

Analysis of Risk Features and Performance Evaluation of Shariah-Compliance Stocks using Standard-Risk Adjusted Techniques

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Abstract

The Islamic Capital Market (ICM) has grown rapidly in line with the increasing demand for various Shariah-compliant investment instruments. As the fastest growing investment component, Shariah-compliant stocks in Bursa Malaysia have attracted more attention not only to Muslim investors but also to non-Muslims investors to meet their investment objectives. However, most of the literature focused on the performance comparisons of Islamic and conventional indices. This study contributes to examine the overall performance of Shariah-compliant stocks across sectors which has significant implications into the relationship of risk-return. Therefore, the main objective of this study is to analyse the risk features of 57 Shariah-compliant stocks from 12 sectors from 2013 to 2018. Next, this study also focuses on evaluating the performance of Shariah-compliant at the sector level by using the standard-risk adjusted performance methods towards KLCI. Methods employed were Sharpe, Treynor and Jensen's Alpha ratios. The empirical results reveal that the unsystematic risk component in Shariah-compliant stocks is very high with an average diversifiability measure of 0.914. The results indicate that all Shariah-compliant stocks are not fully diversified and there are still great opportunities for diversification. While the results show that the Islamic sectors have slightly outperformed the KLCI, it also highlights that application of different risk variables used such as standard deviation and beta will lead to differences in the performance ranking. At best, investors could use this ranking to make investment decisions without undertaking time-consuming analysis to determine the highest and lowest performing sectors in the stock market.

Keywords: Islamic Stock, Systematic Risk, Unsystematic Risk, Performance Measurement

Introduction

In recent years, there is a sharp increase in the demand for Islamic financial products and services in an emerging market, especially in Malaysia. Statistically, the local Islamic Capital Market (ICM) has grown dramatically from RM2.76 trillion in 2014 to RM2.9 trillion in 2020 (Sahudin et al., 2019). Previously, Muslim investors were unable to participate freely in the capital market due to financial instruments such as bonds, options, futures, forwards and swaps that function based on *riba'* (interest), *gharar* (uncertainty) or *maisir* (speculation) (Abdul-Rahim et al., 2019). Thus, Muslim investors are only willing to invest their capital if the investment does not conflict with Islamic laws as outlined by *Al Quran* and *Sunnah*.

As one of the world's leading Muslim countries, Malaysia has played an important role in promoting a variety of Islamic investments to its Muslim investors. Responding to this requirement, the Malaysian government has taken the initiative to establish the Islamic Banking Act 1983 and the Government Investment Act 1983 as a commitment to boost the local ICM. In May 1997, Bank Negara Malaysia authorised Shariah Advisory Council (SAC) to periodically monitor and ensure continuous conformity of the Shariah-compliant companies in conducting their operations and portfolios (Johan, 2018). Thus, a business that engages in risk and returns sharing activities as practised by conventional banking or investing in any non-compliance industries related to pork, alcoholic beverages, tobacco, pornography and entertainment has also been excluded from the Shariah-compliant securities list, published twice a year by the SAC.

About 700 stocks have been listed in Shariah-compliant Securities Commission Malaysia (SCM). The increasing demand for Islamic investment indicates that more investors have realised that Shariah-compliant stocks are less risky than conventional stocks. However, the investors are having a problem in making a decision on which stock market and sector they should invest in. Good investors will choose to maximise the possible return and minimising the level of risk. Generally, all types of investment instruments including Islamic equities that consist of two types of risk, namely systematic and unsystematic. Systematic risk is uncontrollable because it naturally affects the global economic market regardless of any asset due to inflation, interest rate changes, natural disasters, terrorist attacks, etc. (Jawadi et al., 2014). Meanwhile, unsystematic risk, on the other hand, is controllable since it is only associated with internal factors related to the performance of a specific company or an industry.

