Jakarta Sharia Stock Index and international Sharia leading stock indices: comparison of Sharia screening processes

Dwiraptono Agus Harjito* and Athaya Reisya Nabila

Management Department, Faculty of Economics, Universitas Islam Indonesia, Yogyakarta, Indonesia
Email: agus_h@ui.ac.id
Email: athaya@gmail.com
*Corresponding author

Zuraidah Mohd Sanusi

Accounting Research Institute, Universiti Teknologi MARA, Shah Alam Branch, 40450 Selangor, Malaysia
Email: zuraidahms@uitm.edu.my

Abstract: This research examines whether Jakarta Islamic Index (JII) adopts a financial screening process that can be considered more liberal than the financial screening process applied by Dow Jones Islamic Market (DJIM), S&P 500 Sharia, FTSE Sharia Global Equity Index, AMIRI Capital and MSCI Islamic Index. In this study, 180 Sharia-compliant firms listed in JII from 2010 to 2015 are screened using the formula of liquidity ratio, interest ratio and debt ratio adopted by the selected Sharia index providers. This finding shows that the highest percentage originates from MSCI in which 43 companies are considered to be Sharia-compliant. Meanwhile, only three companies are deemed to be Sharia-compliant according to DJIM and S&P. Given the fact that only less than 50% of firms passed, the screening process under each selected Sharia stock index, it can be concluded that JII applies more liberal financial screening criteria when compared to the other index providers.

Keywords: Sharia-compliant stock; financial screening; quantitative screening.


Biographical notes: Dwiraptono Agus Harjito is an Associate Professor in Finance at the Department of Management, Faculty of Business and Economics, Universitas Islam Indonesia (UII), Yogyakarta. Currently, he is the Head of the Master Program Management Study Program, previously the Dean of the Faculty of Business and Economics at UII. He has a Doctor of Business Administration (DBA) from the Center for Graduate Studies, Faculty of...
Economics and Commerce, Universiti Kebangsaan Malaysia. His main research areas are in corporate finance, corporate governance and capital markets.

Athaya Reisya Nabila is an alumnus of the international program of the Faculty of Business and Economics, Islamic University of Indonesia, Yogyakarta. Currently he is working for a private company in Jakarta, Indonesia. Research interests are in the field of corporate finance and capital markets.

Zuraidah Mohd Sanusi is currently the Director of Centre for Leadership, ILD Universiti Teknologi MARA (UiTM). She is also a Senior Research Fellow at the Accounting Research Institute, UiTM. Her main research interests are the fields of financial criminology, corporate reporting, corporate governance and management.

This paper is a revised and expanded version of a paper entitled ‘Jakarta Sharia Stock Index and International Sharia Leading Stock indices: comparison of liberalism’ analysis presented at the 8th International Conference on Financial Criminology, Dorsett Hotel, Putrajaya, 12–13 April 2017.

1 Introduction

As the number of faithful Moslem investor increases, the concept of Sharia economy has become popular. Since the 1980s, the Sharia economy has grown in Indonesia. Investors are seeking Islamic investment in stocks and are under great scrutiny to ensure that their investment is fully in line with the Sharia concept. As well, according to Khatkhatay and Nisar (2012), although investment in stocks is permitted by Sharia scholars, the investors must ensure that the company’s activities and structuring do not contradict Sharia law.

Due to the increasing demand of Islamic investments in stock, Jakarta Islamic Index (JII) was established as the Sharia stock index in Indonesia as a result of collaboration between Danareksa Investment Management and Bursa Efek Indonesia. JII helps Moslem investors to select and screen which stock is categorised as Sharia stock without the need to construct their own basic analysis and portfolio (Lewis, 2007). JII itself contains 30 best stocks that are screened based on Islamic law, popularly known as Sharia law. Now, as the only Sharia stock index in the world’s largest Moslem country, the question that may appear is whether the quantitative screening process in JII is more conservative or more liberal in comparison with the other Sharia indices in both developed and emerging markets. In other words, is JII adopting a quantitative screening process that is closer to the law of Sharia in comparison to the other leading Sharia indices?

According to Global Islamic Economy, Indonesia as the world’s largest Moslem majority country is ranked 10th in terms of the Islamic market and achieved a GIE score of 36. However, Indonesia has not yet succeeded in attracting foreign investors including those from Islamic countries (Islamic Finance Asia, 2016). The most likely reason for this is due to the illiquidity of several companies and the currency risk. Another reason is the perception that the screening process of Sharia stock in Indonesia is more liberal when compared to the screening process of Sharia stock from the other countries (Pok, 2012). The director of FTSE Asia Pacific stated that international investors prefer investment with stricter compliance in which lower debt and implementing social
responsibility programs is emphasised. Since Indonesia’s economy has been growing rapidly in recent times, the country’s relationships with several other Islamic countries are closer. For this reason, it is important to study whether it is true that JII as Sharia stock in Indonesia adopts a more liberal screening process in comparison to other leading Islamic indices.

Currently, a fully Sharia-compliant equity is extremely rare as most countries have conventional finance institutions and probably involve usury (riba) in their activities. It appears that in the early 21st century, prohibited elements in the screening process are to some extent allowed (Adam and Bakar, 2012). In an effort to solve this issue, Sharia scholars have agreed to some extent about the level to which companies can engage in such practices, but also advised on how to purify earnings that are perceived to be ‘sinful’ (Adam and Bakar, 2012). Capital investment institutions and Sharia scholars involved in Islamic investment fund management schemes have proposed various procedures and guidelines to determine the Sharia compliance of an investment. This is difficult to do given the complexity of the modern capital market, greatly intertwined investment schemes, and the multidisciplinary nature of many companies. The fact that the application of Sharia law is dynamic leads to different propositions for screening criteria and processes. Furthermore, this fact leads to the important question: “Is the screening process adopted in JII more conservative or more liberal in comparison to other Islamic stock indices?”

