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Bond Fund Versus Islam Bond Fund: A Comparison of the Performance of Fixed Income Funds in Malaysia

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Abstract

This study examines 43 bond funds and 24 Islamic bond funds in Malaysia from 1 August 2016 to 30 July 2021. This study analyses the performance of fixed income fund portfolios using risk-adjusted models: Treynor ratio, Sharpe ratio, and Jensen alpha. The Wilcoxon signed rank test was done on the top 20 bond funds and Islamic bond funds portfolios to compare risk-adjusted performance using Sharpe, Treynor, and Jensen. Sharpe and Treynor's top 20 bond fund portfolios underperformed the market, while Islamic bond funds outperformed. Both funds outperform the market, according Jensen alpha. The performance of bond funds and Islamic bond funds differs significantly when three risk-adjusted models are utilised. This analysis reveals that Islamic bond funds are more stable over this time span.

Keywords: Bond fund, Islamic bond fund, Sharpe ratio, Treynor ratio, Jensen alpha, Wilcoxon Signed ranked test, Investment

Introduction

In recent years, the Malaysian capital market has expanded at a remarkable rate. To satisfy the needs of Malaysian investors, numerous financial investment products were introduced. However, because Muslims constitute the majority of Malaysians, demand for Islamic financial products is significant. In spite of this, the financial market is based on interest, which is opposed to Quranic and Sunni Islamic beliefs. Consequently, Muslim investors cannot freely participate in the financial market.

Furthermore, important in the Malaysian capital market are unit trusts. They are seen as having the ability to draw small investors to the capital market, as they are one of the industry's leading players (Leong, 1997). It gives a bigger investment base and is more alluring to small investors. As a result, there is a great deal of competition among unit trust fund management organisations. In order to attract potential investors, more innovative unit trust products have been developed and introduced. In response to rising demand from Islamic investors, Islamic unit trust funds were introduced in the mid-1990s. The first Islamic unit trust was Tabung Amanah Bakti, which was created in May 1971 and is managed by Asia Unit Trust Berhad.

However, investing in Islamic unit trusts is concerned with the contractual connection between a unit trust firm and its investors from an Islamic standpoint. All investment enterprises with an Islamic unit trust component are required to have their own Shariah boards comprised of Islamic law experts and specialists who advise, monitor, and ensure that the investment operations and portfolios are managed in accordance with Shariah principles.

In addition, the Malaysian bond market accounts for 38 percent of the GDP of the world's largest economy at the time (International Monetary Fund, 2017). Malaysian bonds accounted for 9% of the total Asian bond market (excluding Japan) in 2019.There are no qualitative and quantitative comparisons between bond funds and Islamic bond funds, despite the fact that there are several studies examining the performance of bond funds and Islamic bond funds, particularly in the context of global crisis scenarios. In this study, the author will analyse the performance of two fund types using methodologies for measuring returns adjusted for diversification risk. The study is unique and distinct from previous research in that it focuses primarily on the differences between the wealth effects on bond funds and Islamic bond funds.

Literature review

Scholars are discussing the performance of Islamic unit trust funds due to the expansion of the Islamic unit trust industry. The performance of Malaysian Islamic unit trust funds was researched by Hanafi (2002), Shariff (2002), Abdul Ghafar and Mohd Saharudin (2003), Zaidi et al. (2004), Kefeli and Zaidi (2006), and Abdullah et al. (2006). By analysing the nature and characteristics of Malaysian Islamic trust funds, this study was able to shed light on their performance (Bashir, 2009). For instance, Hanafi (2002), for instance, discovered that Islamic unit trust funds outperformed the market and risk-free assets during a bear market. In contrast, Islamic unit trust funds failed to provide investment diversification. In addition, during the bear market, the fund managers exhibited poor timing ability. This indicated that the fund managers failed to adjust their portfolio betas to match the movement of the market portfolio (Hanafi, 2001). In contrast, Abdullah et al. (2006) discovered that Islamic unit trust funds not only underperformed the market but also lacked diversification. Zaidi et al. (2003) did an additional study. They found that the majority of Islamic unit trust funds had negative average returns and underperformed the market.