Therefore, this study has two objectives. The main objective is to analyse the risk features of local Shariah-compliant stocks by separating the total risk into systematic and unsystematic components. Next, this study also aims to identify the best performing Shariah-compliant stocks, both at the market level and by sector. Thus, this study utilises the most popular standard risk-adjusted techniques such as Sharpe, Treynor and Jensen's Alpha ratio as evaluation tools towards Kuala Lumpur Stock Exchange (KLSE) as the market benchmark. As a result, a more efficient decision-making strategy in constructing an optimal portfolio can be applied by considering the risk-return perspective in the overall performance of Shariah-compliant stocks in Malaysia.

The remainder of this paper is organised as follows: Section 2 review the works of literature related to this study. Section 3 describes the methodology and data used in this paper. Section 4 discusses the empirical analysis. Section 5 summarises the findings and concludes the paper.

Literature Review

This section presents two types of empirical literature. In the first one, we aim to discuss the risk characteristics of Shariah-compliant stocks. In the second one, we emphasize the literature on the performance of Islamic stock market indices from the perspective of emerging countries, especially Malaysia.

Risk and return are significantly two important elements that have always been considered in their investment decisions whereby the higher the risk, the higher the return and vice versa (Amin et al., 2018). Even though Islamic stocks have grown in popularity, there have been few empirical studies analysing their overall risk-return characteristics. Recently, Abu-Alkheil et al (2020) have proved that Islamic stocks face a lower risk as compared to conventional stocks. Hence, Shariah-compliant stocks are claimed to be safer investment instruments than its counterpart (Mansor & Bhatti, 2011). The empirical findings also found that the lower betas of Islamic indices can be explained by their lower leverage and less exposure to the credit market (Dewandaru et al., 2015; Mwamba et al., 2017; Rizvi & Arshad, 2017).

As a result, the prices of Islamic equities become less sensitive to overall market movement that leads to Islamic portfolios in which it provides slightly less returns than the conventional portfolio (Rakhi et al., 2018; Sukmana & Kholid, 2012). Since conventional stocks are more attractive in the market, investors prefer to strategically allocate less weight to Islamic stocks for long-term investment. This finding contradicts the results of a study conducted by Albaity and Ahmad (2008); Hayat and Kraeussl (2011); Charles et al (2015) which proved that Islamic stocks are riskier than their counterparts. Moreover, Abdullah et al (2002) have also found evidence that both Islamic and conventional funds were poorly diversified as their asset managers were bad at stock-picking and timing the market. Even though Islamic stocks lack diversification benefits, Hersugondo et al (2020); Kabir et al (2017); Tas et al (2016) have indicated that Islamic assets efficiently reduce systemic risk and make higher return relative to the conventional equity markets. These stocks could be more profitable since Shariah-compliance companies consist of small-cap companies with high rates of growth and have passed the extra-financial screening criterion (Hussein, 2004).

To the best of our knowledge, most of the prior studies focused on comparing the performance of Islamic and conventional indices in terms of equity investment at the stock market level (Siddiqui, 2000; Ho et al., 2014). It can also be observed that the empirical results over whether Islamic stocks perform better than non-Islamic stocks offer varied conclusions. Several studies have claimed that Shariah indices were slightly over-performed their conventional indices when markets were bearish and conventional funds outperformed its counterpart in bullish markets (Elfakhani et al., 2005). Thus, Islamic assets have been proven to be more resilient especially during the financial crisis. Therefore, it could be used as a hedging instrument making it more appealing to investors (Charles et al., 2015; Sukmana & Kolid, 2012).

In contradictory, Bouoiyour et al (2018); Ali et al (2018) concluded that Islamic indexes in emerging markets are relatively less efficient relative to non-Islamic indexes. This is consistent with Albaity and Ahmad (2008) findings in the local ICM that the KLSI minimally underperform the KLCI during the observed period. However, some literature did not find a significant difference between Islamic and conventional indices (Girard & Hassan, 2008). In Malaysia, the findings from a study conducted by Ahmad and Ibrahim (2002) also revealed similar results between two indices particularly KLSI and KLCI traded in the Kuala Lumpur Stock Exchange (KLSE). Generally, previous studies suggest that investing in Islamic securities has no substantial impact on an investor's wealth as compared to non-Islamic assets (Abbes & Trichilli, 2015; Dharani & Natarajan, 2011). However, at the sectoral level, the performance of Islamic and conventional indices has received little attention. Therefore, this study will contribute to widening the existing Islamic literature by examining the current performance of Malaysian Shariah-compliant stocks at the sectoral level.