This study examines whether Jakarta Sharia Stock Index has more liberal parameters and proxies in its stock screening process when compared with the other leading Sharia stock indices, these being the Dow Jones Islamic Market (DJIM) Index, S&P BSE 500 Sharia, FTSE Sharia Global Equity Index, Morgan Stanley Capital International (MSCI) Islamic Index and AMIRI Capital Islamic Fund. The screening method that will be employed in this research is quantitative research: liquidity ratio, debt ratio and interest ratio. The quantitative screening process examines the members of JII. The screening process incorporates five years’ data from the JII for the period 2010 to 2015, and each year consists of 30 stocks listed on this particular index. The screening process comprises a quantitative screening methodology and threshold for the stock indices documented above. If at least one stock listed on JII does not pass the screening process of a Sharia stock index, it can be assumed that JII is more liberal than other Sharia stock indices.

2 Literature review

2.1 The concept of Sharia

Sharia can be defined as a code of law derived from the divine revelation and actions of Prophet Mohammed (PBUH), these being, respectively, the Al-Qur’an and Al-Hadith (Adam and Bakar, 2012). In reality, the interpretation of Sharia is always changing and ambiguous, so that ‘pure’ Sharia practice is extremely rare and difficult to put into practice. Some minor differences in the interpretation and application of Sharia may differ over time from place to place because Sharia not only refers to the Al-Qur’an and Al-Hadith, but also secondary sources of law, called ijma (the agreement among ulama, i.e., Moslem scholars) and ijtihad, which is interpretation (Derigs and Marzban, 2008).

Sharia law differentiates Islamic finance and business from conventional finance (Zainudin et al., 2014). According to Abbes (2012), four major schools of Islamic
thought (Hanafi, Maliki, Shafii and Hambali) agree that all activities that contradict with Sharia law are considered as haram (not permissible). The major principles of Sharia that are applicable to Islamic finance are outlined below. According to Ismail and Tohirin (2010), Sharia law prohibits several things in economic and business transactions:

1. **Haram product as core business**
   - Haram is said to be unlawful or not permissible (FTSE Shariah Research, n.d.). Haram is referred to Al-Qur'an and Al-Hadith because all activities, contracts, transactions and professions considered as haram have already been stated explicitly in Al-Qur’an and Al-Hadith. Prophet Muhammad (PBUH) stated,
   
   “Surely, Allah and His messenger have prohibited the sale of wine, the flesh of dead animals, swine and idols.” (Reported by Bukhari and Muslim)

2. **Riba**
   - According to FTSE, riba is an increase or profit by the lender as a condition of having a loan. In Sharia law, making money from money is not permissible because money is only seen as a medium of exchange (El-Dalabeeh, 2013). It is stated in Al-Qur’an:
   
   “… ‘Trade is like interest’, But Allah has permitted trade and forbidden interest. So whoever has received direction from their and desist, may have what in past, and his affair rest with Allah. But whoever returns to (dealing with interest or usury), those are the companions of the fire; they will be abide eternally therein.” (Al-Baqarah: 275)

3. **Gharar**
   - Gharar can be defined as an extreme uncertainty in the muammalah process (El-Dalabeeh, 2013). Gharar is a high level of uncertainty, hazard and risk in a transaction in which the consequences are not known. Islam allows uncertainty but it needs to be managed and not considered as an extreme uncertainty. Gambling is included as a form of gharar because the gambler ignores the outcome of his gambling habits (Malaysian International Islamic Centre, 2013). It is stated in Al-Qur’an:
   
   “O ye who believe! Eat not up your property among yourselves in vanities but let there be amongst you traffic and trade by mutual good-will, nor kill (or destroy) yourselves, for verily Allah hath been to you Most Merciful.”

   (An-Nisaa: 29)

4. **Maysir**
   - Maysir can be described as gambling or obtaining a profit without working for it. Unlike gharar which is tolerated to a certain degree, maysir is not accepted at all. There are two definitions of Maysir based on theory and practice. Theoretically, Maysir is an agreement in which ownership of an asset is based on the occurrence of an uncertain event. In practice, maysir can be described as an agreement in which there is a possibility of loss for one party and gain for the other party without knowing which party will lose or will gain. It is written in Al-Qur’an,
   
   “O Believers! Intoxicants and gambling – and divining arrows are an abomination of Satan’s handiwork. Leave it aside in order that you may prosper.”

   (Al-Maidah: 90).
2.2 Sharia stock index

Sharia stock index is an index that adopts a Sharia-compliant screening standard in its stock screening process (Zainudin et al., 2014). Sharia Stock Index helps investors to differentiate stocks that are permissible in Islam from stocks that are not permissible (Abbes, 2012). In other words, this index fulfils the needs of investors who want to invest their capital according to the sharia term (Salahuddin and Hermansyah, 2014). According to Pok (2012), there are three reasons for creating and refining the Sharia Stock Index. First, there is a strong demand for a Sharia financial product from a large number of Moslem communities around the world. Second, oil rich nations (mostly Middle East countries) strongly demand and prefer to invest their capital in Sharia products. Third, many Sharia products become very competitive and attract not only Moslem investors but also non-Moslem ones.

