

The Relationship between Islamic Hedge funds performance and Stock Market Returns in Malaysia

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Abstract :

The aim of this study is to identify the existence of a relationship and its direction between Islamic hedge fund performance and returns of the stock market in Malaysia from January 2009 to September 2018. By using monthly data which identity Net Asset Value of Islamic hedge funds and two Malaysian stock market indices as benchmark: The FTSE Bursa Malaysia Shariah Index and the FTSE Bursa Malaysia KLCI. The panel data method with the random effect is used to investigate the impact of stock market returns on Islamic hedge fund performance. And we also run the Granger causality test to investigate the possibility of existence at least one-way causality between variances. The results show that the Islamic stock market return has a positive impact on Malaysian Islamic hedge fund performance. Furthermore, the conventional stock market return has also a positive impact. More importantly, evidence of Granger causality suggests that there is one-way causality from the stock market returns to Islamic hedge fund performance.

- **Keywords:** Islamic Hedge Funds; Stock Market Returns; Hedging;
- **Jel Classification Codes:** C23; G10; G23

المخلص:

هدفت هذه الدراسة إلى التحقق من وجود علاقة بين أداء صناديق التحوط الإسلامية وعوائد سوق الأوراق المالية وتبيان اتجاهها في السوق المالية بماليزيا، خلال الفترة الممتدة من جانفي 2009 إلى سبتمبر 2018. وذلك بالاعتماد على البيانات الشهرية لكل من صافي قيمة الأصول لصناديق التحوط الإسلامية الماليزية ومؤشري FTSE Bursa Malaysia و FTSE Bursa Malaysia Shariah كمعيار للسوق المالي. تم تطبيق طريقة البائل ذات التأثير العشوائي كأداة إحصائية للتحقق من تأثير عوائد سوق الأوراق المالية على أداء صناديق التحوط الإسلامية. كما قمنا بإجراء اختبار العلاقة السببية لغرانجر للتحقق من إمكانية وجود علاقة سببية أحادية الاتجاه على الأقل بين الفروق. لقد أظهرت النتائج أن عائد سوق الأوراق المالية الإسلامية في ماليزيا له تأثير إيجابي على أداء صناديق التحوط الإسلامية في هذه السوق. كما أظهرت أن العائد التقليدي لسوق الأوراق المالية له أيضا تأثير إيجابي. وإلى أن سببية جرانجر تشير إلى وجود علاقة سببية في اتجاه واحد (من عوائد سوق الأوراق المالية إلى أداء صناديق التحوط الإسلامية).

- **الكلمات المفتاح:** صناديق التحوط الإسلامية؛ عوائد السوق المالي ؛ التحوط ؛
- **تصنيف JEL :** C23 ; G10; G23

I-Introduction:

Companies face many financial risks, including interest rate risk, exchange risk, and volatility in equity prices. These risks have a negative impact that needs to be addressed by hedging which enables companies to plan their investments better and with greater certainty. Hedging is the adoption of procedures with the selection of the best combination of assets to minimize risk while maintaining high returns. The challenge for Islamic finance is to design tools and products that succeed in achieving hedge and risk management while respecting Shariah principles.

Hedging, in general, is permitted by the Shariah as it fulfills the objective of Shariah itself which is the protection of property. Hence, Islam permits hedging as it will bring *maslahah* and fulfills the principle of *maqasid al-shariah*. The effort to develop the instruments in achieving the objective of hedging is encouraged as long as it is within the framework permitted by the Shariah (Razif & Abdul Rahman, 2012, p. 155). Hedge funds are alternative investments that use pooled funds and employ a variety of strategies to earn returns for their investors. A hedge fund aims to provide the highest investment returns possible as quickly as possible (Maverick .B.). Hedge funds use high-quality qualitative and quantitative techniques to achieve their goals. There is a significant and growing demand for funds that meet the specific religious and investment requirements of the Islamic community.

Investors who demand shariah-compliant financial products could not invest in hedge funds nor hedge using the conventional methods using forwards, futures and options because these are not endorsed by shariah scholars to be shariah-compliant (Mohamad & Tabatabaei, 2008, p. 5). The growth of Islamic finance gained the attention of hedge fund managers, and this led to the development of Islamic hedge funds. The conventional long/short strategy, which is not permitted by Shariah, prevented Islamic investors from investing in the hedge funds. However, fund managers have developed alternative Shariah-compliant strategies to create Islamic hedge funds. Salam and Arbun are the Islamic alternatives for conventional short selling. Though these strategies are being practiced there is still a split of opinion among Islamic scholars on the use of these alternatives for short selling and also a mixed opinion on hedging risk through different derivative instruments (EurekaHedge Database).