Methodology

This study aims to analyse risk features using beta, diversifiability measures and finally evaluate the performance of Shariah-compliant stocks using the standard risk-adjusted methods, namely Sharpe, Treynor and Jensen's alpha ratios. In addition, the sample of this study comprises 12 sectors with 57 approved Shariah-compliant securities listed by the Shariah Advisory Council (SAC) considered for a period of 6 years from 2013 to 2018. Finally, the 3-month Malaysia T-bill rate was employed to proxy for the risk-free rate and the weekly returns of the FTSE Bursa Malaysia Kuala Lumpur Composite Index (FBM KLCI) that serve as a proxy for market return. Figure 1 summarises the steps used to estimate the risk components and measure the performance of Shariah-compliant stock market portfolio towards KLCI:

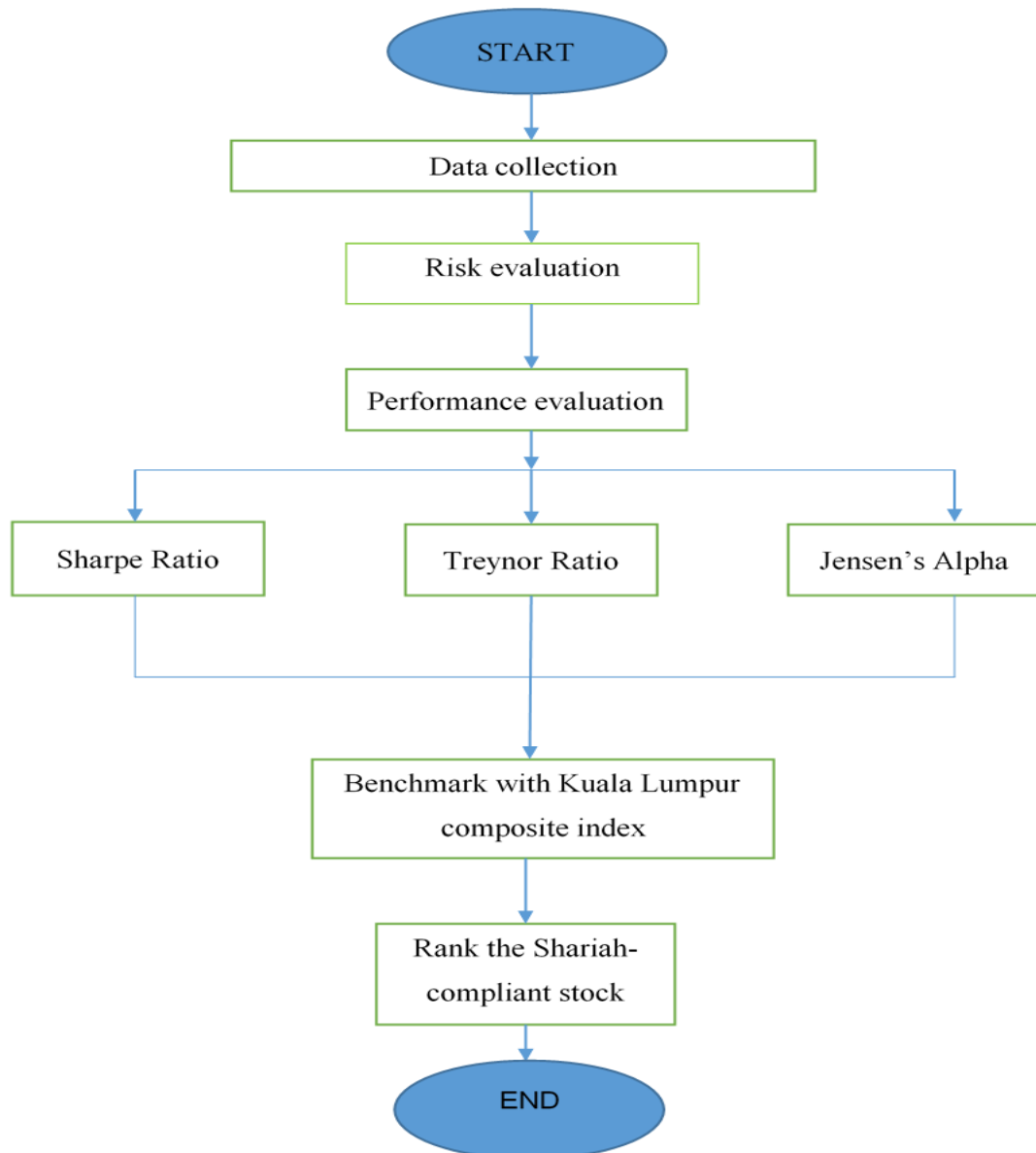


Figure 1: Flowchart of the risk and performance evaluation

Analysis of Risk Features

Beta

In the first part of the analysis, beta (β) was employed as a risk measure to compare the stock's price movements relative to the entire market as a guidance on the future stock's performance. As shown in Equation (1), beta is the slope coefficient in the regression of the Shariah-compliant stock market portfolio rate of return on the market rate of return defined as

$$\beta = \frac{\text{cov}(R_p, R_m)}{\text{var}(R_m)} \quad (1)$$

where R_p is the rate of return for stock j , R_m is the rate of return of KLCI, $\text{cov}(R_p, R_m)$ is the covariance between the stock's return and the return of the market portfolio and $\text{var}(R_m)$ represents the variance of KLCI.

Diversifiability Measure

The variance of the total risk for each Shariah-compliant company is decomposed into its systematic and unsystematic risk components based on the following Equation (2) as shown in Wah and Johari (2014):

$$\sigma_j^2 = \beta_j^2 \cdot \sigma_m^2 + \sigma_e^2 \quad (2)$$

where σ_j^2 is the variance of stock return j , β_j is the beta for stock j , σ_m^2 is the variance of the return of the market portfolio. Thus, $\beta_j^2 \cdot \sigma_m^2$ is to represent the systematic risk component that is not diversifiable.

