ISLAMIC ECONOMIC STUDIES

Articles

Analysis of Sharīʿah Based Equity Screenings: Developing a
Sharīʿah-Compliant Index for Qatar Stock Exchange

Monzer Kahf
Eman Mohammed Al-Hajjaji

Co-Movement and Volatility Transmission between
Islamic and Conventional Equity Index in Bangladesh

Md Abu Hasan

The Role of Entrepreneurial Empowerment in the Relationship
between Islamic Microfinance and Well-being of Clients:
A View from a Service Provider

Usman, A. S.
Tasmin, R.
Ulum, Z. K. A. B.

Achieving Sustainable Impact of Zakah in Community
Development Programs

Mohamad Soleh Nurzaman
Fika Khanifa Kurniaeny

Cumulative Index of Papers

List of IRTI Publications

Islamic Research & Training Institute (IRTI)

Establishment

The Islamic Research and Training Institute (IRTI) was established by the Board of Executive Directors (BED) of the Islamic Development Bank (IDB) in conformity with paragraph (a) of the Resolution No. BG/14-99 of the Board of Governors adopted at its Third Annual Meeting held on 10th Rabi-ul-Thani, 1399H corresponding to 14th March, 1979. The Institute became operational in 1403H corresponding to 1983. The Statute of the IRTI was modified in accordance with the resolutions of the IDB BED No.247 held on 27/08/1428H.

Purpose

The Institute undertakes research for enabling the economic, financial and banking activities in Muslim countries to conform to Shariah, and to extend training facilities for personnel engaged in development activities in the Bank's member countries.

Functions

The functions of the institute are to:

A. Develop dynamic and innovative Islamic Financial Services Industry (IFSI).
B. Develop and coordinate basic and applied research for the application of Shariah in economics, banking and finance.
C. Conduct policy dialogue with member countries.
D. Provide advisory services in Islamic economics, banking and finance.
E. Disseminate IFSI related knowledge through conference, seminars, workshops, apprenticeships, and policy & research papers.
F. Provide learning and training opportunities for personnel engaged in socio-economic development activities in member countries.
G. Collect and systematize information and disseminate knowledge.
H. Collaborate to provide policy advice and advisory services on the development and stability of Islamic Finance and on the role of Islamic institutions in economic development to member government, private sector and the NGO sector.
I. Develop partnership with research and academic institutions at OIC and international levels.

Headquarters

The Institute is located at the headquarters of the Islamic Development Bank in Jeddah, Saudi Arabia.

8111 King Khalid St. A1 Nuzlah A1 Yamania Dist.
Unit No. 1, Jeddah 22332-2444, Kingdom of Saudi Arabia
Tel: (00966-2) 636 1400 Fax: (00966-2) 637 8927
Home page: http://www.irti.org Email: irti@isdb.org

بسم الله الرحمن الرحيم

In the name of Allah, the Most Merciful, Most Beneficent

ISLAMIC ECONOMIC STUDIES

CONTENTS

Articles

ARTICLES

Analysis of Sharī'ah Based Equity Screenings: Developing a Sharī'ah-Compliant Index for Qatar Stock Exchange

MONZER KAHF[•]

EMAN MOHAMMED AL-HAJJAJI[≠]

Abstract

Although, any amount or portion of Haram is not permissible in Sharī'ah. *An exception has been addressed on the basis of the* Sharī'ah-*established maxim of "necessities call for relaxation of prohibition."[1] This allows investing in companies that engage in some non-permissible transactions (mixed companies) to a certain tolerable extent, provided that the financial outcomes of these transactions are purified by giving the part that is not-permissible to charity. Identifying mixed companies that Muslims can invest in is done by using specific* Sharī'ah *screening criteria that exclude out of the universe of all listed companies in a specific market those companies with returns emanating from non-permissible activities beyond certain threshold limits. This paper identifies the screening criteria used by seven Islamic indices, compares and contrasts between them and tries to examine whether it is time to have an Islamic index with no tolerance to non-permissible activities using Qatar as a case study. It is found that there exists a number of differences among Islamic indices which have impact on the Muslim investors level of freedom through their impact on the universe of Halal equity assets. It is also found that an Islamic index with zero-tolerance to non-permissible activities may be constructed for Qatar Stock Exchange without losing much of freedom of choice in this market. A comparison between the proposed zero-tolerance index and the already existing Al Rayan Islamic index shows that there are no*

[•] Hamad Bin Khalifa University, Doha-Qatar, email monzer@kahf.com
[≠] Hamad Bin Khalifa University, email eman.alhajjaji@gmail.com
[1] A rule that accompanies the jurisprudential maxim "hardship begets ease" that is based on the Ayah: "He has not laid upon you in religion any hardship" (22:78).

differences in their respective behaviors. This indicates that having companies that do some non-permissible activities and having non-permissible income in the "Islamic basket" of listed companies is not necessary in Qatar.

This paper consists of five sections. The first section provides an introduction to the presented topic. The methods that are used for Sharīʿah *investment screening are discussed in section two. The third section includes a comparison of the screening criteria that are currently used by major index providers. The creation of an Islamic index with Zero-tolerance in Qatar Stock Exchange is illustrated in section four. The last section consists of conclusions and recommendations.*

Keywords: Islamic Equity Market, Equity Screening, Islamic Finance, Qatar

JEL Classifications: G10 ; G19 ; Z12
KAUJIE Classification: I73 ; I75

1. Introduction

The OIC Fiqh Academy stated in its resolution No. (63/1/7) Date (May 1992) that, when investing in shares, the principle is to avoid companies that have any non-permissible things or activities and to have zero tolerance to all Haram. However, the resolution left room to deal with situations of necessity or hardship and did not explicitly prohibited investment in shares of all companies that may involve in some non-permissible activities, considering the current market structures and business environment. In the market, as it is today, Muslim investors have to deal with companies as they are especially with regard to the non-availability of Islamic finance in many markets. To allow Muslim investors to be a part of the equity market, scholars came up with tolerance levels that sort companies according to the extent of their Haram activities and to suggest as Sharīʿah-compliant those companies that have the least of such activities, the shares of these companies can be part of an Islamic Index. Companies operate in different countries and face different market environments and degrees of accessibility to Islamic financial services. Thus, using the same tolerance level in the Sharīʿah screening criteria of most countries is not logical.

In a country like Qatar, where there is a good number of companies that declare themselves as Sharīʿah-compliant relative to the total number of listed companies in the stock market, such a tolerance is most likely unneeded and an Islamic index

that consists of these companies only can be developed. Qatar equity market already has an Islamic Index (Al Rayan Islamic Index), which has the same tolerance level as other major Islamic indices which are created mainly for the Western markets in which one can rarely find a listed company that fully abides by the Sharīʿah principles. Considering the small number of listed companies in Qatar equity market many of which declared Sharīʿah-compliance, having the same tolerance level applied in the West may seem unjustified. To address this critical issue and to ensure providing an entirely Sharīʿah-compliant investment option for Muslims in Qatar, this paper will attempt to construct an Islamic index that consists of companies fully operating under Sharīʿah laws and regulations and test whether such an index offers adequate investment choice and freedom as that which conventional investors enjoy in Qatar equity market.

2. Sharīʿah Investment Screening Methods

Sharīʿah screening process includes a qualitative test and a quantitative test that any company must pass to be classified as Sharīʿah-compliant.

2.1 Qualitative Screening

Qualitative screening is related to the core of company's business and its objective, that is the main activity or the business field that the company focuses or based on. Hence the qualitative test applies to all companies and excludes companies that fall in the category of non-permissible products or activities. Companies whose businesses are permissible pass this test and companies whose business is not permissible in Sharīʿah fail this qualitative test. Accordingly, we exclude companies that produce or sell products or services that are clearly prohibited in Sharīʿah such as pork and alcohol products. This screen also excludes companies whose business operations are based on interest, *Gharar* (major ambiguity in the mutual obligations of the parties to an exchange) or any immoral activities that are against the principles of Sharīʿah.

2.2 Quantitative Screening

Companies that pass the qualitative test are examined for the quantitative test of Sharīʿah compliance. The quantitative screening focuses on some financial ratios. The rationale of these ratios is to determine a level of tolerance of non-permissible activities and income for companies with mixed activities. These mixed companies are most common in the Muslim world and internationally.

Quantitative screening consists of numerical calculation of three dimensions concerning the operations' structure of a company from its financial aspects. These dimensions are: the extent of its dependence on interest-based leverage, the relative size of non-permissible income and the extent of liquid assets that that the company holds. The quantitative screening is an ongoing test to ensure that the company continues to be in line with the required criteria as the financials of any company change over time.   The qualitative screening is an ongoing process as well, but not as frequent as the quantitative screening.

Debt Level (Leverage Level)

Companies may rely heavily on debt to finance their operations, trading, expansion projects or investment activities such as acquisitions, etc. The prohibition of *Ribā* does not only means it is not permissible to receive interest but also it is not permissible to pay it too. Accordingly, if a company depends heavily on interest-based loans in its operations it can be argued that the results of its activities are actually generated by such prohibited loans and hence cannot be legitimized from Sharī'ah point of view.

Some flexibility in this regard has been addressed by Sharī'ah scholars to tolerate investing in companies that depend on conventional debts in their activities provided that such dependence remains below a certain level. The threshold of debt dependence should not usually exceed 33% of the market value of the company or of its total assets. If a company relies on interest-based loans beyond this level to finance its activities, what the company generates is subsequently Haram because the resources used to initiate these activities are Haram. As a Muslim, you are not supposed to be a shareholder of such a highly interest-leveraged company.

2.2.1   Relative Level of non-Permissible Income

The ratio used by the majority of index providers is that the total of non-permissible income should not exceed 5% of the total revenue of the company. This threshold covers interest and other non-permissible earnings that are reported in the company's financial statements. It includes interest on deposits at convectional or central banks, bonds, treasury bills and any type of interest generating security or financial service as well as income arising from any non-permissible good or service sold by the company or its subsidiaries. For example, a hotel whose main business activity is Sharī'ah-compliant but might have marginal non-permissible activities such as serving alcohol, if the revenue generated from this activity exceeds the given threshold it will not be classified as Sharī'ah-compliant.

Liquidity Level

This ratio covers cash and cash equivalent elements such as bonds, promissory notes and other short-term quasi-cash investments. From a Sharīʿah perspective, such assets often earn interest. Sharīʿah acceptable earning should be gained from business activities/assets of the company which are based on assets mix described as Sharīʿah compliant.

Additionally, cash and debts assets can only be exchanged at face value and if the company's major asset component is cash or debts the company's shares can't be traded except at par book value as the rules of *Ṣarf* and *Ḥawālah* will then be applied. This is supported by Ali Al-Quradaghi (2010, p. 162) who contended that shares of a company before it starts operation can't be traded except under the rule of *Ṣarf* because its assets are still mainly cash in banks not yet transformed into other assets. The liquidity screening is therefore needed to avoid trading stocks at premium or discount when it should be at par as Sharīʿah prohibits trading of debt or cash except at face value. According to the tolerance principle applied in all the seven indices studied in this paper, cash, cash equivalents and debts assets may not exceed 33% of total assets or market capitalization of the company.

However, some researchers (Khatkhatay & Nisar, 2007) argue that the reasoning behind this ratio is flawed because the market price of the share does not represent the amount of cash or cash equivalents in the company's accounting books, rather it represents market valuation, revenue and expectation for the future of the company's business.

OIC Fiqh Academy issued resolution number 188 (3/20) in 2012 and reaffirmed it in 2013 by its resolution number 196 (21/2) which maintain that companies' shares can be traded without looking at the percentage of cash and debt as the share represents a functioning company which is a legal and Sharīʿah-legitimate institution and its assets (any mix of cash, debts, properties, rights and benefits) are only subordinate (Tabi' تابع) to the company.[2] This is in application of the rule [Al-Tabi' Tabi' التابع تابع: a subordinate follows the rules of its principal]. Accordingly, Islamic banks and similar institutions may be traded as an institution regardless of the composition of their assets and the percentage of cash therein and without applying the rule of *Ṣarf*.

---

[2] On the other hand same resolutions emphasized that trading securities (Sukuk) that represent cash and debts separate from the legal ad Sharīʿah-legitimate institution that generates them is not permissible.

2.3 How Much Tolerance to non-Permissible Activities Do We Need?

The levels used and explained above are not based on clear-cut statements from the Qur'ān or the *Sunnah*. They are all opinionated and based on Ijtihad of Sharī'ah scholars and on interpreting statements not directly related to investment matters, which somehow justifies the difference in the thresholds between indexes. Scholars however offer justifications to use these thresholds or percentages. One of these justifications is a Sharī'ah maxim associated with the rule of majority which establishes that we apply to the whole what applies to its majority. Accordingly, many consider one third as not much as it does not come even close to be a majority for which we change our action.

Also, being small and negligible is raised to justify this position of tolerance. It is argued that if the amount of non-permissible income did not exceed 5% of total income it will be considered negligible since most of the money comes from halal sources and the amount of non-permissible income is little and can also be known from the company's financial statements and removed by giving it to charity (Al-Quradaghi, 2010, p 171).

Also, the prophet, pbuh, is reported to have said "one third and one third is even too much".[3] Therefore, the third is used to distinguish between what is few and what is many (Al-Omrani, 2005, p 83). That could be the main reason why the vast majority of Indices use a ratio between 30% and 33% for non-permissible activities.

These screening criteria were established to offer Muslim investors some flexibility and freedom of choice to have different investing options that if not fully abide by Sharī'ah laws are at least in the closest vicinity to them. The argument is that there is no sufficient number of fully Sharī'ah-compliant companies operating and listed in the main equity markets that could constitute a good investible portfolio. Apparently, the criteria of financial test indicate that efforts should be made to minimize the non-permissibility as much as possible. If fully Sharī'ah-compliant companies exist and Islamic financial services are available in a country such tolerance will be deemed unnecessary (Al-nadawi, 2012, p 16). That is because the necessity condition might no longer be applicable.

Since the principle is that there should be no tolerance to any haram activities and the above percentages should be all Zero, it is a must that these thresholds should be

---

[3] Reported by Muslim, No. 1628.

minimized when the investment environment allows it. Of course, this can't be the same for all countries and markets and the thresholds should be different from a country to another depending on the market situation and the availability of services that are in accordance with Sharī'ah. Giving the same threshold for all companies when in fact some companies have full access to Islamic finance services and others don't is unjustified. Furthermore, a relaxed tolerance, when it is proven not necessary, is not only in violation of the Sharī'ah rationale but actually is not to the benefit of the overall Islamic finance industry and the development of the infant Islamic capital markets. Sticking on to these criteria does not incentivize mixed companies to align their activities with the Sharī'ah standards and keeps Muslim investors in the hassle of purification calculation and giving up part of their earnings to charity. Tolerance criteria should be reviewed to reflect the current market circumstances and the business environment surrounding companies.

A study was conducted by (Al-Tunaiji) in 2009 showed that there are several fully Sharī'ah-compliant companies listed in the stock markets of different GCC countries. 23 in the Saudi market, 9 in the Qatari market and 10 in UAE. The author recommended reviewing the screenings to adjust them to the changes that happened in GCC due to the expansion the Islamic finance industry in the gulf region while discussing the necessity condition and whether it is truly still applicable currently in these markets.

Today, 8 years later, there are 18 companies that operate according to Sharī'ah laws in Qatar and more than 100 in in the Saudi market according to the Sharia Board of AlRajhi Bank.[4] This shows that there is a vital need to re-evaluate the screening standards according to the current business environment that these companies operate in.

3.　Comparison of Islamic Equity Indices Screening Criteria

To illustrate the differences and similarities between the different Sharī'ah indices on real ground, this study will look into seven Sharī'ah-compliant indices created by seven different providers. They are selected because they are most commonly known world-wide along with AAOIFI standards for Sharī'ah screening which represents the AAOIFI Council of Sharī'ah experts in the field of Islamic finance from different countries. The screening for AAOIFI is given in the AAOIFI Sharī'ah Standard No. 21 that was issued on 2004 (AAOIFI, 2017, p. 568). The screening for Sharī'ah compliance is decided by the Sharī'ah board of the respective

---

[4] Retrieved on October 28, 2018 from https://www.argaam.com/ar/company/shariahcompanies

index. Thus, the Sharīʻah boards of Dow Jones Islamic Market index defines its screening ("S&P Dow Jones Indices", 2017, p. 26),[5] the screening of Standard & Poor's Sharīʻah Indices are given in ("S&P Indices", 2017, p. 5),[6] those of FTSE Sharīʻah Global Equity Index are available in ("FTSE Sharīʻah Global Equity Index Series", n.d.),[7] Al Rayan Islamic Index has its own Sharīʻah board that defines its own criteria ("Qatar Stock Exchange", 2013),[8] Meezan Index ("Pakistan Stock Exchange Limited",n.d.)[9] and Bursa Malaysia ("Securities Commission Malaysia", 2013, p. 144).[10] Information presented for each index is as disclosed on December 2017 on their official web pages.

3.1 Qualitative Screenings (The Sector Screening)

This sub-section identifies the prohibited sectors that will not be considered for the quantitative screening as defined by each index Sharīʻah methodology. The lists of prohibited sectors are presented in Table 3.1 below and will be followed by a brief comparison between the prohibited sectors in the selected indices.

Table 3.1
Qualitative (Sector) Screening

Index	Prohibited Sectors Screening	Remarks
AAOIFI	The corporation does not state in its memorandum of association, by-laws or articles of incorporation that one of its objectives is to deal in interest, or in prohibited goods or materials such as pork and the like (AAOIFI, 2017, p. 563).	Does not have a distinct list or names for prohibited sector screening. They provided a general definition that includes all companies with activities prohibited in Sharīʻah. The indices derive their own list of prohibited sectors as well as financial screening ratios from AAOIFI guidelines, which might justify not having a list of prohibited sectors as the list that will be provided by AAOIFI might not be applicable or adequate for a specific country. This could be problematic in some sectors

---

[5]   Retrieved February 06, 2018, from http://www.spindices.com/documents/ methodologies/methodology-dj-islamic-market-indices.pdf
[6] Retrieved February 06, 2018, from http://us.spindices.com/documents /methodologies/methodology-sp-shariah-indices.pdf
[7] Retrieved February 06, 2018, from http://www.ftse.com/products/indices/Global-Shariah
[8] Retrieved February 10, 2018 from https://www.qe.com.qa/qe-al-rayan-islamic-index
[9] Retrieved February 10, 2018 from   https://www.psx.com.pk
[10] Retrieved February 06, 2018, from https://www.sc.com.my/

		like entertainment and media, unless additional details were provided.
DJIM (USA)	1. Conventional financial services 2. Alcohol 3. Pork-related products 4. Entertainment (hotels, casinos/gambling, cinema, pornography, music, etc.) 5. Tobacco 6. Weapons and defense	Excludes the whole sector without details that consider Sharīʿah compliant businesses or individual companies that might be compliant under some sectors like sports channels in the entertainment sector or a specific company under the media sector.
S&P (USA)	1. Conventional Finance 2. Alcohol 3. Pork 4. Pornography 5. Tobacco 6. Advertising of (pork, alcohol, gambling, tobacco and all other non-Islamic activities and Advertising means and modes which contravene the tenants of Islam) 7. Media & Entertainment (Producers, distributors and broadcasters of music, movies, television shows, musical radio shows and cinema operators). News channels, newspapers, sports channels, children's channels and educational channels are exempted. 8. Cloning 9. Gambling 10. Trading of gold and silver and currencies on deferred basis	The index does not include weapons and defense on the prohibited sectors list or provide details on casinos and hotels. By excluding some sub-sectors this index apparently goes one step further into the sectoral classification. They add to the exclusion other business such as cloning, advertising of activities or products that don't adhere to Islamic principles and trading of gold and silver and cash on deferred basis because they can be only traded at spot in Sharīʿah.
FTSE (UK)	1. Conventional finance 2. Alcohol 3. Pork related products and non-halal food production, packaging and processing or any other activity related to pork and non-halal food 4. Entertainment (casinos, gambling and pornography) 5. Tobacco 6. Weapons and defense manufacturing.	The index does not provide details on hotels, entertainment activities such as cinema and music production and distribution.

AL-Rayan (Qatar)	1. Conventional Financial Services 2. Alcohol 3. Pork Related Products 4. Adult Entertainment 5. Tobacco 6. Weapons 7. Gambling/Casinos 8. Music 9. Hotels (except Sharīʿah-compliant hotels) 10. Cinema	The index listed some sectors like gambling and adult entertainment although they don't operate officially in the country and there are no listed companies in the Qatar Stock Exchange except for one cinema company.
Meezan (Pakistan)	1. Conventional banking and insurance 2. Alcoholic drinks 3. Pork production 4. Pornography or related activities 5. Tobacco 6. Arms manufacturing.	The index does not provide details on hotels, entertainment activities such as cinema and music production and distribution.
Bursa Malaysia (Malaysia)	1. The primary activity of the company must not be against the Sharīʿah principles. This will be analyzed using four primary criteria. *Ribā*, *Gharar*, sale of prohibited goods and services such as pork and alcohol and gambling. Also, the haram element must be very small compared to the main activities. 2. Public perception or image of the company's activities from the perspective of Islam must be good. 3. The core activities of the company are important and considered *Maṣlaḥah* (benefit) to the Muslim nation and the country, and non-permissible element is very small and involves matters such as *Umum balwa* عموم البلوى, *Urf* العرف (custom) and the rights of the non-Muslim community which are accepted by Islam (Zainudin, Miskam & Sulaiman, 2014, p. 82).	No formal list that includes prohibited sectors and there are no details about entertainment activities and weapons manufacturing in the screening. The qualitative screening in Bursa Malaysia gives a special attention to the image of the company and the benefit it brings to the Muslim community from its business activities. However, the screening does not include details of how this will be measured as the image does not have a particular benchmark and its resolution is based on the discretion of the SAC.

Table 3.1 shows that there is a consensus among all the selected indices about the exclusion of companies with conventional finance, alcohol, pork, pornography or tobacco as a core business activity. There are no major differences in the sector screening among the different Sharī'ah-compliant index providers, they all exclude companies that rely on prohibited activities for profit making. The minor differences in the sector screening can be seen in activities that are not clearly prohibited in Sharī'ah, rather the disagreement appears because the issue is about 'where' and "what for' the products will be used such as producing weapons and defense. Although two out of four Sharī'ah scholars are in the Sharī'ah supervisory board of both Dow Jones and S&P. However, Dow Jones considers weapons and defense a prohibited sector while S&P doesn't, and S&P made an exemption for Sharī'ah compliant business in the entertainment industry while Dow Jones doesn't, even though both indices are originated in the United States, which might create a confusion for the investor and raise some question marks.

The sector screening in these indices has ignored other important aspects such as if the operations of the company are friendly to the environment as the screenings don't contain any conditions related to the behavior of the company from an environmental, social and governance aspects. These are important areas of Sharī'ah concern because Islamic principles always look into the best interest of the whole community, society and all humanity. Thus, a company that is making profit through an aggressive use of the natural resources, causing pollution and damaging the environment where humans live in should be considered a company that operates against the guiding principles of Islam and should be recognized as such. Recently, many stock exchanges around the world have issued guidelines that enforce listed companies to incorporate an environmental, social and governance concerns into their annual reports such as London Stock exchange and Hong Kong Stock Exchange as a recognition of the importance of these large companies' contributions to the society and to monitor the behavior of these companies towards the surrounding environment. While Muslims have guidelines that concern the environment protection and encourage sustainability since the days of the Prophet. For instance, the prophet peace be upon him has discouraged extravagance in water resources. When one of the companions was doing ablution and the prophet said: "What is this extravagance, O Sa'd?" He said: Can there be any extravagance in ablution? He said, "Yes, even if you are on the bank of a flowing river."[11] If this is the situation for ablution, a rituals practice that is necessary for prayers, shouldn't this notion of conserving resources be practiced by us and enforced by law on companies and

---

[11] Reported by Abdullah ibn 'Amr ibn Al-'Aas. Narrated by Imam Ahmad (6768) and Ibn Maajah (419)

institutions. Sharīʿah screenings should address that and exclude companies who evidently uses natural resources in an extravagance manner or does not have a proper waste management process. Adopting these environmental, social, moral and governance standards in the Sharīʿah screening can in the long run help improve the employee's relations, encourage using renewable energy and apply appropriate waste management strategies. Recognizing that it might be difficult to apply these very important criteria at present as this may reduce the number of Sharīʿah-compliant companies, the importance of such ideas imposes itself and calls for action by Sharīʿah specialists to functionalize them. This could also encourage new businesses and startups to follow these standards at early stages of their business operations.

3.2 Quantitative Screenings (The Financial Screening)

This section will discuss the financial Sharīʿah screenings that companies who pass the sector screening will go through in the selected indices. Table 3.2 includes the screening for levels of non-permissible income while Table 3.3 covers debt level. Table 3.4 presents the screenings of assets of the company and Table 3.5 includes the liquidity screenings.

3.2.1 Screening of non-Permissible Income

This subsection will review non-permissible Income screenings used by each of the selected indices. Any company that generates income from non-permissible activities more than the tolerated level will be banned from entering the list of Sharīʿah compliant companies. The following table (Table 3.2) includes the non-permissible Income screening criteria currently used by these indices.

As shown in Table 3.2, S&P, Dow Jones, FTSE and Meezan indices have consensus on limiting non-permissible income to a maximum of 5% of revenue. In AAOIFI the 5% is counted from the total income generated by the company and these four indexes used the term revenue in same meaning as total income as the intention is to consider in the denominator income before deducting any direct or indirect expenses and charges.

For Bursa Malaysia the tolerance level is measured from the group revenue or group profit before taxation. Profit before taxation comes after detecting all expenses incurred by the company whether direct or indirect, there is a great difference between it and total revenue. This difference can affect the amount of

activities that can generate non-permissible income conducted by the company, which is a serious matter that must be addressed by authorities in Bursa Malaysia.

Table 3.2
Non-Permissible Income Screening

Index	Non-permissible Income level	Remarks
AAOIFI	Income generated from prohibited components should not exceed 5% of total income	AAOIFI provide a general statement of prohibition components without any elaboration on specific items. The remaining indices have a similar approach to AAOIFI.
DJIM (USA)	Income from prohibited activities cannot exceed 5% of revenue	
S&P (USA)	Non-Permissible Income other than Interest Income should be less than 5% of revenue	The only index that excludes interest income from non-permissible income.[12]
FTSE (UK)	Total interest and non-compliant activities income should not exceed 5% of total revenue.	
AL-Rayan (Qatar)	-	The used screening methodology does not include a limitation for non-permissible income level as Al Rayan excludes interest income from the sector screening.[13]
Meezan (Pakistan)	The ratio of non-compliant income to total revenue should be less than 5%	
Bursa Malaysia (Malaysia)	Benchmarks of Sharī'ah non-compliant activities to the group revenue or group profit before taxation of the company relative to certain business activities as follows: **The 5% benchmark** applicable to: Conventional banking; conventional insurance; gambling; liquor and liquor-related activities; pork and pork-related activities; non-halal food and beverages; Sharī'ah non-compliant entertainment; interest income from conventional accounts and instruments; tobacco and tobacco-related activities and other activities deemed non-compliant according to Sharī'ah. **The 20% benchmark** applicable to: Share trading; stock-brokering business; rental received from Sharī'ah non-compliant activities and other activities deemed non-compliant according to Sharī'ah.	The only index that has two benchmarks for non-permissible activities. It links the level of tolerance of non-permissible income to the kind of business activity that was conducted where up to 20% can be tolerated for specific activities and 5% for others.

S&P, DJIM, Al Rayan exclude interest income from the total income for calculating the non-permissible income percentage, which is unjustified. Non-permissible income should include all types of prohibited activities and interest

---

[12] I assumed that the index might have a 5% tolerance for interest and another 5% for other non-permissible income. However, this could not be confirmed as I tried to communicate with S&P Sharī'ah board, but there was no respond.

[13] I tried to communicate with Al Rayan Investment for justification of not using a tolerance level for interest and non-permissible income, but I didn't receive any respond.

earning is the most significant one that should be focused on instead of excluded. Al-Rayan Islamic index in Qatar does not have any criteria that limits the level of non-permissible income as a part of total revenue. It's true that Qatar is a Muslim-majority country and it is unlikely that any of the listed companies have investment in forbidden products such as alcohol or pork, still there are other prohibited business that operates in the country like cinemas and conventional finance which mixed companies can have operations with, especially conventional finance and insurance. Bursa Malaysia has a quite unique screening method for the level of non-permissible income. It has a 5% and a 20 % tolerance benchmarks for the prohibited activities depending on the activity itself. The index does not provide any details for the selection of these benchmarks nor why they are used for these businesses in particular.

3.2.2 Screening of Debt (Leverage) Ratio

Table 3.3 below shows debt ratio screenings currently used by the indices. Any company that exceeds the allowed tolerance level of conventional debt will be eliminated from the list of Sharīʿah-compliant companies that can be included in the Sharīʿah index.

The Rationale for using a leverage ratio is that if a company finances more than one third of its assets or commercial transactions with interest-based debt then subsequently these assets and any revenue generated from them is not Halal because the source used to acquire them is not Halal. Muslim investors holding this company shares will become a partial owner of a non-Sharīʿah-compliant asset as more than the tolerated level of interest-based debt has been used by the company. As can be seen from Table 3.3, Meezan leverage screening is the most tolerant in this list of indices, it has a tolerance level of 37% of debt as a ratio of total asset. This is unexpected considering that Pakistan is a Muslim majority country that has full access to Islamic finance services compared to other western indices. However, it must be noted that the percentage was earlier 40 and recently reduced to 37%. The remaining indices have a tolerance level that ranges between 30% and 33%, which apparently reflects what each index considers the one third to distinguish between what is few and what is many.

Table 3.3
Debt (Leverage) Ratio Screening

Index	Debt (leverage) level	Remarks
AAOIFI	$\dfrac{\text{Total Debt}}{\text{Market capitalization}} < 30\%$	• The different views of determining the third is evident in the tolerance level for debt in all these screenings.
DJIM (USA)	$\dfrac{\text{Total Debt}}{\text{Average Market Capitalization (24 month average)}} < 33\%$	
S&P (USA)	$\dfrac{\text{Debt}}{\text{Market Value of Equity (36 month average)}} < 33\%$	
FTSE (UK)	$\dfrac{\text{Debt}}{\text{Total Assets}} < 33.333\%$	• Difference between using total asset or market capitalization as a denominator
AL-Rayan (Qatar)	$\dfrac{\text{Total Debt}}{\text{Total Assets}} < 33.33\%$	
Meezan (Pakistan)	$\dfrac{\text{Debt}}{\text{Total assets}} < 37\%$	
Bursa Malaysia (Malaysia)	$\dfrac{\text{Debt}}{\text{Total assets}} < 33\%$	

3.2.3   Screening of Asset Use

The asset use screening surveys the assets side of the balance sheet in each company to check what is the percentage of non-permissible assets owned by the company, mainly interest earning assets. If the company owns interest generating assets beyond the tolerated level it will be excluded from the list of Sharīʿah-compliant companies that can be included in the index. Asset use screenings for the selected indices are listed in Table 3.4 below.

In terms of assets, it is not permissible for a Muslim to purchase or hold an interest-earning asset such as deposits in conventional banks or bonds. Accordingly, a company that has interest-earning assets forming more than one third of its total assets or market value will not be included in the Sharīʿah index and holding the shares of such a company will be considered a sinful act because the company relies to a great degree on interest-earning elements. As can be seen from the table, Dow Jones, S&P, FTSE and AL-Rayan agreed on examining cash and interest-bearing securities in this screening as a part of total assets or marker capitalization. AAOIFI

screening only mentioned interest earning deposits and does not include any details about other interest-earning elements such as bonds or treasury bills, which should be addressed and explained by AAOIFI. Bursa Malaysia doesn't have a screening for interest-earning assets relative to the company's total assets or market capitalization like the other indices. This is a serious issue that should be addressed because if more than one third of the company's assets are interest-earning then the investor would be a partial owner in a non-Sharī'ah compliant company.

Table 3.4
Asset Use Screening

Index	Interest Earning Assets level	Remarks
AAOIFI	$\frac{\text{Total interest taking deposits}}{\text{Market capitalization}} < 30\%$	Does not include interest-bearing securities
DJIM (USA)	$\frac{\text{Cash \& interest bearing securities}}{\text{Average market capitalization (24 month average)}} < 33\%$	
S&P (USA)	$\frac{\text{Cash + Interest Bearing Securities}}{\text{Market value of Equity (36 month average)}} < 33\%$	
FTSE (UK)	$\frac{\text{Cash \& interest bearing items}}{\text{Total Assets}} < 33.333\%$	
AL-Rayan (Qatar)	$\frac{\text{Cash \& interest bearing securities}}{\text{Total Assets}} < 33.33\%$	
Meezan (Pakistan)	$\frac{\text{Non-compliant investments}}{\text{Total Assets}} < 33\%$	
Bursa Malaysia (Malaysia)	-	The used screening methodology does not include a screening for interest-earning items as a part of total assets.

3.2.4 Screening of Liquidity Level

Liquidity level screenings that are used by the indices to classify companies as Sharī'ah compliant or not are discussed in this subsection. Table 3.5 includes the used screening by each index and it is followed by a critical review of the liquidity screening and a clarification of the objective behind it.

Here clearly, there seems to be no specific common rule behind the screening of liquidity ratio.

The liquidity level should be used to examine two different angles. The first is related to cash and short-term quasi-cash investments that earn interest, if these were more than one third of total assets then the company will not be Sharīʿah compliant because a large portion of its assets is interest generating. The second angle is concerned with the fact that in Sharīʿah cash and debts assets can only be exchanged at face value. Therefore, if the company's major assets composition consists of cash and debt then it can't be traded at a market price and it should be traded only at face value following the rules of *Ṣarf* and *Ḥawālah*. This second consideration has been addressed and clarified by OIC Fiqh Academy resolution in 2013[14]. The application of liquidity ratio in five out of seven of these indices do not follow the decision of OIC Fiqh Academy which states that if a company is traded as an institution that includes its legal entity, all assets and all liabilities, it may be traded at market price without looking into the kinds or sizes of any specific asset category whether cash or account receivables. This is because the entity is what is been traded and its assets and liabilities are subordinates (*Tabi'* تابع). Shares of a company represent the entity along with its assets and liabilities. Therefore, there is no need to apply the rules of *Ṣarf* or *Ḥawālah* because whatever cash or accounts receivable the company may have will be considered subordinates to its legal entity. Meezan and AAOIFI seems to be consistent with this. There are some other indices that are not included in the present study that do not have any screening criteria for liquidity structure of the company like Edbiz NASDAQ-100 Sharīʿah Index in the United States and Jakarta Islamic Index in Indonesia (Nasdaq OMX Group, 2012), (Indonesia Financial Services Authority, 2012).

There is a vital need to rewrite the liquidity screening threshold in a neat and precise manner. Account receivables should not be included in the Sharīʿah screening criteria unless there is a visible evidence that they included charged interest, and if they include interest they should be accounted in the use of asset screening not the liquidity screening. Islamic banks' nature of business is mainly about dealing with cash and account receivables and they are Sharīʿah compliant companies but definitely have more than 33% of cash and receivables from the financing assets the bank provides as part of their total assets or market capitalization. Hence, they won't pass the screening criteria that are used to classify companies as Sharīʿah compliant.

---

[14] Retrieved on October 29 from http://www.iifa-aifi.org/2348.html

Table 3.5
Liquidity Level Screening

Index	Liquidity Level		Remarks
AAOIFI	-	No specific screening, only a note that the total of assets, rights and benefits of a company should not be less than one third of total assets[15].	
DJIM (USA)	$\dfrac{\text{Accounts receivablels}}{\text{Average Market Capitalization (24 month average)}}$ **< 33%**		
S&P (USA)	$\dfrac{\text{Accounts Receivables}}{\text{Market value of Equity (36 month average)}<}$ **49%**		
FTSE (UK)	$\dfrac{\text{Accounts receivables \& cash}}{\text{Total Assets}}$ **< 50%**		
AL-Rayan (Qatar)	$\dfrac{\text{Accounts receivables \& cash}}{\text{Total Assets}}$ **< 33.33%**		
Meezan (Pakistan)	• $\dfrac{\text{Illiquid assets}}{\text{Total Assets}}$ **≥ 25%** • The market price per share should be ≥ the net liquid assets per share, calculated as: $\dfrac{\text{Total Assets – Illiquid Assets – Long Term Liabilities − Curren}}{\text{Number of shares}}$		
Bursa Malaysia (Malaysia)	$\dfrac{\text{Cash}}{\text{Total Assets}}$ **< 33%**		

3.3 Implications of The Variation Among Islamic Indices Methodologies on Islamic Equity and The Muslim Investor

There are several issues that results from the disagreement on using a unified denominator in the financial screening process. These issues have a direct effect on the investor and an effect on the credibility of Islamic equities. A study that was conducted by (Ashraf, Felixson, Khawaja, & Hussain) in 2017 compared the

---

[15] AAOIFI Sharīʿah Standard No. (21), P.567 (3/19)

performance of Islamic equity portfolios according to different indices that use total assets and market value of equity as the denominator in the quantitative screening. The findings of the study shows that the performance of the portfolio depends largely on the screening standard that is used by the index and that varying screenings have an impact on the risk and return of the portfolio. This study has emphasized the results of a preceding study by (Ashraf, 2016, p. 210) which showed that the choice of the denominator has an impact on the returns of portfolio. Since the existing differences in the screening criteria have an impact on the portfolio performance there is a need to unify the screening standards used, by either using market value of equity or total assets as a denominator to avoid injustice to Muslim investors by offering some a better selection of risk and reward than others. Another study finds that indices that use market capitalization as a denominator provide more Halal assets universe to Muslim investors than indices that use total assets in the financial screening process (Derigs & Marzban, 2008, p. 295).[16] The study also argued that the difference in using the financial screening denominator is a main reason behind defining some assets as Sharī'ah compliant by one index and at the same time not-compliant by another, which might create a confusion for Investors (p. 298).

4. Zero-Tolerance Islamic Equity Index for Qatar Stock Exchange

Surveying these indices and the different Sharī'ah screening methodologies they used indicate that there is a need to address the level of tolerance. The level of tolerance should be associated with the freedom of choice offered to Muslim investors in comparison with conventional investors to whom the available basket consists of all the listed shares as represented by the conventional indices. That is, to relax the Haram to an extent that ensures that Muslim investors will enjoy a level of freedom close to that enjoyed by conventional investors in building and diversifying their own investment portfolio, keeping in mind that no investor, whether individual or institutional positively participate in owning shares in all listed companies and the index is just an indicator of the share prices' behavior in the market. An adequate level of tolerance would then be that which gives the Muslim investors sufficient choice of shares in different sectors in a given market. **This can be expressed, in terms of indices by an index that would have a shape, over time, similar to the shape of the conventional index of that same market**. For indices to have similar behavior over a period of time it means that the total of their respective components have similar risks, similar profitability and similar diversification.

---

[16] This conclusion may be disputed as when markets are in an uptrend, market capitalization as the denominator will capture a larger universe and when the markets are in retreat the opposite holds true. (thanks to un-named referee)

This depends on the equity market environment including place and time, number of listed companies, availability of efficient Islamic finance services and the composition of the stock market among other things. By nature, these factors are changeable. For instance, the accessibility to Islamic finance services and products is by far greater now compared to 20 years ago. This requires a periodic revision and assessment of the market situation by Sharīʿah scholars and investment experts to decide on the tolerance level that is needed for each market and each period of time.

If there exists a number of fully Sharīʿah-compliant companies, diversified in different sectors of a given market and of different sizes and performances in a way that would not put any disadvantageous opportunities to Muslim investors, then no tolerance of Haram will be deemed necessary because the reason for it is no more existing in such a market.

