LIBERALISM QUANTITATIVE ANALYSIS OF JAKARTA SHARIA STOCK INDEX IN COMPARISON WITH OTHER INTERNATIONAL SHARIA LEADING STOCK INDICES

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Liberalism Analysis of Jakarta Sharia Stock Index in Comparison With Other International Sharia Leading Stock Indices

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Abstrak
Riset ini dilakukan untuk mengetahui apakah Jakarta Islamic Index sebagai satu-satunya indeks saham Syariah di Indonesia mengadopsi proses skrining/seleksi keuangan yang bisa dikatakan lebih liberal dibandingkan proses skrining yang diadopsi oleh Dow Jones Islamic Market Index, S&P 500 Sharia, FTSE Sharia Global Equity Index dan MSCI Islamic Index. Pada riset ini, 30 perusahaan Syariah yang termasuk dalam indeks JII pada tahun 2010-2015 akan di lakukan skrining/seleksi menggunakan rasio likuiditas, rasio suku bunga (riba) dan rasio hutang dengan rumus yang diadopsi oleh Dow Jones Islamic Market Index, S&P 500 Sharia, FTSE Sharia Global Equity Index and MSCI Islamic Index. Proksi dari studi ini adalah jika dan hanya jika kurang dari 100% perusahaan anggota JII lolos skrining/seleksi dari 3 rasio dengan rumus dari indeks saham tertentu, maka proses skrining keuangan yang diadopsi JII dapat dikatakan lebih liberal dibandingkan dengan indeks saham pembandingnya. Hasil studi menunjukkan bahwa hanya (1.67%) saham anggota JII lolos seleksi keuangan dengan standar DJIM. Hasil serupa ditunjukkan juga dengan standar S&P. Hasil yang lebih tinggi ditunjukkan oleh (22.78%) perusahaan anggota JII lolos seleksi keuangan menggunakan standar Amiri. Hasil seleksi dengan standar FTSE juga menunjukkan hasil yang sama yaitu (22.78%). Hasil tertinggi ditunjukkan oleh (23.89%) perusahaan anggota indeks JII lolos seleksi keuangan syariah menggunakan standar MSCI. Dengan hasil yang menunjukkan kurang dari 50% perusahaan anggota JII (2010-2015) yang lolos seleksi/skrining menggunakan proses seleksi menurut 6 indeks saham yang ditentukan, kita dapat menyimpulkan bahwa JII mengadopsi skrining/seleksi keuangan yang lebih liberal dibandingkan dengan skrining/seleksi keuangan Dow Jones Islamic Market Index, S&P 500 Sharia, FTSE Sharia Global Equity Index dan MSCI Islamic Index.

Keywords: *Saham syariah, JII, DJIM, S&P, FTSE, Amiri, MSCI, skrining keuangan, skrining kuantitatif.*

Abstract
This research is conducted in order to examine whether or not Jakarta Islamic Index as the only Sharia index in Indonesia adopts a financial screening process that can be considered more liberal than those financial screening process apllied by Dow Jones Islamic Market Index, S&P 500 Sharia, FTSE Sharia Global Equity Index and MSCI Islamic Index. In this study, 150 Sharia –compliant firms listed in JII in the period between 2010-215 will be screened using liquidity ratio, interest ratio and debt ratio with certain formula adopted by Sharia leading index providers mentioned previously. The result shows that only few (1.11%) companies listed in JII that passed financial screening under DJIM and S&P in 2010-

2015, more companies (21.68%) are Sharia compliant under Amiri and FTSE and 22.22% of sample companies passed the financial screening process under MSCI. With the fact that only less than 50% of firms listed in JII from 2010-2015 passed the screening process under 6 selected Sharia stock indices, we can judge that JII apply more liberal screening criteria/process in its financial screening compared with 6 other index providers. The possible reason of this differences are: the application of different formula and the aplication of different threshold.

Keywords: *Sharia-compliant stock, financial screening, quantitative screening.*

1. Introduction

Since 1980 Sharia economy has started to grow in Indonesia. As the number of faithful Moslem investor increases, the concept of Sharia economy has been popular. The investor seek for an Islamic investment in stocks and under great scrutiny to ensure that their investment is fully in line with Sharia concept. In 2000, as a result of the collaboration between Danareksa Investment Management and Bursa Efek Indonesia, JII (Jakarta Islamic Index) was established as the Sharia stock index in Indonesia. JII helps Moslem investors to select and screen which stock is categorized as Sharia stock without the investor constructing their own basic analysis and portfolio (Lewis, 2007). JII itself contains 30 best stocks that are screened based on Islamic law, known as Sharia law. Now, as the only Sharia stock index in the most Moslem populated country, the question that may appear is whether or not the quantitative screening process in Jakarta Islamic Index is more conservative or more liberal in comparison with

the other Sharia index from both developed and emerging market. In other word, is Jakarta Islamic Index adopts quantitative screening process that is closer to the law of Sharia (has less compensation) compared with the other leading Sharia index?.

