Green Sukuk Financing for Government Investment Issue (GII) in Malaysia

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https://doi.org/10.26782/jmcms.spl.4/2019.11.00001

Abstract

The paper aims to investigate the relationship between the features of sukuk financing with energy efficiency in Malaysia. The study used a secondary data which are gathered from Bank Negara Bond InfoHub and Malaysia Energy Information Hub (MEIH) from 2014 until 2015. Throughout, this study uses multivariate regression analysis for dependent variable (DV): Energy efficiency and independent variables (IV): size of issues, coupon rate and yield to maturity. The result found that there is a significant impact between green sukuk financing towards energy sectors and positive relationship on size of issue and yield to maturity. The coupon rate has a negative relationship toward energy efficiency. Overall, the green sukuk financing directly have a contribution on energy efficiency in Malaysia by focusing on green sukuk projects financing in the Malaysia.

Keywords: Green Sukuk, Financing, Energy, Efficiency

I. Introduction

Developing an ecosystem for growth by individual innovative financial instruments and right channel to address the global funding gap in green financing is a green sukuk. According to SC (2017), issuance of Malaysia’s first green sukuk is a friendly investment which is this framework based on a collaboration between Securities Commission, Bank Negara Malaysia and World Bank Group. The concept of a green sukuk is to build a pioneering bridge between traditional socially responsible markets in Islamic finance and existing fundamental of social responsible investment (SRI). Green finance is defined as comprising “all forms of investment or lending that consider environmental effect and enhance environmental sustainability” (Volz et al., 2015).

Based on Jacob (2017), in order to fix their problems of environmental degradation that led to climate change by issuing companies to get access on money pool by addressing sustainability, this green bonds allow investors to employ their capital. At present, institutional investors growing their awareness on demand and supply for green bond issuance globally (RLL Bin, 2017). This framework helping and encourage the investors to undertake this assessment of the eligible assets.
Besides that, payment based on the structure of green sukuk can be used for the government-granted subsidy for finance construction and this structure protecting the future income cash flows from other projects or eligible assets to promote energy efficiency such as solar parks, biogas plants, wind energy, renewable transmission, electric vehicles and light rail.

About two thirds from accounting of all sukuk sold, green or SRI investment were call for money to be used to protect and preserve of society since Malaysia has been the world’s biggest sukuk market. Besides that, most of projects eligible for SRI Sukuk are environmental friendly by promoting renewable energy (RE). The issue of the funding of the project is still challenging for the Government and bridging the gaps of SRI in Malaysia and ASEAN country. Indeed, Malaysia can make an investment on green bond to fund RE infrastructure development in promoting size of the bond and sukuk market. Considering that Malaysia to move forward on integrating Environmental, Social and Governance (ESG) to solve the issue via the green bond issuance (RLL Bin, 2017).

Based on Alam, Arshad & Rizvi (2016), sukuk market is a fast growing global channel capital to fund renewable energy and environmentally friendly projects by reducing carbon emission and generating profits on cash flows. It is significantly show that sukuk issuances charted a compound annual growth rate between 2004 and 2011 increase by 44% (IFSB, 2013). Thus, profits are considerably higher and acquire a greater share of the revenue for entrepreneur even as the investor share owing is relatively smaller (Novethic Research, 2009). Thus, it leads to strident intent in green projects concerning and awareness to support globally for environment and sustainable development. Indirectly it is supporting the global surge in demand to initiate green projects. Therefore, it fits well in the overall aspirations of Islamic finance to enhance the welfare of society.

Green sukuk as claim as a new asset class in Malaysia’s capital market by looking into green investment property found to the renewable projects and energy sectors. Again, based on studied done by Alam, Arshad & Rizvi (2016), sukuk instruments supporting the funding requirements of renewable projects in order to sustain investment of new asset class known in Islamic finance. Green sukuk have a huge potential in the market by following on Shariah-compliant investor to devour the climate crisis of global phenomenon and used it for current ambitious renewable energy by generating energy efficiency to the industry as a reasonable investment solution to penetrate economies in Malaysia. Long-term securities issuance adopted from the climate mitigation known as climate sukuk. It could create stable returns for long-term investors by providing funding for renewable energy generation or implementing a large-scale energy efficiency measure in the country.