This section will try to examine whether an index with zero tolerance to non-permissible activities for the Qatar Stock Exchange would have these characteristics. An Islamic index with no-tolerance will be constructed using the Qatar stock Exchange (QSE) as a main source of data and comparing it with Qatar Al Rayan Islamic Index (QRII) that already exists in QSE since 2013, as well as with QSE Index (QSEI).

4.1 Suggested Criteria and Calculation Method

The criterion for the proposed index is that the company must run on a fully Sharīʿah compliant grounds by declaring itself to be committed to Sharīʿah principles in its transactions in the articles of association of the company or by having either a Sharīʿah board or a Sharīʿah audit that reviews the company's transactions on a periodic basis. It was found that 18 companies currently listed in QSE meet this criterion. Table 4.1 provides a list of companies that meet the criterion of the Qatar Zero-Tolerance Index (QZTI) in QSE and the sectors in which they are classified under.

Table 4.1
List of Companies in QZTI

	Company	Sector	Stock Ticker
1.	Qatar Islamic Bank		QIBK
2.	Qatar International Islamic Bank		QIIK
3.	Masraf Alrayan	Banks & Financial	MARK
4.	Qatar First Investment Bank	Services	QFBQ
5.	Islamic Holding Group		IHGS
6.	National Leasing Holding		NLCS
7.	Qatar Islamic Insurance	Insurance	QISI
8.	Al Khaleej Takaful Group		AKHI
9.	Qatari Investors Group	Industrials	QIGD
10.	Gulf Warehousing	Transportation	GWCS
11.	Barwa Real Estate		BRES
12.	Ezdan Holding Group	Real estate	ERES
13.	Mazaya Qatar Real Estate Development		MRDS
14.	Vodafone Qatar [17]	Telecoms	VFQS
15.	Widam Food		WDAM
16.	Al Meera Consumer Goods	Consumer Goods &	MERS
17.	Medicare Group	Services	MCGS
18.	Zad Holding		ZHCD

We see from Table 4.1 that there is at least one Sharīʿah-compliant company in each sector of the sectors that operate in QSE. Companies that run on Sharīʿah-compliant basis are concentrated in banking and financial services sector, real estate sector and consumer goods and services sector. All companies in this list are also included in the most recent list of companies that are not subject to purification as published by Ali Al-Quradaghi.[18]

The calculation of the index daily value is done according to the price return index formula that is used by both QSEI and QRII.

Index calculation formula: $\dfrac{\left[\sum_{i=1}^{N} Pi,t * Qi,t * Ci,t\right]}{Divisor\ t}$

Where: t day of calculation

N number of the constituents in the index

---

[17] Vodafone Qatar became fully Sharīʿah compliant since 2015.
[18] Retrieved on March 10 from http://www.qaradaghi.com/Details.aspx?ID=3651.

i vary between 1 and N

$P_{i,t}$ closing price of the constituent i at day t

$Q_{i,t}$ number of free-float shares of the constituent i at day t

$C_{i,t}$ capping factor of the constituent i at day t[19] (only applied to companies whose weight exceed 15%)

The indices calculation in Qatar is based on free float market capitalization divided by a divisor.[20] The divisor was first determined on the index base capitalization and the base level and updated whenever there is a corporate action or composition change in the index constituents ("Qatar Stock Exchange", 2013).[21] To ensure a proper comparison, the calculation of QZTI will also be based on free float market capitalization as well.

4.2 Differences Between the Proposed Index and Al Rayan Islamic Index

Table 4.2 below presents the list of companies in Al Rayan Islamic index and the sectors in which they operate in the Qatari market as published on March 2018 ("Qatar Stock Exchange", 2018)[22].

Comparing Table 4.2 with Table 4.1 shows that there are 13 common companies and only 5 are different between QZTI and QRII. Four of these five companies are in the industrials sector. This does not seem to offer much diversification opportunity, it actually makes QRII more concentrated and QZTI more diversified. Five out of the eighteen listed companies under QRII are subject to purification while naturally, companies in QZTI do not need any purification.

QRII does not have a capping factor on market capitalization similar to the cap in the QSEI, rather it has customized weights assigned to its constituents. The QRII methodology states that the number of index constituents is not fixed. However, its customized weighing scheme seems to limit the number of constituents that can be listed under it The QRII drops any share with less than 0.5% free float market capitalization from its list which resulted in removing five Sharīʿah-compliant companies which exist in the QZTI.

---

[19] Al Rayan price index formula doesn't have a capping factor

[20] Free float capitalization is based on free float shares which are the shares that can be actually traded at the market; this excludes shares owned by the government and board members.

[21] Retrieved February 10, 2018 from https://www.qe.com.qa/

[22] Retrieved March 01, 2018, from https://www.qe.com.qa/qe-indices

The proposed QZTI will not have a customized weighting scheme, rather it will assign a capping factor of 15% similar to QSEI. Still, the values of QZTI without capping will also be calculated for comparison purpose.

Table 4.2
List of companies in Qatar Al Rayan Islamic index

	Company	Sector	Stock Ticker	Assigned Weight	Purification
1	Qatar Islamic Bank	Banks & Financial Services	QIBK	7.64%	-
2	Qatar Intern Islamic Bank		QIIK	8.43%	-
3	Masraf Alrayan		MARK	14.57%	-
4	Qatar First Investment Bank		QFBQ	2.23%	-
5	Qatar Islamic Insurance	Insurance	QISI	0.96%	-
6	Aamal Company	Industrials	AHCS	5.21%	Subject to purification
7	Industries Qatar		IQCD	13.08%	Subject to purification
8	Qatar Industrial Manufacturing		QIMD	1.06%	Subject to purification
9	Qatari Investors Group		QIGD	4.19%	-
10	Qatar National Cement		QNCD	4.52%	Subject to purification
11	Gulf Warehousing	Transportation	GWCS	4.55%	-
12	Mazaya Real Est. Dev.		MRDS	1.89%	-
13	Barwa Real Estate	Real estate	BRES	10.18%	-
14	United Dev. Company		UDCD	5.33%	Subject to purification
15	Vodafone Qatar	Telecoms	VFQS	5.03%	-
16	Al Meera Consumer Goods	Consumer Goods & Services	MERS	4.98%	-
17	Widam Food		WDAM	0.92%	-
18	Medicare Group		MCGS	5.23%	-

4.3 Comparing QZTI Behavior with QSEI and QRII

This section makes a comparison between the index level of QZTI with QSEI and QRII on a monthly basis. The results of this comparison should indicate whether there is similarity in the behavior of these three indices. Table 4.3 in the appendix shows an example of the calculation of QZTI values for the first three months of the examined period (2013-2017) without capping, while Tables 4.4 and 4.5 shows the calculation of QZTI values in the same period using the capping factor. Recent divisors used by both Al Rayan Islamic index and QSE general index are used in calculating the index values for comparative reasons.[23]

For further illustration and to see if there are any significant differences between QZTI and QRII another index consisting of the thirteen common companies is also created. The calculation of the common companies' index is based on free float market capitalization and it is done with and without capping as well to ensure a proper comparison with the other two indices. Table 4.6 in the appendix shows an example of the calculation of the common companies' index in the same period.

The following pages includes 4 charts that give a graphical illustration of the calculated values of QZTI and common companies index along with the historical values of QRII and QSEI for the examined period. Figure1 presents the calculated monthly values of the capped and un-capped QZTI along with QRII and QSEI, using Al Rayan Islamic index divisor. While Figure 2 represents the monthly values that were calculated for QZTI using QSEI divisor. Figure 3 and Figure 4 graphically illustrate the values of QRII, QZTI and the index of common companies between on a monthly basis using Al Rayan Islamic index divisor and QSE General index divisor respectively. The calculated values of QZTI and the common companies index along with historical indices values of QRII and QSEI that are used in the charts are available in tables 4.7 ,4.8 and 4.9 in the appendix.

---

[23] It was not possible to get historical values of the divisor used by QRII and QSEI. Officials were contacted for this research and informed us that these data is "not available".

Figure-1
QZTI capped and un-capped Index values using Al Rayan divisor,
Compared with QE and Al Rayan Index

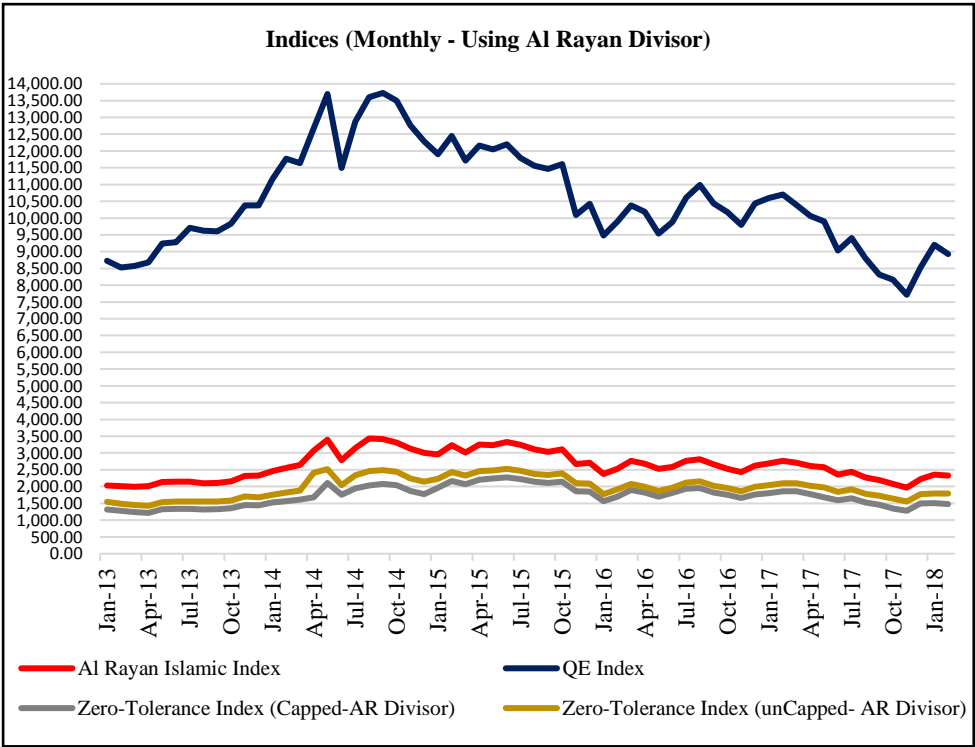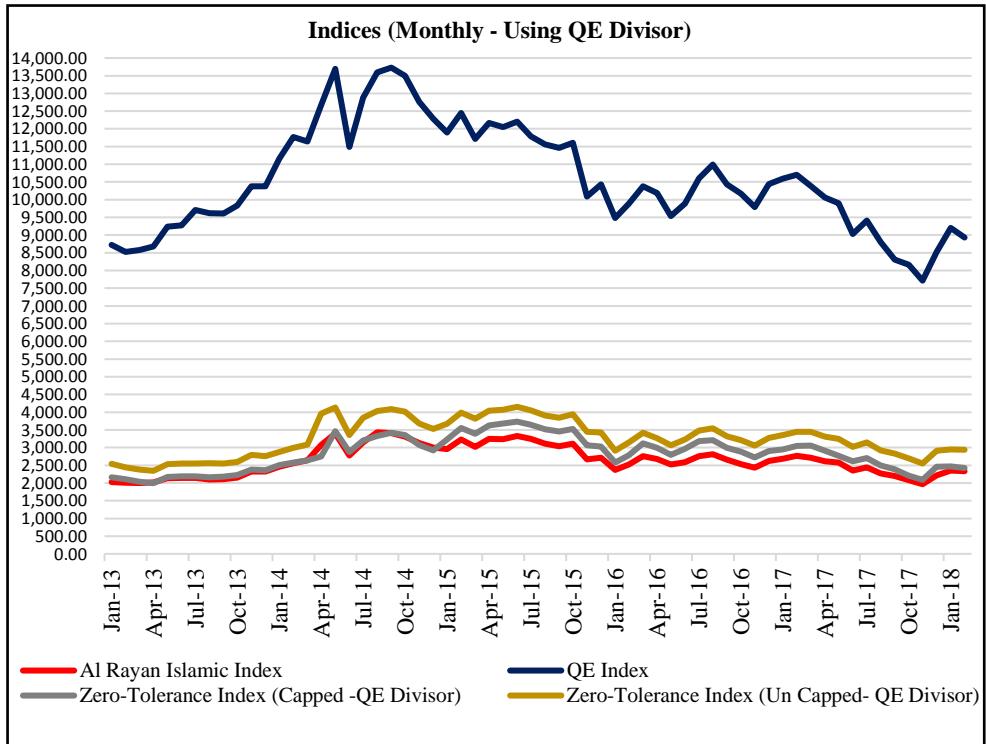Indices (Monthly - Using Al Rayan Divisor)

Figure-2
QZTI capped and un-capped Index values using QE divisor,
Compared with QE and Al Rayan Index

Figures 1 and 2 shows that the shape of QZTI and QRII curves are almost identical, which indicate that QZTI gives as good information as QRII. In figure 1 the values of QRII are higher than the values of both QZTI indexes. This is because the market capitalization of the companies included in QRII are much larger than either of QZTI, or the Index of the 13 common companies. Also, the value of the index differs according to the used divisor. Note that the value of the QZTI is larger when using QSEI divisor since the latter is smaller than Al Rayan divisor. Further, it is seen from the two figures that the difference that appears from using two different divisors has little effect on the general shape of the indices' curves.

There is strong similarity in the upward and downward movement in the studied period among all 4 indices, except that they are much sharper in QSEI, which may

indicate that Islamic indices are more stable with less fluctuation and volatility. These charts show that on a monthly basis comparison of indices' behaviors, there are no significant differences between Al Rayan Islamic Index and QZTI, especially the un-capped QZTI.

Figure 3 and Figure 4 show that there are no significant differences between al Rayan Islamic index and the indices that consist of fully Sharī'ah compliant companies except in their values. This is evident when comparing QRII and the index of common companies between QRII and QZTI, which indicates that the five companies that are included in Al Rayan do not have any substantial effect on the shape of QRII. The similarity in the behavior of Islamic indices is much clear in this comparison, as all Islamic indices look as if they have copied each other in terms of behavior and changes. This confirms what was seen in the previous charts that there are no significant differences between QRII and QZTI in the Qatari Stock Market and the only difference between them is the size of their values. Overall, the charts show that whether the index was capped or not and whether we use Al Rayan divisor or QSE divisor, the Islamic indices behave in a similar manner.

Figure-3
Common Companies Index capped and un-capped values compared with QZTI index, using Al Rayan divisor, Compared with Al Rayan Index
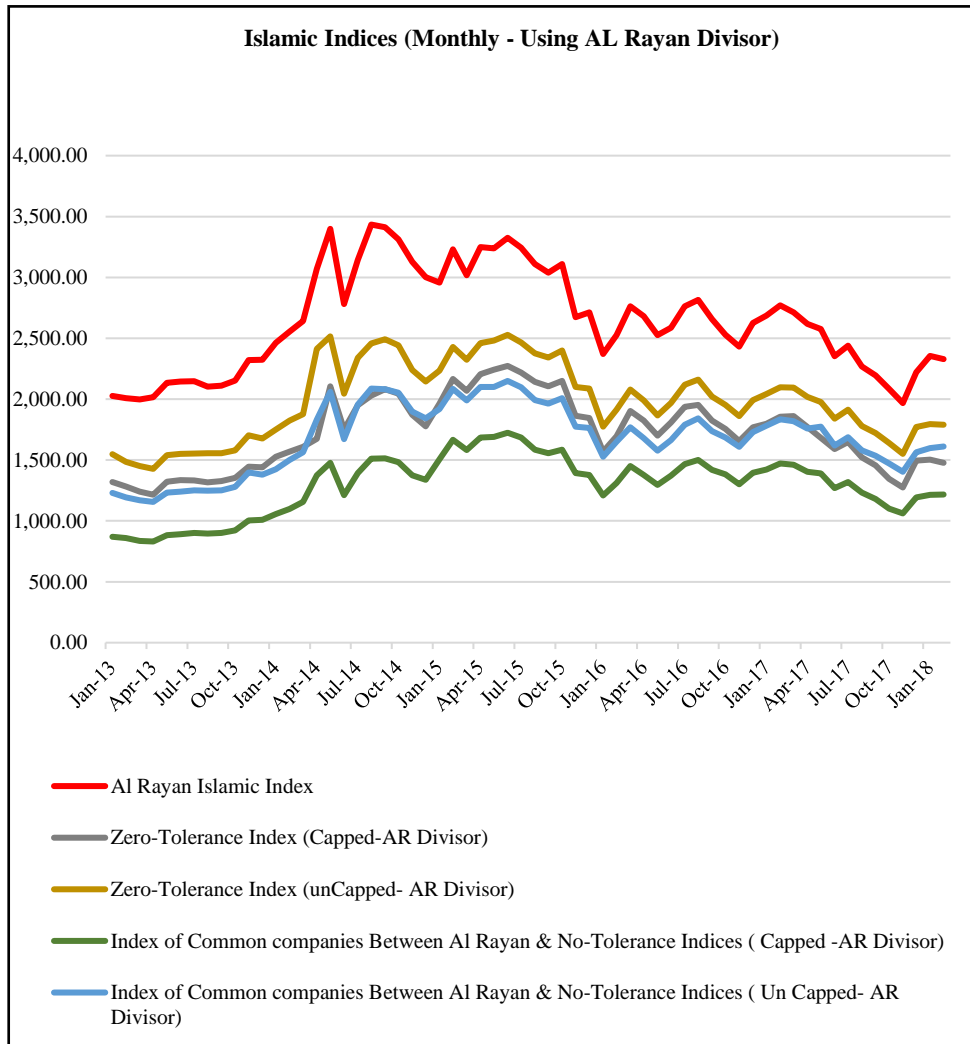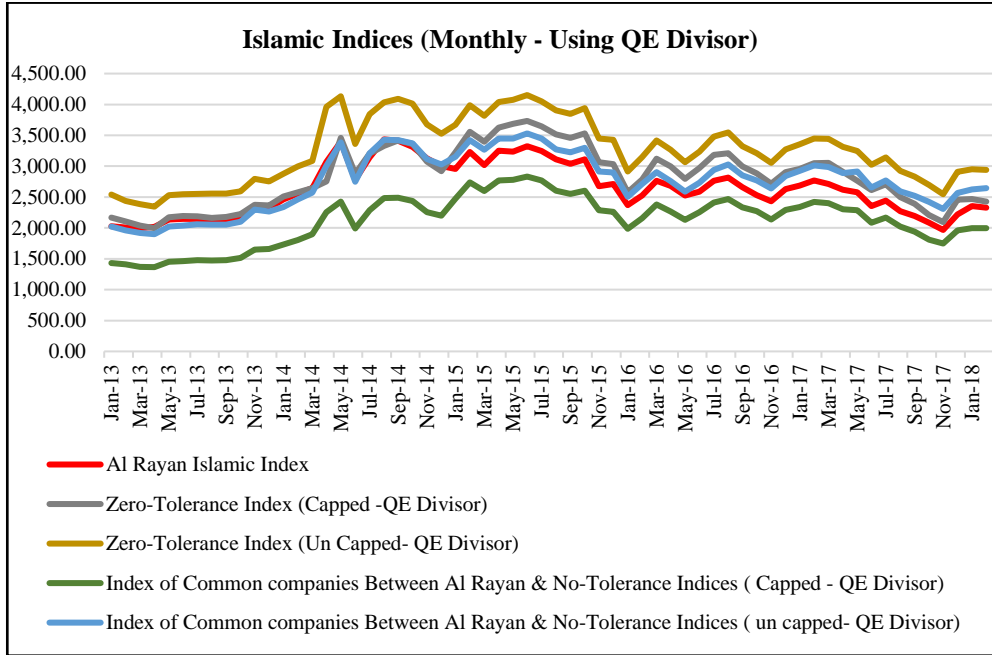

Islamic Indices (Monthly - Using AL Rayan Divisor)

- Al Rayan Islamic Index
- Zero-Tolerance Index (Capped-AR Divisor)
- Zero-Tolerance Index (unCapped- AR Divisor)
- Index of Common companies Between Al Rayan & No-Tolerance Indices (Capped -AR Divisor)
- Index of Common companies Between Al Rayan & No-Tolerance Indices (Un Capped- AR Divisor)

Figure-4
Common Companies Index capped and un-capped values compared with QZTI index, using QE divisor, Compared with Al Rayan Index

Islamic Indices (Monthly - Using QE Divisor)

Al Rayan Islamic Index
Zero-Tolerance Index (Capped -QE Divisor)
Zero-Tolerance Index (Un Capped- QE Divisor)
Index of Common companies Between Al Rayan & No-Tolerance Indices (Capped - QE Divisor)
Index of Common companies Between Al Rayan & No-Tolerance Indices (un capped- QE Divisor)

5. Conclusion and Recommendations

Although the creation of the first Islamic index was less than twenty years ago, Islamic indices and Sharīʿah screenings have been and still are taking a significant attention from researchers.

This paper attempted to identify the rationale behind choosing a specific level of tolerance to non-permissible activities and the financial screenings methods to apply it for creating indices. It surveyed several Islamic indices developed in different countries to identify and analyze the differences and similarities between them. An Islamic index with zero tolerance to non-permissible transactions, activities and income was developed to see if it is about time to have a fully Sharīʿah-compliant index that is not handicapped by any disadvantages to Muslim investors.

Findings suggest that there are several differences among Sharīʿah screening methods and that some indices did not include in their screenings some important

criteria, a matter that must be addressed and revised. The results of the conducted tests as can be seen from the above figures, though with different values, show high similarity in the shape of the three indices. The similarity is more oblivious between QRII and QZTI, which indicates that there is no Sharī'ah justification for the tolerance level adopted by QRII and the index without tolerance behave in the same way in the stock market. It is known that a normal investor holds an average of 15 companies' shares in its stock portfolio, the fully Sharī'ah-compliant companies can fulfill this requirement as they are 18 companies currently and they are distributed among the different sectors of the Qatar market. Therefore, since the behavior of the companies' stock indices is similar, the number of listed companies is also the same (18 each) and the QZTI meets the requirement of a normal investor, there is no rational justification to deviate from zero-tolerance level as done by Al Rayan Islamic index. This suggests that the trading options available to those who will follow the tolerating QRII and those who will only invest in fully Sharī'ah-compliant companies are about the same. This suggests that the tolerance level mentioned in the AAOIFI Standard 21 is not necessary in some equity markets without any negative effect on the investments opportunities available to Muslims or on the effectiveness and indicative data given in the index. If this zero tolerance Islamic index was created in Qatar stock exchange, it would be the first of its kind, which might encourage other countries to assess their market situation and see whether they have reached a level where they don't need to tolerate any non-permissible activities or income or at least can minimize it.

When comparing the QZTI to Qatar General Index, we notice that they somewhat behave also in the same way in the stock market although QSEI is sharper in its upward and downward sloping. The only thing that might put conventional investors on a better ground than a Muslim investor is that a wider range of stocks is available to them, while the Muslim investor will select his investment from a partial basket of the listed companies. The difference is being eliminated with time as more companies are converting to following Sharī'ah rules and guidelines. This puts QRII in troubled waters as it did not include 5 companies that are fully Sharī'ah compliant, which could have made the Islamic basket of stocks in the country richer as it would consist of 23 Sharī'ah-compliant stocks.

Recommendations

Al Rayan Index should increase the number of constituents that could be included in the index by narrowing down the customized weights that are applied in Al Rayan Islamic index since its establishment in 2013 until the day this research was being undertaken. It is a fact that the Islamic index acts as an indicator of the market

performance similar to any other index in the stock market, which might rationalize the conditions that are set to define eligible stocks to enter the Islamic index. Still, the index is called an Islamic index and since the equity market is not wholly Islamic, the investor understands that the index value represents only the performance of companies that passed the Sharī'ah screening in a certain market. Therefore, some flexibility may be required to ensure that all fully Sharī'ah compliant companies are included in the Islamic index of the market along with companies with mixed activities. A matter which will definitely give the investor more freedom of choice due to the larger range of selection and an ability to diversify one's stock portfolio. Unless there is a need to include mixed campiness for purposes like diversification between the different sectors and giving Muslim investors a comparably adequate range of selection for investment. Otherwise, the criteria related to share velocity and minimum weight of market capitalization should have a secondary priority and the Sharī'ah status of the company should come first.

In QZTI, some sectors like the industrial sector have only one fully Sharī'ah compliant company listed under it. Muslim investors who choose to include only fully Sharī'ah compliant stock in their portfolios might face challenges due to the limited scope of choice in this sector and others, this should be addressed by index officials.

Islamic index developers and Sharī'ah boards should agree on unifying the financial screening methods they use. This will ensure consistency and comparability among Islamic indices and boost the confidence in Islamic finance products and services in the capital market.

The level of tolerance should not be the same for all countries (some writers also suggest not being the same across industries) and should be determined according to the need of the country in which the Islamic index is developed. Also, the economic magnitudes of the country should be revised and the listed companies reviewed periodically to decide what tolerance level is suitable for its equity market keeping in mind that the principle is to avoid any Haram activities and income as mentioned in the OIC Fiqh Academy.

Finally, the Islamic sector screening should introduce additional criteria that examine the behavior of the company from an environmental, social and governance aspects. These are extremely important to judge the level of commitment of a company to abide by Sharī'ah because Sharī'ah principles discourage behaviors that negatively affect, and assuredly prohibit inflicting harm to, the community, society, environment and all humanity and other living creatures at large.

References

Al-Nadawi, A. %. (2012). Hkm tdāwl ālāshm ālmḫtlāṭā bālʿnṣr ālrbwy fy ḍwʾ ālqwāʿd ālfqhyh. *Journal of King Abdulaziz University: Islamic economics*. Retrieved February 1, 2018, from http://search.mandumah.com/Record/455215

Al-Omrani, 'e. a. m. (2005). Alestthmar walmtajrh fy ashm alshrkat almkhtlth mraj'eh fqhyh wmqtrhat llbhth almstqbly. *Drasat Eqtsadyh Eslamyh* -Sudai Arabia .Retrieved from http://search.mandumah.com/record/732649

Al-Tunaiji, a. 'e. (2009). Dwabt shra' ashm alshrkat almkhtlth fy alfqh alm'easr. *mjlh alshry'eh aldrasat aleslamyh* - Kuwait. Retrieved from http://search.mandumah.com/Record/474967

Al-Quradaghi, A. (2010). Buhowth fy alaqtsad aleslamy (First edition). Lebanon: Dar albsha'er aleslamyh.

Ashraf, D. (2016). Does Sharīʿah Screening Cause Abnormal Returns? Empirical Evidence from Islamic Equity Indices. *Journal of Business Ethics*, 134(2), 209-228. doi:10.1007/s10551-014-2422-2

Ashraf, D., Felixson, K., Khawaja, M., & Hussain, S. M. (2017). Do constraints on financial and operating leverage affect the performance of Islamic equity portfolios? *Pacific-Basin Finance Journal, 42*, 171-182. doi:10.1016/j.pacfin.2017.02.009

Derigs, U., & Marzban, S. (2008). Review and analysis of current Sharīʿah-compliant equity screening practices. *International Journal of Islamic and Middle Eastern Finance and Management*, 1(4), 285-303.

Indonesia Financial Services Authority. (2012). Sharia Capital Market. Retrieved February 08, 2018, from http://www.ojk.go.id/en/kanal/syariah/tentang-syariah/pages/pasar-modal-syariah.aspx

FTSE Sharīʿah Global Equity Index Series. (n.d.). Retrieved October 01, 2017, from http://www.ftse.com/products/indices/Global-Shariah

Islamic Fiqh Academy. (1992*). Resolutions and recommendations of the Council of Islamic Fiqh Academy*: 1985-2000- Jeddah (First ed.). Jeddah. Retrieved September 10, 2017, from https://uaelaws.files.wordpress.com/2012/05/resolutions-and-recommendations-of-the-council-of-the-islamic-fiqh-academy.pdf

Khatkhatay, M. H., & Nisar, S. (2007). Sharīʿah compliant equity investments: An assessment of current screening norms. *Islamic Economic Studies*, 15(1), 47-76.

Meezan Sharīʿah Methodology. (n.d.). Retrieved February 06, 2018, from https://www.psx.com.pk

Nasdaq OMX Group. (2012). Sharia Family. Retrieved February 8, 2018, from https://indexes.nasdaqomx.com/docs/sharia_overview.pdf

Qatar Stock Exchange. (2013, January). Retrieved September 06, 2017, from https://www.qe.com.qa/qe-indices

Securities Commission Malaysia. (2013, March). Retrieved February 06, 2018, from https://www.sc.com.my/

S&P Dow Jones Indices. (2017, September). *Dow Jones Islamic Market Indices Methodology*. Retrieved September 15, 2017, from http://us.spindices.com/documents/methodologies/ methodology-dj-islamic-market-indices.pdf

S&P Dow Jones Indices. S&P *Sharīʿah Indices Methodology*. (2017, June). Retrieved September 2017, from https://us.spindices.com/documents/ methodologies/methodology-sp-Sharīʿah-indices.pdf?force_download=true

The Accounting and Auditing Organization for Islamic Financial Institutions: Sharīʿah Standards. (2017). Retrieved August 22, 2017, from http://aaoifi.com/books/Sharīʿah-standards-

Appendix

Table-4.3
Qatar Zero-Tolerance Index, QZTI (Without Capping)[24]

	Companies	Jan-13	Feb-13	Mar-13
		Free-Float Market Capitalization = (Free-Float Shares* Closing Price)		
1	QIB	13,303,312,306.74	12,871,269,339.50	12,763,259,047.74
2	QIIB	5,776,627,347.74	5,870,471,158.13	5,432,531,812.26
3	MARK	16,778,031,508.89	15,685,509,785.19	16,095,205,269.00
4	QFB [25]	-	-	-
5	NLCS	1,867,760,547.26	1,649,390,492.00	1,635,452,027.26
6	IHG	73,346,747.43	72,917,888.16	68,628,553.05
7	ZAD	796,637,067.36	779,631,626.64	814,950,523.32
8	WDAM	989,841,879.00	1,071,059,657.28	1,115,052,680.44
9	MERS	1,961,966,896.00	2,092,276,549.75	1,903,400,720.00
10	QIGD	2,250,749,825.52	2,114,798,493.78	2,187,305,770.00
11	AKHI	565,471,917.99	575,370,084.67	558,295,203.29
12	QISI	715,648,512.40	707,143,339.95	626,951,792.10
13	BRES	10,796,065,115.65	10,368,883,444.35	9,650,439,848.00
14	ERES	10,837,485,887.95	9,997,276,869.52	9,498,021,873.60
15	MRDS	926,301,107.91	1,011,286,046.90	918,653,279.93
16	GWC	740,668,394.74	764,784,071.93	784,420,397.72
17	MCGS	788,007,088.92	776,877,045.92	816,945,178.46
18	VFQS	-	-	-
Total Free-Float Market Cap		69,167,922,151.51	66,408,945,893.67	64,869,513,976.17
		Index Value: = (Total Free-Float Market Cap/ Divisor)		
Al Rayan Divisor[26]		44,710,248.85	44,710,248.85	44,710,248.85
QZTI Value		1,547.03	1,485.32	1,450.89
QE Divisor		27,222,940.59	27,222,940.59	27,222,940.59
QZTI Value		2,540.80	2,439.45	2,382.90

---

[24] This three-month example is given in order to show the methodology and the calculation.

[25] Qatar First Bank was listed on June 2016.

[26] Because I was not able to obtain any basis for calculating the Zero-tolerance index own divisor and there are no information available that explains the calculation method of the divisor used by Al Rayan or QE, I used both divisors with the hope of making it closer to reality as it should contain relating numbers to base year in addition to other factors that are used for calculating the divisor and to see how can using different divisors affect the index.

Table-4.4
Applying 15% Cap on Companies of QZTI

	Companies	Jan-13		Feb-13		Mar-13	
		Weights before capping	Weights after capping	Weights before capping	Weights after capping	Weights before capping	Weights after capping
1	QIB	19.23%[27]	15.00%	19.38%	15.00%	19.68%	15.00%
2	QIIB	8.35%	8.35%	8.84%	8.84%	8.37%	8.37%
3	MARK	24.26%	15.00%	23.62%	15.00%	24.81%	15.00%
4	QFB	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5	NLCS	2.70%	2.70%	2.48%	2.48%	2.52%	2.52%
6	IHG	0.11%	0.11%	0.11%	0.11%	0.11%	0.11%
7	ZAD	1.15%	1.15%	1.17%	1.17%	1.26%	1.26%
8	WDAM	1.43%	1.43%	1.61%	1.61%	1.72%	1.72%
9	MERS	2.84%	2.84%	3.15%	3.15%	2.93%	2.93%
10	QIGD	3.25%	3.25%	3.18%	3.18%	3.37%	3.37%
11	AKHI	0.82%	0.82%	0.87%	0.87%	0.86%	0.86%
12	QISI	1.03%	1.03%	1.06%	1.06%	0.97%	0.97%
13	BRES	15.61%	15.00%	15.61%	15.00%	14.88%	14.88%
14	ERES	15.67%	15.00%	15.05%	15.00%	14.64%	14.64%
15	MRDS	1.34%	1.34%	1.52%	1.52%	1.42%	1.42%
16	GWC	1.07%	1.07%	1.15%	1.15%	1.21%	1.21%
17	MCGS	1.14%	1.14%	1.17%	1.17%	1.26%	1.26%
18	VFQS	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Total	100.00%	85.23%	100.00%	86.33%	100.00%	85.51%

Table-4.5
Free- Float Market Capitalization of the QZTI after capping factor

	Companies	Jan-13	Feb-13	Mar-13
1	QIB	10,375,188,322.73	9,961,341,884.05	9,730,427,096.43
2	QIIB	5,776,627,347.74	5,870,471,158.13	5,432,531,812.26
3	MARK	10,375,188,322.73	9,961,341,884.05	9,730,427,096.43
4	QFB	-	-	-
5	NLCS	1,867,760,547.26	1,649,390,492.00	1,635,452,027.26
6	IHG	73,346,747.43	72,917,888.16	68,628,553.05
7	ZAD	796,637,067.36	779,631,626.64	814,950,523.32
8	WDAM	989,841,879.00	1,071,059,657.28	1,115,052,680.44
9	MERS	1,961,966,896.00	2,092,276,549.75	1,903,400,720.00
10	QIGD	2,250,749,825.52	2,114,798,493.78	2,187,305,770.00
11	AKHI	565,471,917.99	575,370,084.67	558,295,203.29
12	QISI	715,648,512.40	707,143,339.95	626,951,792.10
13	BRES	10,375,188,322.73	9,961,341,884.05	9,650,439,848.00
14	ERES	10,375,188,322.73	9,961,341,884.05	9,498,021,873.60
15	MRDS	926,301,107.91	1,011,286,046.90	918,653,279.93
16	GWC	740,668,394.74	764,784,071.93	784,420,397.72
17	MCGS	788,007,088.92	776,877,045.92	816,945,178.46
18	VFQS	-	-	-
	Total	58,953,780,623.18	57,331,373,991.31	55,471,903,852.29
		Index Values		
Al Rayan Divisor		44710248.85	44710248.85	44710248.85
QZTI Value		1,318.57	1,282.29	1,240.70
QE Divisor		27222940.59	27222940.59	27222940.59
QZTI Value		2,165.59	2,105.99	2,037.69

---

[27] Red color marks the excessive contribution of a company to total market capitalization.