To help investors select the stocks included in Sharia stock, Sharia stock index presents several top stocks that meet the needs of Sharia compliance. It is created to fulfil the need of all investors who want to allocate their capital according to Sharia terms (Salahuddin and Hermansyah, 2014). The Sharia or Islamic Stock Index has special regulations and conditions that determine its market and stocks compared to conventional stock indices. Also, Sharia stock has to be associated with halal products and qualities such as safety, environmental friendliness and process efficiency to convince the stock issuer (Zainudin et al., 2014). The leading Sharia stock indices include JII, DJIM Index, S&P 500 Sharia, FTSE Sharia Global Equity Index, AMIRI Capital and MSCI Islamic Index. These are explained in more detail below.

Jakarta Islamic Index (JII) is the first Indonesian Islamic index and it was launched in July 2000 in collaboration with PT. Danareksa Investment Management as a state-owned security companies created in 2007 (Pranata and Nurzanah, 2015). JII contains 30 Sharia stocks on the Indonesian Stock Exchange (IDX). JII is arranged based on the Sharia stock list and selection is further based on the following: firstly, choosing 60 stocks from the Sharia stock list with the biggest market capitalisation in the previous year; and secondly, selecting 30 stocks with the biggest transaction value in the regular market (Salahuddin and Hermansyah, 2014). JII stocks have unique characteristics besides being based on Islamic principles; they have high market capitalisation and characteristics of high liquidity. Based on the 2012 Indonesian Islamic Capital Report, Sharia stock in Indonesia increased from 173 in 2007 to 253 in 2012 and has been growing to the present day. By March 2012, the percentage of Sharia stock in Indonesia outgrew conventional stock by 50.7% (Setiawan and Oktariza, 2013).

DJIM Index is known as the world’s most conventional Islamic stock index (Pok, 2012). It contains stocks of US corporations and companies whose business and activities are consistent with the demands of Sharia law (Hakim and Rashidian, 2004). DJIM index contains 30 of the most influential companies and deemed to be neither risky nor volatile. It is also known as a low-debt, non-financial and social-ethical index since the main purpose of DJIM is to help the world’s Moslem investors manage their investments (Hakim and Rashidian, 2004). DJIM is weighted using free-float market capitalisation rather than full market capitalisation in order to reflect the actual number of shares available to investors (Dow Jones, 2010). The free-float market is a method that takes into account only the market capitalisation of free float shares rather than all of the active and inactive shares readily available in the market. Excluded here are locked-in shares such as those held by insiders, promoters and governments (Dow Jones, 2010).
Referring to Standard and Poor’s Islamic Index (S&P Sharia), it is designed to fulfil the needs of investment in Sharia-compliant stock (Asia Index Pvt. Ltd., 2017). S&P BSE 500 Sharia consists of the 500 largest and most liquid Indian stocks from 20 major industries, and it covers more than 90% of total market capitalisation. S&P Sharia has contracted with ratings intelligent (RI) partner to provide the required Sharia screening justification. There are four fundamental aspects that are implemented by S&P Sharia:

1. the index is screened for Sharia compliance
2. the index is liquid and investable
3. Sharia compliance follows the strictest standards observed by Middle Eastern countries
4. the index is checked for compliance periodically (Asia Index Pvt. Ltd., 2017).


FTSE Global Equity Shariah Index has developed an enhanced Sharia indexes by applying an improved methodology and produce a broader Sharia index solution for Islamic Investors in responding to the rising demand for Sharia-compliant investments in both developed and emerging market economies. FTSE Global Equity Shariah Index was created through a joint venture of FTSE Group with Yaasar Ltd., a consultancy and leading organisation on Sharia and has been certified as Sharia compliant through the fatwa or Islamic legal opinion. The screening and selection process in FTSE stock index is monitored by the Yasasar Sharia Board. Previously, FTSE followed the traditional market capitalisation methodology. However, in recent years, FTSE has focused on risk alleviation, thus FTSE adopts minimum variance methodology to reduce volatility after technical and financial screening processes have been applied. The impact of minimum variance methodology is a more balanced risk profile by overweighting stocks that reduce index volatility and underweighting stocks that possibly increase risk.

MSCI Sharia Islamic index is a series of MSCI World Index groups that adopt Sharia investment principles (MSCI Research Journal, 2016). The methodology employed by MSCI index series is based on the MSCI equity index but at the same time selecting only securities that meet Sharia compliance requirements. Like other Sharia indices, MSCI excludes securities using business activity and financial ratios. MSCI Islamic index uses total assets as the denominator for all of its financial ratios formulae (MSCI Research Journal, 2016).

AMIRI Capital is a Sharia-compliant global investment management group that offers its investors a quality investment opportunity combines with rigorous Sharia compliance (AMIRI Capital Journal, 2009). AMIRI applies four basic points when choosing its Sharia-compliant equity issuer:

1. income generated from the prohibited component should not exceed 5% of the total income
2. interest-bearing ratio must not exceed 33%
3. debt ratio must not exceed 33%
4. accounts receivable and/or cash divided by total assets should be less than 70% (Derigs and Marzban, 2008).
2.3 The Sharia screening process

The term Sharia norm screening refers to the process of maintaining strict Sharia compliance for certain kinds of stock (Pok, 2012). In other words, the process of Sharia norm screening is to examine whether or not a stock is categorised as Sharia stock by detecting prohibited activities (Ho et al., 2012). Sharia norm screening itself is divided into two levels, these being qualitative norm screening and quantitative norm screening. The qualitative part is known as initial screening while quantitative screening is better known as operational screening.