Furthermore, comparing the performance of Islamic and conventional unit trusts is a relatively recent field of study in Malaysia. Baharuddin and Azwan (2004) and Abdullah et al. (2007) were among the researchers who conducted studies. In addition, Baharuddin and Azwan (2004) analysed the return performance of conventional and Islamic funds to evaluate if asset allocation types and styles impact fund performance, as well as if fund size and age impact return performance. The Sharpe index, geometric means, Mallin, and Gregory models were employed to evaluate risk-adjusted performance, compute annualised return, and estimate the coefficient of fund size and fund age (Sharpe, 1966; Mallin et al., 1995; Gregory, 1997; Bashir, 2009).

They discovered that conventional funds outperformed Islamic funds for less than a year but that the difference was negligible over the long term. One possible explanation for the performance disparity between conventional and Islamic funds is the conventional funds' larger fund size and more diversified holdings. Another conclusion suggested that asset allocation, types, and styles have an effect on fund performance over shorter time periods but not over longer time periods. They concluded that asset allocation types and styles,

together with fund size, influence the performance of both conventional and Islamic unit trust funds, but not fund age (Bashir, 2009).

Using monthly returns adjusted for dividends and bonuses, Abdullah et al. (2007) attempted to identify performance differences between Islamic and conventional mutual funds in the Malaysian capital market over a 10-year period from January 1992 to December 2001. In the sample, there are 65 funds, 14 of which are Islamic funds. This study was divided into three eras to examine the effect of economic conditions on the performance of unit trust funds: before (1992–1996); during (1997–1998); and after (1999–2001) the financial crisis. Adjusted Sharpe's index The performance of mutual funds was evaluated with the Sharpe index, Jensen alpha, timing, and selectivity ability tests (Abdullah et al., 2007). According to their analysis, Islamic funds outperformed conventional funds during economic downturns. During periods of robust economic expansion, conventional funds performed better than Islamic funds. In terms of diversification, it was determined that neither conventional funds nor Islamic funds have achieved market diversification levels of at least 50 percent. They also found that both Islamic and conventional fund managers have poor stock selection and market timing abilities (Abdullah et al., 2007).

As a quick illustration, the author explores two applications to investment funds, namely bond funds and Islamic bond funds, in order to compare and contrast these two funds. In each instance, the author wishes to test the null hypothesis of equality between the Sharpe ratios, Treynor ratios, and Jensen alphas of the contrasted funds. Using a risk-adjusted model to test the hypothesis, the findings can be summarised as follows: H0: The risk-adjusted performance of bond funds does not differ from the performance of Islamic bond funds using the Sharpe index. H1: The risk-adjusted performance of bond funds does differ from the performance of Islamic bond funds using the Sharpe index.

Research methodology

This study's primary objective is to assess the performance of fixed income funds in Malaysia, with an emphasis on bond funds and Islamic bond funds. This study employed secondary data and quantitative data gathering, with all data acquired from the websites of Refinitiv Eikon DataStream and Bank Negara Malaysia. This study examines every single bond fund in Malaysia, including the 143 Islamic bond funds.

This study uses the daily net asset value of fixed income funds, the annual rate of 12-month Malaysian Treasury Bills, and the daily price of the benchmark for the FTSE Bursa Malaysia KLCI. The annual rate of Malaysian Treasury Bills for 12 months was extracted from a data stream. The reported Treasury bill rate is the annual holding period yield for a 12-month Treasury bill, converted to an equivalent daily basis to match data consisting of bond fund daily return and return on market. The data for the market return benchmark, FTSE Bursa Malaysia KLCI, was obtained from the websites of Malaysian central banks. The benchmark is selected based on the fund prospectus posted on the website of the Unit Trust Management Company. The prospectus attempts to provide investors with a simplified and clearer image of the fund's information, as opposed to investors reading a 300-400-page fund prospectus to grasp the fund specifications of a Unit Trust Management Company.

The study period spans from 1 August 2016 to 30 July 2021, representing a daily data period of five years. Although the study utilised daily data, this study lacks data for Saturdays and Sundays since Bursa Malaysia is closed on weekends; therefore, the author will omit each Saturday and Sunday date. In addition, the authors were able to collect a total of 67 fixed income funds that were issued throughout the study period, and all of them are included in

the test. Of these, 43 are bond funds and 24 are Islamic bond funds. The authors chose fixed income fund samples based on the following criteria: (1) not a freshly issued fixed income fund; and (2) a complete data set with no missing days. This study focuses on old-issued fixed income securities because (1) the majority of new-issued fixed income securities data does not cover the study period and (2) it is ineffective to compare old-issued fixed income funds to new-issued ones. Appendix A contains a complete list of bond funds and Islamic bond funds.