According to (Fieldhouse, 2007) Islamic finance has succeeded in setting up Shariah-compliant hedge funds. But still faces the lack of strategies and products available to these funds to achieve success and superiority over conventional funds. Currently, there are a limited number of investment products on the market that could properly be considered Shariah-compliant. Most that are available have money market rates of return. Shariah law prohibits profiting from interest and the unethical use of money (eg investing in gambling, arms, alcohol and tobacco companies for example). Consequently, managers of Shariah funds need to be very aware of which companies and assets they are buying, and whether these are also Shariah-compliant.

(Zaid, et al., 2011, p. 479) argued that Islamic finance in Malaysia is a dynamic industry that is widely regarded as a competitive alternative to conventional financing solutions. There are now diverse local and foreign players in the market, showcasing their dynamism with a wide array of innovative financial products and services on offer. Islamic financial institutions in Malaysia have introduced Hedge Funds which have Shariah compliance features. Although Islamic hedge funds are still receiving some criticism from Fiqh scholars. The recent focus is on the importance and relevance of these funds to financial markets in general and Islamic financial markets in particular. This article will investigate the relationship between Islamic hedge funds and Stock Market Returns in Malaysia and its direction.

This article is organized as follows. Section II provides the Theoretical Framework and previous studies.. Section III reports the time series data and some basic statistics. Section IV includes model estimations and the results of panel model. Finally, Section V concludes with a discussion on the findings.

I.1. Problem Statement

Islamic financial industry has grown dramatically. However, investors are divided over whether Islamic hedge funds can achieve the success of other Islamic products. Consequently, the main problem of this study can be summarized within the following question: What effects do stock market returns have on Islamic hedge funds in Malaysia?

Therefore, the subsequent sub-questions are advanced to clear up the main problem of this study:

1. What is a Shariah-compliant fund? And what are the key differences between Islamic and conventional Fund?
2. What is meant by the Islamic hedge fund?
3. Are Islamic Hedge Funds Linked to Malaysian Financial Market Returns?

I. 2. Study Importance:

The significance of this study stems from the subsequent:

- There has been significant debate as to the approval of an Islamic hedge fund as shariah-compliant among scholars, who generally agree that hedging is permissible to reduce risk. Islamic hedge funds seek to provide investors with an Islamic alternative that respects Maqasid Al Shariah in the international markets, thus give a motivation to research the impact of these funds on market returns.
- Studies on the relationship among Islamic hedge funds and stock market returns generally had been conceptual, to the best of our knowledge this is the first empirical one.

I. 3. Study Objectives:

This study aims specifically at accomplishing the subsequent objectives:

1. To identify Islamic funds and show how they are different from conventional funds.
2. To explain the concept of hedge funds under Shariah law.
3. To analyze empirically the relationship between the Islamic hedge funds performance and the stock market returns in Malaysia.

I. 4. Study Hypotheses:

As a way to attain the study objectives and to reply to the study questions the subsequent hypotheses are advanced:

H1: There is a strong correlation between stock market returns and Islamic hedge funds performance in Malaysia.

H1.1: There is a strong correlation between Islamic market return and Islamic hedge funds performance in Malaysia.

H1.2: There is a strong correlation between conventional market return and Islamic hedge funds performance in Malaysia.

H2: Stock market returns have a positive significant statistical impact on Malaysian Islamic hedge funds performance.

H2.1: Islamic market return has a positive significant statistical impact on Malaysian Islamic hedge funds performance

H2.2: Conventional market return has a positive significant statistical impact on Malaysian Islamic hedge funds performance

H3: There is a short-run relationship between financial market returns and Islamic hedge funds in Malaysia.

H3.1: There is a short-run relationship between Islamic market return and Islamic hedge funds in Malaysia.

H3.2: There is a short-run relationship between conventional market return and Islamic hedge funds in Malaysia.

II– Theoretical Framework and Relevant Literature:

II.1 Understanding Hedge Funds

Before defining what an Islamic hedge fund is like, it is better to provide a brief description of the traditional hedge fund.

II.1.1 Defining conventional hedge fund

There is no standard definition of a hedge fund. The term "hedge fund" is commonly used to describe a variety of different types of investment vehicles that share some similar

characteristics. According to (Rubin, Greenspan, Levitt, & Born, p. 1) Although it is not statutorily defined, the term encompasses any pooled investment vehicle that is privately organized, administered by professional investment managers, and not widely available to the public. However (Franklin, 1999, p. 191) identify hedge fund as a private pool of capital, typically formed as a limited partnership or limited liability company to obtain flow-through tax treatment, through which investments are made using a strategy designed to "hedge" against risk in equity investments.