According to Pok (2012), in qualitative screening, all stocks from the conventional global equity indices are screened for any elements that are prohibited by Sharia. Unlike quantitative screening, the criteria used in qualitative screening are mostly the same among all index providers around the world. According to Zainudin et al. (2014), there are three general criteria to assess qualitative screening and they are:

1. A company must have a good reputation and not compromised by any controversial issues.
2. The core activities of the company must be considered as maslahah (beneficial) towards ummah or the nation. If a non-permissible element exists, it must be very small.
3. The core activities or products of the company must be considered as halal.

Quantitative screening in Sharia stock is the second step after stocks are screened qualitatively. Quantitative screening involves examining the proportion of indebtedness of the company, interest rate (if any), other suspect earnings made by the company, and the extent of cash and receivables. According to Derigs and Marzban (2008), Sharia can screen stocks by using three principles: low liquidity ratio, low interest ratio and lower debt ratio.

Since Al-Qur’an and Al-Hadith do not explain in detail what can be tolerated financially, Islamic scholars from each Sharia stock provider have designed a threshold level in which a company is said to be Sharia-compliant (Listyaningsih and Krishnamurti, 2016). This fact not only leads quantitative screening to having different threshold levels, but also different variables in the formula of liquidity ratio, interest ratio and debt ratio. For example, DJIM uses market capitalisation as its denominator while FTSE uses total assets as its denominator in calculating interest and debt ratio.

Liquidity ratio is used to measure the ability of a firm to pay all of its short-term debt obligations (Pok, 2012). Liquidity ratio in quantitative screening measures the extent of cash and receivables in the company (Pok, 2012). A conventional company will prefer a high liquidity ratio because it is a positive sign that their firm is in good financial health. However, at the same time, the firm must be managed in such a way so that it can utilise the current asset effectively. According to Derigs and Marzban (2008), from the Sharia perspective, return should be obtained only from illiquid assets and so the Sharia-compliant company should remain in an illiquid form. Consequently, scholars...
have generally agreed to use liquidity screening to measure the ratio of current asset and a company’s worth, which can be market capitalisation or total assets.

Interest ratio is used to view a proportion of liquid assets especially cash and interest-bearing securities in relation to a company’s market value (Pok, 2012). According to the Sharia perspective, earnings from interest are not permissible and the threshold level should be kept low (El-Dalabeeh, 2013). According to Derigs and Marzban (2008), there are two ways to measure interest permissibility: firstly, the amount of interest income generated; and secondly, the amount of liquid assets that could generate interest income is limited.

Debt ratio measures the level of leverage or debt used by the company to finance its tangible and intangible assets (Scatizzi, 2010). A high level of debt will allow the company to garner larger profits for a given level of owner equity but also be at a higher risk as higher interest debt must be paid regardless of the company’s financial health. Derigs and Marzban (2008) have stated that in Sharia law, receiving and paying interest is banned, so the threshold level of debt is measured and limited. In applying debt ratio, both conventional and Sharia practices agree to favour lower debt ratio because it indicates the company is less dependent on or at the mercy of debt (Pok, 2012).

2.4 The concept of liberalism

Liberalism can be defined as an ideology that promotes political, social and economic freedom, and a wider tolerance of religion and issues of faith (Bilgin, 2006). Liberalism leads to greater economic freedom and ways of doing business. Bilgin (2006) stated that there are two characteristics of liberalism: firstly, it leads to the pluralist beliefs about what is good and what is wrong; and secondly, it represents philosophies about diversity and people’s lifestyles, beliefs, practices and ethical choices. Extensive studies have been conducted on Sharia-compliant companies. Some have concentrated on comparing corporate governance and financial performance amongst Sharia-compliant and non-compliant businesses, with reference to certain criteria used in screening Sharia-compliant companies. Catherine et al. (2011) show that JII places a debt-ceiling ratio of less than or equal to 82% of total equity, a 10% maximum allowable level of income contribution from mixed activities and the maximum threshold level for interest income.

3 Methodology

3.1 Population and sample

The sample developed for this research comprises the members of JII for the period 2010 to 2015. In total, there will be 180 companies screened in this research.

3.2 Data and source of data

The data includes accounts receivable, market capitalisation, cash, interest-bearing securities, etc., from the IDX. Additional data from each company’s website are collected so that have as much information as possible about its financial status.
3.3 Methodology

This research examines the quantitative screening of all stock listed in JII for 2010–2015 using three main financial ratios applied by six Sharia equity index providers. These consist of DJIM Index, S&P Islamic Index, AMIRI Capital Islamic Fund, FTSE Shariah Global Equity Index and MSCI Islamic Index. The three financial ratios used for quantitative screening are liquidity ratio, interest ratio and debt ratio. The threshold level of the financial ratio provided by each equity index will be used as the parameter to judge each stock listed in JII and considered to be Sharia-compliant or otherwise.

Since quantitative screening consists of three applications, the screening process will be executed sequentially, starting with firm liquidity screening, interest screening and debt screening. Thirty firms listed in JII for 2010–2015 are screened using the liquidity screening. From initial screening, companies are screened using the interest screening. For the final result, firms that passed the liquidity and interest screening are screened using the debt screening. Table 1 summarises the financial ratios (i.e., liquidity, interest and debt) that are applied by each index provider used in this analysis. Included here is the threshold level applied in the formula to indicate that the ratio should not exceed a certain percentage level.