Table-4.6
Common Companies Between Al Rayan & QZTI

		Jan-13	Feb-13	Mar-13
1	QIB	13,303,312,306.74	12,871,269,339.50	12,763,259,047.74
2	QIIB	5,776,627,347.74	5,870,471,158.13	5,432,531,812.26
3	MARK	16,778,031,508.89	15,685,509,785.19	16,095,205,269.00
4	QFB	-	-	-
5	WDAM	989,841,879.00	1,071,059,657.28	1,115,052,680.44
6	MERS	1,961,966,896.00	2,092,276,549.75	1,903,400,720.00
7	QIGD	2,250,749,825.52	2,114,798,493.78	2,187,305,770.00
8	QISI	715,648,512.40	707,143,339.95	626,951,792.10
9	BRES	10,796,065,115.65	10,368,883,444.35	9,650,439,848.00
10	MRDS	926,301,107.91	1,011,286,046.90	918,653,279.93
11	GWC	740,668,394.74	764,784,071.93	784,420,397.72
12	MCGS	788,007,088.92	776,877,045.92	816,945,178.46
13	VFQS	-	-	-
	Total	55,027,219,983.51	53,334,358,932.68	52,294,165,795.65
	Index Values			
	Al Rayan Divisor	44710248.85	44710248.85	44710248.85
	Common Companies Index Value	1,230.75	1,192.89	1,169.62
	QE Divisor	27222940.59	27222940.59	27222940.59
	Common Companies Index Value	2,021.35	1,959.17	1,920.96
	Weights before applying capping factor			
1	QIB	24.18%	24.13%	24.41%
2	QIIB	10.50%	11.01%	10.39%
3	MARK	30.49%	29.41%	30.78%
4	QFB	0.00%	0.00%	0.00%
5	WDAM	1.80%	2.01%	2.13%
6	MERS	3.57%	3.92%	3.64%
7	QIGD	4.09%	3.97%	4.18%
8	QISI	1.30%	1.33%	1.20%
9	BRES	19.62%	19.44%	18.45%
10	MRDS	1.68%	1.90%	1.76%
11	GWC	1.35%	1.43%	1.50%
12	MCGS	1.43%	1.46%	1.56%
13	VFQS	0.00%	0.00%	0.00%
	Total	100.00%	100.00%	100.00%
	Weights after applying capping factor			
1	QIB	15%	15%	15%
2	QIIB	10.50%	11.01%	10.39%
3	MARK	15%	15%	15%
4	QFB	0.00%	0.00%	0.00%
5	WDAM	1.80%	2.01%	2.13%
6	MERS	3.57%	3.92%	3.64%
7	QIGD	4.09%	3.97%	4.18%
8	QISI	1.30%	1.33%	1.20%
9	BRES	15%	15%	15%
10	MRDS	1.68%	1.90%	1.76%
11	GWC	1.35%	1.43%	1.50%
12	MCGS	1.43%	1.46%	1.56%

13	VFQS	0.00%	0.00%	0.00%
	Total	71%	72%	71%
	Market Capitalization after applying capping factor			
1	QIB	8,254,082,997.53	8,000,153,839.90	7,844,124,869.35
2	QIIB	5,776,627,347.74	5,870,471,158.13	5,432,531,812.26
3	MARK	8,254,082,997.53	8,000,153,839.90	7,844,124,869.35
4	QFB	-	-	-
5	WDAM	989,841,879.00	1,071,059,657.28	1,115,052,680.44
6	MERS	1,961,966,896.00	2,092,276,549.75	1,903,400,720.00
7	QIGD	2,250,749,825.52	2,114,798,493.78	2,187,305,770.00
8	QISI	715,648,512.40	707,143,339.95	626,951,792.10
9	BRES	8,254,082,997.53	8,000,153,839.90	7,844,124,869.35
10	MRDS	926,301,107.91	1,011,286,046.90	918,653,279.93
11	GWC	740,668,394.74	764,784,071.93	784,420,397.72
12	MCGS	788,007,088.92	776,877,045.92	816,945,178.46
13	VFQS	-	-	-
Total		38,912,060,044.81	38,409,157,883.35	37,317,636,238.96
Index Values				
Al Rayan Divisor		44,710,248.85	44,710,248.85	44,710,248.85
Common Companies Index Value		870.32	859.07	834.66
QE Divisor		27,222,940.59	27,222,940.59	27,222,940.59
Common Companies Index Value		1,429.38	1,410.91	1,370.82

Table-4.7
Monthly Values of un-capped and capped QZTI index compared with QE and Al Rayan indices

Monthly Indices Values Used in Figure 1 and Figure 2						
	Using Al Rayan Divisor		Using QE Divisor			
Month	QZTI (Un-Capped)	QZTI (Capped)	QZTI (Un-Capped)	QZTI (Capped)	Al Rayan Islamic Index	QE Index
Jan-13	1,547.03	1,318.57	2,540.80	2,165.59	2,027.59	8,724.77
Feb-13	1,485.32	1,282.29	2,439.45	2,105.99	2,008.18	8,528.58
Mar-13	1,450.89	1,240.70	2,382.90	2,037.69	1,996.70	8,577.72
Apr-13	1,427.64	1,215.22	2,344.72	1,995.84	2,017.15	8,677.10
May-13	1,539.47	1,322.06	2,528.38	2,171.31	2,135.14	9,238.00
Jun-13	1,550.66	1,334.65	2,546.77	2,192.00	2,144.39	9,275.56
Jul-13	1,553.52	1,333.45	2,551.46	2,190.02	2,147.58	9,704.98
Aug-13	1,555.97	1,317.28	2,555.49	2,163.46	2,102.17	9,619.04
Sep-13	1,555.63	1,326.39	2,554.93	2,178.44	2,111.18	9,608.32
Oct-13	1,579.10	1,353.35	2,593.47	2,222.71	2,153.47	9,837.49
Nov-13	1,702.67	1,445.97	2,796.42	2,374.83	2,320.68	10,375.06
Dec-13	1,677.26	1,440.11	2,754.68	2,365.20	2,323.95	10,379.59
Jan-14	1,750.67	1,527.51	2,875.26	2,508.74	2,462.16	11,155.73
Feb-14	1,824.11	1,568.02	2,995.86	2,575.27	2,555.65	11,771.83
Mar-14	1,877.86	1,609.28	3,084.15	2,643.05	2,642.34	11,639.79
Apr-14	2,412.19	1,674.84	3,961.71	2,750.72	3,070.89	12,677.59
May-14	2,514.80	2,106.58	4,130.24	3,459.79	3,397.63	13,694.19
Jun-14	2,044.50	1,751.38	3,357.84	2,876.41	2,780.76	11,488.87
Jul-14	2,339.49	1,949.75	3,842.32	3,202.21	3,143.96	12,877.31
Aug-14	2,456.66	2,028.13	4,034.76	3,330.95	3,433.96	13,596.66

Monthly Indices Values Used in Figure 1 and Figure 2					
	Using Al Rayan Divisor		Using QE Divisor		
Sep-14	2,490.89	2,081.27	4,090.98	3,418.23	3,411.20	13,728.31
Oct-14	2,441.95	2,045.53	4,010.59	3,359.53	3,310.96	13,498.86
Nov-14	2,239.76	1,871.05	3,678.52	3,072.96	3,126.82	12,760.46
Dec-14	2,145.65	1,777.89	3,523.96	2,919.95	3,002.23	12,285.78
Jan-15	2,235.40	1,964.40	3,671.36	3,226.28	2,956.08	11,899.63
Feb-15	2,428.96	2,166.53	3,989.26	3,558.25	3,231.06	12,445.34
Mar-15	2,323.91	2,067.62	3,816.73	3,395.81	3,018.36	11,711.40
Apr-15	2,459.34	2,206.15	4,039.16	3,623.32	3,249.54	12,164.48
May-15	2,480.09	2,242.97	4,073.24	3,683.80	3,237.13	12,048.26
Jun-15	2,527.98	2,272.94	4,151.89	3,733.02	3,326.00	12,201.02
Jul-15	2,465.56	2,218.11	4,049.37	3,642.96	3,244.70	11,785.22
Aug-15	2,376.45	2,141.94	3,903.02	3,517.87	3,110.66	11,563.56
Sep-15	2,342.72	2,105.52	3,847.63	3,458.05	3,037.45	11,465.22
Oct-15	2,398.68	2,149.70	3,939.53	3,530.61	3,108.36	11,604.59
Nov-15	2,100.66	1,864.63	3,450.07	3,062.42	2,672.84	10,090.81
Dec-15	2,086.61	1,846.00	3,426.99	3,031.82	2,712.18	10,429.36
Jan-16	1,774.12	1,568.35	2,913.76	2,575.82	2,371.77	9,481.30
Feb-16	1,914.67	1,696.48	3,144.61	2,786.25	2,525.57	9,892.32
Mar-16	2,080.39	1,901.85	3,416.77	3,123.56	2,761.68	10,376.20
Apr-16	1,990.38	1,825.09	3,268.94	2,997.49	2,681.84	10,186.18
May-16	1,865.87	1,700.67	3,064.46	2,793.14	2,527.18	9,538.77
Jun-16	1,968.46	1,807.61	3,232.95	2,968.76	2,585.24	9,885.22
Jul-16	2,119.55	1,936.93	3,481.09	3,181.16	2,762.12	10,603.96
Aug-16	2,159.80	1,953.83	3,547.20	3,208.92	2,816.14	10,989.79
Sep-16	2,022.04	1,824.93	3,320.95	2,997.22	2,657.90	10,435.46
Oct-16	1,952.66	1,754.86	3,207.00	2,882.13	2,529.59	10,172.95
Nov-16	1,860.07	1,655.16	3,054.94	2,718.39	2,430.86	9,793.83
Dec-16	1,992.28	1,768.13	3,272.07	2,903.94	2,626.28	10,436.76
Jan-17	2,042.30	1,797.99	3,354.21	2,952.97	2,686.87	10,597.22
Feb-17	2,098.33	1,855.87	3,446.24	3,048.03	2,769.34	10,702.12
Mar-17	2,095.66	1,860.75	3,441.86	3,056.04	2,711.70	10,390.60
Apr-17	2,018.11	1,771.76	3,314.49	2,909.89	2,616.80	10,064.35
May-17	1,976.42	1,683.21	3,246.02	2,764.45	2,576.02	9,901.38
Jun-17	1,839.70	1,591.29	3,021.47	2,613.49	2,352.65	9,030.44
Jul-17	1,913.83	1,648.07	3,143.23	2,706.75	2,440.17	9,406.06
Aug-17	1,779.88	1,522.23	2,923.23	2,500.07	2,268.98	8,800.56
Sep-17	1,722.76	1,454.83	2,829.42	2,389.37	2,195.28	8,312.43
Oct-17	1,641.17	1,345.21	2,695.42	2,209.34	2,083.59	8,165.06
Nov-17	1,550.90	1,275.04	2,547.16	2,094.08	1,967.46	7,714.26
Dec-17	1,772.19	1,496.46	2,910.60	2,457.75	2,220.03	8,523.38
Jan-18	1,796.36	1,503.19	2,950.30	2,468.81	2,355.65	9,204.62
Feb-18	1,789.08	1,476.19	2,938.34	2,424.45	2,329.92	8,929.50

Table-4.8
Values of un-capped and capped QZTI index and Common Companies Index
Compared with Al Rayan index using Al Rayan Divisor

Month	Monthly Indices Values Used in Figure 3				
	Al Rayan Islamic Index	QZTI (Capped)	QZTI (Un-Capped)	Index of Common Companies (Capped)	Index of Common Companies (Un-Capped)
Jan-13	2,027.59	1,318.57	1,547.03	870.32	1,230.75
Feb-13	2,008.18	1,282.29	1,485.32	859.07	1,192.89
Mar-13	1,996.70	1,240.70	1,450.89	834.66	1,169.62
Apr-13	2,017.15	1,215.22	1,427.64	831.08	1,156.10
May-13	2,135.14	1,322.06	1,539.47	882.86	1,232.28
Jun-13	2,144.39	1,334.65	1,550.66	891.25	1,239.65
Jul-13	2,147.58	1,333.45	1,553.52	900.94	1,251.77
Aug-13	2,102.17	1,317.28	1,555.97	897.14	1,249.20
Sep-13	2,111.18	1,326.39	1,555.63	901.22	1,250.44
Oct-13	2,153.47	1,353.35	1,579.10	923.12	1,279.57
Nov-13	2,320.68	1,445.97	1,702.67	1,004.77	1,398.40
Dec-13	2,323.95	1,440.11	1,677.26	1,008.74	1,379.76
Jan-14	2,462.16	1,527.51	1,750.67	1,055.55	1,425.19
Feb-14	2,555.65	1,568.02	1,824.11	1,099.05	1,500.68
Mar-14	2,642.34	1,609.28	1,877.86	1,155.41	1,564.84
Apr-14	3,070.89	1,674.84	2,412.19	1,374.71	1,832.19
May-14	3,397.63	2,106.58	2,514.80	1,476.90	2,061.06
Jun-14	2,780.76	1,751.38	2,044.50	1,211.76	1,672.36
Jul-14	3,143.96	1,949.75	2,339.49	1,392.62	1,955.27
Aug-14	3,433.96	2,028.13	2,456.66	1,512.12	2,088.23
Sep-14	3,411.20	2,081.27	2,490.89	1,514.04	2,082.09
Oct-14	3,310.96	2,045.53	2,441.95	1,483.32	2,052.46
Nov-14	3,126.82	1,871.05	2,239.76	1,374.36	1,897.21
Dec-14	3,002.23	1,777.89	2,145.65	1,338.36	1,842.53
Jan-15	2,956.08	1,964.40	2,235.40	1,505.55	1,918.94
Feb-15	3,231.06	2,166.53	2,428.96	1,665.49	2,083.42
Mar-15	3,018.36	2,067.62	2,323.91	1,581.38	1,988.57
Apr-15	3,249.54	2,206.15	2,459.34	1,685.67	2,100.39
May-15	3,237.13	2,242.97	2,480.09	1,690.75	2,099.25
Jun-15	3,326.00	2,272.94	2,527.98	1,724.19	2,149.53
Jul-15	3,244.70	2,218.11	2,465.56	1,685.13	2,097.99
Aug-15	3,110.66	2,141.94	2,376.45	1,585.91	1,992.98
Sep-15	3,037.45	2,105.52	2,342.72	1,554.64	1,962.80
Oct-15	3,108.36	2,149.70	2,398.68	1,583.83	2,008.43
Nov-15	2,672.84	1,864.63	2,100.66	1,392.95	1,775.36
Dec-15	2,712.18	1,846.00	2,086.61	1,377.13	1,763.25
Jan-16	2,371.77	1,568.35	1,774.12	1,209.12	1,526.37
Feb-16	2,525.57	1,696.48	1,914.67	1,312.40	1,649.79
Mar-16	2,761.68	1,901.85	2,080.39	1,450.14	1,768.86
Apr-16	2,681.84	1,825.09	1,990.38	1,378.10	1,678.70
May-16	2,527.18	1,700.67	1,865.87	1,296.84	1,575.87

Month	Monthly Indices Values Used in Figure 3				
	Al Rayan Islamic Index	QZTI (Capped)	QZTI (Un-Capped)	Index of Common Companies (Capped)	Index of Common Companies (Un-Capped)
Jun-16	2,585.24	1,807.61	1,968.46	1,372.64	1,662.55
Jul-16	2,762.12	1,936.93	2,119.55	1,467.23	1,789.03
Aug-16	2,816.14	1,953.83	2,159.80	1,501.42	1,843.04
Sep-16	2,657.90	1,824.93	2,022.04	1,420.15	1,736.51
Oct-16	2,529.59	1,754.86	1,952.66	1,382.04	1,684.96
Nov-16	2,430.86	1,655.16	1,860.07	1,300.79	1,607.79
Dec-16	2,626.28	1,768.13	1,992.28	1,396.44	1,729.05
Jan-17	2,686.87	1,797.99	2,042.30	1,423.14	1,781.29
Feb-17	2,769.34	1,855.87	2,098.33	1,473.04	1,834.31
Mar-17	2,711.70	1,860.75	2,095.66	1,462.09	1,818.11
Apr-17	2,616.80	1,771.76	2,018.11	1,403.14	1,758.22
May-17	2,576.02	1,683.21	1,976.42	1,390.88	1,773.46
Jun-17	2,352.65	1,591.29	1,839.70	1,269.64	1,617.87
Jul-17	2,440.17	1,648.07	1,913.83	1,319.68	1,687.36
Aug-17	2,268.98	1,522.23	1,779.88	1,232.14	1,579.82
Sep-17	2,195.28	1,454.83	1,722.76	1,180.97	1,533.90
Oct-17	2,083.59	1,345.21	1,641.17	1,101.38	1,473.01
Nov-17	1,967.46	1,275.04	1,550.90	1,062.58	1,404.38
Dec-17	2,220.03	1,496.46	1,772.19	1,193.22	1,563.05
Jan-18	2,355.65	1,503.19	1,796.36	1,214.89	1,597.53
Feb-18	2,329.92	1,476.19	1,789.08	1,216.61	1,610.06

Table-4.9
Values of un-capped and capped QZTI index and Common Companies Index Compared with Al Rayan index using QE Divisor

Month	Indices Monthly Values Used in Figure 4				
	Al Rayan Islamic Index	QZTI (Capped)	QZTI (Un-Capped)	Index of Common companies (Capped)	Index of Common companies (Un-capped)
Jan-13	2,027.59	2,165.59	2,540.80	1,429.38	2,021.35
Feb-13	2,008.18	2,105.99	2,439.45	1,410.91	1,959.17
Mar-13	1,996.70	2,037.69	2,382.90	1,370.82	1,920.96
Apr-13	2,017.15	1,995.84	2,344.72	1,364.95	1,898.75
May-13	2,135.14	2,171.31	2,528.38	1,449.99	2,023.86
Jun-13	2,144.39	2,192.00	2,546.77	1,463.77	2,035.98
Jul-13	2,147.58	2,190.02	2,551.46	1,479.68	2,055.88
Aug-13	2,102.17	2,163.46	2,555.49	1,473.45	2,051.65
Sep-13	2,111.18	2,178.44	2,554.93	1,480.13	2,053.69
Oct-13	2,153.47	2,222.71	2,593.47	1,516.11	2,101.54
Nov-13	2,320.68	2,374.83	2,796.42	1,650.21	2,296.69
Dec-13	2,323.95	2,365.20	2,754.68	1,656.74	2,266.09
Jan-14	2,462.16	2,508.74	2,875.26	1,733.61	2,340.69
Feb-14	2,555.65	2,575.27	2,995.86	1,805.06	2,464.68
Mar-14	2,642.34	2,643.05	3,084.15	1,897.61	2,570.05
Apr-14	3,070.89	2,750.72	3,961.71	2,257.79	3,009.15

	Indices Monthly Values Used in Figure 4				
Month	Al Rayan Islamic Index	QZTI (Capped)	QZTI (Un-Capped)	Index of Common companies (Capped)	Index of Common companies (Un-capped)
May-14	3,397.63	3,459.79	4,130.24	2,425.63	3,385.03
Jun-14	2,780.76	2,876.41	3,357.84	1,990.17	2,746.63
Jul-14	3,143.96	3,202.21	3,842.32	2,287.21	3,211.28
Aug-14	3,433.96	3,330.95	4,034.76	2,483.47	3,429.66
Sep-14	3,411.20	3,418.23	4,090.98	2,486.62	3,419.57
Oct-14	3,310.96	3,359.53	4,010.59	2,436.16	3,370.91
Nov-14	3,126.82	3,072.96	3,678.52	2,257.21	3,115.93
Dec-14	3,002.23	2,919.95	3,523.96	2,198.08	3,026.12
Jan-15	2,956.08	3,226.28	3,671.36	2,472.67	3,151.62
Feb-15	3,231.06	3,558.25	3,989.26	2,735.35	3,421.75
Mar-15	3,018.36	3,395.81	3,816.73	2,597.21	3,265.97
Apr-15	3,249.54	3,623.32	4,039.16	2,768.50	3,449.63
May-15	3,237.13	3,683.80	4,073.24	2,776.85	3,447.76
Jun-15	3,326.00	3,733.02	4,151.89	2,831.77	3,530.34
Jul-15	3,244.70	3,642.96	4,049.37	2,767.62	3,445.68
Aug-15	3,110.66	3,517.87	3,903.02	2,604.65	3,273.22
Sep-15	3,037.45	3,458.05	3,847.63	2,553.30	3,223.66
Oct-15	3,108.36	3,530.61	3,939.53	2,601.24	3,298.59
Nov-15	2,672.84	3,062.42	3,450.07	2,287.74	2,915.81
Dec-15	2,712.18	3,031.82	3,426.99	2,261.75	2,895.91
Jan-16	2,371.77	2,575.82	2,913.76	1,985.82	2,506.87
Feb-16	2,525.57	2,786.25	3,144.61	2,155.45	2,709.57
Mar-16	2,761.68	3,123.56	3,416.77	2,381.67	2,905.13
Apr-16	2,681.84	2,997.49	3,268.94	2,263.35	2,757.05
May-16	2,527.18	2,793.14	3,064.46	2,129.89	2,588.17
Jun-16	2,585.24	2,968.76	3,232.95	2,254.39	2,730.54
Jul-16	2,762.12	3,181.16	3,481.09	2,409.73	2,938.26
Aug-16	2,816.14	3,208.92	3,547.20	2,465.90	3,026.96
Sep-16	2,657.90	2,997.22	3,320.95	2,332.42	2,851.99
Oct-16	2,529.59	2,882.13	3,207.00	2,269.83	2,767.33
Nov-16	2,430.86	2,718.39	3,054.94	2,136.39	2,640.59
Dec-16	2,626.28	2,903.94	3,272.07	2,293.48	2,839.74
Jan-17	2,686.87	2,952.97	3,354.21	2,337.32	2,925.55
Feb-17	2,769.34	3,048.03	3,446.24	2,419.28	3,012.62
Mar-17	2,711.70	3,056.04	3,441.86	2,401.30	2,986.02
Apr-17	2,616.80	2,909.89	3,314.49	2,304.48	2,887.65
May-17	2,576.02	2,764.45	3,246.02	2,284.35	2,912.68
Jun-17	2,352.65	2,613.49	3,021.47	2,085.22	2,657.15
Jul-17	2,440.17	2,706.75	3,143.23	2,167.41	2,771.27
Aug-17	2,268.98	2,500.07	2,923.23	2,023.64	2,594.66
Sep-17	2,195.28	2,389.37	2,829.42	1,939.60	2,519.23
Oct-17	2,083.59	2,209.34	2,695.42	1,808.87	2,419.23
Nov-17	1,967.46	2,094.08	2,547.16	1,745.15	2,306.51
Dec-17	2,220.03	2,457.75	2,910.60	1,959.71	2,567.12
Jan-18	2,355.65	2,468.81	2,950.30	1,995.30	2,623.74
Feb-18	2,329.92	2,424.45	2,938.34	1,998.13	2,644.32

Co-Movement and Volatility Transmission between Islamic and Conventional Equity Index in Bangladesh

MD ABU HASAN[•]

Abstract

Though the issues of co-movement and volatility transmission between Islamic and conventional stock indices have been extensively studied worldwide, this is the first study in reference to Bangladesh to the best of our knowledge. The broad objective of this paper is to investigate whether Islamic stock index provides more diversification benefits than the conventional index from the perspective of cointegration and volatility spillover employing ARDL bounds testing cointegration procedure and GARCH family models. This study uses daily conventional (DS30) and Islamic (DSES) indices from the Dhaka Stock Exchange over the period from 20 January 2014 to 25 June 2018. Typically longer series of data are used in stock market research; however, this study is constrained to take only four and a half years of daily data as Islamic stock index in Bangladesh launched only just in January 2014. The results from ARDL bounds testing and error correction modeling show that both the markets are interlinked in the short-run and long-run. Since two markets move together in the long and short-run, one can predict its future price using any of the index prices. Univariate GARCH(1,1) model finds evidence of volatility clustering in both index returns which have a tendency to last a long time. The results of the EGARCH(1,1) model reveal that both markets are more sensitive to the bad news than with good news. Employing a bivariate GARCH-BEKK model, we find the existence of significant volatility transmission from conventional to Islamic stock market in Bangladesh. Results of GARCH-CCC framework show the evidence of strong direct interconnections between the markets. Finally, we test the presence of time-varying correlation between

---

[•] Assistant Professor of Economics, Bangladesh Civil Service (General Education), Ministry of Education, Bangladesh, hhafij@yahoo.com

markets applying the GARCH-DCC model, and the results reveal that correlations are not only conditional but also significantly time-varying. The result also shows that the correlation process is mean reverting. Therefore, we conclude that conventional and Islamic stock markets in Bangladesh do not offer any diversification benefits to investors having both indices in their portfolios. Hence, faith-based investors and portfolio managers should add in other categories of assets in their portfolios to mitigate risk.

1. Introduction

The investigation of co-movement and volatility spillover between stock markets in developed countries has been a dominant research agenda in financial economics over the few years. Though, the issues provide hints to investors about potential diversification opportunities, the empirical studies on this subject in Bangladesh perspective are still scarce. Jebran (2014) contends that investors will have no potential diversification opportunities if the stock markets are integrated. Harris and Pisedtasalasai (2006) argue that volatility spillover is an indicator of market efficiency. Efficient and the cointegrated stock market does not provide any opportunity for investors to diversify the risk. Thus, considering the importance for investors and policymakers, this study attempts to explore the cointegration and volatility dynamics between conventional and Islamic equity markets in Bangladesh. This study cares about cointegration and volatility dynamics between conventional and Islamic equity market as an Islamic equity market can be a fresh alternative investment value that can provide high diversification benefits to investors. It is generally believed that the risk-return trade-off of Islamic stocks may be different from conventional stocks as the included companies in Islamic indices meet the extra financial filter criteria, additional monitoring costs, and a smaller investment universe. For example, S&P Global 1200 Shariah index generates higher returns at 6.93% over the recent ten years from 2008 to 2018 compared to 5.67% returns generated by S&P Global 1200 (IFSB, 2018). According to Zamzamir et al. (2013), several studies reveal that Islamic indices are better and outperform the conventional indices. Saiti et al. (2014) present an indication that the Islamic equity index contributes a better diversification for the stock markets of Hong Kong, China, Korea, and Turkey. Besides, Sensoy (2016) claims that the level of the systematic

risk in conventional markets is slightly higher than the risk in Islamic markets. In contrast, Majdoub et al. (2016) reveal that Islamic stock prices of France, Indonesia, the UK, and the US are strongly connected to its conventional counterpart. Many latest studies reveal that the stock markets appear to have co-movement. This co-movement might in the mode of stock markets integration along with in the mode of financial contagion (Dewandaru et al., 2014).

Commenced in 1970s and abiding by Islamic jurisprudence derived from the Holy Quran (the holy book of Islam), the Sunnah (the practices of the Prophet Muhammad s.a.w.) and ijtihad (the reasoning of qualified scholars), the Islamic Financial Services Industry (IFSI) has obtained a great interest as an efficient alternative class of financial intermediation. Islamic financial institutions are currently working in over 95 countries worldwide, and the industry has increased significantly over the few decades, reaching about USD 2 trillion marks, up from about USD 1 trillion in 2011 and US$5 billion in the late 1980s (IFSB, 2017 and 2018). The historical development of the Islamic capital market originated in July, 1987 after the fatwa on the Islamic equity fund; however, post 1990s, there has been considerable interest in terms of developing appropriate Shariah-compliant capital market products, such as Islamic securitized assets (Sukuks), Islamic equities, Islamic investment funds, etc. (IFSB, 2011). In general, investors stick to three Shariah screening procedures while investing in Islamic capital markets. First, the Islamic capital market requires investments to be free from riba (interest rates) and prohibited business activities, such as alcohol, gambling, pork-related products, pornography, conventional financial services, and conventional insurance. Second, Shariah-compliant companies must maintain few specific financial ratios, such as debt-to-equity ratio, cash and interest bearing securities-to-equity ratio, and cash-to-asset ratio. Finally, individual investors have to employ a dividend cleansing mechanism to purify investments if some part of the company's income earned from interest-bearing accounts. Launched in February 1999, Dow Jones Islamic Market (DJIM) was the pioneer Shariah-compliant index in the world. The success of DJIM instigated a flow of Islamic indices over the past few years, such as the Standard & Poor Shariah Index (S&P), the Financial Times Islamic Index Series (FTSE), the Morgan Stanley Capital International Islamic Index Series (MSCI) and BSE 500 Shariah Index of Bombay Stock Exchange. Bangladesh is the first country in Southeast Asia where Islamic banking was introduced in 1983; however, the first Islamic stock index in Bangladesh named, Dhaka Stock Exchange (DSE) Shariah index (DSES) launched only just in January 2014. The DSES uses the Shariah screening methodology and processes employed by the S&P Shariah Family of Indices. The DSES Index is formed as a subset of the DSE Broad Index (DSEX) and comprises all stocks contained within the parent index that pass rules-based

screening for Shariah compliance. Companies engaged in advertising and media (except news or sports channel and newspaper), conventional financial institutions, alcohol, cloning, tobacco, gambling, pork, pornography and trading of gold and silver are not included in the Shariah index (DSE, 2018). After removing companies with non-compliant business activities, the rest of the companies are examined for compliance in financial ratios and some 75 listed companies are chosen under the DSES Index. Islamic banking is proliferating in Bangladesh with a market share of about 30 percent (Moniruzzaman, 2018). The popularity of Islamic banking is growing at a rapid pace in Bangladesh, and it has achieved more than 20 percent annual growth over the years (Nabi et al., 2015). Therefore, it goes without saying that there is also a considerable potentiality and scope of Islamic capital market in Bangladesh having 145 million Muslim population. If this relatively fresh Islamic stock market enthuses from the phenomenal growth in the Islamic banking in Bangladesh, stakeholders will be positively concerned on the co-movement between the Islamic and conventional indices for their portfolio diversification.

This study limits its investigation on the domestic diversification opportunities between the conventional and Islamic stock markets despite the recommendations of the financial theory about the additional gains of international diversification. It is often assumed that the best diversified investment is a stock index. Though domestically-oriented faith-based stock market investors in Bangladesh have no alternatives and seek to invest solely in stocks that are compliant with the Islamic laws, this endeavor should be interesting since it is important to know whether domestically-oriented conventional market investors will benefit from investing in Islamic stocks as well. Besides, Gorman and Jorgen (2002) assert that domestically-oriented investors are not irrational and the benefits of international investment are hard to attain. Abid et al. (2014) reveal that the domestic diversification strategy dominates the international diversification strategy at a lower risk level. Moreover, Chniguir et al. (2017) argue that institutional investors show strong preference for national assets. In the same way, French and Poterba (1991), Tesar and Werner (1995), and Oehler, Rummer, and Wendt (2008) suggest that investors tend to hold portfolios largely dominated by domestic assets. In practice, investors have a tendency to favor their domestic market. This home-bias investors of Bangladesh can enjoy the benefits of diversification investing in a mix of securities that differ in size, style, and sector. The benefits of diversification may also arise from different securities of Shariah index and conventional index.

By Inspiring from the above-stated realities, the current study tries to find the answer of the following questions: i) Do Islamic stock prices share the short-run and long-run relationships with the conventional stock prices in Bangladesh? ii) Do

common stylized facts prevail in the conventional and Islamic stock markets? iii) Who is the volatility transmitter between the conventional and Islamic stock indices in Bangladesh? iv) Are there any conditional correlations between the conventional and Islamic stock indices? v) Does the Islamic stock market offer diversification benefits for conventional investors? This study will contribute to the existing literature in several ways. First, to the best of our knowledge, this is the first study to explore the integration and volatility spillover between Islamic index and its conventional counterpart in reference to Bangladesh. Second, this study provides valuable information to domestic and international investors as we employ modern econometric techniques on data of Islamic index in Bangladesh from the time of formation. Therefore, the overall contributions of this study may give valuable knowledge to investors to allocate their portfolio efficiently and policy makers to regulate existing policies or implement new policies. The organization of this study is as follows: section 2 focuses a literature review; section 3 reports data and preliminary statistics, while section 4 justifies the methodology. Lastly, section 5 reports the empirical findings and section 6 concludes the study.

2. Literature Review

The bulk of the existing literature, such as King and Wadhwani (1990), Hamao, Masulis, and Ng (1990), Bekaert and Harvey (1997), Liu and Pan (1997), Bekaert and Wu (2000), Abbas et al. (2013), and Mohammadi and Tan (2015) focus on the co-movement and volatility spillover between international conventional stock markets. For instance, Mohammadi and Tan (2015) examine the dynamics of daily returns and volatility in stock markets of the U.S., Hong Kong, and mainland China over 2 January 2001 to 8 February 2013 employing VAR and MGARCH models. The results suggest the evidence of unidirectional return spillovers from the U.S. to the other three markets; but no spillover between Hong Kong and either of the two mainland China markets. The study also finds the evidence of unidirectional ARCH and GARCH effects from the U.S. to the other three markets. The patterns of dynamic conditional correlations from the DCC model suggest an increase in correlation between China and other stock markets since the most recent financial crisis of 2007.

In recent years, some empirical studies have been conducted on the return and volatility spillover between Islamic and conventional indexes. Rizvi and Arshad (2014) perform an empirical study on the volatilities and correlations of Islamic indices using four conventional global indices and five Islamic indices from the Dow Jones Indices family over the period from January 3, 2000 to December 30, 2011. Employing multivariate GARCH DCC method, they find a low moving

correlation between the conventional and Islamic indices. Chiadmi and Ghaiti (2014) investigate the volatility behavior of the Standard and Poor's Sharīʻah index (S&P Sharīʻah), the Dow Jones Islamic Market (DJIM) index, the FTSE Islamic index, the MSCI Islamic World as well as their conventional counterparts, respectively, the S&P 500, the Dow Jones Industrial Average (DJIA), the FTSE All world, and the MSCI World Indexes. Results of the GARCH family models expose that the financial crisis significantly influenced Islamic stock indexes. However, the Islamic indices were less volatile than their conventional counterparts. Using the dataset over the period from 2000 to 2011 and covering three major regions: Europe, the USA, and the world, Jawadi, Jawadi, and Louhichi (2014) find that Islamic indices outperformed their conventional peers during the financial crisis period. They extend utilizing CAPM-GARCH to correct the bias while it captures volatility dynamics. Kim and Sohn (2016) investigate the volatility spillover effect between the conventional finance market and the Islamic finance market using a bivariate framework of the BEKK parameterization from January 2, 2002 to November 10, 2015. The results show a unidirectional volatility spillover from the U.S. conventional stock market to the Islamic stock indexes of Islamic countries, but not vice versa. They reject the decoupling hypothesis of the linkage between Islamic and the conventional markets. Mseddi and Benlagha (2017) investigate the spillover effects between the returns and volatilities of stocks related to Islamic and conventional banks in GCC countries using Diebold and Yilmaz's index measurement approach, DCC-GARCH model, and Zivot and Andrews test during the period 2005-2014. They find that there is a strong bidirectional returns spillover between conventional banks and a very weak spillover from Islamic banks to conventional banks. Zivot and Andrews test result reveals that the dependence between stock returns in an Islamic bank market structure is more strongly affected by the financial crisis than in a conventional bank market. Moreover, the volatility linkage is more highly affected by the crisis in an Islamic context than that in a conventional bank system. Finally, they find that the behavior of current variances is more affected by the magnitude of past variances than during past return innovations. In addition, for all the GCC countries except Bahrain, a high persistence in the time series of correlation indicates that a long-run average of the correlation can be pushed away by shocks for a very long period.

Some of the existing literature, such as Kasa (1992), Masih and Masih (2001), Saiti (2014), Saiti (2015), Singh and Kaur (2016), Majdoub, Mansour, and Jouini (2016), and Khan and Khan (2018) are focused on the stock market integration. They have employed the cointegration hypothesis to identify the integration of financial markets. For instances, Saiti (2014) uses close-to-close daily return data in USD for MSCI conventional and Islamic stock indices in Muslim (Malaysia, Indonesia,

Turkey, GCC region ex-Saudi) and Far East countries (Japan, China, Korea, Hong Kong, Taiwan), plus the MSCI conventional index of US as proxy for the US-based investor in order to examine whether they shared any degree of long-run relationship with the US. Engle-Granger, and Johansen and Juselius cointegration tests evidence a less cointegration between the stock indices of Islamic countries (compared to non-Islamic countries) and the US stock index. Singh and Kaur (2016) investigate the co-movement in the BRIC countries' stock markets in the long-run employing a Johansen cointegration technique. The results indicate no long-run co-movement among the BRIC countries as a whole. However, the pairwise and multivariate cointegration tests highlight the existence of a co-movement among the Brazilian, Russian and the Chinese markets, excluding Indian during the financial crisis and the period afterwards. Khan and Khan (2018) investigate the cointegration between Islamic and conventional stock markets in Asia Pacific region using the weekly stock prices from June 2009 to July 2017. Employing the Engle-Granger two-steps cointegration test, they find that Dow Jones Islamic Market Asia Pacific (DJIMAP) is cointegrated with BSE Sensex India, TWSE index of Taiwan, PSX Pakistan, and NZ-50 index of New Zealand. Majdoub, Mansour, and Jouini (2016) examine the market integration between conventional and Islamic stock prices for the US, the UK, France, and Indonesia from 8 September 2008 to 6 September 6 2013. They apply the cointegration procedures of Johansen, and Gregory and Hansen, and the multivariate Asymmetric Generalized Dynamic Conditional Correlation GARCH (AGDCC-GARCH) approach of Cappiello, Engle, and Sheppard. They find long-run relationships for all countries, except for the UK where there is no cointegration between conventional and Islamic stock prices. They comment that there is a high connection between the developed markets for both conventional and Islamic indexes. Finally, the results of their study reveal that the Islamic index is strongly linked with its conventional counterpart for each economy.

From the previous literature review, we can note that the results are much divergent and no consensus has been reached to date. Despite the diversity of previous empirical work emphases on the exploration of interdependencies between Islamic and conventional stock markets, the literature is limited on the international markets. In this context, this paper attempts to fill the gap in the literature as it attemps to explore the intra-country interdependencies between Islamic and conventional stock markets. Moreover, there is a lack of study regarding a combined investigation on the integration and volatility spillover dynamics between the Islamic and conventional Index as Jebran, Chen, and Tauni (2017) perform recently. Jebran, Chen, and Tauni (2017) investigate the Islamic and conventional Index integration and volatility spillover dynamics in Pakistan over the period from September 2008 to September 2015 employing Johansen and Juselius cointegration method, VECM

model, GARCH, and EGARCH models. The results show a significant long-run and short-run association between Islamic and conventional index in Pakistan. The findings of their study also recommend that domestic investors possess low diversification opportunities by combining both Islamic and conventional index in their portfolios. Thus, the questions whether the Islamic and conventional markets in Bangladesh are integrated and whether the volatility spillover effect are existed, are tough to answer without inspecting this problem. Unfortunately, there is no prior research on this topics that covers Bangladesh. This study fills the gap in the existing literature as it provides useful information to the portfolio managers and investors who are looking for the opportunity of diversification.

3. Data and Preliminary Statistics

The empirical work in this study utilizes daily data of Dhaka Stock Exchange (DSE) Shariah index (DSES) from the Islamic stock market and DSE DS30 (DS30) from the conventional stock market over the period from 20 January 2014 to 25 June 2018. DSE introduced DSE Broad Index (DSEX) and DSE 30 Index (DS30) as per 'DSE Bangladesh Index Methodology' designed and developed by S&P Dow Jones Indices with effect from January 28, 2013. DSEX is the Benchmark Index which reflects around 97% of the total equity market capitalization, while DS30 constructed with 30 leading companies which can be said as investable Index of the Exchange (DSE, 2018). With effect from 20 January 2014, DSE Shariah index (DSES) comprised of about 75 companies which were selected on the basis of Shariah-compliant criteria. Additions and deletions to DSES are made once a month, and more than 100 companies are selected in a recently revised DSES. Both DSES and DS30 indices subsets of DSEX; however, only 7 common stocks consist on DSES and DS30 at present. Since only a few common stocks are consisted in these two indices, they might not all have similar returns over time. In order to find the long and short-run dynamic relationship between Islamic stock market and conventional stock market, we use daily log data of DSES and DS30. The volatility spillover dynamics are examined using daily return data of DSES and DS30 over the same period with a total of 1077 observations. The data are collected from the official website of the Dhaka Stock Exchange. The daily index data are used to calculate returns as follows:

$$R_{i,t} = [\text{Log}(P_{i,t}) - \text{Log}(P_{i,t-1})] \times 100$$

where, R_i = Daily return, Log = Natural Logarithms, P_t = Price Index at time t, and P_{t-1} = Price Index at time t-1.

Figure-1
Islamic and Conventional Index
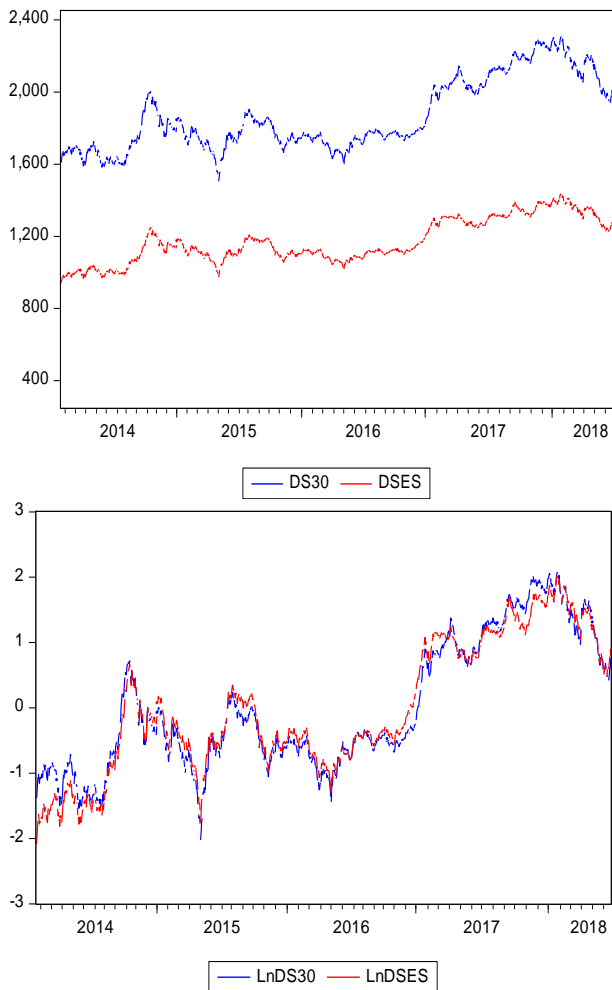
Figure 1 shows the time plots of the DS30 and DSES index series. The visual inspection on index series characterizes that both indices are chasing similar upward and downward trends indicating co-movement between the two series. Figure 2

shows the time plot of the return series of the Islamic and conventional index. Daily returns of Islamic index (RDSES) and conventional index (RDS30) fluctuate around zero and are characterized by volatility clustering. The figure also represents that both returns demonstrate higher volatility in 2014–2015.

Figure-2
Returns of the Islamic Index (RDSES) and Conventional Index (RDS30)
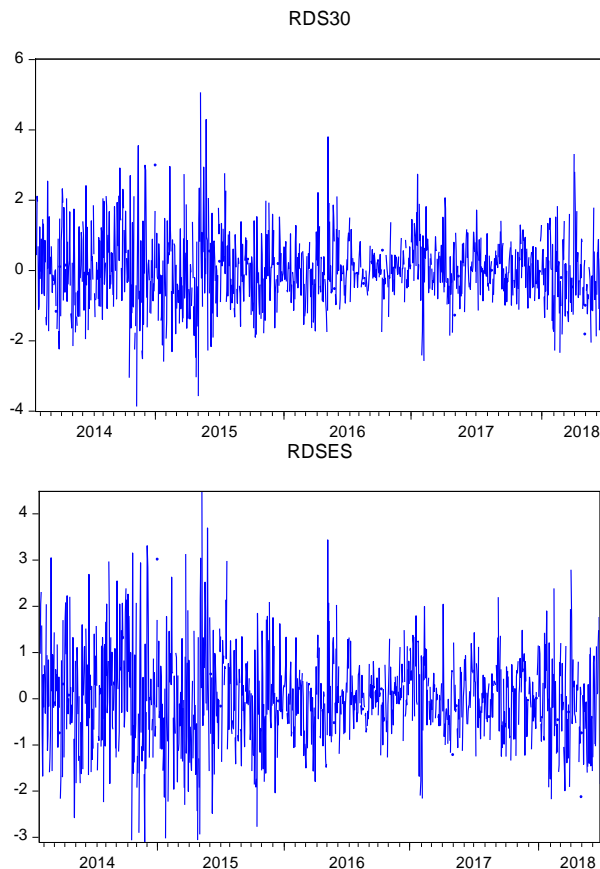
Descriptive statistics of the variables are shown in Table 1. It is evident from the table that average daily log index and returns are positive across the Islamic and conventional markets. The daily returns of Islamic stock market are larger than the daily returns of conventional markets. RDS30 is the more volatile series, though the two markets exhibit almost similar degrees of volatility as reflected in their standard deviations. The positive skewness in RDS30 and RDSES implies that large positive changes in returns occur more often than negative changes. The excess kurtosis of

RDS30 and RDSES indicate that stock market returns of Islamic and conventional exhibit leptokurtosis that is a well-known stylized fact in the finance literature. The large Jarque-Bera statistics reject the null hypothesis of normal distribution for both series. Therefore, the rejection of the normality test based on the Jarque-Bera test gives evidence for the existence of GARCH effects.