Data Analysis

In this study analysis, two methods have been employed to conduct the research. The first method is the Risk Adjusted Model, which consists of three models: Sharpe ratio (1966), Treynor ratio (1965), and Jensen alpha (1968) to measure the performance of bond funds and Islamic bond funds in Malaysia. The second technique is the Wilcoxon Signed Rank Test, a statistical technique used to compare risk-adjusted performance based on Sharpe, Treynor, and Jensen. The selection of data for bond funds and Islamic bond funds is determined by the top 20 Sharpe measure performances.

Risk Adjusted Model

In this study, the author utilised the Risk-Adjusted Model to assess and evaluate the performance of fixed income funds, including bond funds and Islamic bond funds. These directories are obtained on a daily basis and are based on a daily NAV.

Sharpe Ratio

The Sharpe ratio (1966) was the first model employed by the authors to assess the risk-adjusted performance of both fixed income portfolios. The Sharpe ratio is a method for calculating excess return per unit of risk by including standard deviation functions as the portfolio's total risk. The higher the Sharpe ratio, the better the portfolio's risk-adjusted performance. A lower standard deviation results in a higher Sharpe ratio, and vice versa for a lower ratio. According to Friedrich and Rafael Schmidt (2009), the Sharpe ratio can describe how well an investor's portfolio return compensates for its risk. Nonetheless, a negative Sharpe ratio indicates a negative excess return because the portfolio's return is lower than the risk-free interest rate. The Sharpe ratio is then described as follows:

$$Si = \frac{R_i - R_f}{\sigma_i} \quad (1)$$

Based on the above formula, the Ri represents the average return on the fixed income portfolio i, while the R_f represents the risk-free rate return of 12-month Malaysian Treasury Bills. Next is the σi where it represents the total risk of the fixed income portfolio i. The calculation of Sharpe ratio is determined as follows:

$$\sigma_i = \sqrt{\frac{\Sigma(R_i - \underline{R})^2}{(n-1)}} \quad (2)$$

Where,

σ_i = standard deviation of the fixed income portfolio i

R_i = return of fixed income portfolio i

$\underline{R}$ = mean return of fixed income portfolio i

n = number of daily returns

Treynor Ratio

The second model, the Treynor ratio (1965), incorporates a systematic risk component of the portfolio's return, as measured by the portfolio's beta coefficient (βi), in proportion to the market portfolio's return. It evaluates a portfolio's ability to generate an excess return after systemic risk adjustment. The definition of the Treynor ratio is as follows:

$$T_i = \frac{R_i - R_f}{\beta_i} \quad (3)$$

Where,

$$\beta_{(fund\ i)} = Cov_{(fund\ i,KLCI)}/\sigma^2{}_{(KLCI)} \quad (4)$$

Based on the above formula, the R_i represents the average return on fixed income portfolio i, while the R_f represents the risk-free rate return of 12-month Malaysian Treasury Bills. Furthermore, the β_i represents the fixed income portfolio' beta over the evaluation period, which also indicates volatility.

The calculation formula for average daily returns of fixed income portfolio i (R_i) for the Sharpe and Treynor ratio is defined as follows:

$$R_{it} = \frac{NAV_{it} - NAV_{it-1}}{NAV_{it-1}} \quad (5)$$

Where,

R_{it} = return of portfolio i in period t

NAV_{it} = Net Asset Value of portfolio i in period t

NAV_{it-1} = Net Asset Value of portfolio i in period t-1

Jensen Alpha

The third model used by the authors is Jensen alpha (1968), a method to measure risk-adjusted performance of fixed income portfolios based on the capital asset pricing model (CAPM). According to George and Wayne (2007), Jensen alpha method has a disadvantage where the alpha does not control unsystematic sources of risks that could be a problem for investors. However, despite the disadvantage, Jensen alpha has the advantage to correct for market risks and appraise security selection skills, market timing skill or combination of the fund manager's skills. Following is the equation to measure the Jensen index:

$$R_{it} - RFR = \alpha_i + \beta_i(R_m - RFR) + \check{e}_{it} \quad (6)$$

Where,

R_{it} - RFR = excess return of portfolio i in period t

(R_m - RFR) = excess return of market portfolio proxied by BPAM index

α_i= Jensen's alpha to measure portfolio performance

β_i= the systematic risk (beta) for portfolio i

$\check{e}_{it}$ = random error term

The Jensen's alpha (α_i)value will determine whether the portfolio manager is inferior or superior in terms of stock selection and market timing to beat the market. Next, the t-statistic is also used by the authors in this model to test the alpha for statistically significant. If the$\alpha_i$value indicates positive significance, this means that the portfolio has a superior performance where the portfolio manager is capable of beating the market with his skills of stock picking. However, if the$\alpha_i$value indicates negative significance, this means that the portfolio has inferior performance due to the returns being below the CAPM's expectation. The higher the portfolio's $\alpha_i$value, the better the portfolio performance. So, does vice versa on the lower α_i value. However, for retail investors, the $\alpha_i$value is important as it measures the excess returns generated by the portfolio in relation to its benchmark rates.

Wilcoxon Signed Rank Test

After all the data samples have been processed by the three models and the performance results have been successfully generated, the authors analyse the data using the second method, the Wilcoxon Signed Rank Test, to determine the differences between two samples from the same population in order to compare the performance of bond funds and Islamic bond funds.

$$\mu w = \frac{n(n+1)}{4} \quad (7)$$

$$\sigma w = \sqrt{\frac{n(n+1)(2n+1)}{24}} \quad (8)$$

$$Z = \frac{T\dot{\circ} + \mu w}{\sigma w} \quad (9)$$

Where;

μw = Means of test

n = Sample size

σw = Standard deviation of test

Z = Z-score of tests

$T\dot{\circ}$ = The minimum of the sum of positive sign or negative sign (T+, T-)

To analyse the significance of the performance difference between bond funds and Islamic bond funds, it is required to identify the differences between samples of bond funds and Islamic bond funds, rank them, and determine whether they are positive or negative. After the data has been collected, the stages outlined above must be followed, beginning with the determination of the means, standard deviation, and Z-score. The purpose of the calculation formula presented above is to assess whether or not there are substantial differences between the two sample securities.

H_0 is the null hypothesis, whereas H1 is the alternative hypothesis. This hypothesis will be examined via the Wilcoxon Signed Ranks Test with an alpha level of 0.05 for the Z score test. If the test statistic is less than 1.96 or larger than 1.96, then the null hypothesis will be rejected. This test will also be conducted utilising the top 20 bond funds and Islamic bond funds with the highest risk-adjusted performance and three distinct portfolio performance metrics, namely Sharpe, Treynor, and Jensen.

Results and discussion of findings

Bond Funds Analysis

Table 1 displays the risk-adjusted performance of the top 20 bond funds according to their Sharpe performance. The FTSE Bursa Malaysia KLCI was used as a market benchmark to evaluate the performance of bond funds.Based on the above analysis table, the total risk of bond funds ranges from 0.05598 percent to 0.55255 percent, whereas the standard deviation of the FTSE Bursa Malaysia, KLCI is 0.7386 percent and that of Malaysia Treasury-Bills is 0.00178 percent. The standard deviation of the KLCI is greater than the standard deviation of all funds. During this time period, the performance of each of the top 20 bond funds showed low risk. RHB USD High Yield Bond-USD is the bond fund with the highest total risk (0.55255 percent), while Principal Institutional Bond 3 has the lowest total risk (0.05598 percent).

In terms of average daily return, KAF Bond (Manulife Investment Bond) has the highest (lowest) rate of 0.01671%. 0.00199 percentIn contrast, the average annual return for bond funds ranges from 0.716% to 6.01560%. Compared to Malaysia Treasury-Bills, the average daily return of the KLCI is -0.00556 percent (2.0016 percent annually) and is -0.00751 percent for Malaysia Treasury-Bills (2.7036 percent annually). As for beta, or systematic risk, every

bond fund has a lower beta than the market index, KLCI. The average beta of bond funds is 0.00240, which is significantly lower than the benchmark of 1.00. However, when compared to the risk-free rate return benchmark, T-bills, all bond funds are higher than T-bills (-0.04391). This demonstrates that market return fluctuations have little effect on the return of bond funds. In general, the KLCI index exhibits a greater standard deviation, systematic risk, or beta than Malaysia Treasury-Bills, although Malaysia Treasury-Bills offer a greater return than the KLCI index during this period.