Sharia can be defined as a code of law derived from the devine revelation and practice of Prophet Mohammed PBUH, namely Al-Qur'an and Al-Hadith (Adam & Bakar, 2012). In reality, the interpretation of Sharia is always dynamic and a fully Sharia practice is extremely rare. Some minor differences in the interpretation and application of Sharia may differ over time in different places because Sharia will not only refer to two main primary data (Al-Qur'an and Al-Hadist), but also secondary data called *Ijma* (the agreement among *ulama*) (Moslem scholars) and *Ijtihad* (interpretation) (Derigs & Marzban, 2008). Khatkhatay & Nisar (2012) stated that investment in stocks is permitted by

Shariah scolars, however the investors have to ensure that the related company's activities and structuring do not contradict Shariah law. According to Alhabsyi (2008) stocks have to be Sharia compliant or non-compliant. However, in the current situation fully shariah-compliant equity are extremely rare because most countries have conventional finance institutions and involve *usury* (riba) in their activities. It seems that in this era, prohibited elements in the screening process is allowed (Adam & Bakar, 2012). To solve this issue, Shariah scholars have agreed on certain acceptable level on which companies can involve in such practices and outline the steps to purify the sinful earnings (Adam & Bakar, 2012). Capital investment institution and Sharia scholars involved in Islamic investment fund mangement proposed different procedures and guidelines for determining Shariah compliance of an investment regarding to the complexity of modern capital market, existence of complex investment, multidisciplinary and global involvement of companies. These facts, leads different stock index in different country propose and apply different screening criteria and process.

Stock can be defined as a share of a company's ownership (Dow Jones, 2010). According to investopedia journal, stock can represent a company's asset and earning. For a stockholder, stock is one of the investments from which the stockholder will gain dividend in the end of period as well as margin

in the stock buying and selling process. Differ from regular stock, Sharia stock is a stock that meets Sharia compliances, such as not containing any prohibited elements: *riba*, *maysir* and *gharar*. Besides, Sharia stock also needs to associate with *halal* products and good image such as quality, safety, environmentally friendliness and efficiency process of the stock issuer (Zainudin, Miskam, & Sulaiman, N.Y). Based on the 2012 Indonesian Islamic Capital Report, Shariah stock in Indonesia increased, from 173 in 2007 to 253 in 2012 and has been growing until now. By march 2012, the percentage of Shariah stock in Indonesia has defeated conventional stock by 50.7% (Setiawan & Oktariza, 2013).

In order to help Investors select the stocks included in Sharia stock, Sharia stock index presents several top stocks that meet sharia compliances. It is created to

fulfill the need of all investors who want to allocate their capital according to sharia term (Salahuddin & Hermansyah, N.Y). Sharia/Islamic Stock Index has special Sharia regulations and conditions in determining its market and stocks in comparation with conventional stock index. According to Pok (2012), there are three reasons behind the creation and development of Sharia stock index. First, a strong demand for a Shariah financial product from a large number of Moslem community accross the globe. Second, a strong demand from oil rich nations (Middle East) which prefer to invest their capital in Shariah product. Third, a lot of Sharia product becomes very competitive and attracts not only Moslem investors but also non-Moslem investors. Sharia stock index combines both business screening (excludes companies involved in prohibited activities), as well as financial screening (FTSE Shariah Research). Based on Dow Jones, (2010), Sharia Stock index can include many of broad market, blue-chip, fixed-income strategy & thematic indices that have passed the screens for Sharia compliances. To determine whether or not indices meet the Shariah standard, stocks are screened by Shariah standard that set out in published methodology (Derigs & Marzban, 2008).

In general, Sharia screening process is devided into two, those are: qualitative and quantitative screening (Malaysian International Islamic Centre, 2013). According to Derigns and Marzban (2013), the use of qualitative screening is to analize the intensity and quality of the investigated companies in applying the practice of Sharia business. This screening is also known as industy screening. The next stage is quantitative screening. It is also known as financial screening. Based on Pok (2012) there are three financial ratios used in quantitative screening, those are: liquidity ratio, interest ratio, debt ratio. However, in both screening process, every Sharia stock index have their own parameter and proxy to filter the Sharia stock (Derigs & Marzban, 2008). For example, in calculating financial ratios, DJIM, JII and S&P use market capitalization as their denominator whereas FTSE and MSCI Bara use total assets as their denominator.

In relation to liberalism, it exists in every aspect of our life, including religion. Liberalism can be defined as an ideology of freer political instrument and more tolerable religion (Laborde, N.Y). Bilgin (N.Y) stated that there are two characteristics of liberalism: It leads to the pluralism of what is good and what is wrong and it represents diversity worldwide and lifestyle and morality choices. Put it simply, we may define that liberalism leads to freedom and more tolerable of law which we can say as politics and religion. The more tolerable it is from the rule of religion, then the more liberal it is.