Table-1
Basic Statistics

	Mean	Max.	Min.	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	P-Value	Obs.
LnDS30	7.53	7.74	7.32	0.10	0.50	1.99	89.85	0.00	1078
LnDSES	7.06	7.27	6.85	0.10	0.19	1.96	55.23	0.00	1078
RDS30	0.02	3.72	-2.80	0.73	0.35	4.59	136.67	0.00	1077
RDSES	0.03	3.03	-2.05	0.67	0.30	4.09	69.51	0.00	1077

The results of Augmented Dickey-Fuller (ADF) and Phillips-Peron (PP) unit root tests in Table 2 reveal that the null hypothesis of unit root is strongly accepted for the LnDS30 and LnDSES in level. Thus, the LnDS30 and LnDSES are nonstationary in levels. Results also reveal that the series become stationary in first differences with 1% significance level. Since none of the variables are integrated of order two, i.e., I (2), we can proceed our study applying the ARDL bound testing method. Results also confirm that both the return series (RDS30 and RDSES) are stationary, that is, they do not follow a random walk. Since, both the return series are stationary, we can follow GARCH processes.

Table-2
ADF and PP Unit Root Test Results of the Variables

Variables	ADF			PP		
	Intercept	Trend & Intercept	None	Intercept	Trend & Intercept	None
LnDS30	-1.66	-2.11	-0.66	-1.72	-2.28	-0.66
	(0.45)	(0.54)	(0.86)	(0.42)	(0.45)	(0.86)
ΔLnDS30	-27.02*	-27.02*	-27.02*	-27.28*	-27.27*	-27.28*
(RDS30)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
LnDSES	-1.97	-2.33	-1.03	-2.04	-2.47	-1.04
	(0.30)	(0.42)	(0.92)	(0.27)	(0.34)	(0.92)
ΔLnDSES	-26.98*	-26.99*	-26.96*	-27.18*	-27.18*	-27.17*
(RDSES)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Note: First bracket shows P-values. * indicates stationary at 1% significant level using MacKinnon (1996) critical and P -values.

Then, the volatility clustering nature of RDS30 and RDSES is confirmed by the autocorrelation test that is reported in Table 3. The Ljung -Box Q and Q^2 statistics show that serial correlations exist in both stock market returns. This may be seen as

evidence for the presence of volatility clustering in both the return series. The effect of Autoregressive Conditional Heteroscedasticity (ARCH) is also observed in both indices from the results of ARCH-LM test. Thus, a GARCH process is a likable candidate for modeling their time series behavior.

Table-3
Tests for Serial Correlation and ARCH Heteroskedasticity in RDS30 and RDSES

Lags	RDS30			RDSES		
	Q-stat	Q^2-stat	ARCH-LM (F-stat)	Q-stat	Q^2-stat	ARCH-LM (F-stat)
5	47.76 (0.00)	186.60 (0.00)	12.97 (0.00)	53.09 (0.00)	194.19 (0.00)	12.94 (0.00)
10	51.72 (0.00)	190.05 (0.00)	7.43 (0.00)	53.74 (0.00)	199.11 (0.00)	7.69 (0.00)
20	65.52 (0.00)	201.33 (0.00)	6.04 (0.00)	62.22 (0.00)	212.77 (0.00)	5.78 (0.00)
30	77.93 (0.00)	239.39 (0.00)	4.27 (0.00)	71.05 (0.00)	241.59 (0.00)	4.28 (0.00)

Note: First bracket shows P-values.

4. Models

In this study, Autoregressive Distributed Lag (ARDL) bounds testing cointegration procedure is employed to observe the long-run relationships between Islamic and conventional stock prices in Bangladesh, while we use ARDL-Error Correction Model (ARDL-ECM) to examine the short-run association. Moreover, the volatility dynamics between two equity returns is examined employing GARCH family models (GARCH, EGARCH, MGARCH-BEKK, MGARCH-CCC, and MGARCH-DCC). We use Eviews software for determination of descriptive statistics and cointegration model. Moreover, RATS statistical software is used to estimate the GARH-BEKK GARCH-CCC and MGARCH-DCC models.

4.1 Cointegration and Error Correction Model

This study uses Autoregressive Distributed Lag (ARDL) bounds testing cointegration procedure of Pesaran, Shin and Smith (2001) as it has several advantages in comparison to the conventional cointegration procedures: First, ARDL model can be applied on a time series data irrespective of whether the variables are I(0) or I(1) but not the I(2) (Pesaran and Pesaran, 1997). Second, the ARDL procedure permits that the variables may have different optimal lags, while it is impossible with conventional cointegration procedures. Third, the ARDL procedure

is very efficient with small sample sizes. Fourth, the ECM can be derived simultaneously without losing long-run information. Fifth, the ARDL model corrects the omitted lagged variables bias. Finally, the ARDL procedure makes use of only a single reduced form equation, while the conventional cointegration procedures estimate the long-run relationships within the context of a system of equations.

The ARDL long-run model of Islamic and conventional stock prices in Bangladesh can be expressed mathematically as:

$$LnDS30_t = \alpha_1 + \beta_1 LnDSES_t + \varepsilon_{1t} \qquad (1)$$
$$LnDSES_t = \alpha_2 + \beta_2 LnDS30_t + \varepsilon_{2t} \qquad (2)$$

where, α, β, and ε represent constants, coefficients, and error terms respectively. Equations (1) and (2) can be re-expressed in the following conditional error correction model (ECM) version of the ARDL to implement the bounds testing procedure:

$$\Delta LnDS30_t = c_1 + \pi_1 LnDS30_{t-1} + \pi_2 LnDSES_{t-1} + \sum_{i=1}^{\rho} \theta_i \Delta LnDS30_{t-i} + \sum_{i=1}^{\rho} \emptyset_i \Delta DSES_{t-i}$$
$$+ u_{1t} \qquad (3)$$

$$\Delta LnDSES_t = c_2 + \pi_1 LnDSES_{t-1} + \pi_2 LnDS30_{t-1} + \sum_{i=1}^{\rho} \theta_i \Delta LnDS30_{t-i} + \sum_{i=1}^{\rho} \emptyset_i \Delta DSES_{t-i}$$
$$+ u_{2t} \qquad (4)$$

The first part of the above equations represents the long-run dynamics of the model and the second part show the short-run relationship in which Δ signifies the first difference operator. C_i ($i = 1, 2$) shows constant, π_i ($i = 1,2$) denotes coefficients on the lagged levels, θi and ϕ_i ($i =1…\rho$) denote coefficients on the lagged variables, and finally $u_i(i = 1,2)$ stands for error terms. ρ signifies the maximum lag length, which is decided by the Akaike Information Criterion (AIC) as it has a lower prediction error than that of the SBC based model.

After selecting the optimal lag lengths of the models using AIC, we check the robustness and stability of the models. The diagnostic tests, including the serial correlation, normality, and heteroskedasticity associated with the models are performed. In addition, the stability tests are conducted by operating the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ). Then, we estimate the equations (3) and (4) in order to test the long-run relationship by conducting F-test for the joint significance of the

coefficients of the lagged levels of the variables. Pesaran, Shin, and Smith (2001) argue that two sets of critical values for a given significance level can be determined. The first level is calculated on the assumption that all variables incorporated in the ARDL model are I(0), while the second one is calculated on the assumption that the variables are I(1). If the calculated F-statistics exceeds the upper bound of the critical values, then the null hypothesis of 'no cointegration' is rejected. The null hypothesis is accepted if the calculated F-statistic is below the lower bounds value, while the cointegration test becomes inconclusive if calculated F-statistic falls between the two levels of the bounds.

4.2 Univariate Volatility Models

In order to get reliable results of volatility dynamics, researchers should initially examine the volatility characteristics of stock returns, such as heavy tails, volatility clustering, and leverage effects. Miron and Tudor (2010) argue that stock returns exhibit some patterns and that is crucial for correct model specification and estimation. In this line of thinking, we have already checked that the return series of DSES and DS30 show evidence of volatility clustering and leptokurtosis (Figure 2 and Table 3 in Section 3). The stationary properties of the return series have also been checked using ADF and PP unit root tests (Table 2 in Section 3). Further, we intend to explore the degree of persistence and long memory in the conditional variance in the return series using univariate GARCH model. Then, we also investigate whether these return series follow the asymmetry or leverage effect employing univariate EGARCH model.

4.2.1 GARCH(1,1) Model

This study uses an extended version of ARCH model named, Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model of Bollerslev (1986) as Alexander (2001) says that ARCH models are not often used in financial markets because the simple GARCH models perform so much better. The conditional variance of the GARCH(p,q) model can be written in the following form:

$$\varepsilon_t \,\big|\, \Omega_{t-1} \sim N(0, h_t^2),$$
$$h_t^2 = \omega + \sum_{i=1}^{p} \alpha_i \, \varepsilon_{t-1}^2 + \sum_{j=1}^{q} \beta_j \, h_{t-j}^2, \tag{5}$$
$$\omega > 0, \alpha_i, \beta_j \geq 0 \rightarrow h_t^2 \geq 0, \; i = 1, \dots p, \text{ and } j = 1, \dots q.$$

where Ω_{t-1} is the set of all information available at time t-1, ω is the mean of yesterday's forecast, α_i is the coefficient of the ARCH term ε_{t-1}^2 and β$_j$ is the coefficient of the GARCH term h_{t-j}^2.

A large positive value of β_j indicates that volatility is persistent, while α+β is less than one or very close to one is an indication of a covariance stationary model with a high degree of persistence and long memory in the conditional variance. In this study, we use a GARCH(1,1) model as Alexander (2001) argues that it is rarely necessary to use more than a GARCH(1,1) model.

4.2.2 EGARCH(1,1) Model

The symmetric GARCH model cannot capture the leverage or asymmetric effect (volatility is higher in a falling market than in a rising market). Nelson (1991) develops an asymmetric volatility model named, Exponential GARCH (EGARCH) model to address the leverage effect in the volatility. The conditional variance equation of EGARCH (1, 1) model can be written as:

$$\ln\sigma_t^2 = \omega + \alpha|z_{t-1}| + \gamma z_{t-1} + \beta\ln\sigma_{t-1}^2 \qquad (6)$$

where the left-hand side is the logarithm of the conditional variance. It indicates that the leverage effect is exponential and that forecasts of the conditional variance have to be non-negative. z_{t-1} shows the asymmetric impact of positive and negative shocks. The asymmetry term $\gamma < 0$ implies that negative shocks have a greater impact on volatility rather than the positive shocks. The negative asymmetric term also suggests for leverage effect that negative shocks do obviously have a bigger impact on future volatility than positive shocks of the same magnitude.

4.3 Multivariate Volatility Models

Multivariate GARCH (MGARCH) models are valuable expansions from univariate GARCH models as the MGARCH models can predict the dependence in the co-movements of stock returns in a more reliable way. Different types of MGARCH models have been proposed in the literature, such as models of the conditional covariance matrix (VECH, BEKK), models of conditional variances and correlations (CCC and DCC). In this work, we try to investigate the stock returns volatility spillover effect between Islamic and conventional stock markets employing MGARCH-BEKK, while we utilize MGARCH-CCC and MGARCH-DCC framework to examine the conditional correlation.

4.3.1 MGARCH-BEKK

In order to capture the co-movement volatility between conventional and Islamic stock returns in Bangladesh, this study uses multivariate GARCH-BEKK (Baba-Engle-Kraft-Kroner) model. The MGARCH-BEKK model is an extended version of the GARCH model which can capture volatility transmission among different series as well as the persistence of volatility within each series. BEKK formulation enables us to reveal the existence of any transmission of volatility from one market to another (Engle and Kroner, 1995). The BEKK model of Engle and Kroner (1995) can be written as:

$$H_t = CC' + \sum_{i=1}^{k} A_i\, \varepsilon_{t-1}\varepsilon'_{t-i}A'_i + \sum_{i=1}^{k} B_i H_{t-i}\, B'_i \qquad (7)$$

where C, A_i, and B_i are N×N matrices, but C is triangular. This equation guarantees all positive definite diagonal representation.

To illustrate the BEKK model, consider the simple GARCH (1,1) model:

$$H_t = CC' + A_1\varepsilon_{t-1}\varepsilon'_{t-1}A'_1 + B_1 H_{t-1}B'_1 \qquad (8)$$

In the bivariate case as in this study, the BEKK becomes:

$$
\begin{aligned}
H_t & \\
= CC' &+ \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix} \begin{bmatrix} \varepsilon^2_{1,t-1} & \varepsilon_{1,t-1}\varepsilon_{2,t-1} \\ \varepsilon_{2,t-1}\varepsilon_{1,t-1} & \varepsilon^2_{2,t-1} \end{bmatrix} \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix}' \\
&+ \begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{bmatrix} \begin{bmatrix} h_{11,t-1} & h_{12,t-1} \\ h_{21,t-1} & h_{22,t-1} \end{bmatrix} \begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{bmatrix}'
\end{aligned} \qquad (9)
$$

where the symmetric matrixes A captures the ARCH effects, matrixes B focus on the GARCH effects. The diagonal parameters in matrixes A and B measure the effects of own past shocks and past volatility on its conditional variance. The off-diagonal parameters in matrixes A and B, a_{ij} and b_{ij} measure the cross-market effects of shock and volatility; also known as volatility spillover.

In the BEKK model, the ARCH component associated with the conditional variance of RDS30 can be written as:

$$h_{11,t} = C_1 + a^2_{11}\varepsilon^2_{1,t-1} + a^2_{21}\varepsilon^2_{2,t-1} + 2a_{11}a_{21}\varepsilon_{1,t-1}\varepsilon_{2,t-1} \qquad (10)$$

where the ARCH volatility in the RDS30 depends on the squares as well as the cross products of the previous shocks associated with the RDS30 and RDSES. Here, a_{11} and a_{21} capture the effects of past squared shocks in each market on today's volatility in RDS30.

Similarly, The GARCH component of the RDS30 conditional variance can be written as:

$$h_{11,t} = b_{11}^2 h_{11,t-1} + b_{21}^2 h_{22,t-1} + 2b_{11}b_{21}h_{12,t-1} \qquad (11)$$

where the volatility of RDS30 depends on the past conditional variances and covariances associated with each of the two markets. Here, b_{11} and b_{21} capture the effects of past volatility in each of the two markets on today's volatility in RDS30.

4.3.2 MGARCH-CCC

Constant Conditional Correlation (CCC) model is developed by Bollerslev (1990). This model assumes that correlations between each pair of returns are constant and thus the volatility model consists only of the equations for the variances. CCC model has been very popular among empirical studies because it reduces the conditional correlation matrix to constant correlation coefficients between variables, so the number of parameters to be estimated is small in comparison with other models. The conditional covariance matrix is defined as:

$$H_t = S_t R S_t \qquad (12)$$

where S_t is an (N×N) diagonal matrix of time-varying standard deviations and R is an (N×N) matrix of constant correlations.

In the bivariate case as in this study, the CCC becomes as follows:

$$H_t = \begin{bmatrix} \sqrt{h_{11,t}} & 0 \\ 0 & \sqrt{h_{22,t}} \end{bmatrix} \begin{bmatrix} 1 & \rho_{12} \\ \rho_{21} & 1 \end{bmatrix} \begin{bmatrix} \sqrt{h_{11,t}} & 0 \\ 0 & \sqrt{h_{22,t}} \end{bmatrix} \qquad (13)$$

In this case, H_t is assumed to be positive definite if certain restrictions on the parameters are correctly satisfied. Variance terms $h_{11,t}$ and $h_{22,t}$ are univariate GARCH processes with p=q=1.

4.3.3 MGARCH-DCC

The Dynamic Conditional Correlation (DCC) model is proposed by Engle (2002) in which the conditional correlation matrix is time-dependent, and all conditional correlations follow the same dynamic structure. DCC model is more recent and has been successful over the CCC model as contemporary works of literature reveal that stock market integration has been varied over time. The form of Engle's (2002) DCC model is as follows:

$$H_t = D_t R_t D_t \qquad\qquad (14)$$

where D_t is a (N×N) diagonal matrix of time-varying standard deviations from univariate GARCH models. R_t is the time varying conditional correlation matrix and can be expressed as follows:

$$R_t = \text{diag}(q_{11,t}^{-\frac{1}{2}} \ldots q_{22,t}^{-\frac{1}{2}}) Q_t \text{diag}(q_{11,t}^{-\frac{1}{2}} \ldots q_{22,t}^{-\frac{1}{2}})$$

where $Q_t=(q_{ij,t})$ is the 2×2 symmetric positive definite matrix and is given by

$$Q_t = (1 - \alpha - \beta)\, \overline{Q} + \alpha \epsilon_{t-1} \varepsilon'_{t-1} + \beta\, Q_{t-1}$$

where α and β are non-negative scalar parameters with the restriction that $\alpha + \beta < 1$.

5. Results and Discussion

5.1 Results of ARDL Cointegration and ECM

After checking the order of integration in section 3 that none of the variables are I(2), we move to estimate the presence of cointegration between the variables of equation (3) and (4). The AIC selects an optimal ARDL (3, 3) for the variables included in the conventional stock model (The left portion of Figure 3), while optimal ARDL (4, 3) for the Islamic stock model (The right portion of Figure 3).

Figure-3
Selection of Optimal Model using AIC

Akaike Information Criteria
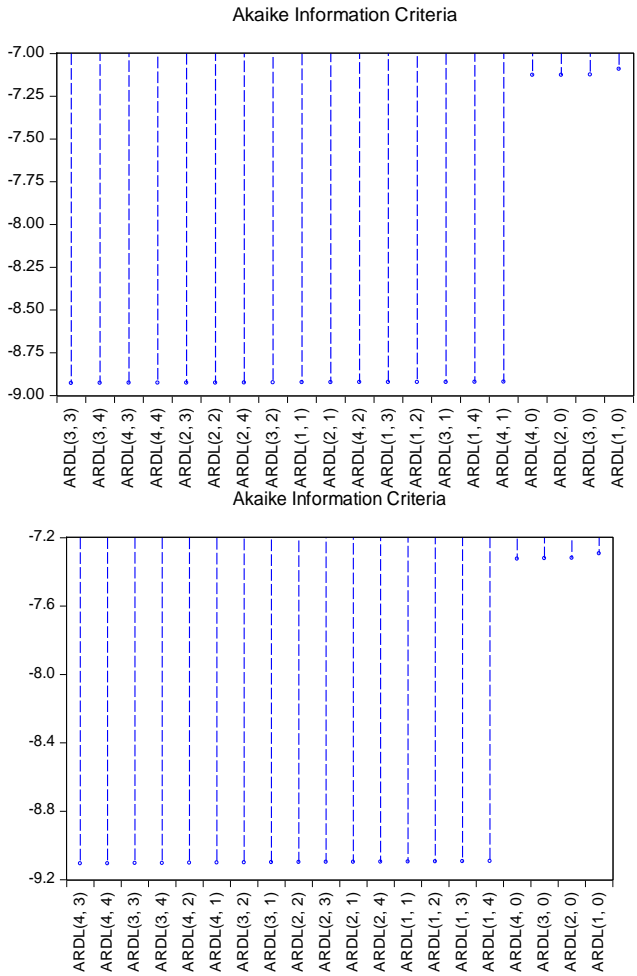
Then we move to check the cointegrating relationship between the variables of both models using the bounds test after getting assured about the robustness and stability of the models. The calculated F- statistics in Table 4 for the conventional stock market model is 4.34 that is higher than the upper bound critical value of 4.16 at 5% level of significance. The computed F- statistics for Islamic stock market model is 4.74 that is also higher than the upper bound critical value at 5% level of significance. Thus, we reject the null hypothesis of no cointegration among the

variables, and therefore we can comment that the long-run relationships exist between the variables.

Table-4
Results of ARDL Bounds Cointegration Test

Model	F-Statistic	5% Critical Bounds		Cointegration
		I(0)	I(1)	
LnDS30=f(LnDSES)	4.34*	3.62	4.16	Present
LnDSES=f(LnDS30)	4.74*	3.62	4.16	Present

Note: * denotes rejection of the null hypothesis at the 5% level.

Table 5 shows the long-run coefficients of both models. The long-run coefficients are significant at 1% level of significance implying that Islamic stock prices have a long-run impact on conventional stock prices in Bangladesh and vice versa. The result implies that a 1% increase in Islamic stock prices contributes to a 1.03% increase in conventional stock prices. Further, a 1% increase in conventional stock prices contributes to 0.93% increase in Islamic stock prices in the long-run in Bangladesh.

Table-5
Long-Run Coefficients

Model	Variable	Coefficient	P-value	Long-run Cointegration Equation
LnDS30	LnDSES	1.03*	0.00	LnDS30 = 0.24 + 1.03 LnDSES
LnDSES	LnDS30	0.93*	0.00	LnDSES = 0.05 + 0.93 LnDS30

Note: * denotes significant at 1% level.

Table-6
Error Correction Estimates

Model: LnDS30=f(LnDSES)			Model: LnDSES=f(LnDS30)		
Variable	Coefficient	P-Value	Variable	Coefficient	P-Value
D[LnDS30(-1)]	0.08*	0.00	D[LnDSES(-1)]	0.09*	0.00
D[LnDS30(-2)]	-0.06**	0.04	D[LnDSES(-2)]	-0.10*	0.00
D[LnDSES]	1.01*	0.00	D[LnDSES(-3)]	0.02**	0.05
D[LnDSES(-1)]	-0.08**	0.02	D[LnDS30]	0.84*	0.00
D[LnDSES(-2)]	0.08**	0.01	D[LnDS30(-1)]	-0.06**	0.04
ECT(-1)	-0.01*	0.00	D[LnDS30(-2)]	0.07**	0.02
			ECT(-1)	-0.01*	0.00

Note: * and ** denote significant at 1% and 5% levels respectively.

Results of short-run dynamics are presented in Table 6. The results reveal that the coefficients of error correction terms of both models are negative and statistically significant at the 1% level of significance. It suggests that there is bidirectional long-run causality running between conventional stock prices and Islamic stock prices in Bangladesh. The error correction terms of both models imply that 1% of the last days' disequilibrium is corrected today. The short-run results are perfectly consistent with that of long-run coefficients. The short-run relationship between Islamic and conventional stock prices is also positive and significant at 1% level. Therefore, we can comment that conventional and Islamic stock markets in Bangladesh do not offer any diversification benefits to investors having both indices in their portfolios.

Table-7
Results of Diagnostic Tests

Residual Diagnostic	Conventional	Islamic
Serial Correlation LM	1.05 (0.37)	1.89 (0.11)
ARCH Heteroskedasticity	8.84 (0.00)	4.94 (0.00)

Note: P-values are in brackets.

Diagnostic checking of the models is conducted using multivariate residual-based tests for serial correlation and ARCH heteroskedasticity test owing to validate the robustness of the models (Table 7). Lagrange Multiplier (LM) tests at 3 lags for the conventional model and 4 lags for the Islamic model indicate the absence of autocorrelation at the 1% level of significance, while ARCH Chi-square test for heteroskedasticity indicates the presence of heteroskedasticity. Then, the cumulative sum of recursive residuals (CUSUM) test is employed in order to check the stability of the models (Figure 4). The left portion of Figure 4 plots the CUSUM statistics for the conventional model, while right portion plots for the Islamic model. The plotted points for the CUSUM statistics stay within the critical bounds of a 5% level of significance meaning that both the models are stable.

Figure-4
Plots of CUSUM Stability Test
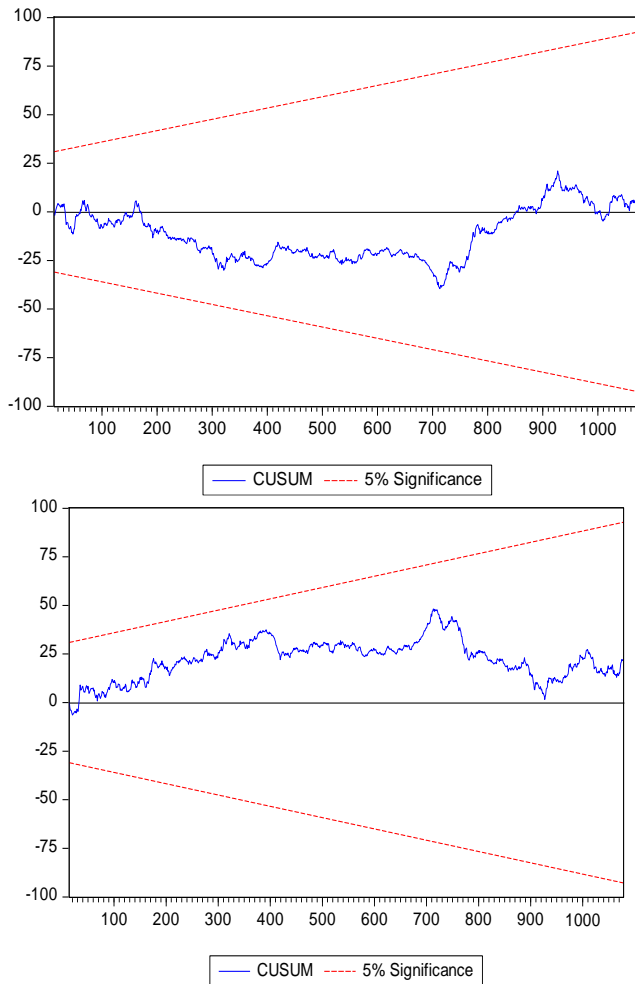
5.2 Results of Univariate GARCH Models

Table 8 reports the results of the variance equations of the estimated GARCH and EGARCH models. A visual look at Table 8 clears that all the estimates of GARCH and EGARCH models are statistically significant and the GARCH effect is very close to one for both series indicating the volatility is clustering. The sum of the ARCH and GARCH coefficients in GARCH(1,1) models is 0.98 for both indices

meaning that volatility is persistent in Islamic and conventional stock markets in Bangladesh. The estimated EGARCH(1,1) models show that the asymmetry term γ for both indices is negative and highly significant suggesting that bad news has more effect than the good news in both markets. In terms of diagnostic fit presented in Table 8, the estimated models satisfy the conditions of the GARCH theory based on Ljung -Box Q^2 statistics and ARCH-LM test.

Table-8
Estimates of the GARCH(1,1) and EGARCH(1,1) Model

Model		ω	α	β	γ	Q^2 (36)	LM(36)
GARCH	RDS30	0.008*	0.10*	0.88*	-	37.32	36.71
		(0.00)	(0.00)	(0.00)		(0.41)	(0.44)
	RDSES	0.008*	0.11*	0.87*	-	35.28	35.37
		(0.00)	(0.00)	(0.00)		(0.50)	(0.49)
EGARCH	RDS30	-0.16*	0.19*	0.98*	-0.03**	36.02	36.69
		(0.00)	(0.00)	(0.00)	(0.01)	(0.47)	(0.44)
	RDSES	-0.17*	0.19*	0.98*	-0.03**	33.99	35.03
		(0.00)	(0.00)	(0.00)	(0.03)	(0.57)	(0.51)

Notes: P-values are in brackets. * and ** mean significant at 1% and 5% levels respectively

5.3 Results of MGARCH Models

Table 9 reports the estimates of bivariate BEKK parameters in which all the coefficients are highly significant except B(2,1). Results reveal that the conventional stock market has the largest own ARCH effect with the coefficient value of 0.358 and there is evidence of a bidirectional ARCH effect between RDS30 and RDSES. The B(1,1) and B(2,2) GARCH parameters reveal that two conditional variances depend on their own history, while the RDSES has the largest own GARCH effect. A significant B(1,2) implies that a negative volatility spillover is running from conventional stock markets to Islamic stock markets in Bangladesh.

The estimated BEKK-GARCH model can be attained by substituting the following matrices:

$$A = \begin{bmatrix} 0.358 & 0.137 \\ -0.063 & 0.149 \end{bmatrix}$$
$$B = \begin{bmatrix} 0.948 & -0.021 \\ -0.002 & 0.973 \end{bmatrix}$$
$$C = \begin{bmatrix} 0.086 & 0 \\ 0.072 & 0.027 \end{bmatrix}$$

In particular, a significant B_{12} = -0.021 indicates the level of the volatility transmission from conventional stock markets to Islamic stock markets in Bangladesh. It implies that a 1% increase in returns of the DSE30 index transmits 2.1% volatility to DSES.

Table-9
Estimates of the GARCH-BEKK Model (RDS30/RDSES)

	Coefficient	Std. Error	T-Stat	P-Value
C(1,1)	0.086*	0.009	9.655	0.000
C(2,1)	0.072*	0.010	7.592	0.000
C(2,2)	0.027*	0.020	5.529	0.000
A(1,1)	0.358*	0.358	17.965	0.000
A(1,2)	0.137*	0.006	23.052	0.000
A(2,1)	-0.063*	0.015	-4.062	0.000
A(2,2)	0.149*	0.014	10.441	0.000
B(1,1)	0.948*	0.004	219.449	0.000
B(1,2)	-0.021*	0.003	-8.252	0.000
B(2,1)	-0.002	0.003	-0.611	0.541
B(2,2)	0.973*	0.006	173.354	0.000

Notes: * denotes significant at 1% level.

The performance of the MGARCH-CCC model is reported in Table 10. The results suggest the existence of own ARCH and GARCH effects in both markets as all of the estimated parameters are significantly different from zero and significant at 1% level. The positive and highly significant conditional correlation (0.91) between RDS30 and RDSES reflect the presence of strong direct interconnections between conventional and Islamic stock markets in Bangladesh.

Table-10
Estimates of the MGARCH-CCC Model (RDS30/RDSES)

	Coefficient	Std. Error	T-Stat	P-Value
C(1)	0.013*	0.004	3.776	0.000
C(2)	0.011*	0.003	3.409	0.000
A(1)	0.051*	0.009	5.830	0.000
A(2)	0.049*	0.011	4.613	0.000
B(1)	0.919*	0.012	67.128	0.000
B(2)	0.921*	0.017	54.270	0.000
R(2,1)	0.910*	0.005	169.718	0.000

Notes: * denotes significant at 1% level.

Results of time-varying dynamic conditional correlation estimation for RDSE30/DSES are presented in Table 11. The sum of A_i and B_i for each univariate GARCH estimation is almost close to 1 which presents the high persistence of conditional volatility. DCC(A) and DCC(B) are significant at 1% level of significance implying that the DCC model is favorable compared with the CCC model. Moreover, DCC(A)+DCC(B)=0.987 is less than 1 indicates that the conditional correlation process is mean reverting. Therefore, the correlations will return in time to the long-run unconditional level after a shock occurs.

Table-11
Estimates of the MGARCH-DCC Model (RDS30/RDSES)

	Coefficient	Std. Error	T-Stat	P-Value
C(1)	0.007*	0.003	2.817	0.000
C(2)	0.007*	0.003	2.617	0.000
A(1)	0.072*	0.012	5.989	0.000
A(2)	0.073*	0.016	4.566	0.000
B(1)	0.917*	0.014	65.561	0.000
B(2)	0.915*	0.019	48.896	0.000
DCC(A)	0.054*	0.012	4.525	0.000
DCC(B)	0.933*	0.017	53.934	0.000

Notes: * denotes significant at 1% level.

6. Conclusion

This study explores the cointegration and volatility spillover between Islamic and conventional stock markets in Bangladesh from 20 January 2014 to 25 June 2018. Employing the ARDL bounds testing procedure on daily log data of DS30 and DSES indices, we find that Islamic stock prices have a long-run positive impact on conventional stock prices and vice versa. The results of ECM reveal that the coefficients of error correction terms of both models are negative and statistically significant suggesting that there is bidirectional long-run causality running between conventional and Islamic stock prices in Bangladesh. Moreover, the short-run relationship between Islamic and conventional stock prices is also positive and significant at 1% level. Employing a univariate GARCH(1,1) model on DS30 and DSES returns, we find evidence of volatility clustering in both index returns which have a tendency to last a long time. Then, the results of the EGARCH (1, 1) model indicate that both markets are more sensitive to the bad news than with a good news. A bivariate GARCH-BEKK model is built to capture the existence of volatility spillover between returns of the Islamic and conventional stock indices. We find the existence of significant and negative volatility transmission from conventional to the

Islamic market. Specifically, a 1% increase in returns of the conventional DSE30 index transmits 2.1% volatility to Islamic DSES index. This study also employs a GARCH-CCC framework to examine the constant conditional correlation between two returns and the results show the evidence of strong direct interconnections between the markets. Finally, we test the presence of time-varying correlation between two equity market applying the GARCH-DCC model, and the results reveal that correlations are not only conditional but also significantly time-varying. The result also shows that the correlation process is mean reverting. Thus, we can comment that the GARCH-DCC model can provide much more useful information than what GARCH-CCC model can do.

Based on the above discussion, we conclude that conventional and Islamic stock markets in Bangladesh do not offer any diversification benefits to investors having both indices in their portfolios. Hence, stakeholders on the investment activity should pay attention to the behavior of co-movement and volatility transmission. Private as well as institutional investors should modify their investment strategy and asset allocation decisions accordingly to the cointegration and spillover effects. Future researchers can include South Asian markets to examine the co-movement and spillover effect from which Bangladesh may be strongly affected.

References

Abbas, Q., Khan, S. and Shah, S. Z. A. (2013). Volatility transmission in regional Asian stock markets. *Emerging Markets Review*, 16, 66-77.

Abid, F., Leung, P.L., Mroua, M. and Wong, W.K. (2014). International diversification versus domestic diversification: mean-variance portfolio optimization and stochastic dominance approaches. *J. Risk Financial Manag*, 2, 45-66. doi:10.3390/jrfm7020045

Alexander, C. (2001). *Market models: A guide to financial data analysis*. John Wiley & Sons Ltd, New York.

Bekaert, G. and Harvey, C. R. (1997). Emerging equity market volatility. *Journal of Financial economics*, 43(1), 29-77.

Bekaert, G. and Wu, G. (2000). Asymetric volatility and risk in equity markets. *Review of Financial Studies*, 13:1-42.

Bollerslev, T. (1986). Generalized autoregressive conditional heteroskedasticity. *Journal of Econometrics*, 31, 307-327.

Bollerslev, T. (1990). Modelling the coherence in short-run nominal exchange rates: a multivariate generalized ARCH approach. *Review of Economics and Statistics*, 72, 498-505.

Chiadmi, M.S and Ghaiti, F. (2014). Modeling volatility of Islamic stock indexes: empirical evidence and comparative analysis, *IJER*. 11(2), 241-276.

Dewandaru, G., Rizvi, S. A. R., Masih, R., Masih, M. and Alhabshi, S. O. (2014). Stock market comovements: Islamic versus conventional equity indices with multi-timescales analysis. *Economic Systems,* 38(4), 553-571.

Dhaka Stock Exchange. (2018). *Official Website*. Retrieved from http://dsebd.org/

Engle, R.F. (2002). Dynamic conditional correlation: a simple class of multivariate generalized autoregressive conditional heteroskedasticity models. *Journal of Business and Economic Statistics*, 20, 339-350.

Engle, R.F. and Kroner, K.F. (1995). Multivariate Simultaneous Generalized ARCH. *Econometric Theory*, 11, 122-150.

French, K. and Poterba, J. (1991). Investor diversification and international equity markets. *American Economic Review*, 81, 222-226.

Gorman, L. and Jorgan, N. (2002). Domestic versus international portfolio selection: A statistical examination of the home bias. *Multinational Finance Journal*, 6(3), 131-166.

Hamao, Y., Masulis, R. W., & Ng, V. (1990). Correlations in price changes and volatility across international stock markets. *The Review of Financial Studies*, 3(2), 281-307.

Harris, F. R. and Pisedtasalasai, A. (2006). Return and Volatility Spillovers between Large and Small Stocks in the UK. *Journal of Business Finance and Accounting*, 33, 1556–1571.

IFSB-Islamic Financial Services Board. (2011, 2017 & 2018). *Islamic financial services industry stability report*, Islamic Financial Services Board, Kuala Lumpur.

Jawadi, F., Jawadi, N., & Louhichi, W. (2014). Conventional and Islamic stock price performance: an empirical investigation. *International Economics*, 137, 73-87.

Jebran, K. (2014). Dynamic linkages between Asian countries stock markets: Evidence from Karachi Stock Exchange. *Journal of Management Sciences*, 3(5), 6–13.

Jebran, K., Chen, S. and Tauni, M.Z. (2017). Islamic and conventional equity index co-movement and volatility transmission: evidence from Pakistan. *Future Business Journal*, 3, 98-103. http://dx.doi.org/10.1016/j.fbj.2017.05.001

Kasa, K. (1992). Common stochastic trends in international stock markets. *Journal of Monetary Economics*, 29, 95-124.

Khan, S. N. and Khan, W. A. (2018). Co-integration between Islamic and conventional stock market index: an investigation of diversification (a case of Asian Pacific region). *Pakistan Business Review*, 20(2): 341-353.

Kim, H-B. and Sohn, T. (2016). Volatility transmission between conventional finance and Islamic finance in stock markets. *The Macrotheme Review*, 5(4), 1-12.

King, M. and Wadhwani, S. (1990). Transmission of volatility between stock markets. *Review of Financial Studies*, 3(1), 5–33.

Liu, Y.A. and Pan, M-S. (1997). Mean and volatility spillover effects in the U.S. and Pacific–Basin stock markets. *Multinational Finance Journal*, 1(1): 47–62.

Majdoub, J., Mansour, W., and Jouini, J. (2016). Market integration between conventional and Islamic stock prices. *North American Journal of Economics and Finance*, 37, 436-457. http://dx.doi.org/10.1016/j.najef.2016.03.004

Masih, A. M. M. and Masih, R. (2001). Long and short term dynamic causal transmission amongst international stock markets. *Journal of International Money and Finance*, 20(4), 563-587.

Miron, D. and Tudor, C. (2010). Asymmetric conditional volatility models: empirical estimation and comparison of forecasting accuracy. *Romanian Journal of Economic Forecasting*, 3, 74-93.

Mohammadi, H. and Tan, Y. (2015). Return and volatility spillovers across Equity Markets in Mainland China, Hong Kong and the United States. *Econometrics*, 3: 215-232, doi: 10.3390/econometrics3020215

Moniruzzaman, M. (2018). Growth and prospects of Islamic finance in Bangladesh. *Journal of Economics and Management Sciences*, 1(1), 253-264. https://doi.org/10.30560/jems.v1n1p253

Mseddi, S. and Benlagha, N. (2017). An analysis of spillovers between Islamic and conventional stock bank returns: evidence from the GCC Countries. *Multinational Finance Journal*, 21(2), 91–132.

Nabi, M.D., Islam, M.A., Bakar, R. and Akter, A. (2015). Islamic banking in Bangladesh: current status, challenges and policy options. Retrieved from https://www.researchgate.net/publication/307545246

Nelson, D.B. (1991). Conditional heteroskedasticity in asset returns: a new approach. *Econometrica*, 59(2), 347-370.