### Table 1: Financial ratios applied by index providers

<table>
<thead>
<tr>
<th>Index provider</th>
<th>Liquidity ratio formula</th>
<th>Interest ratio formula</th>
<th>Debt ratio formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>DJIM</td>
<td>$\frac{AR(i)}{MC(i)} &lt; 33%$</td>
<td>$\frac{CSI(i)}{MC(i)} &lt; 33%$</td>
<td>$\frac{TD(i)}{MC(i)} &lt; 33%$</td>
</tr>
<tr>
<td>S&amp;P</td>
<td>$\frac{AR(i)}{MC(i)} &lt; 49%$</td>
<td>$\frac{CSI(i)}{MC(i)} &lt; 33%$</td>
<td>$\frac{TD(i)}{MC(i)} &lt; 33%$</td>
</tr>
<tr>
<td>AMIRI</td>
<td>$\frac{AR(i) + C(i)}{TA(i)} &lt; 70%$</td>
<td>$\frac{CSI(i)}{TA(i)} &lt; 33%$</td>
<td>$\frac{TD(i)}{TA(i)} &lt; 33%$</td>
</tr>
<tr>
<td>FTSE</td>
<td>$\frac{AR(i) + C(i)}{TA(i)} &lt; 50%$</td>
<td>$\frac{CSI(i)}{TA(i)} &lt; 33%$</td>
<td>$\frac{TD(i)}{TA(i)} &lt; 33%$</td>
</tr>
<tr>
<td>MSCI</td>
<td>$\frac{AR(i)}{TA(i)} &lt; 70%$</td>
<td>$\frac{CSI(i)}{TA(i)} &lt; 33.33%$</td>
<td>$\frac{TD(i)}{TA(i)} &lt; 33.33%$</td>
</tr>
</tbody>
</table>

Notes: $AR(i)$ refers to accounts receivable of $i$ at time $t$. $C(i)$ refers to accounts receivable of $i$ at time $t$. $CSI(i)$ refers to cash and interest-bearing securities of $i$ at time $t$. $MC(i)$ refers to total debt of $i$ at time $t$. $MC(i)$ is the averaged market capitalisation of $i$ in 24 months. $MC(i)$ is the averaged market capitalisation of $i$ in 36 months. $TA(i)$ refers to total assets of $i$ at time $t$.

4 Results

4.1 Descriptive statistics

In the quantitative screening process for each company listed on JII, four ratios are applied using the formula for comparing Sharia stock indices: DJIM Index, S&P Islamic Index, FTSE Shariah Global Index, MSCI Islamic Index and AMIRI Islamic Index. The
three formulas calculated in the screening process are liquidity ratio, interest ratio and debt ratio. Table 2 presents the descriptive statistics of the financial ratios for the companies listed on JII during 2010–2015. Furthermore, Table 2 presents the number of sample, mean, median, maximum value, minimum value, standard deviation and the skewness of sample data.

Table 2  Descriptive statistics for the companies’ financial ratios

<table>
<thead>
<tr>
<th>Ratio</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Max.</th>
<th>Min.</th>
<th>Standard deviation</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A: liquidity ratio</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJIM</td>
<td>180</td>
<td>5.1046</td>
<td>1.4517</td>
<td>78.7161</td>
<td>0.0000</td>
<td>9.8819</td>
<td>4.1126</td>
</tr>
<tr>
<td>S&amp;P</td>
<td>180</td>
<td>5.0626</td>
<td>1.4034</td>
<td>78.2463</td>
<td>0.0000</td>
<td>9.8788</td>
<td>4.0853</td>
</tr>
<tr>
<td>AMIRI</td>
<td>180</td>
<td>0.3313</td>
<td>0.1414</td>
<td>29.3618</td>
<td>0.0032</td>
<td>2.1754</td>
<td>13.3134</td>
</tr>
<tr>
<td>FTSE</td>
<td>180</td>
<td>0.3313</td>
<td>0.1414</td>
<td>29.3618</td>
<td>0.0032</td>
<td>2.1754</td>
<td>13.3134</td>
</tr>
<tr>
<td>MSCI</td>
<td>180</td>
<td>0.1191</td>
<td>0.0931</td>
<td>1.3656</td>
<td>0.0016</td>
<td>0.1332</td>
<td>4.9632</td>
</tr>
<tr>
<td><strong>Panel B: interest ratio</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJIM</td>
<td>180</td>
<td>8.1312</td>
<td>5.1714</td>
<td>43.2670</td>
<td>0.0000</td>
<td>8.1884</td>
<td>1.9111</td>
</tr>
<tr>
<td>S&amp;P</td>
<td>180</td>
<td>8.0104</td>
<td>5.1269</td>
<td>43.2670</td>
<td>0.0000</td>
<td>8.2016</td>
<td>1.9668</td>
</tr>
<tr>
<td>AMIRI</td>
<td>180</td>
<td>1.2285</td>
<td>0.2720</td>
<td>162.3749</td>
<td>0.0017</td>
<td>12.0479</td>
<td>13.4056</td>
</tr>
<tr>
<td>FTSE</td>
<td>180</td>
<td>1.2285</td>
<td>0.2720</td>
<td>162.3749</td>
<td>0.0017</td>
<td>12.0479</td>
<td>13.4056</td>
</tr>
<tr>
<td>MSCI</td>
<td>180</td>
<td>1.2285</td>
<td>0.2720</td>
<td>162.3749</td>
<td>0.0017</td>
<td>12.0479</td>
<td>13.4056</td>
</tr>
<tr>
<td><strong>Panel C: debt ratio</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DJIM</td>
<td>180</td>
<td>14.4056</td>
<td>7.6870</td>
<td>145.4648</td>
<td>0.0002</td>
<td>21.6688</td>
<td>3.5370</td>
</tr>
<tr>
<td>S&amp;P</td>
<td>180</td>
<td>14.2039</td>
<td>7.2694</td>
<td>144.5966</td>
<td>0.0002</td>
<td>21.6751</td>
<td>3.5369</td>
</tr>
<tr>
<td>AMIRI</td>
<td>180</td>
<td>0.4396</td>
<td>0.4067</td>
<td>2.7755</td>
<td>0.0038</td>
<td>0.3068</td>
<td>4.9189</td>
</tr>
<tr>
<td>FTSE</td>
<td>180</td>
<td>0.4396</td>
<td>0.4067</td>
<td>2.7755</td>
<td>0.0038</td>
<td>0.3068</td>
<td>4.9189</td>
</tr>
<tr>
<td>MSCI</td>
<td>180</td>
<td>0.4396</td>
<td>0.4067</td>
<td>2.7755</td>
<td>0.0038</td>
<td>0.3068</td>
<td>4.9189</td>
</tr>
</tbody>
</table>