On the contrary, σ_e^2 defined the unsystematic risk component for stock j which describes the portion of overall risk that is diversifiable. Additionally, this study also employs a measure of diversifiability $(\sigma_e^2 / \sigma_j^2)$ to determine whether or not additional diversification is needed by estimating the ratio between unsystematic risk and the overall risk. In conclusion, if the ratio is close to 0, this indicates that the portfolio is almost fully diversified since only a small portion of unsystematic risk components are available. However, if a portfolio's diversifiability measure is close to 1, this implies that the portfolio still has a large portion of unsystematic risk that can further be diversified.

Performance Analysis

This study employed the standard risk-adjusted measure which was proposed by Sharpe (1966); Treynor (1965); Jensen (1968). In measuring the performance of Shariah-compliant stocks, the observed stocks are then benchmarked towards Kuala Lumpur Composite Index (KLCI). KLCI represents the average price of 100 stocks comprising both Islamic and non-Islamic compliant stocks and was acknowledged globally as one of the best references for Asia-Pacific equity.

First, the Sharpe ratio of each Shariah-compliant stock is the average of the excess return of a portfolio divided by its standard deviation of return is defined as follows:

$$S = \frac{R_i - R_f}{\sigma_i} \quad (3)$$

where R_i and σ_i are the average rate of return and standard deviation of return respectively, while R_f is the average of the risk-free rate of return. In contrast to Sharpe, the Treynor ratio

calculated the average total return of each Islamic stock divided by its beta, β as shown below:

$$T = \frac{R_i - R_f}{\beta_i} \quad (4)$$

The final ratio employed in this study introduced by Jensen (1968) using the intercept alpha, α_i , to evaluate the performance in the Capital Asset Pricing Model (CAPM) Lastly, the following equation is employed to calculate Jensen's Alpha:

$$\alpha = R_i - [R_f + \beta(R_m - R_f)] \quad (5)$$

where R_m the average return of KLCI.