Table 1. Top 20 performance of Sharpe ratio for bond funds

Bond Funds	Mean (%)	SD (%)	Sharpe	Beta	Treynor	Jensen
Principal Institutional Bond 3	0.01589	0.05598	0.14956 (1)	0.00524	1.59782 (1)	0.01584 (2)
Kaf Bond	0.01671	0.12896	0.07131 (2)	0.00593	1.55161 (2)	0.01667 (1)
Amprs-Tactical Bond I	0.013371	0.17321	0.03381 (3)	0.00450	1.30176 (4)	0.01332 (3)
Amprs-Tactical Bond D	0.01279	0.18200	0.02900 (4)	0.00344	1.53488 (3)	0.01274 (4)
Amtactical Bond B	0.00851	0.23709	0.00421 (5)	0.00916	0.10886 (9)	0.00849 (5)
Affin Hwang Select Bond Hedged	0.00694	0.30572	-0.00188 (6)	-0.00620	0.09281 (10)	0.00683 (6)
RHB Usd High Yield Bond	0.00618	0.55255	-0.00242 (7)	-0.01069	0.12508 (8)	0.00604 (9)
RHB Usd High Yield Bond	0.00608	0.54151	-0.00265 (8)	-0.00176	0.81798 (6)	0.00599 (10)
Kenanga Bond	0.00618	0.19159	-0.00697 (9)	0.00215	-0.62110 (15)	0.00612 (8)
Ambond	0.00621	0.18109	-0.00723 (10)	0.01522	-0.08598 (11)	0.00622 (7)
Boswm Emerging Market Bond	0.00541	0.25777	-0.00815 (11)	0.00321	-0.65450 (16)	0.00536 (11)
Kenanga Asnita Bond	0.00490	0.24210	-0.01083 (12)	0.02901	-0.09039 (12)	0.00498 (12)
Principal Lifetime Enhanced Bond	0.00341	0.24996	-0.01641 (13)	0.00104	-3.93005 (20)	0.00334 (13)
Public Enterprises Bond	0.00319	0.26022	-0.01662 (14)	0.00766	-0.56456 (14)	0.00316 (15)
Public Enhanced Bond	0.00275	0.27299	-0.01745 (15)	-0.00500	0.95198 (5)	0.00265 (18)

Public Bond	0.00307	0.24159	-0.01840 (16)	-0.00895	0.49682 (7)	0.00294 (16)
AmDynamic Bond	0.00282	0.23485	-0.02000 (17)	0.00356	-1.32015 (18)	0.00276 (17)
PB Infrastructure Bond	0.00229	0.25424	-0.02056 (18)	0.02354	-0.22201 (13)	0.00234 (19)
Manulife Investment Bond	0.00199	0.26610	-0.02078 (19)	0.00264	-2.09189 (19)	0.00192 (20)
Affin Hwang Select Bond	0.00333	0.18873	-0.02219 (20)	0.00495	-0.84542 (17)	0.00328 (14)
Average	0.00170	0.25671	-0.02066	0.00240	-2.23920	0.00164
FTSE Bursa Malaysia KLCI	-0.00556	0.73860	-0.01771	1.00000	-0.01308	0.00000
Malaysia T-Bills	0.00751	0.00178	0.00000	-0.04391	0.00000	0.00000

According to the Sharpe metric, fifteen out of twenty bond funds exceeded the market benchmark, KLCI (-0.01771). Among the top 20 bond funds, Principal Institutional Bond 3 has the greatest Sharpe value (0.14956), while Affin Hwang Select Bond Myr has the lowest (-0.02219). As measured by Treynor, ten out of twenty bond funds beat the market benchmark, KLCI (-0.01308), with Principal Institutional Bond 3 showing the best performance (1,5972) and AMDynamic Bond the worst performance (-0.01308). (-3.93005). The value range for Jensen alpha is 0.00192 to 0.01667. It demonstrates that each of the top twenty bond funds outperformed the market benchmark, the KLCI index (0.0000). Principal Institutional Bond 3 ranks first based on the Sharpe and Treynor measures and second based on the Jensen alpha, but Affin Hwang Select Bond Myr rates seventeenth and fourteenth for Treynor and Jensen, respectively, but twenty-first based on the Sharpe ratio. The remaining funds are ranked differently according to the remaining performance metrics.