Panel A of Table 2 presents the liquidity ratio of companies in 2010 to 2015. As seen in Panel A of Table 2, the means of DJIM (5.1048) and S&P (5.0626) are higher than the means of AMIRI (0.3313), FTSE (0.3313) and MSCI (0.19). Beside the mean, the medians of DJIM (1.4517) and S&P (1.4034) are higher than the medians of AMIRI (0.1414), FTSE (0.1414) and MSCI (0.0931). From the mean and median of the data, it shows that the liquidity ratio for DJIM and S&P is relatively higher than AMIRI, FTSE and MSCI. This different result concerning liquidity ratio might be due to the different denominator applied in the formula. The minimum result under DJIM and S&P is zero which indicates that from 2010 to 2015, there are companies that have zero liquid assets or in other words, all of their gains are derived from illiquid assets. The maximum (1.3656) and minimum (0.0016) results under MSCI had the smallest gap and consequently the smallest standard deviation. The bigger gap between mean and median under DJIM and S&P leads to a bigger standard deviation (9.8819 and 9.8788), which confirms the liquidity outcome under DJIM and S&P has a wider distribution of the data from the mean. When compared to the result for liquidity ratio under DJIM and S&P, the standard deviation of AMIRI, FTSE and MSCI is smaller and indicates that the results have fewer variations. The outcome of liquidity ratio screening shows a positive skewness for all index providers, which means that the distribution of data is not
symmetrical and instead skewed to the right. The highest skewness is shown by the Sharia companies screened under FTSE and AMIRI (13.314).

Panel B of Table 2 shows the interest ratio of companies in 2010 to 2015. The mean for AMIRI, FTSE and MSCI (1.2285) are lower than the means for DJIM (8.1312) and S&P (8.0104). The medians of AMIRI, FTSE and MSCI (0.2720) are lower than the median of DJIM (5.1714) and S&P (5.1269). These facts inform us that the result for interest ratio under AMIRI, FTSE and MSCI is lower than DJIM and S&P. The gap between maximum and minimum result under AMIRI, FTSE and MSCI is higher than that for DJIM and S&P, which contributes to the high standard deviation (12.0479) and high skewness (13.4056). The skewness under all stock index providers shows a positive number, which can be interpreted to mean that the curve of data is skewed to the right. Since the skewness for AMIRI, FTSE and MSCI is higher than DJIM and S&P, the curve of AMIRI, FTSE and MSCI is more skewed to the right than DJIM and S&P. The minimum result under DJIM and S&P is zero and this tells us there are companies with no cash and bear zero interest-bearing securities.

Panel C of Table 2 shows the results for debt ratio for sample companies in 2010 to 2015. The mean (0.4396) and the median (0.4067) under AMIRI, FTSE and MSCI have only a small gap which leads to the small standard deviation (0.3068). The standard deviation of AMIRI, FTSE and MSCI suggests that the screening result under AMIRI, FTSE and MSCI does not have a large data variable. This is supported by the small gap among the maximum and minimum values under AMIRI, FTSE and MSCI. On the other hand, DJIM and S&P screening results reach 145.4648 and 144.5966 as the maximum outcome, and 0.0002 as the minimum which has a larger gap when compared to the gap between maximum and minimum values under AMIRI, FTSE and MSCI. This finding supports the high standard deviation (21.6688 and 21.6751) that can be interpreted as the screening result under DJIM and S&P having a large variation in data. However, the screening result under S&P and DJIM has lower skewness than that found for AMIRI, FTSE and MSCI. The respectively different result among DJIM, S&P and AMIRI, FTSE, MSCI is affected by the denominator used in the formula of debt ratio. There is no minimum result that reaches zero under all stock indices and it means there is no company with zero debt.

Table 3 represents the results of independent financial ratios for firms listed in JII using three ratios (liquidity, interest and debt) according to the formula provided by five international Sharia index providers. These are DJIM Index, S&P BSE 500 Sharia, Amiri Capital Islamic Fund, FTSE Shariah Global Equity Index and MSCI Islamic Index.