(Blundell-Wignall, 2007, p. 41) used the following definition: lightly-regulated managers of private capital that use an active investment approach to play arbitrage opportunities that arise when mispricing of financial instruments emerge. Extensive use of leverage and derivatives is a common feature of hedge funds

Under this traditional hedge fund model, the investment goal is to generate absolute returns regardless of whether the market rises or falls, as opposed to the more limited goal of outperforming other investors or market indices. (Financial Times , 2005)

In a practical sense, a Hedge fund is a private investment where the managers seek to raise returns and cut risk by employing a wide spectrum of techniques regarding the use of leverage, derivatives and short selling.

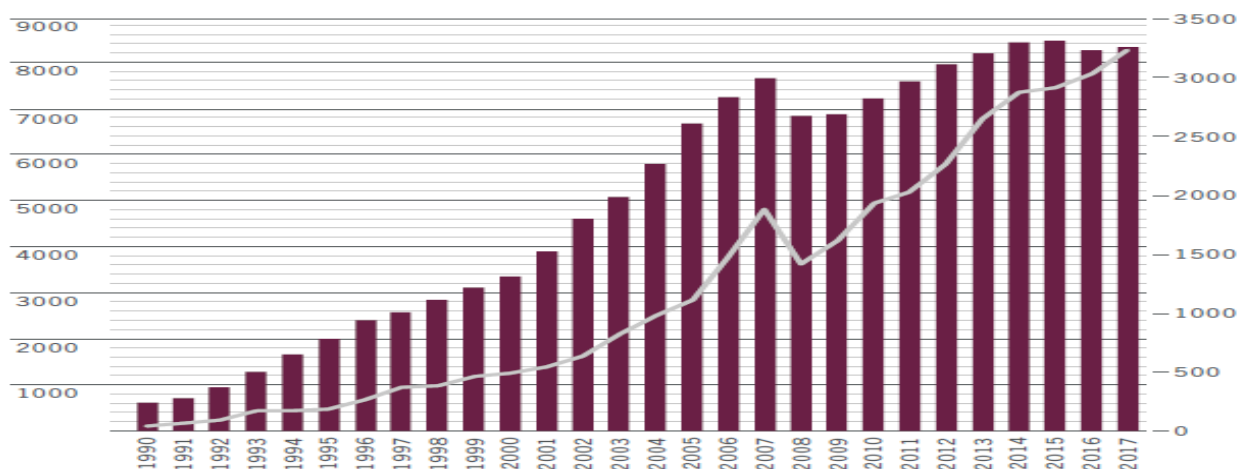
II.1.2 The hedge fund strategies

Although the term ‘hedge fund’ originated from the equally long and short strategy employed by managers like Alfred Winslow Jones, the new definition of hedge funds covers a multitude of different strategies. (Farnsworth, 2015, p. 3) believes there is no standard classification of hedge funds strategies but the most common strategies can be summarized in Appendix 1. The most widely used strategies are short-selling. Since hedge funds are free to engage in short-selling, funds can sell assets short and use the generated funds to increase profitable long positions, which may have very different risk exposures than their shorts. While this practice may differ from the most intuitive concept of leverage, it is nonetheless commonplace in the industry and frequently referred to as “leverage” by managers and prime brokers.

II.1.3 The hedge fund industry

According to (Pictet Alternative Advisors , 2008) the hedge fund industry is generally estimated to have grown from about USD 40 billion in assets under management in 1990 to over 3.0 trillion in December 2017. In terms of the number of funds, the industry has experienced similar growth, rising from around 500 hedge funds in 1990 to approximately 8,335 at the end of December 2017.

Figure (1): Hedge Fund Industry Growth



Source: HFR Global Hedge fund industry report - Q4 2017, quoting Pictet Alternative Advisors SA, An introduction to hedge funds, April 2018, available from <https://www.group.pictet/media/212/download>

II.2 Islamic Hedge Funds

II.2.1 What is a Shariah-compliant fund?