Oehler, A., Rummer, M. and Wendt, S. (2008). Portfolio selection of German investors: on the causes of home-biased investment decisions. *J. Behav. Financ*, 9, 149–162.

Pesaran, M.H., and Pesaran. B. (1997). *Working with Microfit4.0: Interactive Econometric Analysis*, Oxford University Press.

Pesaran, M.H., Shin Y. and Smith R.J. (2001). Bounds testing approaches to the analysis of level relationships, *Journal of Applied Econometrics*, 16, 289-326.

Rizvi, S. A. R. and Arshad, S. (2014). An empirical study of Islamic equity as a better alternative during crisis using multivariate GARCH DCC. *Islamic Economic Studies*, 22(1), 159-184. doi: 10.12816/0004134

Saiti, B. (2014). Integration between the conventional and Islamic stock indices with the US: evidence from cointegration analysis. *Australian Journal of Basic and Applied Sciences,* 8(10): 18-30.

Saiti, B. (2015). Cointegration of Islamic stock indices: evidence from five ASEAN countries. *International Journal of Scientific & Engineering Research*, 6(7), 1392-1405.

Saiti, B., Bacha, O.-I., Masih, M. (2014). The diversification benefits from Islamic investment during the financial turmoil: the case for the US-based equity investors. *Borsa Istanbul Review*, 14, 196–211.

Sensoy, A. (2016). Systematic risk in conventional and Islamic equity markets. *International Review of Finance*, 16(3), 457-466.

Singh, A., and Kaur, P. (2016), Do BRIC Countries' equity markets co-move in long run? *Theoretical Economics Letters*, 6: 119-130, doi: 10.4236/tel.2016.62014.

Tesar, L. and Werner, I. (1995). Home bias and high turnover. *Journal of International Money and Finance*, 14, 467-492.

Zamzamir, Z., Ahmad, N.S., and Badri, N. (2013). Performance of global Islamic indices. *Journal of Entrepreneurship and Business*, 1(1), 1-10.

The Role of Entrepreneurial Empowerment in the Relationship between Islamic Microfinance and Well-being of Clients: A View from a Service Provider

A. S. Usman•

R. Tasmin≠

Z. K. A. B Ulum≈

Abstract

Islamic microfinance has been reported as appropriate in improving the living conditions of the poor. However, little is known about the contribution of entrepreneurial empowerment in achieving such success. The objective of this study is to examine the mediating role of entrepreneurial empowerment in the relationship between Islamic microfinance and well-being of clients. A sample of 291 respondents was selected randomly from the operational staff of Amanah Ikhtiar Malaysia in east-coast states of Malaysia. Structural Equation Modelling was used as the statistical procedure to analyse the data. The results supported three hypotheses, which confirmed that Islamic microfinance has positive relationship with entrepreneurial empowerment. However, three hypotheses were rejected on the relationship between Islamic microfinance and clients' well-being, suggesting that Islamic microfinance does not improve the clients' well-being. The seventh hypothesis was also supported, which indicates a full mediation role of entrepreneurial empowerment. The unique finding of the study is that, entrepreneurial empowerment is the underlying factor for the success of Islamic

---
• Gombe State University, PMB 127, Gombe, Nigeria. Corresponding Author: sadiqusman2003@gmail.com
≠ Universiti Tun Hussein Onn Malaysia. Batu Pahat, 86400 Johor, Malaysia
≈ Universiti Malaysia Kelantan. Kampus Kota Karung Berkunci 36, Pengkalan Chepa, 16100 Kota Bharu, Kelantan

microfinance. To enable generalisation of this finding, further study is recommended in other Muslim countries.

1. Introduction

The New Economic Model (NEM) in Malaysia promotes a new approach to development by raising productivity and incomes of the poor segment of the society (Hatta & Ali, 2013; Xavier & Ahmad, 2012). In addition, the financial inclusion agenda in the Financial Sector Blueprint 2011–2020 was designed to increase productivity, diversify sources of income and improve the quality of life of the poor. Microfinance is the inclusive strategy used in Malaysia for offering the poor people a window for such opportunities (Hatta & Ali, 2013; GIFR, 2012). This approach is expected to contribute in achieving progress towards greater well-being by means of an inclusive growth (Al Mamun, Adaikalam & Abdul Wahab, 2012; Mohieldin *et al*., 2011; Rahman, Rafiq & Momen, 2011). It is noteworthy that Amanah Ikhtiar Malaysia (AIM) has been in the forefront of such developments in recent years. AIM is a replication of the famous Grameen Bank model established in Bangladesh in the late 1970s by Dr Mohammed Yunus in order to extend micro-credit to the financially excluded poor. Basically, AIM offers three services to its members/companions. These are (1) interest-free micro-credit with stipulated repayment periods; (2) saving in the form of compulsory and voluntary saving; and (3) Welfare Charity Fund. This is a fund contributed by members to enhance cooperation and improve welfare based on the principles of *tabarru'* (donation) and *ta'awun* (cooperation), to help members of the group when in trouble. After about 30 years of operation, AIM has established 151 branches and provides financial services to more than 80% of the poor households (AIM, 2015). As at April 2016, there were 382,178 members/companions, while total funding accumulated stood at RM15,097,046,687.

Beside this resource approach of giving micro-credit, Amanah Ikhtiar offers a compulsory training to improve the capability of its clients. While microfinance services help the clients to build micro enterprises, they equally need to be equipped to handle challenges that affect their lives. This empowerment is necessary to enable individuals and groups to engage, influence and participate in decision making that shapes their lives (Bennett, 2002; Sen, 2005). According to

Narayan-Parker (2002), such empowerment leads to self-strength, self-power, self-reliance and life of dignity. Amartya Sen has emphasized the need to improve certain capabilities in order to achieve well-being. Putnam (2000) has added that to achieve these capabilities there is need to develop human, physical and social capital. Human capital refers to the properties that an individual has (education, skills and knowledge), physical capital entails ownership of physical or environmental resources (physical assets) and social capital means social support and integration (networks and connections).

Studies on Islamic microfinance services largely emphasised the financial intervension but ignoring the relevance of the empowerment aspect. This has made it necessary to investigate the role of empowerment in the delivery of Islamic microfinance services towards the clients' well-being. Therefore, the objective of this study is to examine the mediating role of entrepreneurial empowerment in the relationship between Islamic microfinance and the well-being of its clients in the perspective of Amanah Ikhtiar Malaysia (AIM).

2. Statement of the Research Problem

Financial inclusion through microfinance avails the poor the opportunity for income generation, productivity, and capacity building, and contributes to economic development process (Rahman, 2013; GIFR, 2012). Previous studies have established the relevance of financial inclusion in improving the well-being among some poor households in Malaysia (El-Komi & Croson, 2013; Al Mamun, Adaikalam & Abdul Wahab, 2012; Omar, Noor & Dahalan, 2012; Bhuiyan *et al*., 2011; Md Saad & Duasa, 2010; Nawai & Bashir 2009; Rahman *et al*, 2011). However, those studies made attempt to show the relevance of Islamic microfinance services towards improvement in its clients' well-being, and perhaps to justify the huge financial intervention and encourage its sponsors. But the question is, does financial intervention improve the well-being of the recipients?

The methodology of the previous studies centred on mainly two issues. First, much emphasis was placed on the importance of financial intervention (resources). This notion is essentially drawn from the welfarism concept that assumes that 'resource' is the key to understanding well-being. This is so because Welfare theory is concerned with the derivation of a social welfare function to rank economically feasible allocations of resources in the society. However, Amartya Sen (1993) argued that it is inadequate to consider only materialistic factors in evaluating human welfare. Similarly, Nussbaum (2004) added that while economic growth is important in creating opportunities in the society, it does not necessarily

improve well-being. This, she argued, is because the evaluation techniques of economic growth such as the Gross Domestic Product (GDP) and Gross National Product (GNP) do not consider inequality and the ability to turn resources in to actual activities. The argument based on the Amartya Sen's Capability approach suggests that understanding the socio-economic conditions of the poor goes beyond resources, income or utility. It includes other abilities, functionings and freedom of choice, to appreciate a valuable life. Functionings are simply the things a person actually does and experiences (Sen, 2005; Sen, 1993). This includes having good education, being healthy, taking part in community services and self-respect. This means that happiness and fulfilment are not achieved by a mere increase in income, but with a development of a person's life in line with these dimensions of needs (Mohieldin *et al*., 2011). Therefore, in order to analyse what leads to well-being, it is essential to give emphasis on what human beings can do instead of what they have. This is because human efforts, skills and talents are important in the promotion and sustaining of development as a whole (Anand & Sen, 2000; Sen, 1992).

The perspective of this study is based on the notion that resources are means whose value depends on the ability of the person that has them, and that individuals differ greatly in their abilities to convert the same resources into valuable functionings. Newman, Schwarz and Borgia (2014), Roomi (2013) and Putnam (2000) have argued on the importance of developing capabilities in any meaningful empowerment project. This is in line with the preposition of the Capability approach that suggests that to overcome poverty, the poor must be helped to enhance their capabilities so that they can join the mainstream society and have a decent life. This implies that the value of resources as an instrument depends on other variables to ensure the desired functionings, and that being well-off may not necessarily translate to being well (Arabi & Abdalla, 2013). So instead of focusing only on the micro funding, this study is emphasising on clients' capabilities. Capabilities are what people are able to do or able to be, which means a set of valuable functionings that a person has to live a good life (Zangoueinezhad & Moshabaki, 2011; Cabraal, 2010; Anand, Hunter & Smith, 2005 Rahman, Rafiq & Momen, 2011).

The second predicament in the literature is that the studies centred on the view of the clients using impact assessments. This reduced the significance of such studies because of the difficulty to prove that causality is a direct consequence of the microfinance intervention (Epstein &Crane, 2005; Hulme, 2000; Mosley, 1997). The perception of service providers is important in understanding the clients' desires and goals (their functionings) towards building effective services.

While a client can only tell about his or her subjective well-being, a service provider can give a general over-view of clients served. For service providers to achieve long term growth and sustainability, they must have visibility and a bird's eye view of the condition of their clients in order to have a better analysis to improve on offering strategic services.

The concerns highlighted above have necessitated a study to address the gap in understanding what leads to clients' well-being in a comprehensive way. While it is important for microfinance services to empower the entrepreneurial capacity of the clients, it is equally essential to see how such entrepreneurial empowerment can translate to well-being improvement. In order to address the question of whether financial intervention improves the well-being of the recipients, this study examined the mediating role of entrepreneurial empowerment from the perspective of Amanah Ikhtiar Malaysia (AIM).

3. The Conceptual Model

The underpinning theory for this study is the Capability approach which holds that, in the analyses of well-being, there is need to go beyond measures of income and wealth. The approach suggests a multidimensional view to well-being, in terms of what people value. According to Amartya Sen (1993), human life is a set of "doings and beings" (functionings), and hence the importance of empowerment. The core claim of the Capability approach is that assessment of well-being should not primarily focus on resources, or on people's mental states, but on the effective opportunities that people have to lead the lives they have reason to value (Robeyns, 2006; Sen, 1993). This approach has been adopted by the second national report on poverty and wealth in Germany to analyse poverty and social inclusion. Similarly, it was on the basis of the Capability approach that Human Development Index (HDI) was developed in 1990 by the United Nations Development Program (UNDP). The HDI annual reports have become a good source of measuring development, and comparisons between countries and regions.

Therefore, the conceptual model of this study in derived from the idea of the Capability approach, based on what people can do rather than what they have. However, it is depicted to show how both Islamic microfinance services and entrepreneurial empowerment could influence clients' well-being. This is necessary to prove, once again, the position of "resources" and "empowerment" towards well-being. In this study, Islamic microfinance is measured by its services (micro-credit/ *qarḍ ḥasan*, micro-saving/*al- wadī'ah*, and charity and welfare fund). Entrepreneurial empowerment is measured by human, physical and social

empowerment; and clients' well-being is measured by career, economic and social growth. According to the Capability approach, evaluation of well-being involves resources, abilities, functionings and utility (Wells, 2012). It is on this basis that the study framework is conceived. It examined the services provided by Islamic microfinance (resources), the abilities they generated (empowerment), the needed functionings and the improvements in the socio-economic lives of the clients.

Figure-1
Research Framework and Conceptual Model
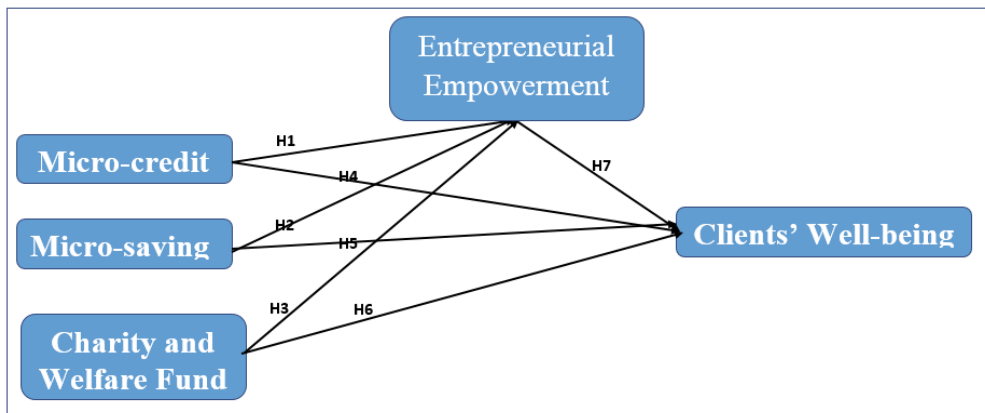
Islamic microfinance has been reported to improve the living condition of the poor people in terms of income generation, productivity and capacity building (GIFR, 2012). According to Al Mamun *et al.* (2012) the motive of all microfinance programs is that the intervention will change human behaviours and practices leading to the achievement of desired outcomes. In order to understand the linkage between Islamic microfinance and the well-being of its clients, it is imperative to investigate the contribution of Islamic microfinance towards that direction. The conceptual framework consists of seven hypotheses depicting a causal relationship between both the Islamic microfinance services and entrepreneurial empowerment towards clients' well-being. Testing these hypotheses will give us a hint on the significance of both Islamic microfinance services and empowerment in achieving well-being. The mediating effect of entrepreneurial empowerment will reveal whether it has any effect on the relationship of Islamic microfinance services and clients' well-being. These hypotheses have been derived from the literature as can be seen in the following discussion.

Micro-credit (*Qarḍ Ḥasan*): Micro-credit refers to the small amounts of credit given to the poor people as economic empowerment to enable them generate income through self-employment (Omar *et al*., 2012). However, the successful delivery of this service depends on its wider coverage to explore different environments and reach the right people (Rahman & Dean, 2013). Convenient access to a range of micro-credit products through innovative delivery channels determines that the loan gets to the right people. Product diversification is another critical issue for its success (Saad, 2012; Md Saad & Duasa, 2010). The terms of the micro loan are important determinants of the clients' individual, household and business performance (Laila, 2010; Praveen, 2009; Rahman & Rahim, 2007). Flexible micro-financing terms provide options to the poor. Increasing the size of the loan is important to expand market as well as the size of the micro enterprises. Flexible loan disbursement and repayment facilitates services delivery, time responsiveness and providing adequate information. The terms of service are important determinants for improving the loan recipient's business performance. Moreover, competitive cost and efficiency by the micro-credit providers all are critical factors for determining the role of microfinance services on clients' well-being (Kazemian *et al.*, 2014; El-Komi, & Croson, 2013; Nawai &Bashir, 2009). It is important to note that, micro-credit is the initial offering of the poor which enables them to generate income and entrepreneurial expertise. In view of this position of micro-credit, the hypothesis can be stated as follows: H1: Micro-credit has positive relationship with entrepreneurial empowerment. Similarly, Omar *et al*. (2012) found relevance of micro-credit in improving living conditions of rural and urban clients; and the study of Al Mamun *et al*. (2012) established a connection between the clients' quality of life and size and quality of their houses. These studies suggest a positive relationship between micro-credit and clients' well-being. It is therefore represented in the conceptual framework to show that micro-credit influences clients' well-being as follows: - H4: Micro-credit has positive relationship with clients' well-being.

Micro-saving (*Wadī'ah*): This are low committed periodical savings that enable low-income households to inculcate the savings habit towards achieving long-term goals such as starting a business, home ownership, education and to have a secure retirement (FSBP, 2011). This is important because capital accumulation is a necessary and sufficient condition for growth and development (Kalu & Nenbee, 2013). This product enables the client to enjoy a bigger loan for business expansion and asset accumulation. It takes the form of mandatory and voluntary savings. Micro-saving is prelude towards asset accumulation and is a relevant instrument towards future well-being (Fiorillo *et al*., 2014). It is also important for enhancing the capability of the poor to cope with uncertainty shocks, reduce the

cost of lending and enhance future growth (Al-shahmi *et al*., 2014; Grayson *et al*., 2013; Tavanti, 2013). More importantly, it provides the saver with the opportunity for enhanced loan repayment and enables easy access to a large size of loan for sustainable growth motives (Rahman, AlSmady &Kazemian, 2015; Fiorillo *et al*., 2014). For sustainability reasons, the poor needs to be encouraged towards building future capabilities. This asserts that micro-saving leads to asset acquisition and business expansion (empowerment), and as well as facilitates long-term financial control, which is an element of well-being (Latifee, 2003; Cabraal, 2010). Therefore, the hypotheses can be noted as follows: -H2: Micro-saving has positive relationship with entrepreneurial empowerment. H5: Micro-saving has positive relationship with clients' well-being

Charity and Welfare Fund (*Micro-takaful*): The social mission of reaching the poorest poor is still a big challenge for most microfinance institutions, and those reached require more than micro-credit to solve their problems (Delgado *et al*., 2015; Prabhakar *et al*., 2015, Tavanti, 2013). The vulnerabilities of the poor people have to do with how to deal with the deprivations of today and the fears of the unseen tomorrow. Accidents, disasters and diseases are some of the challenges of the poor, despite the effort to break the cycle of poverty (Htay, Sadzali &Amin, 2015; Haryadi, 2006). *Micro-takaful* concepts in the form of *Tabarru* and *Ta'awun* encourage mutual donations among clients so as to address these shocks and minimise the tendency of going back to the initial cycle of poverty. Amanah Ikhtiar Malaysia (AIM) employs *Tabarru* and *Ta'awun* to effectively deal with unforeseen future uncertainties among its clients. But the efficiency and effectiveness of this coverage is a determinant of how successful this service is towards complementing poverty reduction. Cooperation among members will go a long way in subsidising other members and as well serve the social cohesion role in the society. Many microfinance providers recognize the importance of product diversification and quality service improvement which help them to build sustainable micro and small businesses (Sharif & Bao, 2013). Some service providers offer micro-insurance to their clients to achieve this goal. Amanah Ikhtiar Malaysia termed this product as Charity and welfare fund, which is contributed voluntarily by clients in line with religious requirement. According to Newman *et al*. (2014), the mutual cooperation is necessary for social networking and collaboration, and is crucial to the long-term survival of the clients. At times of crises, the spirit for a common cause is essential in improving living conditions of the clients (Dusuki, 2006; Yunus, 1999). Thus, the hypotheses can be stated as follows: -H3: Charity and welfare fund has positive relationship with entrepreneurial empowerment. H6: Charity and welfare fund has positive relationship with clients' well-being.

Entrepreneurial empowerment: Empowerment is the enhancement of assets and capabilities of diverse individuals and groups to engage, influence and participate in decision making that shapes their lives (Usman & Tasmin, 2015; Bennett, 2002). This is critical in ensuring poor people are better equipped to handle challenges that affect their lives. According to Narayan-Parker (2002), empowerment entails self-strength, self-power, self-reliance and life of dignity. These range of assets and capabilities are necessary in order to increase their well-being and security to boost their self-confidence in dealing with those that are more powerful (Usman & Tasmin, 2016b). Because poverty is multidimensional, so are these assets and capabilities. While assets enable people to withstand shocks and expand their choices, capabilities are inherent in people and enable them to use their assets in different ways. Education and training, skills, assets, self-reliance, social belonging, leadership, relations of trust, a sense of identity and communal services represent essential capabilities. This is because they are prelude to a meaningful life and have the possibility to affect the clients' performance (Webster University, 2015; Bartle, 2012). In order to expose their clients to various aspects of self-development, Amanah Ikhtiar Malaysia (AIM) organizes entrepreneurship and financial management courses. Such trainings were found to be effective in improving the capacity of the clients (Md Saad, 2010). The Islamic microfinance services are focused towards education and training, assets accumulation, self-reliance and social cohesion (Usman & Tasmin, 2016b). This drive is aimed at addressing the deficiencies of the poor so that they can join mainstream society and have a good life. In fact, this is the main argument of the Capability approach, i.e. to develop a capability set to enable individuals to function well and live a valuable life. Putnam (2000) has identified human, physical and social components as necessary elements of entrepreneurial empowerment. This indicates that when clients are assisted to develop human, physical and social capacities, it is expected to achieve a valuable life. Therefore, this hypothesis can be stated as follows: -H7: Entrepreneurial empowerment has positive relationship with clients' well-being.

Clients' well-being: In simple terms, well-being can be described as judging life positively and feeling good in terms of housing, employment, family, health and social life (Blurton, 2012). There is no sole determinant of individual well-being; however, it is dependent upon good health, positive social relationships, and access to basic resources, e.g., shelter and income (Michaelson, 2012). Rath &Harter (2010) and McCarthy (2010) have outlined that career growth, economic and social development are key elements in achieving well-being. It has been confirmed that Islamic microfinance empowerment has been regarded as an important tool for reducing poverty and improving the household's quality of life in terms of better and bigger houses and healthy conditions (Al Mamun *et al.*,

2012). It also plays a vital role in the empowerment of the poor people especially women towards developing their micro enterprises (Omar *et al*., 2012). The vulnerability of the poor is reduced, and their socioeconomic status improved with better health condition and the education level of their children (Bhuiyan *et al*., 2011; Md Saad, 2010). Similarly, it enhances career growth with the significant increase in firm performance especially entrepreneurial values and management practices (Mahmood & Mohd Rosli, 2013; Shirazi, 2012). This status enables them to manage their economic life effectively, reduce stress, and hence participate in the community with enhanced self-esteem (Usman & Tasmin, 2016a; McCarthy, 2010). Therefore, measuring clients' well-being is dependent on both economic and non-economic dimensions. For this study, indicators of living condition adopted were: career growth (clients' sense of personal fulfilment, motivation in running their businesses and establishing solid track record); economic growth (financial security, increase in income and expenditure, ability to send their children to tertiary/higher level education and enrol children in extra academic classes); and social growth (solidarity to other members and ability to handle issues or unexpected things confidently). The questionnaire for this study was designed on the above variables in the conceptual framework, and the measurement elements derived from the related studies.

4. Methodology

According to AIM (2015), the number of branches of Amanah Ikhtiar Malaysia in the East coast Malaysia is: Kelantan 17, Terengganu 10, and Pahang 13, while the average number of operational staff per branch is 10. Therefore, the population for this study is 400 and the sample for this study is 291, calculated using the normal approximation to the hyper geometric distribution as suggested by Morris (2004). To ensure each state has the same sampling fraction, cluster sampling was used to obtain the sample size of each state, proportionate to its population size. Thus, the sample size for each state is, Kelantan 124, Terengganu 73 and Pahang 94, totalling 291 samples. All respondents are directly involved in the delivery of microfinance services and are in close contact with the clients. Structural Equation Modelling (SEM) is the statistical modelling technique, which is widely used in the behavioural sciences. Confirmatory Factor Analysis (CFA) was performed to assess the parameters of the measurement models of Islamic microfinance (micro-credit, micro-saving, charity and welfare fund), entrepreneurial empowerment (human, physical and social) and clients' well-being (career, economic and social growth) used in this study. After the CFA iterations, the number of items with acceptable factor loading for each construct is as highlighted in Table 3.

5. Results

Reliability and Validity of the Measurement Models: Reliability and validity tests were carried out to provide a consistent and accurate measurement of the constructs.

Table-3
Reliability and Validity for all Constructs

Constructs	No. of Items	Cronbach's Alpha	Construct Reliability	Average Variance Extracted
Micro-credit	6	0.791	0.791	0.387
Micro-saving	5	0.826	0.829	0.493
Charity and welfare fund	7	0.886	0.889	0.535
Entrepreneurial Empowerment	6	0.831	0.827	0.443
Clients' wellbeing	5	0.876	0.934	0.743

The Cronbach's alpha of 0.7 or higher for a component indicates an acceptable internal consistency of items (Ishiyaku *et al*., 2016; Awang, 2012). The results in Table 3 indicate that a reliable Cronbach's alpha of more than 0.8 was achieved in all the constructs except micro-credit (.791) which is still above the acceptable mark. Similarly, construct reliability is also within the acceptable 0.50. Figure 3 presents the structural model which shows good fit in the models based on the established fit indices.

The Absolute fit indices show RMSEA at 0.042, the incremental fit indices indicate good fits with CFI at 0.963 and TLI at 0.958. The parsimonious fit also indicated good result with ChiSq/df at 1.367, which is less than five (<5) as required in the literature. In addition, all the five constructs (micro-credit, micro-saving, charity and welfare fund, entrepreneurial empowerment and clients' well-being) are loaded on a specified prior model. All the five constructs are inter-correlated in order to assess the relationship of the observed variables to their corresponding latent variables. The final structural model (Figure 3) provides pre-requisite data for evaluating the hypotheses of the study. In this stage of study, there are seven hypotheses to be tested using the SEM technique. Table 4 shows the parameter estimates, standard errors (S.E), critical ratios (C.R), and corresponding *p*-values for the significance tests. The discussions of the hypotheses testing explain the test results related to the seven hypotheses.

Figure-3
Finalized Structural Model of Islamic Microfinance and Clients' Well-being
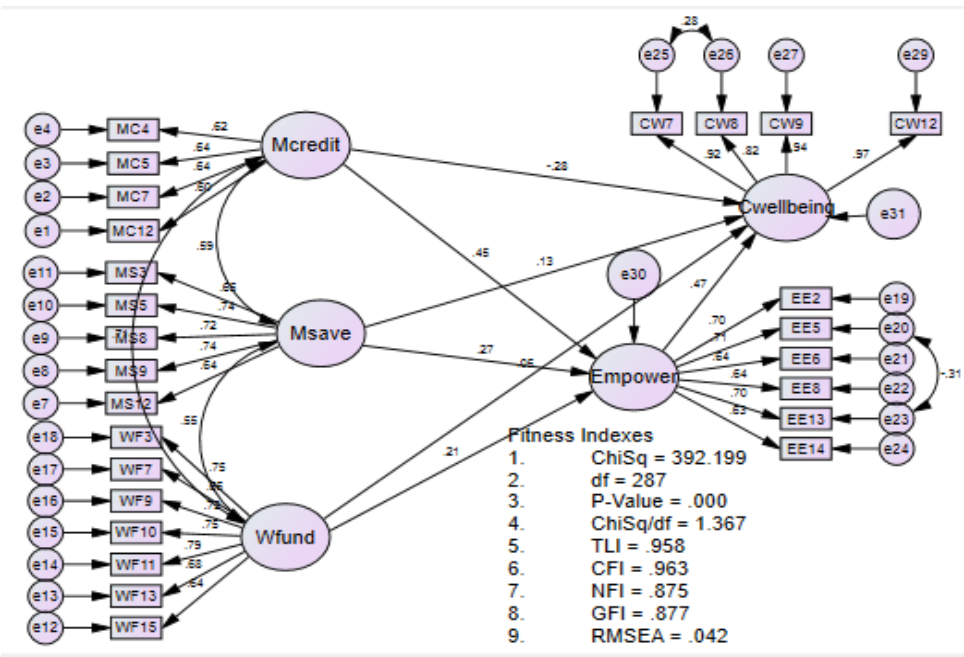
Table-4
Parameter Estimates for the Finalized Structural Model

			Estimate	S.E.	C.R.	P	Label
Empower	<---	Mcredit	.542	.158	3.435	***	Supported
Empower	<---	Msave	.302	.097	3.108	.002	Supported
Empower	<---	Wfund	.239	.119	2.004	.045	Supported
Cwellbeing	<---	Mcredit	-.414	.271	-1.529	.126	Not supported
Cwellbeing	<---	Msave	.176	.154	1.146	.252	Not supported
Cwellbeing	<---	Wfund	.072	.180	.399	.690	Not supported
Cwellbeing	<---	Empower	.590	.208	2.837	.005	Supported

6. Discussion

This study developed five Islamic microfinance constructs with acceptable reliability and validity. The general result revealed that the indicators satisfied the internal reliability and the construct validity criteria. From Table 4, the results of the empirical study for (H1) (β = 0.542, z= 3.435, p= ***0.001) indicated that micro-credit leads to positive relationship with entrepreneurial empowerment, (H2) (β = 0.302, z= 3.108, p= 0.002) micro-saving also leads to positive relationship with entrepreneurial empowerment. Similarly, (H3) (β = 0.239, z= 2.004, p= 0.045) Charity and welfare fund leads to positive relationship with entrepreneurial empowerment. In all the three hypotheses, p value is less than 0.05, the acceptable level of significance. The result is not surprising because it has confirmed previous studies on the importance of these microfinance services in enhancing the empowerment of the poor people. The finding of this study is also consistent with most previous studies on microfinance or microcredit, such as Md Saad (2010), Cabraal (2010), Noreen (2011), (Afrane (2002) and Chopestake *et al*. (2000). However, the findings in this study are in contrast with what Nurzaman (2011) found in Indonesia when assessing the impact of productive-based Zakat. The finding (H2) on micro-savings effect on empowerment has also confirmed the assertions of Tavanti (2013) on the impact of micro-savings in transforming the lives of the Philippine's poorest people. Similarly, it is also in accordance with the findings of Latifee (2003) in Bangladesh which affirms that the savings empowered Grameen borrowers to cope with devastating floods of 1998.

However, the direct relationship (H4 β = -0.414, z= -1.529, p= 0.126, H5 β = 0.176, z= 1.146 p= 0.252 and H6 β = -0.072, z= 0.399, p= 0.690) of Islamic microfinance services have a negative relationship towards clients' well-being. This is because in all of the three, p value is above 0.05, which is the level of insignificance. This surprising result leads to a vivid contrast to previous studies conducted to measure the impact of microfinance schemes of Amanah Ikhtiar Malaysia (AIM)) and their client's quality of life, such as Omar *et al*. (2012) and Al Mamun *et al*. (2012). While Omar *et al*. (2012) added that AIM is relevant in both rural and urban areas, Al Mamun *et al*. (2012) linked the clients' quality of life with the size and quality of their houses. The findings of this study are also inconsistent with other findings, such as Rahman *et al*. (2011) and Latifee (2003) in Bangladesh. These previous researchers asserted that micro-credit programs lead to improvement in the quality of life of the poor people. However, the finding in Shirazi (2012) is consistent with this study. Shirazi (2012) found that the income of the poor borrowers hardly could grow by 2 percent during the study period, but consumption of the poor borrowers increased by 10 percent. Similarly, Hussain &

Nargis (2008) found no evidence that microcredit is instrumental to uplifting of the rural poor to a higher economic status, but believes its contribution lies in helping the poor people to keep up with the rest of the society. Hypothesis 7 indicates a positive relationship between entrepreneurial empowerment and clients' well-being. As presented in Table 4 (β = 0.590, z= 2.837, p= 0.005), p value not above 0.05, the result indicates a statistical significance on the relationship between entrepreneurial empowerment and clients' well-being. As a result, hypothesis H7 is held true. This result suggests that the assumptions of the Capability approach are confirmed significant towards achieving well-being. It also means that entrepreneurial empowerment is the underlying factor for the success of Islamic microfinance services.

In summary, the major findings of this study are:

1. Islamic microfinance services are necessary towards entrepreneurial empowerment.
2. Islamic microfinance services do not contribute towards clients' well-being.
3. Entrepreneurial empowerment is necessary towards clients' well-being.
4. Entrepreneurial empowerment has a full mediating effect in the relationship between Islamic microfinance services and clients' well-being.

This result has answered the research question on whether Islamic microfinance has influence towards well-being of its clients. It can be said authoritatively that Islamic microfinance services do not lead to well-being on their own but require the entrepreneurial empowerment aspect to improve well-being. Therefore, the uniqueness of this study is that it has espoused the underlying factor for the success of Islamic microfinance, which is entrepreneurial empowerment. The result also has confirmed the claim of Capability approach in the analysis of well-being, which suggests the importance of empowerment towards achieving a valuable life.

7. Conclusion

Assessing entrepreneurial empowerment is an important distinction that previous studies have ignored in Islamic microfinance studies. This study contributes to the development of research model on the underlying factor for the success of Islamic microfinance services in Malaysia. The research is based on the provisions of the Capability approach that signifies developing certain human functionings leading to a valuable life. One major contribution of this study is that it fostered the applicability of the Capability approach to microfinance in Malaysia.

The results indicated the factorability of entrepreneurial empowerment in to human, physical and social components. These provide a guide to a better understanding of what really improves the well-being of poor people, especially in developing countries. The study is useful to service providers of microfinance who will want to know the services that influence their clients' well-being and encourage the general development of their services. It is imperative for policy makers to have information about the impact of their programs on the target beneficiaries, especially through independent and unbiased assessment. This will enable academic research and development efforts to be aligned with the accomplishment of national growth objectives.

It is recommended that there is need for a replication of this study in other geographical settings, for instance within the Organisation of Islamic Cooperation (OIC), Middle East countries or Africa. A future research to investigate whether the model could be used for a comparative study between countries is necessary. That will contribute to greater generalisation of the findings because context is essential in validating research model and findings. Such kind of study could give more impetus to academics and industry practitioners a stronger basis for applying the model for contemporary or emerging challenges.

References

Afrane, S. (2002). Impact assessment of microfinance interventions in Ghana and South Africa: A synthesis of major impacts and lessons. *Journal of Microfinance/ESR Review*, *4*(1), 4.

AIM (2015). Amanah Ikhtiar Malaysia. http://www.aim.gov.my/. Retrieved on 9 March 2015.

Al Mamun, A., Adaikalam, J., & Abdul Wahab, S. (2012). Investigating the Effect of Amanah Ikhtiar Malaysia's Microcredit Program on Their Clients Quality of Life in Rural Malaysia. *International Journal of Economics and Finance*, *4*(1), 192-203.

Al-Shahmi, S.S.A., Majid, I.B.A., Hamid, M.S.R.B. and Rashid, N.A. (2014). Conceptual Framework: the Role of Malaysian Microfinance on the Wellbeing of User's Services from the Perspective of Aim and Tekun. AIM, (2015).

Anand, S., & Sen, A. (2000). The Income Component of the Human Development Index. *Journal of human development, 1(1),* 83-106.

Anand, P., Hunter, G., & Smith, R. (2005). Capabilities and Well-being: Evidence Based on the Sen–Nussbaum Approach to Welfare. *Social Indicators Research, 74(1),* 9-55.

Arabi, K. A. M., & Abdalla, S. Z. S. (2013). "The Impact of Human Capital on Economic Growth: Empirical Evidence from Sudan". *Research in World Economy, 4(2),* p.43.

Awang, Z. (2014) *A Handbook on Structural Equation Modeling for Academicians and Practitioner,* (Bandar Baru Bangi, Kuala Lumpur, Malaysia: MPWS rich resources).

Bartle, P. (2012). Elements of Community Strength. Measuring Community Empowerment. Community Empowerment Collective. http://cec.vcn.bc.ca/cmp/modules/mea-int.htm. Retrieved 4 December 2015.

Bennett, L. (2002). Using empowerment and social inclusion for pro-poor growth: a theory of social change. *Working draft of a background paper for the Social Development Strategy Paper, World Bank, Washington, DC*.

Bhuiyan, A. B., Siwar, C., Ismail, A. G., & Talib, B. (2011). Islamic Microcredit is the Way of Alternative Approach for Eradicating Poverty in Bangladesh: A Review of Islami Bank Microcredit Scheme. *Australian Journal of Basic & Applied Sciences*, *5*(5).

Blurton, J. (2012). The Importance of Wellbeing. Family Development Centre. 19th Floor, Kennedy Town Centre, 23 Belcher's Street, Kennedy Town, Hong Kong. August 6, 2012. http://www.blurton-fdc.com/articles/2013/12/4/the-importance-of-wellbeing. Retrieved on 22 July 2016.

Cabraal, A. (2010). The impact of microfinance on the capabilities of participants (Doctoral dissertation, RMIT University).

Chopestake, J., Bhalotra, B. and Johnson, S. (2000). Assessing the impact of microcredit on poverty: A Zambian case study. Occasional Paper, 2(00).

.Delgado, M. S., Parmeter, C. F., Hartarska, V., & Mersland, R. (2015). Should all microfinance institutions mobilize microsavings? Evidence from economies of scope. *Empirical Economics*, *48*(1), 193-225.

Dusuki, A. W. (2006, November). Empowering Islamic Microfinance: Lesson from Group-Based Lending Scheme and Ibn Khaldun's Concept of 'Asabiyah. In *Monash University 4th International Islamic Banking and Finance Conference. Kuala Lumpur on* (pp. 13-14).

El-Komi, M., & Croson, R. (2013). Experiments in Islamic microfinance. *Journal of Economic Behavior & Organization*, *95*, 252-269.

Epstein, M. J., & Crane, C. A. (2005, October). Alleviating global poverty through microfinance: factors and measures of financial, economic, and social performance. In *Documento presentado en la conferencia sobre pobreza mundial organizada por la Harvard Business School, Boston, MA* (Vol. 1).

Fiorillo, A., Potok, L., Wright, J., Peachey, J., & Davies, K. (2014, February). Applying Behavioral Economics to Improve Microsavings Outcomes. In *Ideas* (Vol. 42).

FSBP, (2011). Financial Sector Blueprint 2011–2020. Bank Negara Malaysia Central Bank of Malaysia. Strengthening our future. Strong Stable Sustainable http://www.bnm.gov.my/files/publication/fsbp/en/BNM_FSBP_FULL_en.pdf. Retrieved 15 November, 2014.

GIFR (2012). Global Islamic Finance Report (2012), Global Islamic Microfinance landscape, https://cdn.fbsbx.com/hphotosxfa1/v/t59.270821/10737544_ 1580113622222454_1394765609_n.pdfoh=41cf0f3411c3e9f3c6e1ed9cda4d27d c&oe=549D5B29. Retrieved 12 June 2014.

Grayson, B., Dowdle, S., Beck, A., & Khatami, K. (2013). Microsavings: Barriers to Saving Learned from an Experiment in Uganda. *Sigma: Journal of Political and International Studies*, *30*, 11-20.

Haryadi, A. (2006). Developing microtakaful in Indonesia. In *Second International Convention on Takaful and Retakaful, Kuala Lumpur, November* (Vol. 23).

Hatta, Z. A., & Ali, I. (2013). Poverty Reduction Policies in Malaysia: Trends, Strategies and Challenges. *Asian Culture & History*, *5*(2).

Htay, S. N. N., Sadzali, N. S., & Amin, H. (2015). An analysis of the viability of micro health takaful in Malaysia. Qualitative Research in Financial Markets, 7(1), 37-71.

Hulme, D. (2000). Impact assessment methodologies for microfinance: theory, experience and better practice. *World development*, *28*(1), 79-98.

Hussain, G. and Nargis, N., 2008. A Welfare Economic Analysis of the Impact of Microfinance in Bangladesh. *Department of Economics, University of Dhaka, Nilkhet, Dhaka-1000, Bangladesh*.

Ishiyaku, B., Kasim, R., Harir, A. I., Sabo, I. A., (2016). Exploration for the building component theory. *International Conference on Trends in Information,*

Management, Engineering and Sciences (ICTIMES). Malla Reddy College of Engineering, Hyderabad, India, 22-23 January 2016.

Kalu, E., & Nenbee, S. G. (2013). Micro-savings and poverty reduction in Nigeria: Some field observations from Gokana Local Government Area of Rivers State. *European Journal of Business and Management*, *5*(17), 84-91.