Results and Discussions

Table 1 below reports the risk characteristics of each Shariah-compliant stock measured by using various measures such as beta, total risk (sum of systematic and unsystematic risk) and the diversifiability measure to further analyse the proportion of unsystematic components relative to the total risk.

Table 1
Risk features of Shariah-compliant stocks

Shariah-compliant stocks	Beta (β_j)	Total risk (σ_j^2)	Systematic risk ($\beta_j^2 \sigma_m^2$)	Unsystematic Risk (σ_e^2)	Diversifiability measure (σ_e^2 / σ_j^2)
CONSUMER PRODUCTS & SERVICES					
Acoustech Bhd	0.447	8.518	0.708	7.810	0.917
Advance Synergy Bhd	0.041	9.282	0.485	8.797	0.948
Amway (Malaysia) Holdings Bhd	0.672	1.663	0.571	1.092	0.657
Apollo Food Holdings Bhd	0.589	3.845	0.033	3.812	0.991
Ajinomoto (Malaysia) Bhd	0.009	7.348	0.567	6.781	0.923
Average	0.352	6.131	0.473	5.658	0.887
INDUSTRIAL PRODUCTS & SERVICES					
Ablegroup Bhd	0.256	3.787	0.651	3.136	0.828
Borneo Oil Bhd	0.600	6.690	0.193	6.497	0.971
Ajiya Bhd	0.668	1.757	0.217	1.540	0.876
Alcom Group Bhd	0.331	5.157	1.763	3.394	0.658
Amalgamated Industrial Steel Bhd	0.217	5.236	0.404	4.832	0.923
Average	0.414	4.525	0.646	3.880	0.851
ENERGY					
Alam Maritim Resources Bhd	0.872	4.85	0.216	4.634	0.955
Dayang Enterprise Holdings Bhd	0.905	4.906	0.339	4.567	0.931
Dialog Group Bhd	0.630	5.714	0.825	4.889	0.856
Handal Resources Bhd	0.152	8.715	0.213	8.502	0.976
Hengyuan Refining Company Bhd	0.609	3.033	0.037	2.996	0.988
Average	0.634	5.444	0.326	5.118	0.941

CONSTRUCTION					
Ahmad Zaki Resources Bhd	0.014	7.691	0.221	7.470	0.971
Ekovest Bhd	0.608	7.107	0.929	6.178	0.869
Brem Holding Bhd	0.874	8.757	0.565	8.192	0.935
Crest Builder Holdings Bhd	0.555	8.607	0.395	8.212	0.954
DKLS Industries Bhd	0.045	7.042	0.897	6.145	0.873
Average	0.419	7.841	0.601	7.239	0.921
TRANSPORTATION & LOGISTIC					
Freight Management Holdings Bhd	0.612	3.543	0.228	3.315	0.936
Boustead Heavy Industries Corp. Bhd	0.531	4.057	0.151	3.906	0.963
Chin Hin Group Property Bhd	0.136	4.251	0.038	4.213	0.991
CJ Century Logistics Holdings Bhd	0.817	8.304	0.306	7.998	0.963
Complete Logistic Services Bhd	0.420	9.224	0.556	8.668	0.940
Average	0.503	5.876	0.256	5.620	0.958
PROPERTY					
Acme Holdings Bhd	0.793	3.687	0.832	2.855	0.774
Amcorp Properties Bhd	0.256	6.850	0.169	6.681	0.975
Amverton Bhd	0.927	2.500	0.513	1.987	0.795
ARK Resources Holdings Bhd	0.693	5.612	0.559	5.053	0.900
Asian Pac Holdings Bhd	0.697	3.051	0.170	2.881	0.944
Average	0.673	4.340	0.449	3.891	0.878
PLANTATION					
Astral Asia Bhd	0.204	8.999	0.211	8.788	0.977
Batu Kawan Bhd	0.471	6.304	0.129	6.175	0.980
BLD Plantation Bhd	0.068	5.708	0.024	5.684	0.996
Dutaland Bhd	0.639	6.839	0.659	6.180	0.904
Cepatwasan Group Bhd	0.848	9.752	0.657	9.095	0.933
Average	0.446	7.520	0.336	7.184	0.958
TECHNOLOGY					
Censof Holdings Bhd	0.031	9.784	0.944	8.840	0.904
Industronics Bhd	0.999	8.206	0.019	8.187	0.998
D&O Green Technologies Bhd	0.738	2.681	0.269	2.412	0.900
Dagang Nexchange Bhd	0.055	8.251	0.641	7.610	0.922
Dataprep Holdings Bhd	0.877	8.710	0.480	8.230	0.945
Average	0.540	7.526	0.471	7.056	0.934
UTILITIES					
Gas Malaysia Bhd	0.373	2.868	0.404	2.464	0.859
Taliworks Corporation Bhd	0.939	9.119	0.078	9.041	0.991
Salcon Engineering Bhd	0.556	8.735	0.376	8.359	0.957
PBA Holdings Bhd	0.081	4.523	0.016	4.507	0.996
Petronas Gas Bhd	0.555	5.053	0.911	4.142	0.820
Average	0.501	6.060	0.357	5.703	0.925
FINANCIAL SERVICES					
BIMB Holdings Bhd	0.601	3.043	0.835	2.208	0.726
Bursa Malaysia Bhd	0.688	1.593	0.406	1.187	0.745
Average	0.645	2.318	0.621	1.698	0.735
HEALTHCARE					
Adventa Bhd	0.269	8.707	0.191	8.516	0.978
Apex Healthcare Bhd	0.400	3.897	0.816	3.081	0.791
Duopharma Biotech Bhd	0.895	5.425	0.076	5.349	0.986
Hartalega Holdings Bhd	0.493	6.158	0.234	5.924	0.962
KPJ Healthcare Bhd	0.166	5.886	0.139	5.747	0.976
Average	0.445	6.015	0.291	5.723	0.939
TELECOMMUNICATION & MEDIA					