With respect to the sukuk market in Malaysia, all the sukuk issuances should follow and comply with the shariah principles endorsed by the SAC of the SC. However, for Gulf Corporation Countries’ (GCC) sukuk issuances, they should comply with shariah standards and guidelines issued by AAOIFI. Sukuk instruments either debt-based or equity-based are a halal investment since it based on shariah principles. This shariah-compliant instrument is a better choice to the issuer for their capital funding to achieve the maqasid al-shariah (shariah objectives) in Islam. This investment follows the Islamic law and principles. Meaning that, the market is free from non-permissible activities. Even if some of the companies’ project or activities
dealing with the non-permissible elements, sukuk financing can still apply as long as it belongs to an SAC benchmark on the shariah-compliant assessment on their stock screening process (Mohd Saad, Haniff & Ali, 2017).

II. Theoretical and Empirical Reviews

Energy is an essential in society and economic development. Generally, most of researcher and government are paying more concern to energy efficiency. Energy plays an important role in driving modern economic. Thus, higher demanding on project and financial investment leads to Malaysia on focusing on sustainable economic growth and long term green projects in order to follow the global green project by protecting the environment and investing on green sukuk. In industries, the result of competitive competition between firms by using an energy efficiency indicator is a vital strategy. The highest level of energy efficiency means outputs can be maximized and operational costs can be minimized. It linked to commercial and energy security could support on environmental benefits.

Based on Hepbasli, Ozdamar & Ozalp (2001), if local energy resources are unable to preserve with demand, a nation becomes dependent on imported energy. It leads to higher cost of raw material to generate electricity and disruption of supply. Besides that, the government must have a strong interest in developing energy efficiency as a nation continues to develop (Ang, 2008) by reducing on cost, carbon emission (CO2) and demand by protecting the environment. Based on May et. al. (2017), energy efficiency technologies for energy intensive industrial sectors has seemly gained critical momentum. In that case, the government should play their role by offering an intensive program by sending engineers or any expertise to gain knowledge on energy efficiency training to assist in building an effective case using legal, technological, environmental, social and economic dimensions (Abdelaziz, et al (2011).

By largely shaped a governmental policy in the form of stringent regulation and market shift towards environmental responsibility (Okereke, 2007). The success of energy stability depends on the ability to predict and controlling industrial sector response should be based on scientific evidence, where Martin et. al. (2012) found that energy friendly practices are positively correlated to firm productivity. Looking at stakeholder perspective and corporate social responsibility by considering sustainable development actions by companies help to win recognition of consumer and investors which can bring long term brand effects and causing long term financial benefits for corporations that closely related to the interplay with environment (Fan, 2017).

Besides the return, size of sukuk issuance need to be considered when making a decision in creating structure of capital by firms. Usually, the money raised from the sukuk issuance is used to invest in the underlying asset (Clifford Chance (2008); Manaf, 2007; Shahrim (2006). In addition, the issuance of Sukuk has undergone rapid increase; for example, London based financial institutions had arranged more than a dozen Sukuk issuances on behalf of Middle Eastern clients in 2006.

While in 2008 Indonesia will increase the sale of both conventional and Islamic bonds in order to generate a domestic source of finance to solve its financial deficit (Emergingmarketsmonitors.com (2007); Alvi (2006, 2007). Zeti Akhtar Aziz (2007) a governor of Bank Negara Malaysia said that the growing role of Islamic finance in
mobilising and channeling funds to productive investment activities across borders contributes to more efficient allocation of funds across borders and facilitates international trade and investment. The more recent developments in Islamic finance are the growing significance of the sukuk market to become an increasingly important component of the development of the global sukuk market. There has been growing interest in the issuance of sukuk by corporations, sovereigns and multinational corporations; the demand for sukuk significantly exceeds the supply.

Today, the global sukuk market, denominated in international currencies, is estimated to exceed USD50 billion. Although the size of the market is modest by global standards, the sukuk market is experiencing remarkable growth, increasing at an average rate of growth of forty per cent per annum. In her other articles, she also focus on the vast potential of the Islamic bond market in the economic development process, in its role in ensuring financial stability and its role in promoting greater financial integration in the global financial system. Similar with the Abdul kader Thomas (2007) also stress on the important of the sukuk market. He argue that the application of the forward lease is an innovation developed elsewhere, but made possible in the sukuk space thanks to Malaysia’s progressive steps to define the broad sukuk space, and grow it with new concepts.