Kazemian, S., Rahman, R. A., Ibrahim, Z., &Adeymi, A. A. (2014). AIM's Accountability in Financial Sustainability: The Role of Market Orientation. *International Journal of Trade, Economics and Finance*, *5*(2), 191.

Laila, T. (2010). Islamic Microfinance for Alleviating Poverty and Sustaining Peace. In *World Universities Congress, Canakkale* Turkey Onsekiz Mart University 20-24 October 2010.

Latifee, H.I., 2003, June. Microcredit and poverty reduction. In *International Conference on Poverty Reduction through Microcredit. Taksim-Istambul*.

Mahmood, R., & Mohd Rosli, M. (2013). Microcredit position in micro and small enterprise performance: the Malaysian case. *Management Research Review*,*36*(5), 436-453.

McCarthy, J. (2010). The 5 Essential Elements of Wellbeing. Book Reviews, Positive Psychology, Wellbeing in the World of Work. http://psychologyofwellbeing.com/201010/the-5-elements-of-wellbeing.html. Retrieved on 4th December, 2015.

Md Saad, N., & Duasa, J. (2010). Determinants of economic performance of micro-credit clients and prospect of Islamic microfinance in Malaysia. *ISRA International Journal of Islamic Finance*, *2*(1), 113-130.

Md Saad, N. (2010). Achieving human development objectives through microfinance institution: The case of Amanah Ikhtiar Malaysia. *Journal of Islamic Economics, Banking and Finance*, *6*(2), 65-78.

Michaelson, J. (2012). The Importance of Measuring Wellbeing. New Economic Foundation. The NEF blog. http://www.neweconomics.org/blog/entry/the-importance-of-measuring-well-being. Retrieved on 22nd July 2016.

Morris, E. (2004). Sampling from small populations. Retrieved December 11, 2015, from URL: http://uregina.ca/~morrisev/Sociology/Sampling%20from%20small%20populations.htm.

Newman, A., Schwarz, S., & Borgia, D. (2014). How Does Microfinance enhance Entrepreneurial Outcomes in Emerging Economies? The Mediating

Mechanisms of Psychological and Social Capital. *International Small Business Journal, 32(2),* 158-179.

Mohieldin, M., Iqbal, Z., Rostom, A. M., & Fu, X. (2011). The role of Islamic finance in enhancing financial inclusion in Organization of Islamic Cooperation (OIC) countries. *World Bank Policy Research Working Paper Series, Vol*. (2011).

Mosley, P. (1997). *The use of control groups in impact assessment for microfinance*. Department of Economics and Department of Agricultural Economics, University of Reading.

Nair, S. (2010, September). Moving forward: Its poverty agenda challenges, dilemmas and options for Malaysia. In *Proceedings of the Chronic Poverty Research Centre 2010 Conference*.

Narayan-Parker, D. (Ed.). (2002). *Empowerment and poverty reduction: A sourcebook*. World Bank Publications.

Nawai, N., & Bashir, M. S. (2009). Evaluation of micro credit program for poverty alleviation: A case of Amanah Ikhtiar Malaysia (AIM).

Noreen, S., 2011. Role of microfinance in empowerment of female population of Bahawalpur district. In International Conference on Economics and Finance Research (Vol. 4, No. 20, pp. 65-71).

Nurzaman, M. S. (2011). Zakat and Human Development: An Empirical Analysis on Poverty Alleviation in Jakarta, Indonesia. In *8th International Conference on Islamic Economics and Finance*.

Omar, M. Z., Noor, C. S. M. & Dahalan, N. (2012) The Economic Performance of the Amanah Ikhtiar Malaysia Rural Microcredit Programme: A Case Study in Kedah. World Journal of Social Sciences Vol. 2. No. 5. August 2012 Special Issue. Pp. 286 – 302.

Prabhakar, S. V., Abu-Bakar, A., Becker, S., Pereira, J. J., & Solomon, D. S. (2015). Insurance for Disaster Risk Reduction and Climate Change Adaptation–An Overview. *Effectiveness of Insurance*, 4.

Praveen, J. A. (2009). Sustainability Issues Of Interest-Free Microfinance Institutions In Rural Development And Poverty Alleviation. The Bangladesh Perspective. *Theoretical and Empirical Research in Urban Management*, *2*, 11.

Putnam, R. (2000). *Bowling alone: The collapse and revival of American community.* Simon & Schuster Paperbacks, New York. In Cabraal, A. (2010).

The Impact of Microfinance on the Capabilities of Participants. RMIT University Australia: PhD Thesis.

Rahman, K. (2013). Targeting Underdevelopment and Poverty Reduction in Muslim World Role of Islamic Finance. *Policy Perspectives*, *10*(2).

Rahman, R. A., Al Smady, A., & Kazemian, S. (2015). Sustainability of Islamic Microfinance Institutions through Community Development. *International Business Research*, *8*(6), p196.

Rahman, R. A., & Dean, F. (2013). Challenges and solutions in Islamic microfinance. *Humanomics*, *29*(4), 293-306.

Rahman, A. R. A., & Rahim, A. (2007). Islamic microfinance: a missing component in Islamic banking. *Kyoto Bulletin of Islamic Area Studies*, *1*(2), 38-53.

Rahman, S., Rafiq, R.B. and Momen, M.A., (2011). Impact of microcredit programs on higher income borrowers: Evidence from Bangladesh. *International Business & Economics Research Journal (IBER)*, *8*(2).

Rath, T. and Harter, J. (2010). The Five Essential Elements of Wellbeing. BUSINESS JOURNALhttp://www.gallup.com/businessjournal/126884/five-essential-elements-wellbeing.aspx Retrieved 4th December 2015.

Robeyns, I. (2006). The Capability Approach in practice. *Journal of Political Philosophy, 14(3),* 351-376.

Roomi, M. A. (2013). Entrepreneurial Capital, Social values and Islamic Traditions: Exploring the Growth of Women-owned Enterprises in Pakistan. *International Small Business Journal, 31(2),* 175-191.

Saad, N. M. (2012). Microfinance and prospect for Islamic microfinance products: The case of Amanah Ikhtiar Malaysia. *Advances in Asian Social Science*, 1(1), 27-33.

Sen, A. (2005). Human rights and capabilities. *Journal of Human Development*, *6*(2), 151-166.

Sen, A. (1993). Capability and Well-being. In: *The Quality of Life*. Nussbaum, Martha (Editor) & Sen, Amartya (Editor), Cambridge Print publication date: 1993, Published to Oxford Scholarship Online: November 2003 Print ISBN-13: 978-0-19-828797-1, doi:10.1093/0198287976.001.0001.

Sen, Amartya (1992). Inequality Re-examined. New York Oxford New York: Russell Sage Foundation Clarendon Press Oxford Univ. Press. ISBN 9780198289289.

Sharif, K., & Bao, W. Y. (2013). Theory and Instruments of Social Safety Nets and Social Insurance in Islamic Finance: Takafuland Ta'min. *Economic Development and Islamic Finance*, 231.

Shirazi, N. S. (2012). Targeting and Socio-Economic Impact of Microfinance: A Case Study of Pakistan. *Islamic Economic Studies*, *20*(2), 1-28.

Tavanti, M. (2013). Before microfinance: The social value of microsavings in Vincentian poverty reduction. *Journal of business ethics*, *112*(4), 697-706.

Usman, A. S., & Tasmin, R. (2016a). The Relevance of Islamic Microfinance in achieving the Sustainable Development Goals. *International Journal of Latest Trends in Finance and Economic Sciences*, *6*(2), 1115-1125.

Usman, A. S., & Tasmin, R. (2016b). The Role of Islamic Microfinance in Enhancing Human Development in Muslim Countries. *Journal of Islamic Finance*, *5(1),* 053-062.

Usman, A. S., & Tasmin, R. (2015). Entrepreneurial Skills Development Strategies through the Mandatory Students' Industrial Work Experience Scheme in Nigeria. *Procedia-Social and Behavioral Sciences*, *204*, 254-258.

Webster University (2015). 4 Elements of empowerment. Webster University 470 East Lockwood Avenue St. Louis, Missouri 63119 United States of America (800)981-9801.http://www.webster.edu/public-safety/rad/elements-empowerment.html. Retrieved 4th December 2015.

Wells, T. (2012). "Sen's Capability Approach". *Internet Encyclopaedia of Philosophy.* Retrieved May 15, 2016, from URL: < http://www.iep.utm.edu/sen-cap/#H3>.

Xavier, J. A., & Ahmad, Z. U. (2012). Proposed scholarly research agenda for transforming Malaysia into a model developing nation. *International Journal of Public Sector Management*, *25*(3), 231-243.

Zangoueinezhad, A., & Moshabaki, A. (2011). Human Resource Management Based on the Index of Islamic Human Development: The Holy Quran's approach. *International Journal of Social Economics*, *38(12),* 962-972.

Achieving Sustainable Impact of *Zakāh* in Community Development Programs

MOHAMAD SOLEH NURZAMAN•

FIKA KHANIFA KURNIAENY

Abstract

Zakāt Community Development (ZCD) Program is one of the featured programs initiated by Indonesia National Board of Zakāt in empowering the community and prioritizing the fulfillment of people's capacity and skills as a basis for mobilizing people and making changes. More than a hundred communities, which are represented at village level, have been chosen to benefit from the program since last year. In practice, the ZCD program has various fields in economic, spiritual, social, educational, and health activities to improve the living standards of the mustahik. The beneficiaries of the program are also expected to be self-reliant and be able to spread the inspiration to those around them so as to make the impact of zakāt long term.

This study is conducted to examine the sustainable impact of zakāt toward the welfare of mustahik living in a community. By using mixed methods, the indicator of sustainable impact is derived from the Sustainable Development Goals (SDGs). The assessment or evaluation indicator is developed specifically to determine whether the communities are suitable to benefit from ZCD programs. It is also necessary to measure the outcome of the program from the perspective of sustainability

This study shows that conceptually zakāt and SDGs have significant relevance. It is because zakāt is an instrument of Islamic economic development which places the Maqāṣid al-Sharīʿah as its implementation

• Faculty of Economics and Business, Universitas Indonesia, Email: ms.nurzaman@ui.ac.id

goal. Because of its narrower scope compared to the Maqāṣid al-Sharī'ah*,
SDGs can be used as a reference indicator for zakāt to fulfil the purpose of
development which is reflected in Maqāṣid* al-Sharī'ah.

*Furthermore, from samples of ZCD programs in some selected villages, it
has been found that communities of mustahik are able to scale up their
welfare by utilizing the zakāt programs. Some of them have successfully
created new productive activities which transform their status from mustahik
to muzakki. Interestingly, these achievements are not only for those who
receive zakāt, but also for non-recipients who are living in the same
community that gets involved in the programs.*

1. Introduction

Since 1997, Indonesia has been initiating and implementing various national
programs for community empowerment projects that have reached more than
70,000 villages across Indonesia[1]. The importance of community-based programs,
which are technically focused on rural areas, is further strengthened by being
included as one of the priority programs in the Indonesia National Medium Term
Development Plan 2015-2019 (RPJMN 2015-2019). According to this plan, within
the next five years the number of underdeveloped villages can be reduced by 5000
villages and the number of empowered villages would increase to 2000 villages by
2019.

In line with this national program, Indonesia National *Zakāt* Board (BAZNAS)
has for the past several years focused on the *zakāt* program to empower
disadvantaged regions. Empowering disadvantaged regions has also been
mentioned as one of the BAZNAS strategic programs in Indonesia until 2020,
which places *Zakāt* Community-Based Development (ZCD) as the main
instrument of all *zakāt* empowerment programs. ZCD aims to empower the

---

[1] Haider, H. PNPM/Community-driven development in Indonesia (GSDRC Helpdesk Research
Report). Governance and Social Development Resource Centre, University of Birmingham,
Birmingham, UK (2012), 17 pp.

community by targeting the mustahik communities who live in the villages which are left behind. The goal of this program is to improve communities' standard of living from the economic, spiritual, social, educational, and health aspects.

More than a hundred communities, which are represented at village level, have been chosen by BAZNAS to benefit from the program since 2017. In practice, the ZCD has various fields to improve the living standards of the mustahik. Empowerment-based programs prioritize the fulfillment of people's capacity and skills as a basis for mobilizing people and making changes. Theoritically the ZCD can also be categorized as an empowerment program that guarantees sustainability of the impact. Because not only does it make the recipients prosper, but they are expected to be self-reliant and be able to spread the benefit to the surrounding environment so as to make the impact of *zakāt* long term.

There are currently limited studies on the sustainability aspect of *zakāt*. Although several studies have tried to relate *zakāt* with indicators of sustainability frameworks such as Sustainabile Development Goals (SDGs), none has considered the impacts by using actual data. It would be interesting to see whether the theoritical claim of sustainability impact of *zakāt*, particularly the program of ZCD, is empirically confirmed. Another challenge is how to develop such indicators that not only can measure the effectiveness of *zakāt* from Islamic based values but also reflect the sustainability framework.

Therefore this study will try to consider the extent to which *zakāt* empirically has an impact on a sustainability basis that derived from SDGs by taking the example of the ZCD program carried out by BAZNAS. Methodologically this study will first link the religious aspect of *zakāt* that is reflected in *Maqāṣid* al-Sharī'ah toward SDGs, and then build the technical method on how the sustainability impact of *zakāt* can be measured properly. The finding will be shown and analyzed after the method is explained.

2. *Zakāt*, *Maqāṣid* al-Sharī'ah, and Sustainable Development

Zakāt is a means of the dedication of a servant of Allah SWT as well as the mechanism of redistribution of wealth. Historical evidence shows that *zakāt* can be an important development instrument for the state, especially in its role to reduce

the concentration of wealth, channeling funds from the rich to the needy (Chapra, 1992)[2]. Thus, the goal of more equitable and just development can be achieved.

Because of the very strategic role of *zakāt*, some countries, including Indonesia, have institutionalized the management of *zakāt*. The *Zakāh* Law Act No. 23 of 2011 provides legal certainty of institutionalization of *zakāt* by a non-structural state institution, BAZNAS. Moreover, it shows that the state wants to embrace *zakāt* as one of the instruments for development.

To ensure the administration of *zakāt* is in line with the fundamental values held by Islamic economics, *Maqāṣid* al-Sharī'ah should be used as the basis for its consideration, or at least the inspiration from the perspective of the *Maqāṣid* al-Sharī'ah (Kasri, 2016)[3]. Recent researches also consistently bring *Maqāṣid* al-Sharī'ah as a basis for calculating the performance of financial institutions. For example, Martan et al. (1984)[4], who use the framework for thinking of *Maqāṣid* al-Sharī'ah to measure the performance of Islamic banking, and Dusuki (2005)[5], who measures the performance of corporate social responsibility within the *Maqāṣid* al-Sharī'ah framework for thinking.

Zakāt should 'have more right' to use the *Maqāṣid* al-Sharī'ah-based development framework for thinking in all its processes (Kasri, 2016)[6]. Fundamentally, *zakāt* can not only fulfill the legal and substance of the *shari'ah*, but it is also relatively easy to promote social faces and alignments to the real sector of *shari'ah* itself. The concept of development in Islam is comprehensive because it places religious responsibility as an integral part of human development (Ibrahim A. O, 2016)[7].

---

[2] Chapra, M. U. (1992). Islam and the Economic Challenge. Riyadh: The Islamic Foundation and The International Institute of Islamic Thought.

[3] Kasri., R. A. (2016). *Maqāṣid* al-Sharī'ah and Performance of Zakat Institutions. Kyoto Bulletin of Islamic Area Studies, 9 hlm. 19-41.

4 Marta, S. S. dan Abdul-Fatah, Anwar. (1984). Islamic vis a-vis Traditional Banking: A "Fuzzy-set" Approach. Journal of Research in Islamic Economics, 2(1): hlm. 29-44.

5 Dusuki, A. W. (2005). Corporate Social Responsibility of Islamic Banks in Malaysia: A Synthesis of Islamic and Stakeholders' Perspective. UK, Loughborough University, PhD Thesis.

6 Ibid: Kasri., R. A.

7 Ibrahim A. O, A. A. (2016). *Maqāṣid* al-Sharī'ah: The Drive for an inclusive human development policy. Shari'ah Journal, Jil. 24, Bil. 2, 290.

On the other hand, the UN has initiated the Sustainable Development Goals (SDGs). Additionally, SDGs are a sustainable global development agenda that has gained consensus from 193 member states of the United Nations which commit themselves to its achievement. SDGs are also a continuation initiative of the previous Millennium Development Goals (MDGs). Although the coverage of the field of SDGs is very broad and ambitious, it is still being developed by considering different national realities, capacities, and levels of development and respecting national policies and priorities.

As a product, SDGs are the result of multi-stakeholder agreements and a transparent, participatory and inclusive process of all stakeholder voices over a period of three years. This is in line with one of SDGs' slogans, Leaving No One Behind (involving all parties without exception), where it is expected that SDGs can be implemented by all parties from government, private sector to civil society from all the world community to build a more inclusive, sustainable and resilient future for mankind and for the planet. Thus, as a sustainable global development agenda with a target of 15 years (2015 - 2030), SDGs have 17 goals and 169 achievement targets.

The potential linkage and intersection between *zakāt* and SDGs requires cooperation among multi-stakeholders in the community. The way of looking at the relationship of *zakāt* and SDGs should also in a way of Islamic *da'wah* contribute to the world. To ensure the linkage of *zakāt* and SDGs to be equal, they are needed to be compared by observing the relevance and priority of each goal. Comparing these two concept is could be done specifically by placing *Maqāṣid* al-Sharī'ah, as development framework of *zakāt*, on the one side and SDGs on the other side.

According to the concept of *Maqāṣid* al-Sharī'ah by Ibn Qayyim, certainly as long as they do not conflict with the Islamic law, the SDGs are part of the *Maqāṣid* al-Sharī'ah itself. It is because Ibn Qayyim's unlimited definition of *Maqāṣid* al-Sharī'ah can be even wider than the 17 points in the SDGs. As long as a target can bring social benefit, then the target can be incorporated into the *Maqāṣid* al-Sharī'ah.

By using matrix matching method, our previous study shows the relevant concept of the SDGs and *Maqāṣid* al-Sharī'ah as a platform of *zakāt*[8]. This method is a modification of the matching method commonly used in the field of social

---

[8] MS Nurzaman, et al. 2017. Sebuah Kajian Zakat on SDGs. Center of Strategic Studies, Indonesia National Board of Zakat

science[9]. The matrix approach in the study is used to facilitate the comparison between level of needs of variables, i.e., SDGs, *Maqāṣid* al-Sharī'ah, at the same time.

The study found that, among 17 SDGs, there are 4 highest priority goals, i.e Goal 1. Without poverty, Goal 3. Good Health, Goal 2. No Hunger, and Goal 11. Sustainable Cities and Communities. Those goals are being addressed by most of the *zakāt* organizations in Indonesia and especially BAZNAS is very relevant to the context of the implementation of SDGs. Moreover, BAZNAS as the implementer of *zakāt* program has also prioritized its achievement targets appropriately through ZCD program. It indicates that the *zakāt* work is also related and highly relevant in making a real contribution to those goals. For instance, *amil* (*zakāt* administrators) make efforts to open wider access to the *mustahik* and to encourage the *mustahik* and the people in their surroundings to be self-reliant.

Therefore, it can be strongly suspected that *zakāt* and SDGs have significant relevance. It is because *zakāt* is an instrument of Islamic economic development which places the *Maqāṣid* al-Sharī'ah as its implementation goal. On the other hand, almost all points on SDGs are on the same path as the *Maqāṣid* al-Sharī'ah. Because of its narrower scope compared to the *maqasid shari'ah*, SDGs can be used as an interim goals reference for *zakāt* to fulfil the ultimate purpose of development which is reflected in *Maqāṣid* al-Sharī'ah (Nurzaman et al., 2017).

There is a relevant relation between *Maqāṣid* al-Sharī'ah as the framework of *zakāt* and SDGs. The relevance that occurs is adjusted based on the context of the needs of the *mustahik* conditions . Although all 17 SDGs may be contributed (directly or indirectly) from *zakāt* work, they are not entirely the responsibility of *zakāt* work alone. There are duties and responsibilities of the *zakāt* institutions such as BAZNAS that can govern and manage programs that specifically aim to improve the community life so that the impact can be sustained in the long run.

3. Literature Review on Community-Based Index

The above studies have shown a relevant relation between *Maqāṣid* al-Sharī'ah as the framework of *zakāt* and SDGs. However, none of the studies has evaluated the relation by using actual data. To evaluate the concept, one needs an indicator from which the empirical study could be conducted. Several related measurements

---

9 Nielsen, R.A. 2016. Case Selection via Matching. Sociological Methods & Research 45(3) hlm. 569-597

in Indonesia which may address the impact evaluation of ZCD program have been released, including the Village Development Index (*Indeks Pembangunan Desa* or IPD) developed by the National Development Agency of Indonesia (known as Bappenas) and the Central Board of Statistics (*Badan Pusat Statistic* or BPS) in 2014, as well as Building Village Index (*Indeks Desa Membangun* or IDM) developed by the Village Ministry of Indonesia in 2015.

The Village Development Index (2014) measures the level of village development from 5 dimensions:

a. Basic services: education and health.
b. Infrastructure condition: facilities, infrastructure, local economic development, etc.
c. Accessibility/transportation: traffic, road quality, road accessibility, availability of public transport, regional distance, and travel time, etc.
d. Public service: environment, and community empowerment (referring to BPS village potential data).
e. Government administration: completeness of village administration, village autonomy, village asset/wealth, and quality of human resources.

On the other hand, the Building Village Index (2015) issued by the Village Ministry, measuring the level of village development from 3 dimensions:

a. Social: health, education, social capital, and settlement.
b. Economic resilience: diversity of community production, available trade centers, distribution access, access to financial institutions, economic institutions, regional openness.
c. Ecology: environmental quality, potential/prone to natural disasters.

At international level, OECD[10] (1996), an economic organization composed of 35-member countries, measures the development of villages on four main elements, namely:

a. Population and migration: population density, changes in land used, structure, household, and community.
b. Social welfare and justice: income, housing, education, health, and security.

---

[10] The Organisation for Economic Co-operation and Development.

   c. Economic structure and performance: labor, employment, sector, productivity, and investment.

   d. Environment and sustainability: topography and climate, land use change, habitat and species, soil and water, and water quality.

The European Commission establishes regional development indicators called Regional Competitiveness Index (2013). The concept has 3 major dimensions as follows.

   a. Basic groups: institutions, macroeconomic stability, infrastructure, health, and basic education.

   b. Group efficiency: higher education, labor efficiency, and market size.

   c. Group innovation: technological readiness, up-to-date business, and innovation.

Furthermore, the European Agricultural Fund for Rural Development (EAFRD, 2013), in its report, uses the following 6 indicators to measure the level of rural and agricultural development:

   a. Importance of rural areas
   b. Socio-economic situation of rural areas
   c. Sectoral economic indicators
   d. Environment
   e. Diversification and quality of life
   f. Leader

Agarwal, *et al* (2009) measured the specific village development of the economy. Village economic performance can be measured from productivity factors (HR) which includes expertise, investment, and effort. It can be measured by utilizing accessibility factors, and other factors such as economic structure, government infrastructure, roads, and availability of employment.

Huggins (2004) also created the European Competitiveness Index that consists of 5 variables, namely creativity, economic performance, infrastructure and accessibility, knowledge level of labor, and education. This index can be used to measure the level of regional competitiveness associated with Europe. According to Huggins and Davies, identifying, understanding, and measuring competitiveness can be input to make policies that can improve the regional economy.

In another study, Bryden (2002) divides village development issues into three areas. First, quality of life and social welfare comprising health, education, local government, home, security, and income. Second, the economic structure and performance, including business, agriculture, diversification and productivity, infrastructure, employment. Finally, the field of demography, including population density, culture, migration, structural changes.

From Indonesian point of view, some studies such as Irawati *et al* (2012) assessed the level of competitiveness of particular village by looking at the three variables of economy (value added, savings, sectoral performance), human resources (labor, education, unemployment rate), infrastructure and natural resources (natural capital, physical capital). The study aims at understanding the extent to which the village has the ability to address its problems and to develop itself.

Abdullah (2002) revealed that indicators of regional competitiveness can be divided into 9 indicators, namely regional economy, openness, financial system, science and technology, infrastructure and natural resources, management and macroeconomy, human resources, institutional, governance and government policies. Macroeconomic indicators are interconnected with other indicators, so that requires an integrated and sustainable management in its implementation.

From the above reviews, it can be seen that some indicators have been constructed and thus can be taken as the sources to develop an indicator that can specifically be utilized for *zakāt* evaluation. In the context of this study, such indicator is crucial not only to measure the effectiveness of *zakāt* from Islamic-based values but also to reflect the sustainability framework.

4. Method of Developing Indicator of Sustainable Impact

In order to evaluate the sustainable impact of BAZNAS ZCD program, this part will explain the method of developing *Zakāt* Sustainable Index (ZSI) that will be utilized in the measurement. BAZNAS currently has 5 focus categories of fund disbursement, namely (i) economic, (ii) social and humanitarian, (iii) health, (iv) education, and (v) *da'wah*. Each of the categories is in line with the dimensions of *Maqāṣid* al-Sharī'ah, i.e. successively (i) wealth, (ii) lineage, (iii) life, (vi) intellect, and (v) faith. This needs to be adopted in the model so that the sustainability framework can be well developed.

4.1 Procedures to Develop ZSI Concept

The methodology used to develop ZSI is a mixed methods research. This is a methodology that combines qualitative and quantitative methods in a study. This method allows researchers to present a qualitative study through descriptive explanations as well as quantitatively through figures, graphs, charts, and statistical data (Creswell, 1999).

Basically, ZSI is a modification developed from *Zakāt* Village Index that has been constructed in a previous study[11]

Figure-1
Stages to Develop ZSI
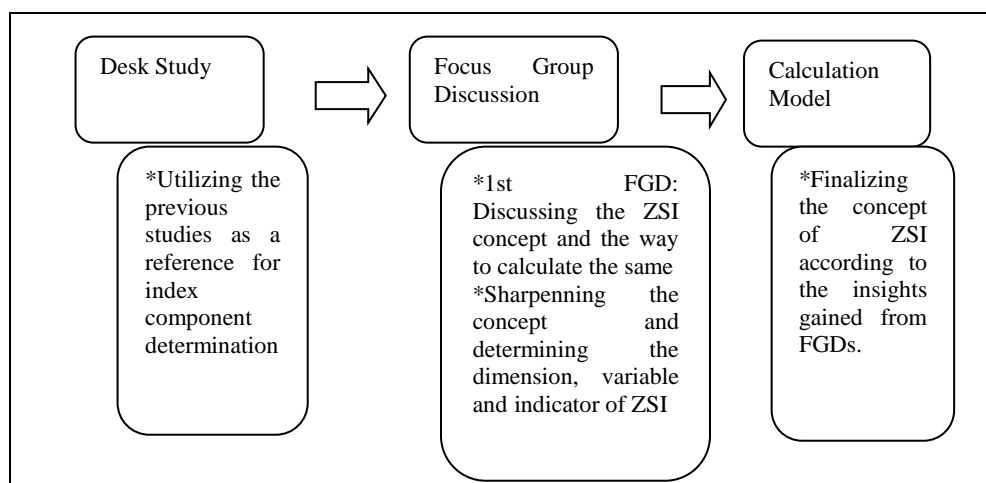
At the development of ZSI component stage, qualitative method is used through literature study and Focus Group Discussion (FGD). FGD was conducted twice with the discussants, who were from several backgrounds, including government and non-profit organizations engaged in humanitarian and *zakāt* institutions. FGD is utilized to sharpen dimensions, indicators, and variables in the *Zakāt* Sustainable Index in order to make the index more relevant, calculable, and applicable

---

[11] See Nurzaman, et al (2017),” Indeks Desa Zakat”, Center of Strategic Studies, Indonesia National Board of Zakat

On the other hand, the quantitative method is used to calculate the *zakāt* index component value indicator, variable, and dimension. The calculation process should be done gradually, in other words through multi-stage weighted index method. The aggregate computation of the index forms the so-called composite value for ZSI. Thus, it can be applied to ZCD targeted by the BAZNAS program. The index allows BAZNAS to have an idea of the village development level and its potential, so that the impact of the program can be evaluated.

In general, ZSI components are formed by 5 dimensions, namely economic, health, education, social, and *da'wah*. This is in harmony with the *zakāt* distribution segmentation of BAZNAS. Each of these dimensions has several variables and indicators that will be used for calculating the index. Table 1 shows the components of ZSI. It is shown that all indicators reflecting the condition of the community in which the *mustahik* is living. Instead of measuring the impact of *zakāt* at individual level, ZSI focuses more at group/community level. Therefore, the impact of *zakāt* is seen from the overall condition of the community, not only the mustahik, so that the multiplier effect of *zakāt* can be captured

Table-1
Components of *Zakāt* Sustainable Index

DIMENSIONS	VARIABLES	INDICATORS
Economic	Productive economic activity	• Availability of diversified main product/production center. • Labor force participation rate. • Availability of creative industry community.
	Village trade center	• Availability of market as a trading facility and supplier of community needs, both traditional and online (online marketing). • Availability of trading place cluster (shopping center, minimarket, corner store, hawker center/Pujasera/culinary center).
	Accessibility (transportation and logistics)	• Accessibility of village roads. • Availability of modes of transportation. • Availability of logistic service.
	Access to financial institutions	• Availability and accessibility of Sharia and conventional financial institutions. • Engagement of community in loan shark (rentenir). • Engagement in financial institutions.
Health	Public health	• Availability of clean water for bathing and washing in every house. • Availability of bathroom facilities and toilet in the house.

	Health services	• Availability of the source of drinking water. • Availability of Puskesmas[12] • Availability of Polindes[13] • Availability of Posyandu[14] • Availability of doctor/midwives
Education	Health insurance	• BPJS membership level
	Level of education and literacy	• Education level of villagers • The level of reading and numeracy literacy
	Education facilities	• Availability of learning facilities • Accessibility to schools • Availability of adequate number of teachers
Social and humanity	Public space interaction facilities	• Availability of sports facilities • Existence of community activity (village consultative body, recitation, youth group, social gathering, etc.)
	Electricity, communication and information infrastructure	• Availability of electricity • Availability of communication access (mobile phone) • Availability of internet access • Availability of television or radio broadcast
	Mitigation of natural disasters	• Disaster management
Da'wah	Availability of religious facilities & companions	• Availability of mosques in the community • Accessibility to the mosque. • Availability of religious companion (ustaz/ustazah, etc.)
	Level of religious knowledge society	• Level of literacy of Al-Quran • Public awareness for *zakāt* and *infāq*
	Level of religious activities and community participation	• Implementation of routine religious activities • Level of community participation in 5 daily prayers in congregation • Level of community participation in routine religious activities (weekly or monthly)

a. Method to Calculate ZSI

ZSI calculation procedures and formulas are explained as follows. First, each indicator has a rating criterion based on Likert scale consisting of 5 assessment criteria (see Appendix). The higher index value means that the village is considered to be more sustainable after receiving *zakāt*. Contrarily, the lower index value means that the impact of *zakāt* to the village is less sustainable.

---

[12] Pusat Kesehatan Masyarakat (Puskesmas) is sub district level health center

[13] Pondok Bersalin Desa (Polindes) is village midwife clinic

[14] Pos Pelayanan Terpadu (Posyandu) is integrated health post

Second, the structured face-to-face questionnaires administered to respondents are then converted to the Likert scale. The value is then transformed into index through utilizing the following formula:

$$Indicator_x = \frac{(Skor_x - Skor_{min})}{(Skor_{max} - Skor_{min})}$$

Indicator$_x$ = Value of indicator x
Skor$_x$ = Score of indicator x
Skor $_{min}$ = 1 (minimum score)
Skor $_{max}$ = 5 (maximum score)

Third, after the value of each indicator is obtained, then it is multiplied by the weight of each indicator to get the indicator index.

Fourth, the index indicators are grouped according to their variables, and multiplied by the weight of each variable to get the index variable.

Finally, the index of each variable is multiplied by the weight of each dimension to obtain the dimension index. The result is a composite index that can be called the ZSI. The formula is given as follows:

ZSI= (X1*ek* + X2*ks* + X3*pe* + X4*ke* + X5*da*)
ZSI = The *zakāt* sustainable index
X1,...,X5 = value weight
ek = economic dimensions
ks = health dimensions
pe = education dimensions
ke = social and humanity dimensions
da = *da'wah* dimensions

ZSI value ranges from 0 to 1. The score then can be divided into five categories as shown by Table 2. The more the ZSI value approaches 1 then the impact of ZCD to the community at the village is considered highly sustainable. Conversely, the more ZSI approaches 0 then the impact of ZCD to the community in the village is considered not sustainable.

5. Implementation of ZSI at ZCD Program

In 2016, the BAZNAS National Coordination Meeting specifically set out to achieve an increase in the number of *zakāt*-based community development

programs in Indonesia. This strategic program is developed in order to leverage the contribution of *zakāt* to be more beneficial to the people who are directly assisted and, thus, also indirectly related to Indonesia's human development. Setting the target increase was one of the outcomes of the National Coordination Meeting, of which point 11 states: "Increasing the number of *zakāt*-based community development programs in 81 regions spread across villages in all provinces in 2017".

Table-2
Range Score of ZSI

Range Score	Rating	Impact
0.00 – 0.20	Very low	Not sustainable
0.21 – 0.40	Low	Less sustainable
0.41 – 0.60	Good Enough	Can be considered sustainable
0.61 – 0.80	Good	Sustainable
0.81 – 1.00	Excellent	Highly Sustainable

Ideally the implementation of ZSI can covers all villages that receive ZCD program since mid-2016, which reached more than 150 villages in 34 Provinces in Indonesia. However, with all the limitations and challenges faced in implementing ZSI to ZCD program, this measurement will only be carried out in 20 Provinces consisting of 86 Villages. This study divides it further into six regions, namely (1) Sumatra, (2) Java I, (3) Java II, (4) Nusa Tenggara, (5) Kalimantan, and (6) Sulawesi and Papua. The data was collected from March – June 2018, by which time the ZCD program had been implemented for at least a year.

Below are the results of ZSI measurement in each Region that are measured in the first semester of 2018:

(1) The number of points in the Sumatra region that have been measured in 14 villages, spread over 6 provinces, 10 regencies/cities, and 14 sub-districts. From the measurement activities that have been done, it has produced an average value of 0.52 (Good Enough) which is interpreted as a value that can be considered sustainable.

The lowest value point is obtained from the village of Mendah, Jayapura sub-district, Ogan Komering Ulu Timur district, South Sumatra Province (0.34). While the highest value is obtained from Jorong 1 Siguhung, Nagari Lubuk

Basung, Agam regency, West Sumatra Province with a value of 0.69 (good) which is interpreted as a value that is sustainable. When viewed from the priority of the fields obtained, the measurement results show 3 fields, namely economic, health, and social & humanitarian assistance. The economic aspect seems to dominate as much as 33%. Followed by health aspect as much as 26%, then in the field of social and humanitarian as much as 24%.

(2) The Java I region includes Banten, West Java and Central Java. Measurements in this region were carried out in 17 villages in 3 provinces, 15 regencies/cities, 17 sub-districts. The measurement has produced an average value of 0.53 (Good Enough), which is interpreted as a value that can be considered sustainable. The lowest value is 0.39 (Not Good) which is interpreted as a less sustainable

The lowest value point was obtained from the village of Cempaka Warna, Cempaka Multa sub-district, Cianjur district, West Java Province. While the highest value was obtained from village of Kaliboto, Mojogedang sub-district, Karanganyar district, Central Java Province with a value of 0.62 (Good) which is interpreted as a value that is sustainable. When viewed from the priority of the fields obtained, the measurement results show 3 fields, namely economic, health, and social & humanitarian assistance. The economic aspect seems to dominate as much as 32%, followed by two fields with the same amount of 19%, namely in the health and social and humanitarian aspects.

(3) The Java II region covers the Special Region of Yogyakarta and East Java. The points that have been measured are in 15 villages in 2 provinces, 4 regencies / cities, 5 sub-districts. The measurement produced an average value of 0.61 (Good) which is interpreted as a value that is sustainable.

The lowest value obtained is 0.48 (Not Good) which is interpreted as a less sustainable. The lowest value point was obtained from Pakis village, Grabagan sub-district, Tuban Regency, East Java Province. Meanwhile the highest score was obtained from Bojong village, Panjatan sub-district, Kulon Progo district, DIY Province with a value of 0.70 (good) which is interpreted as a value that is sustainable. From the measurement results in the Java II region it shows 3 priority areas covering the fields of economic, social & humanitarian, and health. The economic aspect seems to dominate as much as 33%. This is followed by social and humanitarian by 22%. The third priority area is the health with as much as 20%.

(4) The measurement of the Nusa Tenggara region includes West Nusa Tenggara and East Nusa Tenggara, where the points measured are in 8 villages, which are spread in 2 provinces, 7 districts/cities, 7 sub-districts. The measurement produced an average value of 0.49 (Good Enough) which is interpreted as a value that can be considered sustainable. The lowest value obtained is 0.35 (Not Good) which is interpreted as a less sustainable.

The lowest value point was obtained from 2 villages, namely Billa village, East Amanuban sub-district, South Central Timor District, and Seraya Kecil Island in the Komodo sub-district, West Manggarai Regency, East Nusa Tenggara Province. Meanwhile the highest score was obtained from the Kelurahan Kota Uneng, Alok sub-district, Sikka district, East Nusa Tenggara Province with a value of 0.65 (Good) which is interpreted as a value that is sustainable. The results of measurements in the Nusa Tenggara region show four priority fields covering the fields of economic, social & humanitarian, health and *da'wah*. The economic aspect seems to dominate, with as much as 32%, followed by the social and humanitarian fields by 24%, and the third and fourth priority fields with the same percentage are health and the *da'wah* sectors with as much as 20%.

(5) The measurement of the Kalimantan region includes West Kalimantan, South Kalimantan, East Kalimantan and North Kalimantan, where the points measured are in 17 villages, spread over 4 provinces, 11 districts / cities, 15 sub-districts. The measurement has produced an average value of 0.50 (Good Enough) which is interpreted as a value that can be considered sustainable. The lowest value obtained is 0.22 (Not Good) which is interpreted as a less sustainable. The lowest value point was obtained from Pegat Betumbuk village, Derawan Island sub-district, Berau Regency, East Kalimantan province.

Meanwhile the highest score was obtained from Juata Laut Village, North Tarakan District, Tarakan City, North Kalimantan Province with a value of 0.70 (Good) which is interpreted as a value that is sustainable. The measurement results in the Kalimantan region show 3 priority areas covering the fields of economics, social & humanity, and health. The economic aspect seems to dominate, with as much as 33%. This is followed by social and humanitarian fields by 20%, and third priority area is the health sector by as much as 19%.

(6) Sulawesi and Papua regions include South Sulawesi, Central Sulawesi and Papua, where the measured points are in 15 villages, which are spread in 3

provinces, 13 districts / cities, 15 sub-districts. The measurement produced an average value of 0.54 (Good Enough) which is interpreted as a value that can be considered sustainable. The lowest value obtained is 0.31 (Not Good) which is interpreted as a priority value to be assisted. The lowest value point was obtained from Bone Buntu Sisong village, South Makale sub-district, Tana Toraja Regency, South Sulawesi Province.

Meanwhile the highest value was obtained from Cilellang village, Mallusetasi sub-district, Barru district, South Sulawesi Province with a value of 0.71 (Good) which was interpreted as a value that was not prioritized for assistance. The results of measurements in the Sulawesi and Papua region show 3 priority areas covering the fields of economics, education and health. The economic aspect seems to dominate as much as 33%. Followed by 2 fields with the same value of 18%, namely the education and health fields.

Below is a summary of measurement in all villages in the regions.