1 Liquidity screening result

The finding for liquidity screening shows that only 47 (26.11%) out of the initial sample of 180 companies passed the liquidity screening under DJIM. Under S&P liquidity screening, 57 (31.67%) are considered to be Sharia-compliant. On the other hand, the screening result under AMIRI, FTSE and MSCI shows a higher result in comparison to DJIM and S&P. It emerged that 178 (98.89%) out of 180 companies passed the screening under AMIRI, while 176 (97.78%) companies passed the screening under FTSP. A total of 179 companies passed the screening under MSCI. The big gap appeared for the screening result under DJIM, S&P and the rest of the
index providers; this was caused by a different denominator being used in the
formula. AMIRI, FTSE and MSCI used total assets as the denominator in the
formula which makes it possible for companies to pass the screening as total assets
are more stable and can be calculated better than market capitalisation. The
difference among DJIM and S&P is caused by different threshold levels and the
formula that has been applied. The finding is that liquidity screening result for all
stock indices falls below 100%.

2 Interest screening result

In interest screening, all index providers except MSCI are using the same threshold
level of 33%. On the other hand, MSCI is using a more relaxed threshold level of
33.33%. A significantly different outcome is shown among the index providers that
use market capitalisation in the formula (DJIM and S&P) and index providers that
use total assets in the formula (AMIRI, FTSE and MSCI). Only five companies
(2.78%) meet the interest threshold level under DJIM and S&P. A similar interest
screening result for DJIM and S&P is probably caused by the same threshold level
and formula being applied. It can also be deduced that the different period for
averaged market capitalisation among DJIM and S&P does not affect the result.
Meanwhile, 113 out of 180 companies (62.78%) meet the interest criteria under
AMIRI and FTSE. The finding for AMIRI and FTSE is similar due to the same
threshold level and formula being applied. Meanwhile, the result for MSCI is slightly
different to AMIRI and FTSE because MSCI uses a more relaxed threshold level.
One hundred fifteen companies (63.89) of the total 180 companies pass the interest
screening under MSCI. MSCI reaches the highest number of companies that passed
the interest screening (63.89%), so there is no 100% pass rate under any stock index
providers.

3 Debt screening result

In debt screening, DJIM, S&P, AMIRI and FTSE use the same threshold level of
33%, meanwhile MSCI uses a looser threshold level of 33.33%. The result in Table 3
shows that only five companies (2.78%) conform to the threshold of DJIM. It also
appears there are only four sample companies (2.22%) which have passed the debt
screening process under S&P and the range is quite close to that of DJIM. In
contrast, 61 out of 180 companies (33.89%) meet the threshold level of FTSE and
AMIRI. The highest result is again achieved by MSCI with 62 sample companies
(34.44%) that passed the debt screening process under MSCI. As explained
previously, the significantly different result is shown among index providers that
adopt market capitalisation (DJIM and S&P) and total assets (AMIRI, FTSE and
MSCI). The similar result among DJIM and S&P on one hand, and AMIRI and
FTSE on the other, is caused by the same formula adopted in debt screening, while a
different result under MSCI is caused by the higher threshold level applied by MSCI.
The pass level under DJIM, S&P, AMIRI FTSE and MSCI is consistently under
100%.
<table>
<thead>
<tr>
<th>Index provider</th>
<th>N</th>
<th>Liquidity ratio</th>
<th>Interest ratio</th>
<th>Debt ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Threshold</td>
<td>No. of companies</td>
<td>%</td>
</tr>
<tr>
<td>DJM</td>
<td>180</td>
<td>&lt; 33%</td>
<td>47</td>
<td>26.11</td>
</tr>
<tr>
<td>S&amp;P</td>
<td>180</td>
<td>&lt; 49%</td>
<td>57</td>
<td>31.67</td>
</tr>
<tr>
<td>AMIRI</td>
<td>180</td>
<td>&lt; 70%</td>
<td>178</td>
<td>98.89</td>
</tr>
<tr>
<td>FTSE</td>
<td>180</td>
<td>&lt; 50%</td>
<td>176</td>
<td>97.78</td>
</tr>
<tr>
<td>MSCI</td>
<td>180</td>
<td>&lt; 70%</td>
<td>179</td>
<td>99.44</td>
</tr>
</tbody>
</table>
Table 4 shows that the first screening (liquidity) result is exactly the same as the liquidity result explained previously. From the initial 180 companies, only 47 (26.11%) meet the threshold under DJIM and only 57 (31.67%) meet the threshold level under S&P. The first screening result under DJIM, S&P, AMIRI, FTSE and MSCI shows that 178 (98.89%), 176 (97.78%) and 179 (99.44%) companies conform to the threshold level under AMIRI, FTSE and MSCI, respectively. The first liquidity screening result shows a pass level lower than 100% for all index providers.

<table>
<thead>
<tr>
<th>Index provider</th>
<th>1st screening (liquidity)</th>
<th>2nd screening (liquidity and interest)</th>
<th>3rd screening (liquidity, interest and debt)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>No. of companies</td>
<td>%</td>
</tr>
<tr>
<td>DJIM</td>
<td>180</td>
<td>47</td>
<td>26.11</td>
</tr>
<tr>
<td>S&amp;P</td>
<td>180</td>
<td>57</td>
<td>31.67</td>
</tr>
<tr>
<td>AMIRI</td>
<td>180</td>
<td>178</td>
<td>98.89</td>
</tr>
<tr>
<td>FTSE</td>
<td>180</td>
<td>176</td>
<td>97.78</td>
</tr>
<tr>
<td>MSCI</td>
<td>180</td>
<td>179</td>
<td>99.44</td>
</tr>
</tbody>
</table>

In the second screening, the company that passed the first screening (liquidity) was ten subjected to interest screening. From the initial 47 companies which passed, only 4 (2.22%) meet the interest threshold level under DJIM. The second screening of S&P reveals a similar result with DJIM. From 57 companies that passed the first screening, only 5 (2.78%) are considered fit for further screening. In contrast to the result of DJIM and S&P, 112 companies (62.22%) passed the second screening process out of 178 and 176 companies under AMIRI and FTSE, respectively. The best result belongs to MSCI in which 116 companies (64.44%) out of 179 companies qualified for the third screening, i.e., debt screening.