Alshowaikh (2008) also mentioned that Malaysia has been developing a more extensive capital market after the Asian financial crisis to ensure a more resilient financial system. He also said that Malaysia is a matured market as indicated not only by the market share but also by the number of issuances. Based on Bin et. al. (2017), there is a high chance by promoting the size of bond and sukuk market known as green bond funding on RE infrastructure development. Here with, this study was developing the first hypothesis to outfit for the multivariate regression model as follows:

H1: There is a significance relationship between size of green sukuk issuances and energy efficiency.

According to Kidney & Oliver (2014), the collaboration between investors and issuers on green bond is enhancing on green investment financing. Besides that, the bondholder investing in the bond issued will pay the interest and coupon payments. It work similar with conventional bonds, but must be issue to support green investment by reducing the environmental impact, climate change and increasing energy efficiency. The coupon payments are similar to interest payment. The bond will matured at time expires and the debt repaid to bondholders (Brealey, Myers, & Marcus, 2012). The bondholder concern on Corporate Social Responsibility (CSR) will be reflected on lower coupon rate by issuing the bond (Ge, Han & Liu, 2012). Implementation on practices of eco premium product, reduction of carbon emission, clean energy use and energy efficiency were linked to lower bond spreads (Bauer & Hann, 2010). Therefore, the second hypothesis is developed as follows:

H2: There is a significance relationship between coupon rates of green sukuk financing and energy efficiency.

From view of conventional bonds, Modigliani and Miller (1958) argue that the presence of perfect capital markets, all financial decisions including debt maturity do not matter. Stiglitz (1974) has formalized and extended Modigliani and Miller’s propositions to demonstrate that the debt maturity structure is irrelevant for firm value under perfect market assumptions. However, market imperfections, which are
later introduced primarily based on the role of agency cost, signaling and asymmetric information, liquidation risk or taxes, have led to theories supporting the choice of debt maturity mix either short or long term debt. Enclosed, the study was concluding the third hypothesis as follows:

H3: There is significance relationship between yield to maturity and energy efficiency

III. Research Methodology

For this study, data collected from the MEIH and World Bank’s World Development Indicators for periods from 2014 until 2015. The sukuk financing data are retrieve from Government Investment Issue (GII). Completed data on this GII sukuk features are considered.

\[
\begin{array}{|c|c|}
\hline
\text{Independent Variables} & \text{Dependent Variables} \\
\hline
\text{Size of Issue} & \text{Energy efficiency} \\
\text{Coupon Rate} & (\text{Hang & Tu, 2007}) \\
\text{Yield to Maturity} & \\
\hline
\end{array}
\]

Fig. 1. The Research Framework

Energy efficiency can be measure of energy intensity due to simplicity and ease of use for supporting policy analysis and making decision. Energy intensity can be defined as the ratio of total energy use of operating revenue of a firm, Fan (2017). Based on Martin et. al. (1994) as a pioneer of energy efficiency that presents amounts from human activities such as manufacturing industry, transportation and electricity industry, providing per unit of energy used.

Energy efficiency indicator for industry activities, especially on a macro-level is a ratio or service output to energy input. Energy intensity also means increasing the amount of work without changing the quantity of energy used. It also can be measure by the amount of energy consumption per unit, which is often used. The energy intensity of GDP (gross domestic product) is easy to calculate as gross inland energy per GDP (Popescu, 2015). The implication for decision making and economic growth could manage to separate from energy consumption to direct with outcome decreasing on energy intensity (Kapusuzoglu & Karan, 2013).

Energy can be considered an input factor for production, where reciprocal number is energy intensity. From the viewpoint of energy, the measurement of energy efficiency and energy intensity is efficient based on the boosts on production and
living standard (from total value of production and total value of income). Raising energy prices is an effective policy tool for increasing efficiency of energy use (Hang & Tu, 2007).

Next, the relationship between the green sukuk financing variables and energy efficiency sectors will be estimated using the following multiple regression equations:

\[ \text{Energy}_i = \alpha + \beta_1(\text{Size}) + \beta_2(\text{Coupon}) + \beta_3(\text{YTM}) + \epsilon_i \]

**IV. Results and Analysis**

**Descriptive Statistics**

Table I. shows the output of four variables data for two years from year 2014 until 2015 with a total sample is 10,308. From the Table I, the mean value of energy efficiency is 2.9515 with a standard deviation of 0.05332 and it indicates that the minimum is 2.91 while the maximum is 3.02. The highest mean is amount from the size of issue with 15.3483 after log and the lowest mean is coupon rate for 3.9706. Based on Skewness, all independent variables show that positive Skewness than energy efficiency, where distribution of data set is symmetric to the right of the center point.