Table-3
Summary of ZSI Measurement

No	Region	Average	Not/Less Sustainable	At least can be considered sustainable
1	Sumatra	0.52 (can be considered sustainable)	4 Villages	10 Villages
2	Java I	0.53 (can be considered sustainable)	5 Villages	12 Villages
3	Java II	0.61 (can be considered sustainable)	2 Villages	13 Villages
4	Nusa Tenggara	0.49 (can be considered sustainable)	3 Villages	5 Villages
5	Kalimantan	0.50 (can be considered sustainable)	4 Villages	13 Villages
6	Sulawesi and Papua	0.54 (can be considered sustainable)	4 Villages	11 Villages
		Total	22 Villages	64 Villages

The above table shows that the impact of ZCD program in average at least can be considered sustainable. Out of 86 villages, almost 75% are categorized as Good Enough (can be considered sustainable), while only 25 % are not/less sustainable. From the finding, it has been empirically found that communities of *mustahik* are able to scale up their welfare by utilizing the *zakāt* programs. Some of them have successfully created new productive activities which transform their status from *mustahik* to be *muzakki,* and this has been confirmed by the fact that most of the empowerment program has been carried out in the economic sector.

Furthermore, these achievements are not only for those who receive *zakāt*, but also for non-recipients who live in the same community and get involved in the programs, so that a multiplier effect is achieved. This situation can be achieved because *mustahiks* who benefit from the programs are required to reduplicate the program to the surrounding people particularly in form of skill transfer and training. All of these processes, in practice, are monitored by BAZNAS, and become one of indicators of a successful program. As ZSI is measuring the impact at community level, not at individual *mustahik* level, therefore, the higher of ZSI can be claimed that the benefit of *zakāt* program can be spread out to the others living in the same community, even though these people are not part of *mustahik* who are receiving the *zakāt* disbursement directly.

The theoretical claim that ZCD program provides sustainable impact has been proven. Empowerment-based programs indeed have prioritized the fulfillment of people's capacity and skills as a basis for mobilizing people and making changes. The ZCD program thus can guarantee sustainability of the *zakāt* impact because not only does it help make the recipients prosper, but also they are expected to be self-reliant and be able to spread the benefit to the surrounding environment.

6. Conclusion

This study tries to assess the extent to which *zakāt* empirically has an impact on a sustainability basis that derived from SDGs by taking the example of the ZCD program carried out by BAZNAS. *Zakāt* Community-Based Development (ZCD), as the main instrument of all *zakāt* empowerment programs, is one of the BAZNAS strategic programs in Indonesia until 2020. ZCD aims to empowering the community by targeting the *mustahik* communities who live in the villages which are left behind. The goal of this program, that is to improve communities' standard of living from the economic, spiritual, social, educational, and health aspect, should also be in line with the *Maqāṣid* al-Sharī'ah as the basis framework that can be used to measure the performance of *zakāt*.

Based on ANP-Delphi approach, it can be strongly argued that *zakāt* and SDGs have significant relevance. It has been found that *zakāt* is one of the Islamic social finance instruments that aims to fulfil *Maqāṣid* al-Sharī'ah*, which consists of preserving and promoting faith, life, intellectual, lineage, and wealth. All these

goals are broader than the SDGs set by the UN, as SDGs do not include the goal of preserving and promoting the faith, which is the highest priority in *Maqāṣid* al-Sharī'ah.

However, there is a relevant relation between *Maqāṣid* al-Sharī'ah as the framework of *zakāt* and SDGs. The relevance is adjusted based on the context of the needs of the *mustahik* conditions. Although *zakāt* could contribute to all the 17 SDGs targets (directly or indirectly), realizing the targets is not entirely the responsibility of *zakāt* work alone. There are duties and responsibilities of the *zakāt* institutions, such as BAZNAS, that can govern and manage programs that specifically aim to improve community life so that the impact of *zakāt* can be sustained in the long run.

In order to evaluate the sustainable impact of BAZNAS ZCD program, the indicator of *Zakāt* Sustainable Index (ZSI) has been developed by categorizing the *zakāt* fund disbursement into (i) economic, (ii) social and humanitarian, (iii) health, (iv) education, and (v) *da'wah.* This categorization is so that that the index is consistent with the dimensions of *Maqāṣid* al-Sharī'ah, i.e. successively (i) wealth, (ii) lineage, (iii) life, (vi) intellect, and (v) faith.

The implementation of ZSI to measure the sustainability impact of ZCD has been carried out in 20 Provinces comprising 86 Villages. This study divides the areas of coverage further into six regions, namely (1) Sumatra, (2) Java I, (3) Java II, (4) Nusa Tenggara, (5) Kalimantan, and (6) Sulawesi and Papua. The data was collected from March–June 2018, by which time the ZCD program had been implemented at least for 1 year.

In the end, this study succeeded in evaluating the impact of ZCD program which was implemented at villages level. Out of 86 villages, almost 75% categorized are as Good Enough (can be considered sustainable), while only 25% are categorized as not/less sustainable. The study has empirically found that communities of *mustahik* are able to scale up their welfare by utilizing the *zakāt* programs. Some of them have successfully created new productive activities which transform their status from *mustahik* to be *muzakki.* The ZCD program can guarantee sustainability of the *zakāt* impact because not only does it help

make the recipients prosper but also they are expected to be self-reliant and be able to spread the benefit to the surrounding environment.[15]

References

Agarwal, Sheela. Rahman, Sanzidur. Errington, Andrew. (2009). Measuring the determinants of relative economic performance of rural areas. *Journal of Rural Studies* 25 (2009) 309–321.

Beik, I. S., & Arsyianti, L. D. (2016). Measuring *Zakāt* Impact On Poverty And Welfare Using Cibest Model. *Journal of Islamic Monetary Economics and Finance*, 1(2),2016th

Chapra, M. U. (1992). Islam and the Economic Challenge. Riyadh: *The Islamic Foundation* and *The International Institute of Islamic Thought*.

Depkes RI. (2013). Pusat Promosi Kesehatan Pencapaian PHBS. http://www.promosikesehatan.com

Direktorat kawasan khusus dan daerah tertinggal, Kementerian negara perencanaan pembangunan nasional/bappenas. (2008). Laporan Akhir Kajian Penyusunan Indikator Tipologi Dan Indikator Kinerja Pengembangan Kawasan Strategis Nasional Bidang Ekonomi Di Indonesia

Dusuki, A. W. (2005). Corporate Social Responsibility of Islamic Banks in Malaysia: A Synthesis of Islamic and Stakeholders's Perspective. UK, Loughborough University, PhD Thesis.

El Menouar, Yasemin. Bertelsmann Stiftung. (2014). The Five Dimensions of Muslim Religiosity. Results of an Empirical Study. *methods, data, analyses |* Vol. 8(1), 2014, pp. 53-78

European Commission Directorate-General for Agriculture and Rural Development. Rural Development in the European Union Statistical and Economic Information Report 2013

Haider, H. PNPM/Community-driven development in Indonesia (GSDRC Helpdesk Research Report). Governance and Social Development Resource Centre, University of Birmingham, Birmingham, UK (2012) 17 pp.

Ira Irawati, Zulfadly Urufi, Renato Everardo Isaias Rezza Resobeoen, Agus Setiawan, Aryanto, (2012). Pengukuran tingkat daya saing daerah Berdasarkan variabel perekonomian daerah, Variabel infrastruktur dan sumber daya alam, Serta variabel sumber daya manusia Di wilayah provinsi sulawesi tenggara. *J@TI Undip*, Vol VII, No 1, Januari 2012

J. W. Creswell. (1999). Mixed method research: Introduction and application. In T.Cijek (Ed.), *Handbook of Educational Policy*. San Deigo, CA: Academic Press.

Kasri., R. A. (2016). *Maqāṣid* al-Sharīʿah and Performance of *Zakāt* Institutions. *Kyoto Bulletin of Islamic Area Studies*, 9 hlm. 19-41.

Kementerian Desa, Pembangunan Daerah Tertinggal Dan Transmigrasi (2015). Indeks Desa Membangun.

Kementerian Perencanaan Pembangunan Nasional/ Badan Perencanaan Pembangunan Nasional dan Badan Pusat Statistik/BPS. Indeks Pembangunan Desa 2014; Tantangan Pemenuhan Standar Pelayanan Minimum Desa.

Marta, S. S. dan Abdul-Fatah, Anwar. (1984). Islamic vis a-vis Traditional Banking: A "Fuzzy-set" Approach. *Journal of Research in Islamic Economics*, 2(1): hlm. 29-44.

Melon et.all .(2012). A combined ANP-delphi approach to evaluate sustainable tourism. *Environmental Impact Assessment Review* Volume 34, April 2012, Pages 41-50

Miftakhul Huda. (2014). Pengembangan daya saing daerah kabupaten/kota di propinsi jawa timur berdasarkan Potensi daerahnya. Institut Teknologi Sepuluh Nopember Surabaya.

MS Nurzaman, et al. (2017a). Sebuah Kajian *Zakāt* on SDGs. *Center of Strategic Studies*, Indonesia National Board of *Zakāt*

MS Nurzaman, et al. (2017b). Indeks Desa *Zakāt*. *Center of Strategic Studies*, Indonesia National Board of *Zakāt*

Mulyanto. (2014). Indikator dan Karakteristik Pembangunan Desa Sebagai Basis Implementasi Atas Undang-Undang Desa.

Nielsen, R.A. (2016). Case Selection via Matching. *Sociological Methods & Research* 45(3) hlm. 569-597

Permendagri no.56 tahun .(2015). tentang Kode dan Data Wilayah Administrasi Pemerintahan.

Robert Huggins .(2004). European Competitiveness Index; Measuring the Performance and Capacity of Europe's Nations and Regions.

Survei Nasional Literasi dan Inklusi Keuangan .(2016). Otoritas Jasa Keuangan/OJK, http://www.ojk.go.id/id/berita-dan-kegiatan/siaran-pers/Documents/Pages/Siaran-Pers-OJK-Indeks- Literasi-dan-Inklusi-Keuangan-Meningkat/17.01.23 Tayangan Presscon nett.compressed.pdf

The Organisation for Economic Co-operation and Development, Territorial Indicators of Employment: Focusing on Rural Development paperback – September 24, 1996

Undang-undang no.6 tahun 2014 tentang Desa

Appendix

Likert Scale

Indicator	Criteria				
	1	**2**	**3**	**4**	**5**
Have main products	Do not have a main product	Have 1-2 main products	Have 3-4 main products	Have 5-6 main products	Have >6 main products
Labor force participation rate	<20% of the productive age population (15-64 years) have a job	20% - 39% of the productive age population (15-64 years) have a job	40% - 59% of the productive age population (15-64 years) have a job	60% - 80% of the productive age population (15-64 years) have a job	>80% of the productive age population (15-64 years) have a job
Availability of is creative industry community.	Do not have a creative industries community	Have 1-2 creative industries community	Have 3-4 creative industries community	Have 5-6 creative industries community	Have >6 creative industries community
Availability of market as a trading facility and supplier of community needs both traditional and online (online marketing).	The village has no market with permanent and semi-permanent buildings	The Village has a market with specific trading schedules	The village has a daily market with semi-permanent buildings	The village has a daily market (traditional/modern) with permanent buildings	The village has a modern day market with permanent buildings and has an online marketing system
Availability of trading place cluster (shopping center, minimarket, corner store, hawker center/Pujasera/culinary center).	The village has no shops, minimarkets, but there is a corner store with a ratio of less than 100 / 10,000 to the population	The village has no shopping center, minimarkets, but there is a corner store with a ratio of ≥ 100 / 10,000 to the population	The village has no shopping but there is a minimarket with a ratio of <4 / 10,000 to the population without considering the availability of a corner store	The village has no shopping center but there is a minimarket with a ratio of >4 / 10,000 to the population without considering the availability of a corner store	The village has a shopping area without considering the availability of a corner store
Accessibility of village roads	The village traffic can only go	Village traffic by land or land and	Village traffic by land or land	Village traffic by land or land and	Village traffic by land or land

	through the river or lakes	water, but roads are not passable by four-wheeled vehicles throughout the year	and water, roads can be passed by four-wheeled vehicles throughout the year except during the rainy season	water, roads can be passed by four-wheeled vehicles throughout the year except for certain moments (rain, tide, etc.)	and water roads can be traversed by four or more wheels during the year
Availability of modes of transportation.	The village can only be accessed through the river or lakes	The village road is crossed by public transport without a fixed route and does not operate every day	The village road is crossed by public transport without a fixed route but operates daily	Village roads are crossed by public transport with fixed routes but do not operate every day	The village road is crossed by public transport with fixed routes and operates daily
Availability of logistic service	The village has no cooperation with logistic service/freight forwarder	The village has cooperation with logistic service company/freight forwarder which operates at least 1 day in a month	The village has cooperation with logistics/freight service company that operates at least 1 day in 2 weeks	The village has cooperation with logistics/freight forwarding company that operates at least 1 day a week	The village has cooperation with logistic service company/freight forwarder that operates every day
Availability and accessibility of Sharia and conventional financial institutions	The village does not have both conventional and sharia financial institutions	The village has at least 1 conventional financial institution	The village has at least 1 conventional financial institution and 1 sharia financial institution	The village has at least 1 conventional financial institution and 2 sharia financial institutions	The village has at least 1 conventional financial institution and 3 sharia financial institutions
Engagement of community in loan shark (rentenir)	There are >20% of people who have debt to loan shark	There are 16-20% of people who have debt to loan shark	There are 11-15% of people who have debt to loan shark	There are 1-10% of people who have debt to loan shark	There is no people have debt to the loan shark
Engagement in financial	<20% of the population	20-39% of the population	40%-59% of the	60%-80% of the population	>80% of the population

institutions	has used financial products / services	has used financial products / services	population has used financial products / services	has used financial products / services	has used financial products / services

Indicator	Criteria				
	1	**2**	**3**	**4**	**5**
Availability of clean water for bathing and washing in every house.	<20% of people's homes use clean water for cooking and sanitary	20%-39% people's homes use clean water for cooking and sanitary	40%-59% people's homes use clean water for cooking and sanitary	60%-80% people's homes use clean water for cooking and sanitary	>80% rumah people's homes use clean water for cooking and sanitary
Availability of bathroom facilities and toilet in the house	<20% of the houses have a shower and toilet in the house	20%-39% of the houses have a shower and toilet in the house	40%-59% of the houses have a shower and toilet in the house	60%-80% of the houses have a shower and toilet in the house	>80% of the houses have a shower and toilet in the house
Availability of the source of drinking water	<20% of people's homes have access to clean drinking water including tap water, springs, or wells at a distance of at least 10m from sewerage, sewage and garbage.	20%-39% people's homes have access to clean drinking water including tap water, springs, or wells at a distance of at least 10m from sewerage, sewage and garbage.	40%-59% people's homes have access to clean drinking water including tap water, springs, or wells at a distance of at least 10m from sewerage, sewage and garbage.	60%-80% people's homes have access to clean drinking water including tap water, springs, or wells at a distance of at least 10m from sewerage, sewage and garbage.	>80% people's homes have access to clean drinking water including tap water, springs, or wells at a distance of at least 10m from sewerage, sewage and garbage.
Availability of Puskesmas / Poskesdes	Distance to puskesmas / Poskesdes nearest ≥4km and to reach it is difficult	Distance to puskesmas / Poskesdes nearest ≥4km and to reach it is easy.	Distance to puskesmas / Poskesdes nearest 3-4km and to reach it is difficult	Distance to puskesmas / Poskesdes nearest 3-4km and to reach it is easy	Distance to puskesmas / Poskesdes nearest 1-2km and to reach it is easy
Availability Polindes	Distance to polindes nearest ≥4km and to reach it is difficult	Distance to polindes nearest ≥4km and to reach it is easy	Distance to polindes nearest 3-4km and to reach it is difficult	Distance to polindes nearest 3-4km and to reach it is easy	Distance to polindes nearest 1-2km and to reach it is easy

Availability Posyandu	<20% of RW has posyandu actively conducting its activities	20%-39% of RW has posyandu actively conducting its activities	40%-59% of RW has posyandu actively conducting its activities	60%-80% of RW has posyandu actively conducting its activities	>80% RW of RW has posyandu actively conducting its activities
Availability of doctors in the village	At least one doctor can be accessed by the community once for more than a month or even no doctor in the village	At least one doctor can be accessed by the community once in a month	At least 1 doctor can be accessed by the community once in 2 weeks	At least one doctor can be accessed by the community once a week	At least one doctor can be accessed by the community everyday.
BPJS membership level	<20% of households have health insurance (BPJS)	20%-39% of households have health insurance (BPJS)	40%-59% of households have health insurance (BPJS)	60%-80% of households have health insurance (BPJS)	>80% of households have health insurance (BPJS)

Indicator	Criteria				
	1	2	3	4	5
Education level of villagers	<20% of the population have formal education ≥12 years	20%-39% of the population have formal education ≥12 years	40%-59% of the population have formal education ≥12 years	60%-80% of the population have formal education ≥12 years	>80% of the population have formal education ≥12 years
The level of reading and numeracy literacy	<40% of people aged 15-45 can read and count	40%-59% of people aged 15-45 can read and count	60%-79% of people aged 15-45 can read and count	80%-100% of people aged 15-45 can read and count	100% of people aged 15-45 can read and count
Availablility of learning facilities	Neither classrooms available nor classroom equipment; desks, chairs for each student, and a whiteboard for students	There is a classroom but no classroom equipment; desks, chairs for each student, and a whiteboard for students	There is a classroom but there is only one of the classroom equipment; tables, chairs for every student, and a blackboard	There is a classroom but there are only two of the class equipment; tables, chairs for every student, and a blackboard	There are classrooms including classroom equipments; tables, chairs for every student, and a blackboard
Accessibility to schools	The distance to the nearest	The distance to the nearest	The distance to the nearest	The distance to the nearest	The distance to the nearest

Indicator	1	2	3	4	5
	elementary school, junior high school and high school is ≥6km and to reach it is difficult	elementary school, junior high school and high school is ≥6km and to reach it is easy	elementary school, junior high school and high school is 4-6km and to reach it is difficult	elementary school, junior high school and high school is 4-6km and to reach it is easy	elementary school, junior high school and high school is 1-3km and to reach it is easy
Availability of adequate number of teachers	Every 1 teacher is at least able to accompany ≥ 36 students in 1 class	Every 1 teacher is at least able to accompany 31-35 students in 1 class	Every 1 teacher is at least able to accompany 26-30 students in 1 class	Every 1 teacher is at least able to accompany 21-25 students in 1 class	Every 1 teacher is at least able to accompany 15-20 students in 1 class

Indicator	Criteria				
	1	**2**	**3**	**4**	**5**
Availability of sports facilities	The village has neither facilities nor sports field (volleyball, football, futsal, badminton, table tennis, etc.)	The village has 1-2 facilities or sports field (volleyball, football, futsal, badminton, table tennis, etc.)	The village has 3-4 facilities or sports field (volleyball, football, futsal, badminton, table tennis, etc.)	The village has 5-6 facilities or sports field (volleyball, football, futsal, badminton, table tennis, etc.)	The village has >6 facilities or sports field (volleyball, football, futsal, badminton, table tennis, etc.)
Existence of community activity (village consultative body, recitation, youth group, social gathering, etc.)	There is no community activity group (village consultative organization, recitation, youth group, social gathering, etc.)	There is 1-2 community activity group (village consultative organization, recitation, youth group, social gathering, etc.)	There is 3-4 community activity group (village consultative organization, recitation, youth group, social gathering, etc.)	There is 5-6 community activity group (village consultative organization, recitation, youth group, social gathering, etc.)	There is >6 community activity group (village consultative organization, recitation, youth group, social gathering, etc.)
Availability of electricity	percentage of household users ≤ 20%	percentage of household users >20% - ≤ 45%	percentage of household users >45% - ≤70%	percentage of household users >70% - ≤90%	percentage of household users >90%
Availability of communication access (mobile phone)	The Village does not get cellular telecommunication signals	The Village get cellular telecommunications signals but the signal is unstable, 0-	The village get cellular telecommunication signals but signal status is	The village get mobile telecommunication signals with strong signal status,	The village get mobile telecommunication signals with very strong signal

	1 bar	weak, 1-2 bars	3-4 bar	status, 5 bar
Availability of internet access	≤5% of villagers have accessed the internet	>5% - ≤15% of villagers have accessed the internet	>15% - ≤25% of villagers have accessed the internet	>25% - ≤35% of villagers have accessed the internet	>35% of villagers have accessed the internet
Availability of television or radio broadcast	≤20% of villagers are able to access television or radio broadcasts	>20% - ≤40% of villagers are able to access television or radio broadcasts	>40% - ≤60% of villagers are able to access television or radio broadcasts	>60% - ≤80% of villagers are able to access television or radio broadcasts	>80% of villagers are able to access television or radio broadcasts
Disaster management	The village has no disaster management plans, disaster early warning systems, safety equipments, and evacuation routes	The village has al least 1 of disaster management plans, disaster early warning systems, safety equipments, and evacuation routes	The village has al least 2 of disaster management plans, disaster early warning systems, safety equipments, and evacuation routes	The village has al least 3 of disaster management plans, disaster early warning systems, safety equipments, and evacuation routes	The village has all of disaster management plans, disaster early warning systems, safety equipments, and evacuation routes

Indicator	Criteria				
	1	2	3	4	5
Availability of mosques in the community	There is no Mosque that is easily accessible and reachable by villagers	There is at least 1 'Mosque that is easily accessible and reachable by ≤20% of villagers	There is at least 1 'Mosque that is easily accessible and reachable by 21%-50% villagers	There is at least 1 'Mosque that is easily accessible and reachable by 51%-80% villagers	There is at least 1 'Mosque that is easily accessible and reachable by ≥81% villagers
Accessibility to the mosque	The distance to the nearest mosque >3km and to reach it is difficult	The distance to the nearest mosque >3km and to reach it is easy	The distance to the nearest mosque 2.1-3km and to reach it is difficult	The distance to the nearest mosque 1.1-2km and to reach it is easy	The distance to the nearest mosque ≤1km and to reach it is easy
Availability of religious	There is no ustaz and	There is 1 ustaz /	There is 2 ustaz /	There is 3 ustaz /	There is 4 ustaz /

companion (ustaz/ah, etc.)	ustazah	ustazah	ustazah	ustazah	ustazah
Level of literacy of Al-Quran	<20% of the Muslim community can read the Qur'an	20% - 39% of the Muslim community can read the Qur'an	40% - 59% of the Muslim community can read the Qur'an	60% - 80% of the Muslim community can read the Qur'an	>80% of the Muslim community can read the Qur'an
Public awareness for *zakāt* and *infāq*	<20% of people pay *zakāt* fitrah, *zakāt* of property, and *infāq* / alms	20%-39% of people pay *zakāt* fitrah, *zakāt* of property, and *infāq* / alms	40%-59% of people pay *zakāt* fitrah, *zakāt* of property, and *infāq* / alms	60%-80% of people pay *zakāt* fitrah, *zakāt* property, and *infāq* / alms	>80% of people pay *zakāt* fitrah, *zakāt* of property, and *infāq* / alms
Implementation of routine religious activities	The implementation of religious activities at least once in 3 months or no religious activity at all	The implementation of religious activities at least once in 2 months	The implementation of religious activities at least 1 time in a month	The implementation of religious activities at least 1 time in 2 weeks	The implementation of religious activities at least 1 time in a week
Level of community participation in 5 daily prayers in congregation	The number of worshipers ≤20%.	The number of worshipers 21-40%.	The number of worshipers 41-60%.	The number of worshipers 61-80%.	The number of worshipers >80%.
Level of community participation in routine religious activities (weekly or monthly)	≤20% of the Muslim community attend and participate in any organized religious activity	21%-40% of the Muslim community attend and participate in any organized religious activity	41%-60% of the Muslim community attend and participate in any organized religious activity	61% - 80% of the Muslim community attend and participate in any organized religious activity	>80% of the Muslim community attend and participate in any organized religious activity

CUMULATIVE INDEX OF PAPERS

CUMULATIVE INDEX OF PAPERS PUBLISHED IN PREVIOUS ISSUES OF *ISLAMIC ECONOMIC STUDIES*

Vol. 3, No. 1, Rajab 1416H (December 1995)

Articles

Islamic Securities in Muslim Countries' Stock Markets and an Assessment of the Need for an Islamic Secondary Market, 1-37.

Abdul Rahman Yousri Ahmed

Demand for and Supply of Mark-up and PLS Funds in Islamic Banking: Some Alternative Explanations, 39-77.

Tariqullah Khan

Towards an Islamic Stock Exchange in a Transitional Stage, 79-112.

Ahmad Abdel Fattah El-Ashkar

Discussion Papers

The Interest Rate and the Islamic Banking, 115-122.

H. Shajari and *M Kamalzadeh*

The New Role of the Muslim Business University Students in the Development of Entrepreneurship and Small and Medium Industries in Malaysia, 123-134.

Saad Al-Harran

Vol. 3, No. 2, Muharram 1417H (June 1996)

Article

Rules for Beneficial Privatization: Practical Implications of Economic Analysis, 1-32.

William J. Baumol

Discussion Papers

Privatization in the Gulf Cooperation Council (GCC) Countries: The Need and the Process, 35-56.

Fuad Abdullah AI-Omar

Towards an Islamic Approach for Environmental Balance, 57-77.

Muhammad Ramzan Akhtar

Vol. 4, No. 1, Rajab 1417H (December 1996)

Articles

Monetary Management in an Islamic Economy, 1-34.

Muhammad Umer Chapra

Cost of Capital and Investment in a Non-interest Economy, 35-46.

Abbas Mirakhor

Discussion Paper

Competition and Other External Determinants of the Profitability of Islamic Banks, 49-64.

Sudin Haron

Vol. 4, No. 2, Muharram 1418H (May 1997)

Article

The Dimensions of an Islamic Economic Model, 1-24.

Syed Nawab Haider Naqvi

Discussion Papers

Indirect Instruments of Monetary Control in an Islamic Financial System, 27-65.

Nurun N. Choudhry and *Abbas Mirakhor*

Istisna' Financing of Infrastructure Projects, 67-74.

Muhammad Anas Zarqa

The Use of Assets *Ijara* Bonds for Bridging the Budget Gap, 75-92.

Monzer Kahf

PUBLICATIONS OF IRTI

LIST OF PUBLICATIONS OF THE
ISLAMIC RESEARCH AND TRAINING INSTITUTE

Seminar Proceedings

☐ **LECTURES ON ISLAMIC ECONOMICS (1992),** pp.473   **Price $ 20.00**
Ausaf Ahmad and *Kazem Awan* (eds)
An overview of the current state of Islamic Economics is presented in this book.

☐ **THE ORGANIZATION AND MANAGEMENT OF THE PILGRIMS MANAGEMENT AND FUND BOARD OF MALAYSIA (1987),** pp.111   **Price $ 10.00**
The book presents the functions, activities and operations of Tabung Haji, a unique institution in the world, catering to the needs of Malaysian Muslims performing Hajj.

☐ **INTERNATIONAL ECONOMIC RELATIONS FROM ISLAMIC PERSPECTIVE (1992),** pp.286   **Price $ 10.00**
M. A. Mannan, Monzer Kahf and *Ausaf Ahmad* (eds)
An analytical framework is given in the book to work out basic principles, policies and prospects of international economic relations from an Islamic perspective.

☐ **MANAGEMENT OF *ZAKĀH* IN MODERN MUSLIM SOCIETY (1989),** pp.236   **Price $ 20.00**
I. A. Imtiazi, M. A. Mannan, M. A. Niaz and *A. H. Deria* (eds)
The book analyses how *Zakāh* could be managed in a modern Muslim society.

☐ **DEVELOPING A SYSTEM OF FINANCIAL INSTRUMENTS (1990),** pp.284   **Price $ 20.00**
Muhammad Ariff and *M.A. Mannan* (eds)
It gives an insight into the ways and means of floating viable Islamic financial instruments in order to pave the way for mobilization of financial resources.

☐ **MANAGEMENT AND DEVELOPMENT OF AWQĀF PROPERTIES (1987),** pp.161   **Price $ 10.00**
Hasmet Basar (ed.)
An overview of the state of administration of Awqāf properties in OIC member countries.

☐ **EXTERNAL DEBT MANAGEMENT (1994),** pp.742   **Price $ 20.00**
Makhdoum H. Chaudhri (ed.)
It examines the role of external borrowing in development. It also suggests how to improve the quality of information on external debt and how to evaluate the organizational procedures for debt management.

☐ **REPORT OF THE MEETING OF EXPERTS ON ISLAMIC MANAGEMENT CENTER (1995),** pp.188   **Price $ 10.00**
Syed Abdul Hamid Al Junid and *Syed Aziz Anwar* (eds)
The book discusses the programs of the Islamic Management Centre of the International Islamic University, Malaysia.

☐ **INSTITUTIONAL FRAMEWORK OF *ZAKĀH*: DIMENSION AND IMPLICATIONS (1995),** pp.510   **Price $ 20.00**
Ahmed El-Ashker and *Sirajul Haque* (eds)
It studies the institutional systems of *Zakāh* and their socioeconomic and organizational dimensions.

☐ **COUNTER TRADE: POLICIES AND PRACTICES IN OIC MEMBER COUNTRIES (1995),** pp.252   **Price $ 20.00**
M. Fahim Khan (ed.)
It studies theories and practices regarding countertrade and examines the role of its different forms in international trade in the first part of 1980's with special reference to OIC member countries.

☐ **ISLAMIC FINANCIAL INSTITUTIONS (1995),** pp.176   **Price $ 20.00**
M. Fahim Khan (ed.)
The study explains the concept of Islamic banking, the way to establish an Islamic bank, and operational experiences of Islamic banks and Islamic financial instruments.

☐ **THE IMPACT OF THE SINGLE EUROPEAN MARKET ON OIC MEMBER COUNTRIES (1995)**, pp.410   **Price $ 20.00**
M. A. Mannan and *Badre Eldine Allali* (eds)
The study seeks to analyse the possible effects of the Single European Market and to identify possible economic and social impact upon the OIC member countries

☐ **FINANCING DEVELOPMENT IN ISLAM (1996),** pp.624   **Price $ 30.00**
M.A. Mannan (ed.)
It discusses various Islamic strategies for financing development and mobilization of resources through Islamic financial instruments**.**

☐ **ISLAMIC BANKING MODES FOR HOUSE BUILDING FINANCING (1995),** pp.286   **Price $ 20.00**
Mahmoud Ahmad Mahdi (ed.)
It discusses issues, - both *Fiqhi* and economic, concerning house building financing and the *Sharī'ah s*anctioned instruments that may be used for the purpose.

☐ **ISLAMIC FINANCIAL INSTRUMENTS FOR PUBLIC SECTOR RESOURCE MOBILIZATION (1997),** pp.414   **Price $ 10.00**
Ausaf Ahmad and *Tariqullah Khan* (eds)
This book focuses on designing such financial instruments that have potential of use by the governments of Islamic countries for mobilizing financial resources for the public sector to meet the development outlays for accomplishing the economic growth and social progress.

☐ **LESSONS IN ISLAMIC ECONOMICS (1998),** pp.757 (two volumes)   **Price $ 35.00**
Monzer Kahf (ed.)
It presents a broad overview of the issues of Islamic economics.

☐ **ISLAMIC FINANCIAL ARCHITECTURE: RISK MANAGEMENT AND FINANCIAL STABILITY (2006),** pp.561   **Price $ 25.00**
Tariqullah Khan and *Dadang Muljawan*
Financial architecture refers to a broad set of financial infrastructures that are essential for establishing and sustaining sound financial institutions and markets. The volume covers themes that constitute financial architecture needed for financial stability.

☐ **ISLAMIC BANKING AND FINANCE: FUNDAMENTALS AND CONTEMPORARY ISSUES (2006),** pp. 306   **Price $ 10.00**
Salman Syed Ali and Ausaf Ahmad
The seminar proceedings consist of papers dealing with theoretical and practical issues in Islamic banking.

☐ **ADVANCES IN ISLAMIC ECONOMICS AND FINANCE, (2007),** Vol. 1, pp. 532.   **Price $ 35.00**
Munawar Iqbal, Salman Syed Ali and *Dadang Muljawan* (ed).,
Islamic economics and finance are probably the two fields that have provided important new ideas and applications in the recent past than any of the other social sciences. The present book provides current thinking and recent developments in these two fields. The academics and practitioners in economics and finance will find the book useful and stimulating.

☐ **ISLAMIC CAPITAL MARKETS: PRODUCTS, REGULATION & DEVELOPMENT, (2008),** pp.451.   **Price $ 25.00**
Salman Syed Ali (ed.),
This book brings together studies that analyze the issues in product innovation, regulation and current practices in the context of Islamic capital markets. It is done with a view to further develop these markets and shape them for enhancing their contribution in economic and social development. The book covers *sukuk*, derivative products and stocks in Part-I, market development issues in Part-II, and comparative development of these markets across various countries in Part-III.

☐ **ISLAMIC FINANCE FOR MICRO AND MEDIUM ENTERPRISES, (1432, 2011),** pp 264   **Price $ 35.00**
Mohammed Obaidullah & Hajah Salma Haji Abdul Latiff
This book is the outcome of First International Conference on "Inclusive Islamic Financial Sector Development: Enhancing Islamic Financial Services for Micro and Medium Sized Enterprises" organized by Islamic Research and Training Institute of the Islamic Development Bank and the Centre for Islamic Banking, Finance and Management of Universiti Brunei Darussalam. The papers included in this volume seek to deal with major issues of theoretical and practical significance and provide useful insights from experiences of real-life experiments in Sharī'ah -compliant MME finance.

Research Papers

☐ **ECONOMIC COOPERATION AND INTEGRATION AMONG ISLAMIC COUNTRIES: INTERNATIONAL FRAMEWORK AND ECONOMIC PROBLEMS (1987),** pp.163   **Price $ 10.00**
Volker Nienhaus
A model of self-reliant system of trade relations based on a set of rules and incentives to produce a balanced structure of the intra-group trade to prevent the polarization and concentration of costs and benefits of integration.

☐ **PROSPECTS FOR COOPERATION THROUGH TRADE AMONG OIC MEMBER COUNTRIES (A COMMODITY ANALYSIS) (1985),** pp.100   **Price $ 10.00**
Kazim R. Awan
The paper is an attempt to specify particular commodities in which intra OIC member country trade could be increased.

☐ **EFFECTS OF ISLAMIC LAWS AND INSTITUTIONS ON LAND TENURE WITH SPECIAL REFERENCE TO SOME MUSLIM COUNTRIES (1990),** pp.59   **Price $ 10.00**
Mahmoud A. Gulaid
The book traces distributive and proprietary functions of the Islamic law of inheritance and assesses the effects of this law on the structure of land ownership and on the tenure modalities in some Muslim countries.

☐ **THE ECONOMIC IMPACT OF TEMPORARY MANPOWER MIGRATION IN SELECTED OIC MEMBER COUNTRIES (BANGLADESH, PAKISTAN AND TURKEY) (1987),** pp.90   **Price $ 10.00**
Emin Carikci
The book explains the economic impact of the International labor migration and reviews recent trends in temporary labor migration.

☐ **THE THEORY OF ECONOMIC INTEGRATION AND ITS RELEVANCE TO OIC MEMBER COUNTRIES (1987),** pp.82   **Price $ 10.00**
Kadir D. Satiroglu
It presents concepts, principles and theories of regional economic integration and points out their relevance for OIC member countries.

☐ **ECONOMIC COOPERATION AMONG THE MEMBERS OF THE LEAGUE OF ARAB STATES (1985),** pp.110   **Price $ 10.00**
Mahmoud A. Gulaid
It attempts to assess the magnitude of inter Arab trade and capital flows and to find out achievements and problems in these areas.

☐ **CEREAL DEFICIT MANAGEMENT IN SOMALIA WITH POLICY IMPLICATIONS FOR REGIONAL COOPERATION (1991)**, pp.62   **Price $ 10.00**
Mahmoud A. Gulaid
The study assesses cereal food supply and demand conditions characteristic of Somalia.

☐ **COMPARATIVE ECONOMICS OF SOME ISLAMIC FINANCING TECHNIQUES (1992),** pp.48   **Price $ 10.00**
M. Fahim Khan
It is an attempt to present some economic dimensions of the major Islamic financing techniques in a comparative perspective.

☐ **CONTEMPORARY PRACTICES OF ISLAMIC FINANCING TECHNIQUES (1993),** pp.75   **Price $ 10.00**
Ausaf Ahmad
It describes Islamic financing techniques used by various Islamic banks and explores differences, if any, in the use of these techniques by the banks.

☐ **UNDERSTANDING ISLAMIC FINANCE: A STUDY OF THE SECURITIES MARKET IN AN ISLAMIC FRAMEWORK (1992),** pp.115   **Price $ 10.00**
M. A. Mannan
It presents a case for the Islamic Securities Market to serve as a basis for an effective policy prescription.

☐ **PRINCIPLES OF ISLAMIC FINANCING (A SURVEY) (1992),** pp.46   **Price $ 10.00**
Monzer Kahf and *Tariqullah Khan*
It surveys the historical evolution of Islamic principles of financing.

☐ **HUMAN RESOURCE MOBILIZATION THROUGH THE PROFIT-LOSS SHARING BASED FINANCIAL SYSTEM (1992),** pp.64   **Price $ 10.00**
M. Fahim Khan
It emphasizes that Islamic financial system has a more powerful built-in model of human resource mobilization than the existing conventional models.

☐ **PROFIT VERSUS BANK INTEREST IN ECONOMIC ANALYSIS AND ISLAMIC LAW (1994),** pp.61   **Price $ 10.00**
Abdel Hamid El-Ghazali
In the book a comparison is made between interest and profit as a mechanism for the management of contemporary economic activity from economic and *Sharīʿah* perspectives.

☐ **MAN IS THE BASIS OF THE ISLAMIC STRATEGY FOR ECONOMIC DEVELOPMENT (1994),** pp.64   **Price $ 10.00**
Abdel Hamid El-Ghazali
It focuses on the place of Man as the basis of development strategy within the Islamic economic system.

☐ **LAND OWNERSHIP IN ISLAM (1992),** pp.46   **Price $ 10.00**
Mahmoud A. Gulaid
It surveys major issues in land ownership in Islam. It also seeks to define and establish rules for governing land and land-use in Islam.

☐ **PROFIT-LOSS SHARING MODEL FOR EXTERNAL FINANCING (1994),** pp.59   **Price $ 10.00**
Boualem Bendjilali
It is an attempt to construct a model for a small open economy with external financing. It spells out the conditions to attract foreign partners to investment in projects instead of investing in the international capital market.

☐ **ON THE DEMAND FOR CONSUMER CREDIT: AN ISLAMIC SETTING (1995),** pp.52   **Price $ 10.00**
Boualem Bendjilali
The study derives the demand function for consumer credit, using the *Murabahah* mode. A simple econometric model is built to estimate the demand for credit in an Islamic setting.

☐ **REDEEMABLE ISLAMIC FINANCIAL INSTRUMENTS AND CAPITAL PARTICIPATION IN ENTERPRISES (1995),** pp.72   **Price $ 10.00**
Tariqullah Khan
The paper argues that a redeemable financial instrument is capable of presenting a comprehensive financing mechanism and that it ensures growth through self-financing.

☐ **ISLAMIC FUTURES AND THEIR MARKETS WITH SPECIAL REFERENCE TO THEIR ROLE IN DEVELOPING RURAL FINANCE MARKET (1995),** pp.80   **Price $ 10.00**
M. Fahim Khan
The study addresses (a) what is un-Islamic about contemporary futures trading (b) can these markets be restructured according to Islamic principles and (c) would it be beneficial if it is restructured.

☐ **ECONOMICS OF SMALL BUSINESS IN ISLAM (1995),** pp.68   **Price $ 10.00**
Mohammad Mohsin
The paper concentrates upon the possible uses of Islamic financial techniques in the small business sector.