In this research, the researchers will examine whether or not Jakarta Sharia Stock Index has more liberal parameter and proxy in its stock screening process in comparison with leading Sharia stock index which consist of Dow Jones Islamic Market Index, S&P BSE 500 Sharia, FTSE Shariah Global Equity Index, MSCI Islamic Index and Amiri Capital Islamic Fund. The screening method that will be used in this research is quantitative research: liquidity ratio, debt ratio and interest ratio.

Researcher will examine a quantitative screening process towards members of Jakarta Islamic Index. The screening process coupes 5 years data of Jakarta Islamic Index started 2010 untill 2015, and each year concist of 30 stocks listed in Jakarta Islamic Index. The screening process will adopt the

quantitative screening methodology and treshold of Dow Jones Islamic Market Index, S&P BSE 500 Sharia, FTSE Shariah Global Equity Index, MSCI Islamic Index and Amiri Capital Islamic Fund. If at least one stock listed in Jakarta Islamic Index does not pass the screening process of a Shariah stock index, then we can judge that Jakarta Islamic Index is more liberal than the compared Shariah tock index.

2. Literature Review

If we compare to conventional stock, Sharia stock has a unique characteristics. What makes it different is Sharia stock adopts Sharia selection restriction. The word Sharia itself comes from arabic language which means the code of conduct or religious of Islam (Sharia). Adam & Bakar (2012) described Sharia as a defined code of law derived from the devine revelation and practice of Prophet Mohammed PBUH which are known as Al-Qur'an and Al-Hadith. According to journal of (Sharia), Sharia is derived from Al-Qur'an and Al-Hadith as primary sources and *Ijma* (agreement among scholars) and *Ijtihad* (interpretation or analogy from Al-Qur'an using *qiyas*) as secondary sources.

Sharia Stock Index is an index that adopt Sharia compliant screening standard in its stock screening process (Zainudin, Miskam, & Sulaiman, N.Y) . Sharia Stock Index is aimed to help investors differentiate stocks included as permissible in Islam from stocks that are not permissible (Abbes, 2012). In other word, Sharia stock index is created to fulfill the needs of investors who want to invest their capital according to sharia term (Salahuddin & Hermansyah, N.Y). According to Pok (2012), there are three reasons behind the creation and development of Sharia stock index. First, a strong demand for a Shariah financial product from a large number of Moslem community accross the globe. Second, a strong demand from oil rich nations (mosltly Middle East countries) which prefer to invest their capital in Shariah products. Third, a lot of Sharia products become very competitive and attracts not only Moslem investors but also non-Moslem investors.

Liberalism can be defined as an ideology of freer political instrument and more tolerable religion (Mehmet Fevzi., N.Y). Mehmet Fevzy (N.Y) stated that there are 2 characteristics of liberalism:

a. It leads to the pluralism of what is good and what is wrong.
b. It represents diversity worldwide and lifestyle and morality choices.

Liberalism leads to freedom and more tolerable of law which we can say as politics and religion. The more tolerable it is from the rule of religion, then the more liberal it is.

Jakarta Islamic Stock Index (JII) is the first Indonesian Islamic index launched in July 2000 in collaboration with PT. Danareksa Investment Management as one of the stated owned security companies created in 2007 (Pranata & Nurzanah, N.Y). JII contains 30 Sharia stocks in IDX. JII is arranged based on Sharia stock list with further selection process: (1) Selecting 60 stocks from the Sharia stock list with the biggest market capitalization in one last year and (2) then 30 stocks with the biggest transaction value in regular market are chosen (Salahuddin & Hermansyah, Assessing the Efficiency of Jakarta Islamic Indec-Linked Investing, N.Y). According to Listyaningsih & Krishnamurti (2016) JII stocks have unique characteristics besides being based on Islamic principles. They have high market capitalization and high liquidity.

Dow Jones Islamic Market Index (DJIM) is known as the most conventional Islamic stock index in the world (Pok, 2012). According to Hakim & Rashidian (N.Y), DJIM contains stocks of US corporations and companies whose business and activities are accordance with Sharia law. DJIM index only contains 30 most influential companies and considered as not risky and 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 who adhere to Islamic principles in how they manage their investment (Hakim & Rashidian, N.Y). DJIM is weighted using free-float market capitalization rather than full market capitalization 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 capitalization of free float shares rather than takes all of the active and inactive shares readily in the market which excludes locked-in shares such as thosse held by insider, promoters and goverments (Dow Jones, 2010).