Asia Media Group Bhd	0.812	7.140	0.358	6.782	0.950
Axiata Group Bhd	0.318	9.580	0.946	8.634	0.901
Digi.Com Bhd	0.974	8.511	0.374	8.137	0.956
Maxis Bhd	0.012	6.862	0.441	6.421	0.936
Pelangi Publishing Group Bhd	0.089	10.064	0.473	9.591	0.953
Average	0.441	8.431	0.518	7.913	0.939

From the observation, the Property sector indicates to be the highest average beta, followed by the Financial Services and finally, the Energy sector with 0.673, 0.645 and 0.634 respectively. On the other hand, three Shariah-compliant sectors have the lowest beta namely Consumer, Industrial and Construction reported at 0.352, 0.414 and 0.419 respectively. The initial findings conclude that Islamic stocks are less sensitive and volatile towards changing in the market conditions since the estimated beta for all sectoral was generally very low (less than 1). Thus, the finding also provides evidence that these Islamic stocks possess relatively low systematic risks due to their risk-sharing strategy and the prohibition of debt financing nature.

As estimated by the diversifiability measure, the total risk of Shariah-compliant stocks due to the unsystematic risk component is very high, approximately 91%. This poorly diversified condition may be due to the screening procedure implemented beforehand which finally limited the number of securities available in the local Shariah equities market. In the second part, this study further applied the three most popular standard risk-adjusted measures to evaluate the performance of Shariah-compliant stock across sectors. Table 2 below tabulates the ranking for 12 Shariah-compliant sectors in Malaysia. The chosen benchmark index is the KLCI.