Islamic Bond Funds Analysis

Table 2 displays the risk-adjusted performance of the top 20 Islamic bond funds based on their Sharpe performance. As a market benchmark, FTSE Bursa Malaysia KLCI was used to evaluate the performance of Islamic bond funds. Based on the above research table, the total risk of Islamic bond funds ranges from 0.06194 percent to 0.31568 percent, whereas the standard deviation of the FTSE Bursa Malaysia, KLCI is 0.7386 percent and Malaysia Treasury-Bills is 0.00178 percent. The standard deviation of the KLCI is greater than the standard deviation of all funds. During this time period, the performance of each of the top 20 Islamic bond funds was low-risk. The Public Islamic Bond has the highest total risk (0.31568 percent), while Principal Islamic Institutional Sukuk has the lowest total risk (0.31568 percent) (0.06194 percent).

In terms of average daily return, the AMDynamic Sukuk B (Public Islamic Bond) has the highest (lowest) rate of 0.01719 percent (-0.00176). In contrast, the average annual return for Islamic bond funds varies between-0.6336 and 6.1884. Compared to Malaysia Treasury-Bills, the average daily return of the KLCI is -0.00556 percent (2.0016 percent annually) and is -0.00751 percent for Malaysia Treasury-Bills (2.7036 percent annually). As for beta, or

systematic risk, every Islamic bond fund has a lower beta than the market index, KLCI. The average beta of bond funds is 0.00458, which is significantly lower than the benchmark of 1.00. In comparison to the risk-free rate return benchmark, T-bills, all Islamic bond funds are greater than T-bills (-0.04391). This demonstrates that market return swings have no effect on the returns of Islamic bond funds. In general, the KLCI index exhibits a greater standard deviation, systematic risk, or beta than Malaysia Treasury-Bills, although Malaysia Treasury-Bills offer a greater return than the KLCI index during this period.

Table 2. Top 20 performance of Sharpe ratio for Islamic bond funds

Islamic Bond Funds	Mean (%)	SD (%)	Sharpe	Beta	Treynor	Jensen
Principal Islamic Institutional Sukuk	0.01655	0.06194	0.14595 (1)	0.005471	1.65227 (3)	0.01648 (3)
Kaf Sukuk	0.01702	0.0965	0.09846 (2)	0.007451	1.27520 (4)	0.01694 (2)
Amdynamic Sukuk B	0.01719	0.13382	0.07228 (3)	0.014961	0.64652 (6)	0.01711 (1)
Amprs-Dynamic Sukuk D	0.01384	0.12908	0.04904 (4)	0.014744	0.42934 (7)	0.01377 (4)
Amdynamic Sukuk A	0.01207	0.16992	0.02683 (5)	0.018379	0.24803 (9)	0.01200 (5)
Affin Hwang Aiiman Global Sukuk Myr	0.00967	0.27619	0.00781 (6)	-0.01590	-0.13568 (13)	0.00960 (6)
Affin Hwang Aiiman Global Sukuk Usd	0.00915	0.26861	0.00609 (7)	-0.01270	-0.12879 (11)	0.00908 (7)
Amprs-Dynamic Sukuk I	0.00782	0.25128	0.00123 (8)	0.005531	0.05570 (10)	0.00775 (8)
Pmb Wholesale Sukuk	0.00717	0.18400	-0.00187 (9)	0.002613	-0.13191 (12)	0.00709 (9)
Pb Aiman Sukuk	0.00340	0.2795	-0.01471 (10)	-0.00244	1.68479 (2)	0.00333 (11)
Public Islamic Select Bond	0.00374	0.21218	-0.01777 (11)	-0.01101	0.34240 (8)	0.00367 (10)
Principal Islamic Lifetime Enhanced Sukuk	0.00051	0.29833	-0.02347 (12)	-0.00289	2.42158 (1)	0.00044 (16)
Principal Islamic Lifetime Sukuk	0.00062	0.28544	-0.02416 (13)	0.00452	-1.52396 (18)	0.00054 (15)
Maybank Malaysia Sukuk	0.0007	0.27493	-0.02478 (14)	0.00936	-0.72832 (16)	0.00062 (14)
PB Sukuk	0.00096	0.25582	-0.02561 (15)	0.00350	-1.87434 (19)	0.00089 (12)
PB Islamic Bond	-0.00061	0.30678	-0.02649 (16)	0.02467	-0.32950 (14)	-0.00069 (18)
Public Sukuk	0.00086	0.25016	-0.02662 (17)	0.00302	-2.19991 (20)	0.00078 (13)