Standard and Poor's Islamic Index (S&P Shariah) is designed to fulfill the needs of investment in Shariah-compliant stock in the broad (Asia Index Pvt. Ltd., 2017). S&P BSE 500 Sharia consist of 500 largest and most liquid Indian stock from 20 major industries of the economy sector at the BSE and it covers more than 90% of the total market capitalization. S&P Shariah has contracted with Ratings Intelligent Partner (RI) in providing the Shariah screening justification. There are 4 fundamental keys that are adopted by S&P Shariah, those are: The indes is sccreened for Shariah compliance, The indes is liquid and investable, Shariah compliance is as per strictest standards observed by Middle Eastern countries and The index is maintained for compliance on a periodic basis (Asia Index Pvt. Ltd., 2017). S&P 500 Shariah uses a modified market capitalization weighting flow and using the divisor methodology used in S&P Dow Jones Indices (Asia Index Pvt. Ltd., 2017).

FTSE Sharia was developed by applying improved methodology & broarder Sharia index solution due to the rising demand for Sharia cpmpliant in both developed and emerging market (FTSE Shariah Research). FTSE Global Shariah Index was created by partnering with Yasaar Ltd, a consultancy and leading organization on Shariah and has been certified as Shariah compliant through the Fatwa or Islamic Legal Opinion. The screening and selection process in FTE stock index ia monitored by Yasaar Sharia Board. In past years, FTSE followed the traditional market capitalisation methodology. However, in recent years, FTSE has been focusing on risk allevation, thus FTSE adopts Miminum Variance methodology to reduce volatility after the application of technical and financial screening process. 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.

Morgan Stanley Capital International Islamic index (MSCI Sharia) is a series of MSCI World Index group that adopt Sharia investment principle (MSCI Research Journal, 2016). The methodology that is used by MSCI Index Series is based on MSCI Equity Index but at the same selecting only securities that meets Shariah compliant. The Islamic Index Methodology has been approved by MSCI's

Sharia advisors commitee of Sharia scholars as Sharia compliant (MSCI Research Journal, 2015). Similar with other Shariah Index, MSCI excludes securities using business activity and financial ratios. MSCI Islamic Index uses Total Assets as the denominator of all its financial ratios formula (MSCI Research Journal, 2016).

Amiri Capital is a Sharia compliant global investment mangement group that offers its investors quality investment opportunities combines with rigorous Sharia compliance (Amiri Capital Journal, 2009). Amiri apply 4 basic point in selecting its Sharia-compliant equity issuer, those are: (1) income generated from 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% and (4) account receivable and or cash divided by total assets should be less than 70% (Derigs & Marzban, 2008). The screening outputs are regularly checked and audited by Amiri Sharia Comitte in order to supervise the screening process (Amiri Capital Journal, 2009).

According to Zainudin, Miskam, & Sulaiman (N.Y), Sharia law differentiates Islamic finance and business from conventional finance. According to Abbes (2012), four major Schools of Islamic Thought, (Hanafi, Maliki, Shafii and Hambali) agreed that all activities that is contradict with Sharia law is

considered as haram (not permissible). Major principles of Shariah that are applicable to Islamic finance are outlined in paragraphs.

According to Ismail (2010) Sharia law prohibits several things in the transaction process of economy and business, those are:

1. *Haram* product as core business.

Haram can be said as unlawful or not permissible (FTSE Shariah Research). *Haram* is reffered to Al-Qur'an and Al-Hadith because all activities, contracts, transactions and proffesions considered as *haram* have already been stated explicitly in Al-Qur'an and Al-Hadith. Prophet Muhammad PBUH said, *"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 (N.Y), riba is an increase or profit gained by the lender as a condition of having loan. In Sharia law, money from money is not permissible because money is only seen as a medium of exchange (El-Dalabeeh & Rahman, 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 *muamalah* process (El-Dalabeeh & Rahman, 2013). According to FTSE (N.Y), Gharar is a high level of uncertainty, hazard and risk in a transaction in which the consequence is not known. Islam allows uncertainty but it needs to be managed and not considered as an extreme uncertainty. Gambling is also included as a form of Gharar because the gambler is ignorant of the result of his gamble (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 getting profit without working. Unlike *gharar* which is tolerated to a certain degree, *maysir* is not accepted at all. According to FTSE (N.Y), there are two definitions of Maysir based on concept and practice. Conceptually, Maysir is an agreement in which oownership of an asset is lying on the occurence of an uncertain event. Practically, 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 loss and 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).

According to Wee Ching Pok (2012), Sharia Norm Screening is a process of maintaining strict Sharia compliances/law in stock. To put it simply, the process of Sharia norm screening is to examine whether or not a stock is categorized as Sharia Stock by detecting prohibited activities (Ho et al., 2012). Sharia Norm Screening itself is divided into 2 levels, those are qualitative norm screening and quantitative norm screening. Qualitative is known as initial screening and quantitative screening is better known as operational screening.