<table>
<thead>
<tr>
<th></th>
<th>EE</th>
<th>Log size (amount)</th>
<th>Coupon</th>
<th>YTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.9515</td>
<td>15.3483</td>
<td>3.9706</td>
<td>3.9878</td>
</tr>
<tr>
<td>Maximum</td>
<td>3.0200</td>
<td>500.000</td>
<td>4.9400</td>
<td>4.8600</td>
</tr>
<tr>
<td>Minimum</td>
<td>2.9100</td>
<td>0.0300</td>
<td>3.5600</td>
<td>2.9600</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.0533</td>
<td>15.7098</td>
<td>0.3459</td>
<td>0.2359</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.5070</td>
<td>8.3080</td>
<td>1.2680</td>
<td>0.3500</td>
</tr>
</tbody>
</table>

**Correlation Analysis**

Table II shows that there is a significant correlation between energy efficiency and size, coupon rate and yield to maturity since the p-value is <0.10. It can conclude that the energy efficiency related with all independent variables and there is no multicollinearity problem (p-value <0.8). Thus, the variables can be proceeded to test the significant relationships between dependent and independent variables that is second objective of the study.

<table>
<thead>
<tr>
<th></th>
<th>EE</th>
<th>Size</th>
<th>Coupon</th>
<th>YTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE</td>
<td>1</td>
<td>0.051**</td>
<td>-0.257**</td>
<td>0.141**</td>
</tr>
<tr>
<td>Size</td>
<td>0.051**</td>
<td>1</td>
<td>0.005</td>
<td>-0.042**</td>
</tr>
<tr>
<td>Coupon</td>
<td>-0.257**</td>
<td>0.005</td>
<td>1</td>
<td>0.637**</td>
</tr>
<tr>
<td>YTM</td>
<td>0.141**</td>
<td>-0.042**</td>
<td>0.637**</td>
<td>1</td>
</tr>
<tr>
<td>N</td>
<td>10308</td>
<td>10308</td>
<td>10308</td>
<td>10308</td>
</tr>
</tbody>
</table>

Notes: ** correlation is significant at the 0.10 level (2-tailed)

In table III, the results of multivariate regression indicate the value of F-statistics is significant with at 1% confidence level. It implies that the model is good fits in and
the independent variables are significantly having a relationship with the energy efficiency. From the regression model, it found that size of issue and yield to maturity have significant positive relationship at 1 percent with energy efficiency with the coefficient of estimations at 0.012 and 0.117 respectively. Implied that, the higher the size of sukuk issuances and their YTM will increase the level of energy efficiency. Next, the result of coupon rate have a negative significant relationship towards energy efficiency is consistent with the finance theory whereby lower coupon will encourage amount of issue in green sukuk financing. Therefore, all the three hypotheses are failed to reject. With respect to the value of R square, the result shows that 22.7 percent, which explains that almost 23 percent of the energy efficiency was explained by size of issue, coupon rate and YTM. As regards to the VIF, the value is shown below than 5 for each of the independent variables, means there are no redundancy or multicollinearity exists among them.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>Significant</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>2.832</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>0.012</td>
<td>0.000***</td>
<td>1.003</td>
</tr>
<tr>
<td>Coupon</td>
<td>-0.090</td>
<td>0.000***</td>
<td>1.685</td>
</tr>
<tr>
<td>YTM</td>
<td>0.117</td>
<td>0.000***</td>
<td>1.688</td>
</tr>
</tbody>
</table>

Notes: *** regression is significant at 0.10

Energy = 2.832+0.012SIZE -0.090Coupon + 0.117YTM + ε_i

V. Conclusions

The main objective of this study is to investigate the relationship between the features of sukuk financing with energy efficiency in Malaysia. From the finding we can concluded that there are significant relationship between features of sukuk financing proxies by size of issuances, coupon rate and YTM towards energy efficiency. Thus, through GII investment, should deeply analyze on the sukuk features especially related to its volume to be issued, level of high-low coupon rate as well as the cost of debt incurred until the end of the maturity date as represented by YTM. Besides, the sukuk financing on the green projects also can promote the energy efficiency in terms of environmental and socio-community responsibility. Government as a policymaker have a broaden connection with the investor and firms to access and focusing on sustainable investment and thereby reduce the overall cost of debt.

VI. Acknowledgment (Optional)

This study is part of the research under UNITEN Internal Grant, job number of J510050727. We would like to thanks to UNITEN for financially support.
References