The third screening is the final screening and it decides whether a company is considered to be financially Sharia-compliant. Only three companies (1.67%) out of 5 and 4 companies under DJIM and S&P, respectively, are deemed to be Sharia-compliant. In contrast, 41 companies are believed to be Sharia-compliant from the initial 112 (22.78%) companies under AMIRI and FTSE. The best result is achieved by MSCI showing 43 companies (23.89%) out of 116 are suggested to comply with Sharia law. The pass levels for complete financial screening under DJIM, S&P, AMIRI, FTSE and MSCI are all under 100%.

Based on the above results, it can be concluded that the final financial screening outcome shows a pass level for a company is under 100%. The financial screening adopted by JII is more liberal than DJIM, S&P, AMIRI, FTSE and MSCI.

5 Discussion

This study compares the financial screening process for the levels of liquidity, interest income and debt as applied by the JII, DJIM, S&P, AMIRI, FTSE and MSCI. A comparative analysis on the measurement of liquidity ratio, interest income ratio and debt
ratio adopted by the five selected leading Sharia stock indices was conducted for 180 Sharia-compliant companies listed in JII for the period 2010 to 2015. The results of the quantitative screening process for firms listed on JII using the methods of five leading Sharia stock indices reveals that out of 180 sample companies, 43 are considered to be financially Sharia-compliant according to MSCI. This is followed by AMIRI and FTSE in which 41 out of 180 companies are financially Sharia-compliant. Only three companies are deemed to be financially Sharia-compliant according to DJIM and S&P.

The difference in results between the DJIM, S&P, AMIRI, FTSE and MSCI is attributed to the different formula and threshold applied by the index providers. AMIRI and MSCI impose a bigger margin threshold of 70% on liquidity ratio while DJIM imposes a stricter threshold of 33% on liquidity ratio, thus explaining the varying outcomes for the number of Sharia-compliant businesses. The reason for the high level of threshold is even if the illiquid assets constitute one-third of total assets, the company is still considered complying with Sharia law (Derigs and Marzban, 2008).

As well, DJIM and S&P represent less Sharia-compliant companies when market capitalisation is used as the denominator to calculate the liquidity ratio, interest ratio and debt ratio. Since DJIM and S&P indices are applied to developed countries with better and more stable economies, it is suitable to use market capitalisation to show what the companies are worth. However, according to Khatkhatay and Nisar (2007), there are three major problems when implementing market capitalisation. Firstly, the market value of a security may be affected by the prediction of future earnings and movements regardless of the company’s fundamentals. Secondly, the market value of a company is influenced by favourable or unfavourable market conditions, thus leading to volatility in terms of market value. Thirdly and lastly, market capitalisation cannot be used to assess the compliance of private sector companies.

From this research, it can be stated that the pass level of JII under DJIM, S&P, AMIRI, FTSE and MSCI is below 100% (180 companies) which shows that JII applies a more relaxed form of financial screening. It can therefore be concluded that the financial screening applied by JII is more liberal than those systems applied by DJIM, S&P, AMIRI, FTSE and MSCI. This agrees with study by Listyaningsih and Krishnamurti (2016) who stated that JII is less restrictive in its screening process and the upper limits for debt ratio, accounts receivable to total assets and interest income to revenue, which respectively are 45%, 55% and 10%. In addition, according to Pok (2012), Indonesia may use more liberal (relaxed) quantitative screening methods compared to the other Sharia stock indices.

This research proves that JII adopts more liberal quantitative screening in comparison to DJIM, S&P, AMIRI, FTSE and MSCI. It is highly probable that JII applies different thresholds and denominators in liquidity, interest and debt formula which results in a different number of Sharia-compliant companies. Regardless of any reason for this explanation, it does confirm why Indonesia’s Sharia capital investment market is less preferred to that operating elsewhere, for example Malaysia.

6 Conclusions

The results documented in this study suggest that the differences in the number of Sharia-compliant companies are due to the variety of parameters and proxies applied by
every Sharia stock index when they are filtering the suitability of stock. The variety of screening practices being used today is probably due to the lack of an overarching regulatory body that can ensure uniformity of practices. In order to resolve this issue, it is strongly suggested to develop a governing body with the power to supervise and enforce screening practices and to achieve a standardisation of such practices. Standardised screening practices are important because according to Derigs and Marzban (2008), different criteria set by various Sharia stock exchanges may add confusion to investors, thus leading to insecurity and lack of confidence about investing in Sharia compliant-stocks.

As well, this study’s findings reveal that the application of market capitalisation as the denominator is greatly affected the number of Sharia-compliant companies. Given this reality, it can lead to new hypotheses for further research to consider, where total assets serving as the denominator for a given formula is more conservative when compared to averaged market capitalisation. Finally, it is suggested that further research should include other variables such as governance, risk management practices and currency risk. This will expand the opportunities afforded by more known factors affecting investors’ selections of Sharia-compliant stock.

References
FTSE Shariah Research (n.d.) Targeting Lower Volatility through Ethical and Quantitative Screening, FTSE Shariah Research, pp.1–19, FTSE.
Jakarta Sharia Stock Index and international Sharia leading stock indices

Indexes_Methodology.pdf (accessed 6 January 2019)


Malaysian International Islamic Centre (2013) Shariah Screening Methodology, Insight.