According to Wee Ching Pok (2012), in qualitative screening or often known as initial screening of stock, all stocks from the conventional global equity indices are screened of prohibitive Sharia elements. Different from quantitative screening, the criteria used in qualitative screening is mostly the same among all index providers around the world. Taken from Nurlita et al (2012), there are 3 general criteria to asses qualitative screening, those are:

1. 1. Company must have good image and should be clean from any bad issue.
2. 2. The core activities of the company must be considered as *maslahah* (beneficial) towards *ummah* or nation. If there is no permissible element, it must be in a very small portion.
3. 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, the interest and other suspect earnings of the company, the extent of cash and receivable with the company. According to Derigs and Marzban (2008) sharia can screen stocks by using 3 principles: low liquidity ratio, low interest ratio and lower debt ratio.

Because Al-Qur'an and Al-Hadith are not explaining the detail of financial tolerancy level, Islamic scholars from each Sharia stock provider has designed a treshold level in which a company can be said as Sharia-compliant (Listyaningsih & Krishnamurti, 2016). This fact not only lead quantitative screening have diffferent threshold level, but also different variable in the formula of liquidity ratio, interest ratio and debt ratio. For example, DJIM uses market capitalization 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 obligation (Pok, 2012). Liquidity ratio in quantitative screening is used to measure the extent of cash and receivable with the company (Pok, 2012). A conventional company will find a high liquidity ratio preffered as it indicates a positive sign that their firm has a good financial health, but at the same time the firm will manage not to become too high to utilize the current asset effectively. According to Derigs & Marzban (2008), from shariah perspective, return should be obtained only from illiquid asset and since then Shariah-compliant company should be, to high extent, remains in illiquid form. Thus, scholars agreed to use liquidity screening to measure the ratio of current asset and company's worth, which can be market capitalization or total asset.

Interest ratio is used to view a proportion of liquid assets especially cash and interest bearing securities in relation to a company's worth (Pok, 2012). In Sharia perspective, earning from interest is not permissible and the threshold level should be kept low (El-Dalabeeh & Rahman, 2013). According to Derigs & Marzban (2008), there are two ways to measure interest permissibility: (1) the amount of interest income generated and (2) 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 assets including tangible and intangible assets (Cara Scatizzi, 2010). High level of debt will allow the company to gain higher level of profits for a given level of owner equity but also gain higher risk as higher interest debt must be paid without considering the company's financial condition. According to Derigs & Marzban (2008), in Sharia perspective, receiving and paying interest is banned, thus the level of theshold level of debt is measured and limited. In applying debt ratio, both conventional and Sharia practice agree to favor lower debt ratio because lower debt ratio indicates the company is less dependent on debt (Pok, 2012).

3. Methodology

3.1. Population and Sample. The sample of this research is all member of JII each year from 2010 untill 2015. In total, there will be 180 companies screened in this research.

3.2. Data & Source of Data. The data needed in this research inluded account receivable, market capitalization, cash, interest bearing and so on will be gathrered from Indonesian Stock Exchange (IDX) corner UII. The researcher will also collect additional data from each companies website to gain more information about its financial report.

3.3. Methodology. Researcher will examine the quantitative screening to all stock listed in JII within 2010-2015 using three main financial ratios applied

by six Sharia equity index providers which consists of Dow Jones Islamic Market Index, S&P Islamic Index, Amiri Capital Islamic Fund, FTSE Shariah Global Equity Index and MSCI Islamic Index. The three financial ratios used as quantitative screening are: liquidity ratio, interest ratio and debt ratio. The threshold level of the fiancial ratio provided by each equity index will be used as the parameter to judge each stock listed in JII is considered as shariah compliant or not.

As the quantitative consist of three screenings, the screening process will be executed sequencially, started firm liquidity screening, interest screening and debt screening. 30 firms listed in JII each year in 2010-2015 will be screened using liquidity screening. From initial screening, qualified companies will be screened using interest screening. As final result, firms that passed liquidity and interest screening will be screened using debt screening.

Table 1 summarizes the financial ratios that are applied by each index providers used in this research. The ratios consist of liquidity, interest and debt ratio. It includes the threshold level applied in the formula that indicates that the ratio should not exceed the percentage level.