Public Islamic Infrastructure Bond	-0.00011	0.28395	-0.02683 (18)	0.01969	-0.38699 (15)	-0.00018 (17)
Franklin Malaysia Sukuk I Myr	-0.00138	0.31085	-0.02862 (19)	-0.01198	0.74270 (5)	-0.00146 (19)
Public Islamic Bond	-0.00176	0.31568	-0.02937 (20)	0.009549	-0.97086 (17)	-0.00183 (20)
AVERAGE	0.00445	0.23063	-0.00228	0.00458	0.11871	0.00438
FTSE Bursa Malaysia KLCI	-0.00556	0.73860	-0.01771	1.00000	-0.01308	0.00000
MALAYSIA T-BILLS	0.00751	0.00178	0.00000	-0.04391	0.00000	0.00000

Using the Sharpe metric, ten out of twenty Islamic bond funds exceeded the KLCI market benchmark (-0.01771). Among the top 20 Islamic bond funds, Principal Islamic Institutional Sukuk has the greatest Sharpe value (0.14595), while Public Islamic Bond has the lowest (-0.02937). As measured by Treynor, ten out of twenty Islamic bond funds exceeded the market benchmark, KLCI (-0.01308), with Principal Islamic Lifetime Sukuk exhibiting the best return (2.42158) and Public Islamic Infrastructure Bond exhibiting the lowest return (-0.01308). (-2.19991). The range of values for Jensen Alpha is-0.00183 to 0.01711, indicating that four out of twenty Islamic bond funds underperformed the market benchmark, the KLCI index (0.0000). Principal Islamic Institutional Sukuk ranked first based on the Sharpe measure and third based on Treynor and Jensen Alpha, while the Public Islamic Bond ranked seventeenth based on the Treynor measure and twentieth based on the Sharpe measure and Jensen Alpha. The remaining funds are ranked differently according to the remaining performance metrics.

Wilcoxon Signed Rank Test

This part would respond to the study's hypothesis. The Wilcoxon signed rank test was utilised to compare the risk-adjusted performance of bond funds and Islamic bond funds with Sharpe, Treynor, and Jensen alpha portfolios of performance metrics. In this analysis, the top twenty performing bond funds and Islamic bond funds in Malaysia will be utilised.

Sharpe Ratio

Table 3. Results of Wilcoxon Signed Rank Test between bond fund and Islamic bond fund using Sharpe measurement ratio

		Absolute Value
Positive (Sum)	121	121
Negative (Sum)	0	0
Test statistic	0	
Sample Size (n)	20	
Mean	105	
Standard Deviation (SD)	26.7862	
Z-score	-3.9199	
P-value	0.00004	
P-value two tail	0.0001	
Alpha	0.05	
Hypothesis 1	Reject Null	

The table above demonstrates that Sharpe's Z-score is smaller than the study's critical value of 1.96 (-3.9199-1.96). In addition, the p-value of the two tails indicates that alpha is smaller than 0.0004 (0.0004 0.05). Since there is insufficient information to demonstrate that the risk-adjusted performance of bond funds and Islamic bond funds are comparable, the null of hypothesis 1 must be rejected. And alternative hypothesis 1 will be accepted since the adjusted risk performance of bond funds and Islamic bond funds can be demonstrated using these statistics.

Treynor Ratio

Table 4. Results of Wilcoxon Signed Rank Test between bond fund and Islamic bond fund using Treynor measurement ratio

		Absolute Value
Positive (Sum)	144	144
Negative (Sum)	-9	-9
Test statistic	33	
Sample Size (n)	20	
Mean	105	
Standard Deviation (SD)	26.7862	
Z-score	-2.6880	
P-value	0.00359	
P-value two tail	0.0072	
Alpha	0.05	
Hypothesis 1	Reject Null	

In light of the fact that the Treynor Z-score of bond funds and Islamic bond funds is less than the crucial value of -1.96 (-2.6880 – 1.96), the null of hypothesis 2 will also be rejected. The P-value is similarly smaller than alpha (0.0072 0.05), indicating that the alternative to Hypothesis 2 will be accepted, namely that the risk-adjusted performance of bond funds differs from the risk-adjusted performance of Islamic bond funds when the Treynor index is used.