Table 2
Rankings of Shariah-Compliant Sectors Using Standard Risk-Adjusted Methods

Shariah-compliant sector	Sharpe	Rank	Treynor	Rank	Jensen's Alpha	Rank
Consumer Products & Services	0.041	13	0.033	13	-0.244	12
Industrial Products & Services	0.163	11	0.373	12	-0.175	11
Financial Services	0.392	2	1.487	2	1.549	2
Construction	0.187	10	0.493	11	-0.117	10
Transportation & Logistic	0.347	4	1.082	4	0.907	4
Property	0.419	1	1.801	1	1.848	1
Plantation	0.246	7	0.699	9	0.387	9
Energy	0.376	3	1.235	3	0.957	3
Utilities	0.301	6	0.877	5	0.608	7
Technology	0.242	8	0.829	6	0.881	5
Healthcare	0.226	9	0.824	7	0.694	6
Telecommunication & Media	0.319	5	0.714	8	0.488	8
KLCI	0.136	12	0.554	10		

As summarised in Table 2, a higher value of the measured ratio indicates a better performance of a sector that can be considered worthy to be invested in and vice versa. Surprisingly, the results show consistent ranking for the top four best performing sectors suggesting Property in the first place, followed by Financial Services, Energy and finally,

Transportation and Logistics. Observed also, the following sectors such as Construction, Industrial and Consumer are considered inferior due to the lowest-ranked as a benchmark towards KLCI.

Based on the Sharpe ratio, 92% of the Shariah-compliant sectors observed outperformed the KLCI. Meanwhile, Treynor and Jensen's Alpha indicated that only 75% of sectors outperformed KLCI. Overall, the empirical evidence showed that the Shariah-compliant sector slightly outperformed the KLCI since the average is approximately 81%. Although the ranking for the other sectors is slightly different by using different measures, it can be concluded that the ranking produced by Jensen and Treynor is much more similar as compared to Sharpe. The possible reason for this is because Sharpe uses standard deviation as a risk variable, while beta is employed for the other two measures mentioned previously.

Conclusion

This study has successfully analysed the risk features and performance of 57 Shariah-compliant stocks across 12 sectors in Malaysia. Due to their lower betas, the initial findings indicate that the relative sensitivity of local Islamic stock returns is proven to be less affected by the overall performance of KLCI. Thus, each Shariah-compliant stock can also be considered a less volatile asset because of its lower variances. Therefore, local Islamic stocks are suitable instruments especially for hedging purposes since the future prices of Shariah-compliant stocks are expected to be more steady. Despite their low risk, Lean and Parsva (2012) claimed that Islamic securities still perform very well which is appealing to Muslim investors. The empirical result also indicates that about 91% of the total risk came from the unsystematic risk component showing that there are still great diversification opportunities. Hence, this study is in line with Dewandaru et al (2015) suggesting that Islamic investors should focus more on sector diversification rather than country diversification in the short-term investment.

Next, this study further examined the performance of the Malaysian Islamic stock market at the sectoral level employing three standard risk-adjusted methods: Sharpe, Treynor and Jensen Alpha. The results showed that the Islamic stock market performed slightly better than the market index, KLCI. However, it is worth mentioning that the application of different risk variables leads to a difference in the performance ranking. Observed that, only systematic risk is used in Treynor and Jensen's Alpha, meanwhile Sharpe ratio takes into consideration both systematic and unsystematic risk components. Thus, it is not surprising that the empirical results of Treynor and Jensen's Alpha behave similarly as compared to the Sharpe. In addition, the performance using the standard risk-adjusted also shows consistent results to the previous beta estimates. The Property sector is ranked the best, while the Consumer sector is ranked the worst were found to be consistent with the highest and smallest beta respectively. Finally, the results of this investigation indicate that there is a significant relationship between beta and performance whereby higher beta will indicate higher expected returns that eventually lead to higher performance of stocks and vice versa.

The findings from this study provide important information especially to the risk-averse investors, regulators or market players who seek the best performing Shariah-compliant stocks from the whole basket of ICM. Moreover, this study also provides vital information that can be used in the asset allocation strategy by the portfolio managers to reduce

unsystematic risk in constructing an optimal portfolio. Islamic stocks may be an alternative for conventional investors who want to diversify their portfolios with a less risky asset. Nonetheless, this study only focuses on beta, diversifiability measures and performance in the normal market condition. Hence, further study is encouraged to analyse other elements, including macroeconomic and fundamental factors, especially during the financial crisis. A possible extension of the current studies is to employ another performance measurement such as Modigliani Measure that expresses a stock performance relative to the market in percentage terms. This could be a benefit to the investor since the information on the performance is based on a particular market trend.

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