Table 1. Financial Ratios applied by index providers

Index Provider	Liquidity Ratio Formula	Interest Ratio Formula	Debt Ratio Formula
DJIM	$\frac{\text{ARi (t)}}{\text{MCi (24)}} < 33\%$	$\frac{\text{CSIi (t)}}{\text{MCi (24)}} < 33\%$	$\frac{\text{TDi (t)}}{\text{MCi (24)}} < 33\%$
S & P	$\frac{\text{ARi (t)}}{\text{MC36 (t)}} < 49\%$	$\frac{\text{CSIi (t)}}{\text{MCi (36)}} < 33\%$	$\frac{\text{TDi (t)}}{\text{MCi (36)}} < 33\%$
Amiri	$\frac{AR_i\,(t) + C_i\,(t)}{TA_i\,(t)} < 70\%$	$\frac{CSIi\,(t)}{TA_i\,(t)} < 33\%$	$\frac{TDi\,(t)}{TA_i\,(t)} < 33\%$
FTSE	$\frac{AR_i\,(t) + C_i\,(t)}{TA_i\,(t)} < 50\%$	$\frac{CSIi\,(t)}{TA_i\,(t)} < 33\%$	$\frac{TDi\,(t)}{TA_i\,(t)} < 33\%$
MSCI	$\frac{AR_i\,(t)}{TA_i\,(t)} < 70\%$	$\frac{CSIi\,(t)}{TA_i\,(t)} < 33.33\%$	$\frac{TDi\,(t)}{TA_i\,(t)} < 33.33\%$

*Notes: ARi(t) refers to account receivable of **i** at time **t**. Ci (t) refers to account receivable of **i** at **t** time. SCIi (t) refers to cash & interest bearing securities of **i** at **t** time. TDi (t) refers to total debt of **i** at **t** time. MCi (24) averaged market capitalization of **i** in 24 months. MCi (36) averaged market capitalization of **i** in 36 months. TAi (t) refers to total asset of **i** at **t** time.*

4. Findings and Results

4.1. **Descriptive Statistics**. In quantitative screening process for each companies listed in Jakarta Islamic Index, four ratios are applied using the formula of the comparison Sharia stock indices, those are Dow Jones Islamic Market Index, S&P Islamic Index, FTSE Sharia 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 7 presents the descriptive statictics of the financial ratios for the companies listed in Jakarta Islamic Index inside the period of 2010-2015. Specifically, Table 1 will presents number of sample, mean, median, maximum value, minimum value, standard deviation and the skewness of sample data.

Panel A of Table1 presents the liquidity ratio of companies in 2010-2015. As we can see in Panel A Table 7, from 180 sample companies, 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 median of DJIM (1.4517) and S&P (1.4034) are higher than the median of AMIRI (0.1414), FTSE (0.1414) and MSCI (0.0931). From the mean and median of the data, we can examine that the result of liquidity ratio under DJIM and S&P have relatively higher number than AMIRI, FTSE and MSCI. This different result of liquidity ratio can be the result of a different denominator applied in the formula[1]. The minimum result under DJIM and S&P is zero which indicates that within 2010-2015, there is/are companies that have zero liquid asset or in the other word, all of their gain are from illiquid asset. The maximum (1.3656) and minimum (0.0016) result under MSCI has least gap, therefore it has smallest standard deviation as well. The bigger gap between mean and median under DJIM and S&P leads to bigger standard deviation (9.8819 and 9.8788) which indicates that the liquidity result under DJIM and S&P have wider distribution of the data from the mean. Compared to the result of liquidity ratio under DJIM and S&P, the standard deviation of AMIRI, FTSE and MSCI is smaller and indicates that the result have fewer variation. The result of liquidity ratio screening shows positive skewness under all index providers, which means the distribution of the data is not simetrical and instead skewed to the right. The highest skewness is shown by the result under FTSE and AMIRI (13.314)

Table 2. Descriptive statistics of the financial ratios of the companies

Ratio	N	Mean	Median	Max	Min	Standard Deviation	Skewness
Panel A. Liquidity Ratio							
DJIM	180	5,1046	1,4517	78,7161	0,0000	9,8819	4,1126
S&P	180	5,0626	1,4034	78,2463	0,0000	9,8788	4,0853
AMIRI	180	0,3313	0,1414	29,3618	0,0032	2,1754	13,3134

[1] For more detail, DJIM used averaged market capitalization, while AMIRI, FTSE and MSCI used total asset as the denominator.

FTSE	180	0,3313	0,1414	29,3618	0,0032	2,1754	13,3134
MSCI	180	0,1191	0,0931	1,3656	0,0016	0,1332	4,9632
Panel B. Interest Ratio							
DJIM	180	8,1312	5,1714	43,2670	0,0000	8,1884	1,9111
S&P	180	8,0104	5,1269	43,2670	0,0000	8,2016	1,9668
AMIRI	180	1,2285	0,2720	162,3749	0,0017	12,0479	13,4056
FTSE	180	1,2285	0,2720	162,3749	0,0017	12,0479	13,4056
MSCI	180	1,2285	0,2720	162,3749	0,0017	12,0479	13,4056
Panel A. Debt Ratio							
DJIM	180	14,4056	7,6870	145,4648	0,0002	21,6688	3,5370
S&P	180	14,2039	7,2694	144,5966	0,0002	21,6751	3,5369
AMIRI	180	0,4396	0,4067	2,7755	0,0038	0,3068	4,9189
FTSE	180	0,4396	0,4067	2,7755	0,0038	0,3068	4,9189
MSCI	180	0,4396	0,4067	2,7755	0,0038	0,3068	4,9189