Shariah-compliant funds vary basically from traditional funds seeing that Muslims are not allowed to make investments in some prohibited transaction and pay or get any kind of interest. (Taqi Usmani) defined The shariah-compliant fund as a joint pool wherein the investors contribute their surplus money for its investment to earn halal profits in strict conformity with the precepts of Islamic Shariah. The main element that differentiates a Shariah-compliant fund from other conventional funds is the appointment of a Shariah committee or Shariah adviser to determine the compliance of the fund against existing Shariah guidelines. Where (Securities Commission Malaysia) imposes the Shariah committee assesses a fund's overall activities to ensure that they are managed and administered following Shariah principles. In conclusion, the Islamic fund is defined as an investment fund which complies with Islamic law and governed by Shariah acceptability of assets. In other words, An Islamic fund is a financial organization that should not violate the guidelines of Islamic jurisprudence.

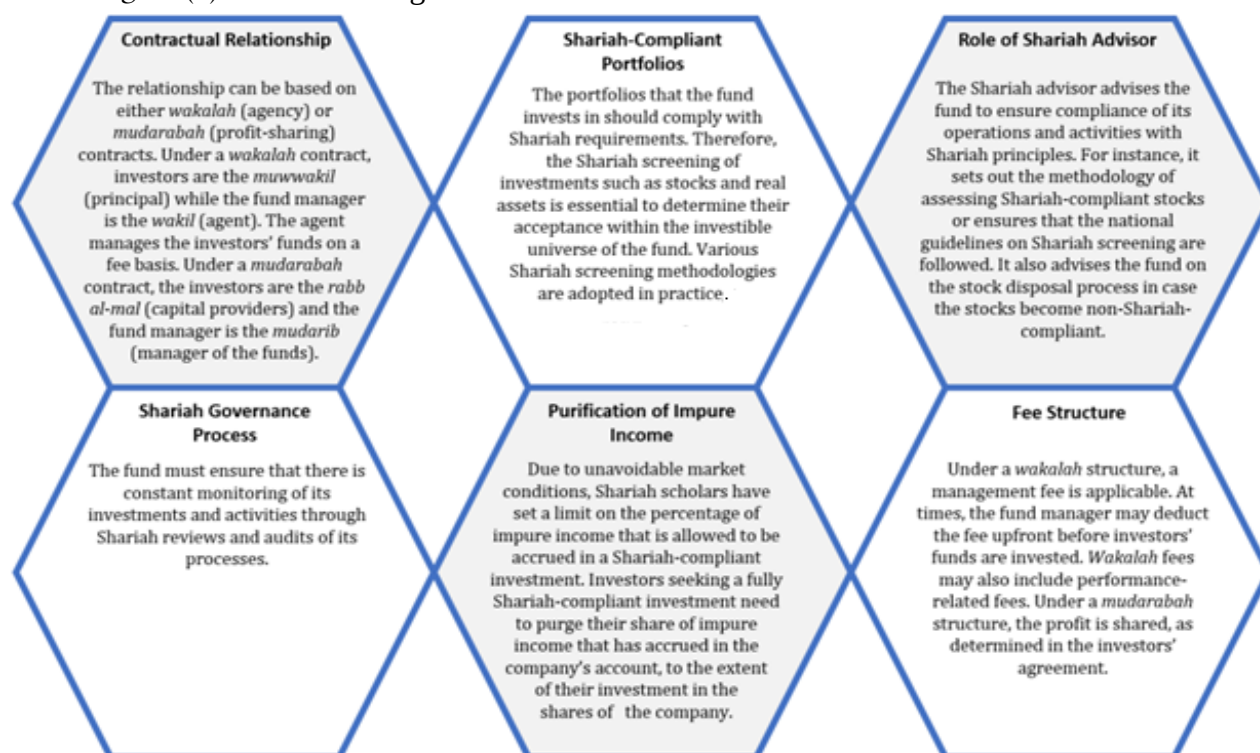
II.2.2 Key Differences Between Islamic and Conventional Funds

(The COMCEC Coordination Office, 2018, p. 13) explain the common objectives between Islamic funds and conventional funds such as capital preservation, structured investment, and improved returns. The activities of the two sets of funds are also similar, involving:

- Determining clients' financial needs and objectives.
- Selection of assets and securities.
- Financial analysis of investments.
- Investment planning and strategies
- Portfolio monitoring and periodic rebalancing.

The fundamental difference between these two types of funds is that Islamic funds must always adhere to Shariah rules in terms of their strategies and tools. The following figure shows the most important differences between conventional funds and Islamic funds.