Jensen Alpha

Table 5. Results of Wilcoxon Signed Rank Test between bond fund and Islamic bond fund using Jensen Alpha measurement

		Absolute Value
Positive (Sum)	6.5	6.5
Negative (Sum)	-103.5	103.5
Test statistic	2	
Sample Size (n)	20	
Mean	105	
Standard Deviation (SD)	26.7862	
Z-score	-3.8453	
P-value	0.0001	
P-value two tail	0.0001	
Alpha	0.05	
Hypothesis 1	Reject Null	

The aforementioned Wilcoxon result implies that the null of Hypothesis 3 will likewise be rejected, and the alternative will be accepted, namely that the risk-adjusted performance of bond funds differs from the risk-adjusted performance of Islamic bond funds when using the Jensen alpha index. Because the Z-score of Jensen alpha for both funds is less than the key value (-3.8453-1.96), both funds are underperforming. The P-value of the test statistic's two tails is also less than alpha (0.0001 0.05).

Discussion

This chapter presents the results and comments in accordance with the purpose of this study. According to the study shown above, 15 out of 20 bond funds and Islamic bond funds exceeded the market benchmark KLCI. In contrast, for Treynor, ten out of twenty of the funds beat the market benchmark. According to Jensen metrics, all bond funds have outperformed the market index benchmark. However, only 16 of 20 Islamic bond funds have outperformed the market index benchmark. As for the risk of the funds, it is evident that both funds have a low risk during this period, as their standard deviations are less than those of the market index KLCI and Malaysian Treasury-Bills. Both bond funds and Islamic bond funds have surpassed the benchmark market index KLCI in terms of high returns. However, Islamic bond funds have a greater average return than bond funds. The results contradict Abdullah (2006) and Zaidi et al.'s (2003). They discovered that Islamic bond funds and conventional bond funds struggled to outperform the market, and the majority of funds recorded a negative return and underperformed the market. Furthermore, the majority of Islamic unit trust funds recorded a negative return and underperformed the market. In contrast, the results correspond with Hanafi's findings (2002). The results demonstrate that Islamic unit trusts outperformed the market and risk-free investing.

All null hypotheses of this study were rejected by the Wilcoxon test due to the fact that the Z-score and P-value of risk-adjusted performance of bond funds and Islamic bond funds using the three indexes of Sharpe, Treynor, and Jensen are less than the critical value and alpha of the Z-score of Wilcoxon analysis. Therefore, this study indicated that the bond fund performance is different from the Islamic bond fund performance.

Conclusion

This study revisits the performance of unit trust funds in Malaysia to provide an example of portfolio performance for the study and research of bond funds and Islamic bond funds. In a previous study titled "Sukuk and Bond Funds Performance in Malaysia," t-test and correlation analysis revealed that the sukuk index outperformed the bond fund index and the market index. In addition, the correlation between the returns of Islamic bond funds and conventional bond funds has been confirmed.

In this study, the portfolio performance of bond funds and Islamic bond funds in Malaysia was evaluated using a risk and return analysis of fixed income funds. Overall, the results of this study indicate that the performance of fixed income fund portfolios has been measured using three different measurement indexes, namely Sharpe, Treynor, and Jensen alpha, indicating that each of these measurements yields a different portfolio performance outcome. According to Sharpe and Treynor, bond funds underperform the market, whereas Islamic bond funds outperform the market. However, according to the Jensen alpha result, both funds outperform the market. In this study, it was also demonstrated that the performance of bond funds and Islamic bond funds differ significantly, despite both belonging to the same class of securities; the terms of the securities are what distinguish them. Further

study based on the Wilcoxon Signed Ranked test demonstrates that there is a substantial difference between the performance of bond funds and Islamic bond funds. Specifically, it is found that the performance of bond funds is significantly different from the performance of Islamic bond funds based on these three measurement performance indices: Sharpe, Treynor, and Jensen Alpha, whereas all risk-adjusted performance measures present a significant difference between the performance of both funds.

Based on the findings of the study, it can be concluded that Islamic bond funds and bond funds have different performance for these three types of model risk measurement. Nonetheless, as a result of the recent improvement of Islamic bond funds, their performance has begun to increase and outperform that of conventional bond funds, and investors are now more willing to invest in Islamic bond funds without fear of low returns, even after complying with Shariah Principles. The amount of diversification and risk-adjusted return assessment revealed a slight difference between these two funds. Nonetheless, Islamic bond funds are substantially more stable than bond funds due to the fact that calamities such as the COVID19 pandemic cannot affect Islamic bond funds. This fact further confirms the minister's remark regarding the stability of Islamic bond funds, boosting investor trust. Therefore, this study would contribute to the portfolio managers in assessing diversification advantages as well as provide a better investment performance when risk-adjusted return approach taking into consideration.

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