Panel B of Table 1 shows the interest ratio of companies in 2010-2015. With respect to interest ratio screening in panel B the means of AMIRI, FTSE and MSCI (1.2285) are lower than the mean of 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 fact informs that the result of interest ratio under AMIRI, FTSE and MSCI is lower than DJIM and S&P. The gab within maximum and minimum result under AMIRI, FTSE and MSCI is higher than DJIM and S&P which contributes to the high result of standard devation (12.0479) and high snewness (13.4056). The skewness under all stock index providers shows a positive number that can be interpreted that the curve of the sata is skewed to the right. As the skewness under AMIRI FTSE and MSCI is higher thann DJIM and S&P, then 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 it tells that there is/are companies that have no cash and zero interest bearing securities.

Panel C of Table 1 consists of the the result of debt ratio in sample companies in 2010-2015. The mean (0.4396) and the median (0.4067) under AMIRI, FTSE and MSCI has only small gap and leads to small result for standard deviation (0.3068). The standard deviation of AMIRI, FTSE and MSCI represent the information that the screening result under AMIRI, FTSE and MSCI does not have a large data variable which is supported by the small gap among the maximum and minimum value under AMIRI, FTSE and MSCI. On the other hand, DJIM and S&P screening result reach 145.4648 and 144.5966 as the maximum result and 0.0002 as the

minimum result which has larger gap in comparison with the gap of maximum and minimum value under AMIRI, FTSE and MSCI. This result sopport the high result of standard deviation (21.6688 and 21.6751) that can be interpreted as the screening result under DJIM and

S&P has a large variable of data. However, the screening result under S&P and DJIM have lower skewness than the result under AMIRI, FTSE and MSCI. A 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 reach zero under all stock indices. This means that there is no company have zero debt.

4.2. **Result and Findings**. Table 3 represents the result of independent financial ratios result of firms listed in JII using three ratios (liquidity, interest and debt ratio) according to the formula provided by 5 international Sharia index providers, those are: Dow Jones Islamic Market Index, S&P BSE 500 Sharia, Amiri Capital Islamic Fund, FTSE Shariah Global Equity Index and MSCI Islamic Index.

Table 3. Analysis of companies according to the independent ratios and threshold set by the indices provider

Index Provider	N	Liquidity Ratio			Interest Ratio		
		Threshold	No. Of Companies	%	Threshold	No. Of Companies	%
DJIM	180	<33%	47	26,11	<33%	5	2,78
S&P	180	<49%	57	31,67	<33%	5	2,78
AMIRI	180	<50%	178	98,89	<33%	113	62.78
FTSE	180	<70%	176	97,78	<33%	113	62.78
MSCI	180	<50%	179	99,44	<33,33%	115	63.89

4.2.1. **Liquidity Screening Result**. The result of liquidity screening shows that only 47 (26.11%) from initial 180 sample companies that passed liquidity screening under DJIM. Under S&P liquidity screening, 57 (31.67%) are considered as Shariah-compliant. In the other hand, the screening result under AMIRI, FTSE and MSCI shows a lot higher result in comparison with DJIM and S&P. There are 178 (98.89%) out of 180 companies passed the screening under AMIRI and 176 (97.78%) companies passed the screening under FTSP. As highest achievement, there are 179 companies passed the screening under MSCI. The big gap among the screening result

under DJIM, S&P and the rest index providers is caused by different denominator used in the formula. AMIRI, FTSE and MSCI used total asset as the denominator in the formula which allow more companies to pass the screen as total asset is more stable to be calculated than market apitalization. The difference among DJIM and S&P also among AMIRI, FTSE and MSCI is caused by different threshold level and formula that is applied. We can also examine that all the liquidity screening result always fall below 100% in all stock indices.

4.2.2. **Interest Screening Result**. In interest screening, all index providers except MSCI are using the same level of threshold which is 33%. In the other hand, MSCI is using more relax threshold level which is 33.33%. A significant different result is shown among the result of index providers that use market capitalization in the formula (DJIM and S&P) and index providers that use total asset in the formula (AMIRI, FTSE and MSCI). The result shows that only 5 companies (2.78%) meet the interest threshold level under DJIM and S&P. The similar interest screening result among DJIM and S&P is probably caused by the same threshold level and formula that is applied. We can also examine that different period for averaged market capitalization among DJIM and S&P does not give significant different in the result[2]. Meanwhile, there are 113 out of 180 companies (62.78%) that meet the interest criteria under AMIRI and FTSE. The result under AMIRI and FTSE is similar because it apply the same threshold and formula. While, the result under MSCI is slightly different with AMIRI and FTSE because MSCI uses more relax threshold. There are 115 companies (63.89) from intial 180 companies that pass the interest screening under MSCI. As MSCI reach the highest number of company that passed the interest screening (63.89%), thus there is no 100% pass rate under any stock index providers.