☐ **PAKISTAN FEDERAL *SHARĪ'AH* COURT JUDGEMENT ON INTEREST (*RIBA*) (1995)**, pp.464   **Price $ 15.00**
Khurshid Ahmad (ed.)
The book presents a translation of the Pakistan Federal Sharī'ah Court's judgement on interest.

☐ **READINGS IN PUBLIC FINANCE IN ISLAM (1995),** pp.572   **Price $ 15.00**
Mohammad A. Gulaid and *Mohamed Aden Abdullah* (eds)
This is an attempt to present contribution of Islam to fiscal and monetary economics in a self contained document

☐ **A SURVEY OF THE INSTITUTION OF ZAKĀH: ISSUES, THEORIES AND ADMINISTRATION (1994),** pp.71   **Price $ 10.00**
Abul Hasan Sadeq
It examines the major *Fiqhi* issues of *Zakāh*. A review of the administrative issues related to *Zakāh* implementation in the contemporary period is also made.

☐ ***SHARĪ'AH* ECONOMIC AND ACCOUNTING FRAMEWORK OF *BAY[AL-SALAM* IN THE LIGHT OF CONTEMPORARY APPLICATION (1995),** pp.130   **Price $ 10.00**
Mohammad Abdul Halim Umar
The author compares the *salam* contract and other similar contracts like *bay[al ajal*, *al istisna[*, *bay[al istijrar* with other financing techniques.

☐ **ECONOMICS OF DIMINSHING *MUSHĀRAKAH* (1995),** pp.104   **Price $ 10.00**
Boualem Bendjilali and *Tariqullah Khan*
The paper discusses the nature of *Mushārakah* and *Muḍārabah* contracts. It introduces the diminishing *Mushārakah* contract and describes its needs and application.

☐ **PRACTICES AND PERFORMANCE OF *MUḌĀRABAH* COMPANIES (A CASE STUDY OF PAKISTAN'S EXPERIENCE) (1996),** pp.143   **Price $ 10.00**
Tariqullah Khan
The paper studies institutional framework, evolution and profile of *Muḍārabah* companies in Pakistan and compares performance of some of these companies with that of other companies.

☐ **FINANCING AGRICULTURE THROUGH ISLAMIC MODES AND INSTRUMENTS: PRACTICAL SCENARIOS AND APPLICA-BILITY (1995),** pp.93   **Price $ 10.00**
Mahmoud A. Gulaid
The paper examines the functional and operational activities done during production and marketing of agricultural commodities, contemporary modes that banks use to finance them and assesses the possibility of financing them through Islamic instruments.

☐ **DROUGHT IN AFRICA: POLICY ISSUES AND IMPLICATIONS FOR DEVELOPMENT (1995),** pp.86   **Price $ 10.00**
Mahmoud A. Gulaid
It covers the policy issues having direct bearing upon the development needs of contemporary rural Sub-Sahara Africa within the framework of socio-economic conditions of the rural household.

☐ **PROJECT APPRAISAL: A COMPARATIVE SURVEY OF SELECTED CONVEN-TIONAL AND ISLAMIC ECONOMICS LITERATURE (1995),** pp.62   **Price $ 10.00**
Kazim Raza Awan
It attempts to answer two basic questions: (1) What are the areas of conflict, if any between conventional project appraisal methodology and generally accepted injunctions of Islamic finance and (2) Given that there are significant differences on how should Islamic financiers deal with them.

☐ **STRUCTURAL ADJUSTMENT AND ISLAMIC VOLUNTARY SECTOR WITH SPECIAL REFERENCE TO AWQĀF IN BANGLADESH (1995),** pp.113   **Price $ 10.00**
M.A. Mannan
The paper argues that both informal and Islamic voluntary sector can be monetized and can contribute towards mobilizing the savings and investment in an Islamic economy.

☐ **ISLAMIC FINANCIAL INSTRUMENTS (TO MANAGE SHORT-TERM EXCESS LIQUIDITY (1997),** pp.100   **Price $ 10.00**
Osman Babikir Ahmed
The present paper formally discussed the practices of Islamic Financial Institutions and the evaluation of Islamic Financial Instruments and markets.

☐ **INSTRUMENTS OF MEETING BUDGET DEFICIT IN ISLAMIC ECONOMY (1997),** pp.86   **Price $ 10.00**
Monzer Kahf
The present research sheds new lights on instruments for public resources mobilization that are based on Islamic principles of financing, rather than on principles of taxation

☐ **ASSESSMENTS OF THE PRACTICE OF ISLAMIC FINANCIAL INSTRUMENTS (1996),** pp.78   **Price $ 10.00**
Boualam Bendjilali
The present research analyzing the Islamic Financial Instruments used by two important units of IDB and IRTI. The study analyzes the performance of the IDB Unit Investment Fund by investigating the existing patterns in the selection of the projects for funding.

☐ **INTEREST-FREE ALTERNATIVES FOR EXTERNAL RESOURCE MOBILIZATION (1997),** pp.95   **Price $ 10.00**
Tariqullah Khan
This study, discusses some alternatives for the existing interest based external resource mobilization of Pakistan.

☐ **TOWARDS AN ISLAMIC FINANCIAL MARKET (1997),** pp.81   **Price $ 10.00**
Ausaf Ahmad
This paper effort to intrude the concepts Islamic Banking and Finance in Malaysia within overall framework of an Islamic Financial Market.

☐ **ISLAMIC SOCIOECONOMIC INSTITUTIONS AND MOBILIZA-TION OF RESOURCES WITH SPECIAL REFERENCE TO HAJJ MANAGE-MENT OF MALAYSIA (1996),** pp.103   **Price $ 10.00**
Mohammad Abdul Mannan
The thrust of this study is on mobilizing and utilizing financial resources in the light of Malaysian Tabung Haji experience. It is an excellent example of how a specialized financial institution can work successfully in accordance with the Islamic principle.

☐ **STRATEGIES TO DEVELOP *WAQF* ADMINISTRATION IN INDIA (1998)**, pp.189   **Price $ 10.00**
Hasanuddin Ahmed and *Ahmadullah Khan*
This book discusses some proposed strategies for development of *waqf* administration in India and the attempts to speel out prospects and constraints for development of *Awqāf* properties in this country.

☐ **FINANCING TRADE IN AN ISLAMIC ECONOMY (1998),** pp.70   **Price $ 10.00**
Ridha Saadallah
The paper examines the issue of trade financing in an Islamic framework. It blends juristic arguments with economic analysis.

☐ **STRUCTURE OF DEPOSITS IN SELECTED ISLAMIC BANKS (1998),** pp.143   **Price $ 10.00**
Ausaf Ahmad
It examines the deposits management in Islamic banks with implications for deposit mobilization.

☐ **AN INTRA-TRADE ECONOMETRIC MODEL FOR OIC MEMBER COUNTRIES: A CROSS COUNTRY ANALYSIS (2000)**, pp.45   **Price $ 10.00**
Boualem Bendjilali
The empirical findings indicate the factors affecting the inter-OIC member countries' trade. The study draws some important conclusions for trade policymakers.

☐ **EXCHANGE RATE STABILITY: THEORY AND POLICIES FROM AN ISLAMIC PERSPECTIVE (2001)**, pp.50   **Price $ 10.00**
Habib Ahmed
This research discusses the exchange rate determination and stability from an Islamic perspective and it presents a monetarist model of exchange rate determination.

☐ **CHALLENGES FACING ISLAMIC BANKING (1998),** pp.95   **Price $ 10.00**
Munawar Iqbal, Ausaf Ahmad and *Tariqullah Kahn*
This paper tackles stock of developments in Islamic Banking over the past two decades and identifies the challenges facing it.

☐ **FISCAL REFORMS IN MUSLIM COUNTRIES (1993),** pp.39   **Price $ 10.00**
Munawar Iqbal
This paper studies the fiscal problems facing many of the Muslim
countries using the experience of Pakistan. It tries to identify the causes of
fiscal problems and makes an attempt to suggest some remedial measures.

☐ **INCENTIVE CONSIDERATION IN MODES OF FINANCIAL**   **Price $ 10.00**
FLOWS AMONG OIC MEMBER COUNTRIES (1993), pp.65
Tariqullah Khan
The paper deals with some aspects of incentives inherent in different
modes of finance and which determine financial flows, particularly in the
context of the OIC member countries.

☐ **ZAKĀH MANAGEMENT IN SOME MUSLIM SOCIETIES (1993),**   **Price $ 10.00**
pp.54
Monzer Kahf
The paper focuses on the contemporary Zakāh management in four
Muslim countries with observation on the performance of Zakāh
management.

☐ **INSTRUMENTS OF REGULATION AND CONTROL OF ISLAMIC**   **Price $ 10.00**
BANKS BY THE CENTRAL BANKS (1993), pp.48
Ausaf Ahmad
The paper examines the practices of Central Banks, especially in the
regulation and control aspects of Islamic Banks.

☐ **REGULATION AND SUPERVISION OF ISLAMIC BANKS (2000),**   **Price $ 10.00**
pp.101
M. Umer Chapra and *Tariqullah Khan*
The paper discusses primarily the crucial question of how to apply the
international regulatory standards to Islamic Banks.

☐ **AN ESTIMATION OF LEVELS OF DEVELOPMENT (A**   **Price $ 10.00**
COMPARATIVE STUDY ON IDB MEMBERSS OF OIC – 1995)
(2000), pp.29
Morteza Gharehbaghian
The paper tries to find out the extent and comparative level of
development in IDB member countries.

☐ **ENGINEERING GOODS INDUSTRY FOR MEMBER**   **Price $ 10.00**
COUNTRIES: CO-OPERATION POLICIES TO ENHANCE
PRODUCTION AND TRADE (2001), pp. 69
Boualam Bindjilali
The paper presents a statistical analysis of the industry for the member
countries and the prospects of economic cooperation in this area.

☐ **ISLAMIC BANKING: ANSWERS TO SOME FREQUENTLY**   **Price $ 10.00**
ASKED QUESTIONS (2001), pp. 76
Mabid Ali Al-Jarhi and Munawar Iqbal
The study presents answers to a number of frequently asked questions
about Islamic banking.

☐ **RISK MANAGEMENT: AN ANALYSIS OF ISSUES IN ISLAMIC**   **Price $ 10.00**
FINANCIAL INDUSTRY (2001), pp.185
Tariqullah Khan and *Habib Ahmed*
The work presents an analysis of issues concerning risk management in
the Islamic financial industry.

☐ **EXCHANGE RATE STABILITY: THEORY AND POLICIES FROM AN ISLAMIC PERSPECTIVE (2001),** pp. 50   **Price $ 10.00**
Habib Ahmed
The paper discusses and analyzes the phenomenon of exchange rate stability in an Islamic perspective.

☐ **ISLAMIC EQUITY FUNDS: THE MODE OF RESOURCE MOBILIZATION AND PLACEMENT (2001),** pp.65   **Price $ 10.00**
Osman Babikir Ahmed
The study discusses Islamic Equity Funds as the Mode of Resource Mobilization and Placement.

☐ **CORPORATE GOVERNANCE IN ISLAMIC FINANCIAL INSTITUTIONS (2002),** pp.165   **Price $ 10.00**
M. Umer Chapra and *Habib Ahmed*
The subject of corporate governance in Islamic financial institutions is discussed in the paper.

☐ **A MICROECONOMIC MODEL OF AN ISLAMIC BANK (2002),** pp. 40   **Price $ 10.00**
Habib Ahmed
The paper develops a microeconomic model of an Islamic bank and discusses its stability conditions.

☐ **THEORETICAL FOUNDATIONS OF ISLAMIC ECONOMICS (2002),** pp.192   **Price $ 10.00**
Habib Ahmed
This seminar proceeding includes the papers on the subject presented to an IRTI research seminar.

☐ **ON THE EXPERIENCE OF ISLAMIC AGRICULTURAL FINANCE IN SUDAN: CHALLENGES AND SUSTAINABILITY (2003),** pp.74   **Price $ 10.00**
Adam B. Elhiraika
This is a case study of the experience of agricultural finance in Sudan and its economic sustainability.

☐ *RIBA,* **BANK INTEREST AND THE RATIONALE OF ITS PROHIBITION (2004),** pp.162   **Price $ 10.00**
M. Nejatullah Siddiqi
The study discusses the rationale of the prohibition of *Riba* (interest) in Islam and presents the alternative system that has evolved.

☐ **ON THE DESIGN AND EFFECTS OF MONETARY POLICY IN AN ISLAMIC FRAMEWORK: THE EXPERIENCE OF SUDAN (2004),** pp.54   **Price $ 10.00**
Adam B. Elhiraika
This is a case study of monetary policy as applied during the last two decades in Sudan with an analysis of the strengths and weaknesses of the experience.

☐ **FINANCING PUBLIC EXPENDITURE: AN ISLAMIC PERSPECTIVE (2004),** pp. 114   **Price $ 10.00**
Munawar Iqbal and *Tariqullah Khan*
The occasional paper addresses the challenge of financing public expenditure in Muslim countries, provides an Islamic perspective on the subject and discusses the potential of the alternatives available to alleviate the problem.

☐ **ROLE OF ZAKĀH AND AWQĀF IN POVERTY ALLEVIATION (2004),** pp. 150   **Price $ 10.00**
Habib Ahmed
The occasional paper studies the role of *Zakāt* and *Awqāf* in mitigating poverty in Muslim communities. The study addresses the issue by studying the institutional set-up and mechanisms of using *Zakāt* and *Awqāf* for poverty alleviation. It discusses how these institutions can be implemented successfully to achieve the results in contemporary times using theoretical arguments and empirical support.

☐ **OPERATIONAL STRUCTURE FOR ISLAMIC EQUITY FINANCE: LESSONS FROM VENTURE CAPITAL (Research Paper No. 69), (2005),** pp.39   **Price $ 10.00**
Habib Ahmed
The paper examines various risks in equity and debt modes of financing and discusses the appropriate institutional model that can mitigate theses risks.

☐ **ISLAMIC CAPITAL MARKET PRODUCTS DEVELOPMENTS AND CHALLENGES (Occasional Paper No. 9**), **(2005),** pp.93   **Price $ 10.00**
Salman Syed Ali
The paper will serve to increase the understanding in developments and challenges of the new products for Islamic financial markets. The ideas explored in it will help expand the size and depth of these markets.

☐ **HEDGING IN ISLAMIC FINANCE (Occasional Paper No.10), (2006**), pp.150   **Price $ 10.00**
Sami Al-Suwailem
The book outlines an Islamic approach to hedging, with detailed discussions of derivatives, *gharar* and financial engineering. It accordingly suggests several instruments for hedging that are consistent with Sharī‘ah principles.

☐ **ISSUES IN ISLAMIC CORPORATE FINANCE: CAPITAL STRUCTURE IN FIRMS (Research No.70),** (2007), pp. 39   **Price $ 10.00**
Habib Ahmed
The research presents some issues concerning capital structure of firms under Islamic finance.

☐ **ROLE OF MICROFINANCE IN POVERTY ALLEVIATION: LESSONS FROM EXPERIENCES IN SELECTED IDB MEMBER COUNTRIES (Occasional Paper),** (2008), pp.73   **Price $ 10.00**
Mohammed Obaidullah
The book proposes a two-pronged strategy to poverty alleviation through micro-enterprise development based on the dichotomy between livelihood and growth enterprises. With a focus on provision of Sharī‘ah-compliant financial services for micro-enterprises, it reviews thematic issues and draws valuable lessons in the light of case studies from three IsDB member countries – Bangladesh, Indonesia, and Turkey.

☐ **ISLAMIC ECONOMICS IN A COMPLEX WORLD: AN EXTRAPOLATION OF AGENT-BASED SIMULATION, (2008), pp. 149**   **Price $ 15.00**
Sami Ibrahim al-Suwailem
This research paper (book/occasional paper) discusses the possible use of recent advances in complexity theory and agent-based simulation for research in Islamic economics and finance

☐ **ISLAMIC MICROFINANCE DEVELOPMENT: INITIATIVES AND CHALLENGES (Dialogue Paper No. 2), (2008), pp. 81.**   **Price $ 10.00**
Mohammed Obaidullah and Tariqullah Khan
This paper highlights the importance of microfinance as a tool to fight poverty. It presents the "best practices" models of microfinance and the consensus principles of microfinance industry.

☐ **THE ISLAMIC VISION OF DEVELOPMENT IN THE LIGHT OF** *MAQASID* **AL-SHARĪ‘AH**, (**1429H, 2008**)**,** pp.65   **Price $ 15.00**
M. Umer Chapra
This paper asserts that comprehensive vision of human well-being cannot be realised by just a rise in income and wealth through development that is necessary for the fulfilment of basic needs or by the realization of equitable distribution of income and wealth. It is also necessary to satisfy spiritual as well as non-material needs, not only to ensure true well-being but also to sustain economic development over the longer term.

☐ **THE NATURE AND IMPORTANCE OF SOCIAL RESPONSIBILITY OF ISLAMIC BANKS, (1431H, 2010),** pp. 460   **Price $ 15.00**
Mohammed Saleh Ayyash
This book attempts to analyse the essential aspects of social responsibility of Islamic Banks and the means to achieving them. Apart from encapsulating the Sharī‘ah formulation of the social responsibility and its relation to the objectives of Sharī‘ah, the book also addresses the linkage between social responsibility and the economic and social development of Muslim communities. Furthermore, it demonstrates the impact of the nature of social and developmental role which should be undertaken by Islamic banks, not only for achieving socio-economic development but also for making the earth inhabitable and prosperous.

☐ **ISLAMIC BANKING STRUCTURES: IMPLICATIONS FOR RISK AND FINANCIAL STABILITY, (1432, 2011),** pp 50   **Price $ 10.00**
Abd Elrahman Elzahi Saaid Ali
The results of this research are expected to be valuable to the management of Islamic banks and to those who are engaged in the fields of Islamic banking and finance.

☐ **HANDBOOK OF ISLAMIC ECONOMICS, Vol. 1, Exploring the Essence of Islamic Economics, (1432, 2011),** pp.348   **Price $ 35.0**
Habib Ahmed & Muhammad Sirajul Hoque
This "Handbook of Islamic Economics" is part of the project to make important writings on Islamic economics accessible by organizing them according to various themes and making them available in one place. The first volume of this Handbook subtitled "Exploring the Essence of Islamic Economics" collects together the eighteen important articles contributed by the pioneers of the subject and presents them under four broad themes: (i) Nature and Significance of Islamic Economics, (ii) History and Methodology, (iii) Sharī'ah and *Fiqh* Foundations, (iv) Islamic Economic System.

☐ **BUILD OPERATE AND TRANSFER (BOT) METHOD OF FINANCING FROM SHARĪ'AH PERSPECTIVE, (1433, 2012),** pp.115   **Price $ 15.00**
Ahmed Al-Islambouli
Literature on BOT techniques from Shariah perspectives are few and far between. This book surveys and reviews the previous studies as well as experiences of BOT financing by individuals and institutions and concludes with a Sharī'ah opinion. It finds BOT to be a combination of *Istiṣnā'* and other contracts. The BOT would be a valid method after appropriate modifications

☐ **CHALLENGES OF AFFORDABLE HOUSING FINANCE IN IDB MEMBER COUNTRIES USING ISLAMIC MODES (1433, 2012),** pp.266   **Price $ 20.00**
Nasim Shah Shirazi, Muhammad Zulkhibri Salman Syed Ali & SHAPE Financial Corp.
The focus of this book is on financial products and infrastructure innovation for housing finance. It quantifies the demand for housing in IDB member countries, estimates the financial gap, and evaluates the current Islamic house financing models and practices in the IDB member countries and elsewhere in the world. It also identifies niche areas where intervention by the IDB Group can promote development of housing sector to meet the housing needs in its member countries.

Lectures

☐ **THE MONETARY CONDITIONS OF AN ECONOMY OF MARKETS: FROM THE TEACHINGS OF THE PAST TO THE REFORMS OF TOMORROW (1993),** pp.64　　**Price $ 10.00**
Maurice Allais
This lecture by the nobel laureate covers five major areas: (1) potential instability of the world monetary, banking and financial system, (2) monetary aspects of an economy of markets, (3) general principles to reform monetary and financial structures, (4)review of main objections raised against the proposed reforms and (5) a rationale for suggested reforms.

☐ **THE ECONOMICS OF PARTICIPATION (1995),** pp.116　　**Price $ 10.00**
Dmenico Mario Nuti
A case is made that the participatory enterprise economy can transfer dependent laborers into full entrepreners through changes in power sharing, profit sharing and job tenure arrangements.

☐ **TABUNG HAJI AS AN ISLAMIC FINANCIAL INSTITUTION: THE MOBILIZATION OF INVESTMENT RESOURCES IN AN ISLAMIC WAY AND THE MANAGEMENT OF HAJJ (1995),** pp.44　　**Price $ 10.00**
It provides history and objectives of Tabung Haji of Malaysia, outlines saving and investment procedures of the Fund and gives an account of its services to *hajjis*.

☐ **ISLAMIC BANKING: STATE OF THE ART (1994),** pp.55　　**Price $ 10.00**
Ziauddin Ahmad
The paper reviews and assesses the present state of the art in Islamic banking both in its theoretical and practical aspects.

☐ **ROLE OF ISLAMIC BANKS IN DEVELOPMENT (1995),** pp.54　　**Price $ 10.00**
Ahmad Mohamed Ali
The paper analyses the concept of development from an Islamic perspective, highlighting the role of Islamic banks in achieving the same.

☐ **JURISPRUDENCE OF *MAṢLAḤAH* AND ITS CONTEMPORARY APPLICATIONS (1994),** pp.88　　**Price $ 10.00**
Hussein Hamid Hassan
The paper discusses the Islamic view as well as applications of *Fiqh al Maṣlaḥah* in the field of economic and finance.

☐ ***AL GHARAR* (IN CONTRACTS AND ITS EFFECT ON CONTEM-PORARY TRANSACTIONS) (1997),** pp.79　　**Price $ 10.00**
Siddiq Al Dareer
This study presents the Islamic Sharī‘ah viewpoint regarding *gharar* and its implications on contracts, particularly in connection with sale contracts and other economic and financial transactions.

☐ ***ISTIHSAN* (JURISTIC PREFERENCE) AND ITS APPLICATION TO CONTEMPORARY ISSUES (1997),** pp.148　　**Price $ 10.00**
Mohammad Hashim Kamali
The lecture deals with an important subject. It is a common knowledge that Qur’an and *Sunnah* are the primary sources of Islamic jurisprudence. It presents a cross section of Islamic legal issues, which are of vital importance to Islamic countries.

☐ **ECONOMIC COOPERATION FOR REGIONAL STABILITY (1996),** pp.34   **Price $ 10.00**

Bacharuddin Jusuf Habibie

The paper highlights significance and implications of economic cooperation for regional stability in the context of Asian countries. Given the importance of economic cooperation between the developing countries in general and Islamic countries in particular.

☐ **WHAT IS ISLAMIC ECONOMICS? (1996),** pp.73   **Price $ 10.00**

Mohammad Umer Chapra

This lecture deals with an important subject. It explained both the subject matter of Islamic economics as well as its methodology in his usual mastering fashion.

☐ **DEVELOPMENT OF ISLAMIC BANKING ACTIVITY: PROBLEMS AND PROSPECTS (1998),** pp.24   **Price $ 10.00**

Saleh Kamel

This lecture explores the origin of Islamic banks and explains their problems and prospects which have attracted the attention of scholars.

☐ *AL-QIYAS* **(ANALOGY) AND ITS MODERN APPLICATIONS (1999)**, pp.132   **Price $ 10.00**

Muhammad Al-Mukhtar Al-Salami

The paper presents the juridical theory of *Qiyas* and its applications to contemporary issues.

☐ *MUḌĀRABAH* **AND THE PAKISTAN PERSPECTIVE (2000),** pp.46   **Price $ 10.00**

Justice (Retd.) Tanzilur Rahman

The lecture deals with *Muḍārabah* characteristics and its applications in accordance with Sharīʿah and the Pakistan perspective.

☐ **SUSTAINABLE DEVELOPMENT IN THE MUSLIM COUNTRIES (2003),** pp.104   **Price $ 10.00**

Monzer Kahf

IDB Prize Lectures analyses the concept of sustainable development from an Islamic perspective and surveys the state of development in Muslim countries.

Others

☐ **TRADE PROMOTION ORGANIZATIONS IN OIC MEMBER COUNTRIES (1994),** pp.40   **Price $ 10.00**

A directory of trade promotion organizations. A reference for those interested in trade promotion in OIC member states.

☐ **A BIBLIOGRAPHY OF ISLAMIC ECONOMICS (1993),** pp.840   **Price $ 20.00**

A very significant bibliography of Islamic economics organized according to (1) Call Number Index, (2) Descriptor Index, (3) Subject Term Index for Call Numbers, (4) Author Index (5) Corporate Author Index.

☐ **PETROCHEMICAL INDUSTRY IN OIC MEMBER COUNTRIES (1994),** pp.89   **Price $ 10.00**

Useful and up-to-date information on Petrochemical Industry in OIC member States are brought together in this study to promote trade among them in this area.

☐ **FERTILIZER INDUSTRY AND TRADE IN OIC MEMBER COUNTRIES (1995),** pp.603   **Price $ 20.00**

It serves as a useful and up-to-date guide to fertilizer industry, technology and trade in OIC member countries.

☐ **CEMENT INDUSTRY IN OIC MEMEBR COUTNIRES – (SECOND EDITION) (1993),** pp.560   **Price $ 20.00**

It is a guide to the Cement industry in the OIC member countries to promote trade among them in the area of cement and to enhance the quality and productivity of cement.

☐ **FINANCIAL DEVELOPMENT IN ARAB COUNTRIES (BOOK OF READINGS, No.4) (2005)**, pp.298   **Price $ 20.00**

This book of readings provides fruitful policy recommendations on various financial development issues in the Arab World such as operational efficiency and service quality in banking. It also examines different aspects related to stock markets development such as efficiency, volatility, hedging, and returns

Actes de Séminaires

☐ **L'ORGANISATION ET LE FONCTIONNEMENT DU CONSEIL MALAIS DE DIRECTION DES PELERINS ET DU FONDS DU PELERINAGE (1987),** 109 pages   **Prix $ 10.00**

Comme institution consacrée à l'organisation du pèlerinage, TABUNG HAJI (Conseil de Direction des Pèlerins) a servi comme modèle type à cette journée d'étude.

☐ **L'ADMINISTRATION PUBLIQUE DANS UN CONTEXTE ISLAMIQUE (1995),** 150 pages   **Prix $ 10.00**

Yassine Essid and *Tahar Mimm, (éd.)*

Outre l'histoire de l'administration en Islam, cet ouvrage traite de nombreux aspects tant théoriques que pratiques de l'administration d'un point de vue islamique et qui touchent à l'actualité du monde islamique.

☐ **LA ZAKĀT: ASPECTS JURIDIQUES, ECONOMIQUES ET SOCIAUX (1995),** 248 pages   **Prix $ 20.00**

Boualem Bendjilali and *Mohamed Alami (éd.)*

Actes de séminaire sur LA ZAKĀT dont l'objectif est d' ouvrir de nouvelles voies à la reflexion et de faire connaître les concepts, la méthodologie et les principes de base de la collecte et de la répartition de la Zakāt.

☐ **DEVELOPPEMENT D'UN SYSTEME D'INSTRUMENTS FINANCIERS ISLAMIQUES (1995),** 328 pages   **Prix $ 20.00**

Mohamed Ariff and *M.A. Mannan* (éd.)

Actes de séminaire dont l'objectif principal était d'identifier les voies et moyens pour l'émission d'instruments financiers islamiques viables qui pourraient préparer le terrain à une mobilisation efficace des ressources financières dans les pays membres de la BID.

☐ **INTRODUCTION AUX TECHNIQUES ISLAMIQUES DE FINANCEMENT (1997),** 210 pages   **Prix $ 20.00**

Actes de séminaire don't l'objectif principal était d'offrir aux cadres supérieurs des pays francophones membres de la BID une introduction d'ordre théorique et pratique sur les modes de financement islamiques utilisés par les banques et les institutions financières islamiques.

☐ **CONFERENCES EN ECONOMIE ISLAMIQUE (1996),** 555 pages   **Prix $ 20.00**
Ausaf Ahmed and *Kazim Awan*
Actes de séminaire dont l'objectif principal est de servir comme outil de
base pour les étudiants et aux enseignants en économie islamique.

☐ **LE DEVELOPPEMENT DURABLE, (1997),** 256 pages   **Prix $ 20.00**
Taher Memmi (éd.)
Actes d'un séminaire sur le développement durable qui présente, entre
autres, la stratégie en cette matière de quelques pays membres de la BID.

☐ **PROMOTION ET FINANCEMENT DES MICRO-ENTREPRISES
(1997),** 187 pages   **Prix $ 10.00**
Taher Memmi (éd.)
Actes de séminaire sur la promotion et financement des micro-entreprises
qui peuvent être utiles à tous ceux, décideurs, hommes et femmes du
terrain, soucieux de faire de la micro-entreprise un outil efficace et durable
de lutte contre la pauvreté.

☐ **LA ZAKĀT ET LE WAQF : ASPECTS HISTORIQUES,
JURIDIQUES, INSTITUTIONNELS ET ECONOMIQUES (1998),**
387 pages   **Prix $ 20.00**
Boualem Bendjilali (éd.)
Actes de séminaire qui visent à faciliter l'accès des lecteurs francophones
à la littérature sur l'économie islamique en général et la Zakāt et le Waqf
en particulier.

☐ **LES MODES DE FINANACEMENT ISLAMIQUES (1993)**,
48 pages   **Prix $ 10.00**
Boualem Bendjlali (éd.)
Rapport d'un séminaire sur les modes de financement islamiques tenu en
Mauritanie en 1413H (1992).

☐ **LES SCIENCES DE LA CHARI'A POUR LES ECONOMISTES:
LES SOURCES DU FIQH, SES PRINCIPES ET SES THEORIES;
LE FIQH DES TRANSACTIONS FINANCIERES ET DES
SOCIETES; ET SON APPLICATION CONTEMPORAINE (2001),**
572 pages   **Prix $ 25.00**
Boualem Bendjilali (éd.)
Actes de séminaire sur les sciences de la Chari'a pour les économistes
dont l'objectif principal est de servir comme outil de base aux chercheurs,
étudiants et enseignants en économie islamique sur les sources du *Fiqh.*

Recherches

☐ **LA COOPERATION ECONOMIQUE ENTRE LES PAYS DU
MAGHREB (1985),** 138 pages   **Prix $ 10.00**
Ridha Saadallah
Cet ouvrage traite de nombreux thèmes dont les ressources naturelles et
humaines au Maghreb, le potentiel de coopération agricole et industrielle au
Maghreb, etc.

☐ **PROFITS ET INTERETS BANCAIRES ENTRE L'ANALYSE
ECONOMIQUE ET LA CHARI'A (1994),** 150 pages   **Prix $ 10.00**
Abdelhamid El-Ghazali
Cet opuscule traite de l'intérêt bancaire face au profit en tant que mécanismes
de gestion de l'activité économique. Une analyse de deux points de vue
différents, celui de l'économie conventionnelle et celui de la Chari'a.

☐ **LA MOUDHARABA SELON LA CHARI'A ET SES APPLICATIONS CONTEMPORAINES (1994),** 83 pages   **Prix $ 10.00**
Hassan El-Amin
Cette étude traite de nombreux aspects pratiques: légal, économique et bancaire.

☐ *JOUALA* **ET** *ISTISNA,*   **Prix $ 10.00**
***Analyse juridique et économique* (1994) ,** 65 pages
Chaouki Ahmed Donia
L'intérêt de cette recherche réside dans le fait qu'elle aborde un nouveau domaine d'application des transactions économiques islamiques se basant sur deux contrats, à savoir "La Jouala et L'Istisna".

☐ **LA PROPRIETE FONCIERE EN ISLAM (1994)** *(Enquête),* 52 pages   **Prix $ 10.00**
Mahmoud A. Guilaid
Le but de cette étude est d'examiner les questions les plus importantes concernant le droit de propriété foncière en Islam.

☐ **LES RELATIONS COMMERCIALES ENTRE LE CONSEIL DE COOPERATION DU GOLFE ET LA COMMUNAUTE EUROPEENNE (1995),** 152 pages,   **Prix $ 10.00**
Du Passé Récent au Lendemain de 1992
Ridha Mohamed Saadallah
Cette étude procède à une analyse minutieuse des statistiques passées, des échanges commerciaux entre les pays du CCG et ceux de la Communauté Européenne en vue de dégager les tendances profondes et les caractéristiques structurelles du commerce Euro-Golfe.

☐ **ERADICATION DE LA PAUVRETE ET DEVELOPPMENT DANS UNE PERSPECTIVE ISLAMIQUE (1995),** 180 pages   **Prix $ 10.00**
Abdelhamid Brahimi
Cette recherche, divisée en deux parties, traite dans la première des facteurs internes et externes de blocage et de l'impasse. La seconde est consacrée à la conception et à la mise en oeuvre de politiques économiques dans une perspective islamique.

☐ **JUGEMENT DU TRIBUNAL FEDERALISLAMIQUE DU PAKISTAN RELATIF A L'INTERET** *(RIBA)* **(1995),** 478 pages   **Prix $ 25.00**
Ce document constitue un outil de travail et une référence indispensables à tous ceux, parmi les décideurs politiques et chercheurs dans les pays membres de la Banque, qui sont désireux de voir se développer l'alternative d'un système financier exempt d'intérêt.

Eminents Spécialistes

☐ **LES CONDITIONS MONETAIRES D'UNE ECONOMIE DE MARCHES DES ENSEIGNEMENTS DU PASSE AUX REFORMES DE DEMAIN (1993),** 64 pages   **Prix $ 10.00**
Maurice Allais (Prix Nobel d'Economie - 1988)
L'auteur, dans son examen, critique du système monétaire international, appelle à des réformes tant économiques que morales.

☐ **JURISPRUDENCE DE LA *MAṢLAḤAH* ET SES APPLICATIONS**   **Prix $ 10.00**
CONTEMPORAINES (1995), 92 pages
Hussein Hamed Hassan
L'étude, présente le point de vue islamique se rapportant à la question de l'intérêt publique, son lien avec la législation, ses conditions et ses dimensions juridiques; avec un certain nombre d'applications contemporaines.

☐ **JURISPRUDENCE DE LA NECESSITE (*FIQH* DE LA *DHARURA*)**   **Prix $ 20.00**
ET SON APPLICATION DANS LA VIE CONTEMPORAINE :

PERSPECTIVE ET PORTEE (1996), 259 pages
Abd al-Wahab I. Abu Sulayman
Cette recherche sur le *Fiqh de la Ḍarūrah* aborde le point de vue de la Chari'a islamique par rapport à la notion de *Ḍarūrah* (nécessité), ses conditions et ses perspectives juridiques.

☐ **COOPERATION ECONOMIQUE POUR UNE STABILITE**   **Prix $ 10.00**
REGIONALE (1996), 37 pages
Bacharuddin Jusuf Habibie
Cet ouvrage porte sur l'importance coopération économique entre les pays en développement en général et entre les pays islamiques en particulier.

☐ **LE QIYAS ET SES APPLICATIONS CONTEMPORAINES (1996),**   **Prix $ 10.00**
139 pages
Mohamed Mokhtar Sellami
Uni conférence qui traite de l'une des sources de la jurisprudence, reconnue dans la science des fondements du droit sous le nom d'analogie (Qiyâs) et reconnue par l'ensemble des écoles juridiques comme preuve légale et méthode d'extraction des jugements.

Prix de la BID

☐ **LE SYSTEME BANCAIRE ISLAMIQUE : LE BILAN, (1996),** 65   **Prix $ 10.00**
pages
Ziauddin Ahmed
Le but de ce papier est d'examiner et d'évaluer la situation actuelle dans le domaine des banques islamiques aussi bien du point de vue théorique que pratique.

☐ **QU'EST-CE QUE L'ÉCONOMIE ISLAMIQUE? (1996),** 81 pages   **Prix $ 10.00**
Mohammad Umer Chapra
Conférence donnée par Dr. Chapra lauréat du Prix de l'économique islamique 1409H (1989) sur : l'économie conventionnelle et l'économie islamique.

☐ **EVOLUTION DES ACTIVITES BANCAIRES ISLAMIQUES:**   **Prix $ 10.00**
PROBLEMES ET PERSPECTIVES (1998), 30 pages
Saleh Kamel
Conférence donnée par Cheikh Saleh Kamel lauréat du Prix de la BID en système bancaire islamique pour l'année 1416H (1995/96). Elle constitue une grande contribution à la compréhension de l'économie et du système bancaire islamiques et à leur évolution.

Traductions

☐ **VERS UN SYSTÈME MONÉTAIRE JUSTE, (1997),** 352 pages   **Prix $ 20.00**
Mohammad Umer Chapra
Ce livre développe avec habilité la logique islamique de la prohibition du
Riba, et démontre avec rigueur la viabilité et la supériorité du système de
financement basé sur la participation au capital.

Documents occasionnels

☐ **DEFIS AU SYSTEME BANCAIRE ISLAMIQUE, (1998),** 90 pages   **Prix $ 10.00**
Munawar Iqbal, Ausaf Ahmad et Tariquallah Khan
Le but de ce document occasionnel est que les théoriciens et praticiens
dans le domaine bancaire islamique doivent explorer les voies et moyens
permettant au système bancaire islamique de soutenir son rythme de
progrès au moment où il entre dans le 21ème siècle.

TRANSLITERATION TABLE

Arabic Consonants

- Initial, unexpressed medial and final:

ء	'	د	d	ض	d	ك	k
ب	b	ذ	dh	ط	t	ل	l
ت	t	ر	r	ظ	z	م	m
ث	th	ز	z	ع	[	ن	n
ج	j	س	s	غ	gh	هـ	h
ح	h	ش	sh	ف	f	و	w
خ	kh	ص	s	ق	q	ي	y

- Vowels, diphthongs, etc.

Short	⸌	a	⸍	i	وِ	u
Long	أ	a	ي	i	و	u
Diphthongs	ؤ	aw	ئ	ay		

Notes To Contributors

1. The papers submitted to *IES* should make some noticeable contribution to Islamic economics, either theoretical or applied, or discuss an economic issue from an Islamic perspective.

2. Submission of a paper will be held to imply that it contains original unpublished work and is not being submitted for publication elsewhere.

3. Since *IES* sends all papers for review, electronic copies should be submitted in MS word format in a form suitable for sending anonymously to the reviewers. Authors should give their official and e-mail addresses and telephone/fax numbers at which they can be contacted.

4. All papers must include an abstract of no more than 150 words. It is strongly advised that the length of the article should not exceed 6000 words.

5. All papers should have an introductory section in which the objectives and methodology of the article are explained and a final section, which summarizes the main points, discussed and the conclusions reached.

6. Manuscripts should be typed double-spaced, on one side of the paper only. References, tables and graphs should be on separate pages.

7. Detailed derivations of the main mathematical results reported in the text should be submitted separately. These will not be published.

8. References should be listed at the end of the text in the following style:

9. Articles: Al-Qari, Mohamed Ali (1993), "Towards an Islamic Stock Market", *Islamic Economic Studies*, Vol. 1, No. 1; Books: Khan, A. R. (1993), *Financial Intermediation*, New York: Springer Publishers. Page references to works referred to in the text should take the following form: Al-Qari (1993:17). Citations within the text should follow Harvard APA style.

10. The verses of the Qurʾān quoted should carry *surah* number and *ayah* number as (3:20).

11. Complete reference to the source of aḥādīth quoted should be given.

12. Contributions may be sent in English, Arabic or French and should be addressed to the Editor, *Islamic Economic Studies*, on the following

   E-mail: ejournal@isdb.org (for English language articles)

   ajournal@isdb.org (for Arabic language articles)

   fjournal@isdb.org. (for French language articles)

   Our postal address is: Islamic Research & Training Institute (IRTI), 8111 King Khalid St. A1 Nuzlah A1 Yamania Dist. Unit No. 1, Jeddah 22332-2444, Kingdom of Saudi Arabia