Index Provider	1st Screening (Liquidity)			2nd Screening (Liquidity & Interest)			3rd Screening (Liquidity, Interest & Debt)		
	N	No. Of Companies	%	N	No. Of Companies	%	N	No. Of Companies	%
DJIM	180	47	26.11	47	4	2.22	4	3	1.67
S&P	180	57	31.67	57	5	2.78	5	3	1.67
AMIRI	180	178	98.89	178	112	62.22	112	41	22.78
FTSE	180	176	97.78	176	112	62.22	112	41	22.78
MSCI	180	179	99.44	179	116	64.44	116	43	23.89

4.2.3. **Debt Screening Result**. In debt screening, DJIM, S&P, AMIRI and FTSE use the same threshold (33%), meanwhile MSCI use looser threshold level (33.33). The result in Table 1 shows that only 5 company (2.78%) conform to the threshold of DJIM. The Table also show that there are only 4 sample companies (2.22%) has passed the debt screening under S&P which is quite a close range with DJIM. In contrast, there are 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 under MSCI. As explained

[2] DJIM use averaged market capitaization for the last 24 months and S&P apply averaged market capitalization for tthe last 36 months as the denominator.

previously, the significant different result is shown among index provider that adopt market capitalization (DJIM and S&P) and total asset (AMIRI, FTSE and MSCI). The similar result among DJIM and S&P also AMIRI & FTSE is caused by the same formula adopted in debt screening, while different result under MSCI is caused by higher threshold applied by MSCI. The passing level under DJIM, S&P, AMIRI FTSE and MSCI is all under 100%.

Table 4. Analysis of companies according to the set of ratios and threshold set by the indices providers.

With respect to the result of liquidity screening, the 1st screening (liquidity) result is exactly the same with the liquidity result explained previously. From the initial 180 companies, only 47 companies (26.11%) meet the threshold under DJIM and only 57 companies (31.67%) meet the threshold level under S&P. The 1st screening result under DJIM, S&P, AMIRI, FTSE and MSCI shows higher result, in which there are 178 (98.89%), 176 (97.78%) and 179 (99.44%) companies that conform to the threshold level under AMIRI, FTSE and MSCI. All 1st screening (liquidity) result showing lower than 100% of passing level under all index providers.

In 2nd screening, the company that passed the 1st screening (liquidity) then tested with interest screening. As result, from initial 47 passed companies, only 4 (2.22%) companies meet the interest threshold level under DJIM. The 2nd screening of S&P is showing similar result with DJIM. From 57 companies that passed 1st screening, only 5 companies (2.78%) is considered fit to further screening. In contrass with the result of DJIM and S&P, 112 companies (62.22%) passed the 2nd base screening from initial 178 and 176 companies under AMIRI and FTSE. The highest result so far belong to MSCI in which 116 companies (64.44%) from initial 179 companies are qualified to be screened by its debt.

The 3rd screening is the final screening for financial screening to decide wether or not a company is considered financially Sharia-compliant. There are only 3 companies (1.67%) out of 5 and 4 companies are considered Shariah under DJIM and S&P. In contrast, there are 41 companies that are considered as Shariah-compliant from initial 112 (22.78%) companies under AMIRI and FTSE. The highest result is achieved by MSCI showing 43 companies (23.89%) from intial 116 companies are considered as Shariah-compliant. The passing level of complete financial screening process under DJIM, S&P, AMIRI, FTSE and MSCI is all under 100%.

From the result explained above, we can examine that the final financial screening result show a passing level of a company under 100%. Hence, hyphothesis 1 to 5 is accepted. The financial screening adopted by JII is more liberal than DJIM, S&P, AMIRI, FTSE and MSCI. We can also gain another information that DJIM and S&P gain less passed company because market capitalization is more difficult to be calculated due to its unstability.

5. Conclusion

After a quantitative screening conducted towards firms listed in JII within 2010-2015 using methods from 5 different Sharia leading stock indices, we can examine that from initial 180 sample companies only 3 companies (1.67%) is considered as financially Shariah-compliant according to DJIM and S&P. Presenting higher result, 112 out of 180 companies (22.78%) are financially Shariah-compliant under AMIRI and FTSE. The highest percentage result comes from MSCI in which 116 out of 180 companies is considered as financially Sharia-compliant. From this research we can sumarize that the passing level of JII under DJIM, S&P, AMIRI, FTSE and MSCI is below 100% (180 companies) which shows that JII applies more relax financial screening. Hence, we can conclude that the financial screening applied by JII is more liberal than those applied by DJIM, S&P, AMIRI, FTSE and MSCI

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