Figure (2): Differentiating the Criteria between Islamic and Conventional Funds

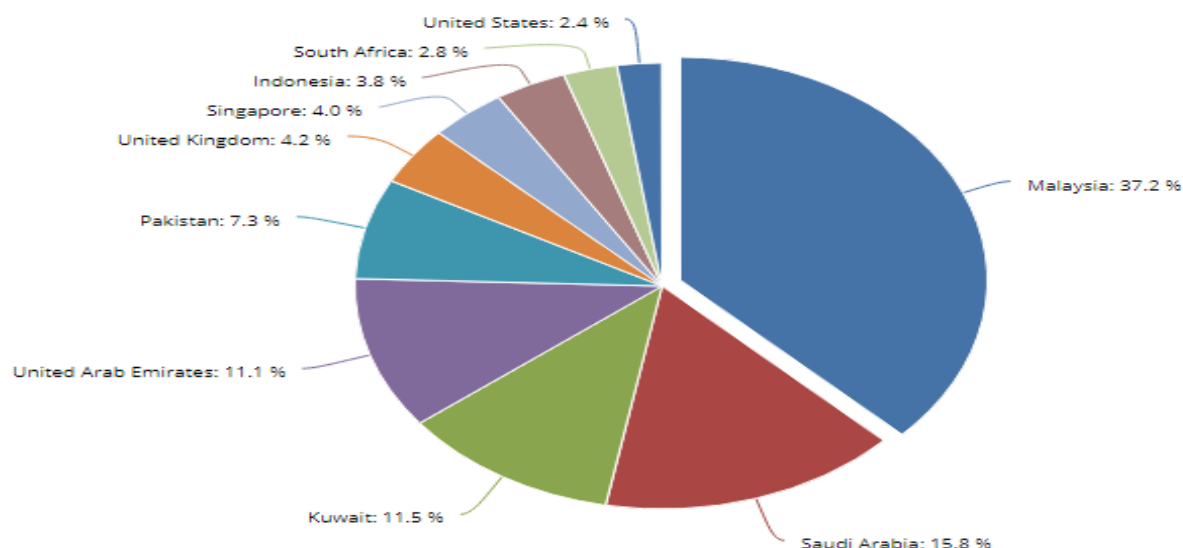


Source: ISRA (2015). Islamic capital markets: Principles and practices. Kuala Lumpur: International Shariah, Research Academy for Islamic Finance and Securities Commission Malaysia.

II.2.3 Global Islamic funds industry

According to the (The Eurekahedge Database, 2019) ^{II}, there are 536 live funds in the database with the top 5 most popular locations for running a global Islamic fund strategy being; Malaysia, Saudi Arabia, Kuwait, United Arab Emirates, and Pakistan.

Figure (1): Global Islamic funds by manager location



SOURCE: <http://www.eurekahedge.com/Products/islamic-fund-database> SEE ON: 12/07/2019 (Bank Negara Malaysia, , 2017) indicate as at the end of the first quarter of 2017, the total global Islamic assets under management (AuM) were USD70.8 billion and the number of Islamic funds stood at 1,535. There were only 802 funds with AuM of USD47 billion in 2008. Malaysia has the highest number of Islamic funds globally with 388 funds as at the end of the first quarter of 2017. The development of the Islamic funds' industry is the result of the huge growth of the Islamic financial industry in Malaysia:

II.2.4 Shariah Analysis of Hedge Funds

The concept of a hedge fund is not against Islamic Sha

Oriah. The issue with conventional hedge funds is their use of financial instruments and strategies that are prohibited by Islamic Shariah to hedge risk. Once the hedge fund uses Shariah-compliant tools, it can become an Islamic hedge fund.

Hedge funds are a relatively new concept in Islamic finance. However, promoters of this sector have been able to develop funds under the guidance of Shariah scholars, which now offer somewhat similar although more limited economic effects as that offered by conventional hedge funds. (Dar & Azami, 2010, p. 57) believe that salam contract, which duplicates a forward purchase mechanism is the preferred method of ensuring these hedge funds remain Shariah-compliant. Demand for hedge funds might expand in the future if investors in Islamic countries recognize the benefits that these types of investments might bring to an investment portfolio.

While (Humayon & Dar, 2003, p. 4) said that hedge funds have proven to be the weakest link. Devout Islamic investors have by and large kept themselves away from this asset class. Consequently, most managers of full-fledged Islamic banks shy away from investing their proprietary money in hedge funds and become nervous by the prospect of having to sell an

^{II} As on 12 Jul 2019.

Islamic hedge fund. The performance of Islamic hedge funds has not helped to change the negative attitude towards this asset class.

Shariah researchers have kept on creating Shariah-compliant alternatives with the end goal of risk hedging. Thus, under Islamic law, hedge funds can be defined as Shariah-compliant funds that use Halal instruments and permissible strategies to increase their returns and hedge risk.

II.2.5. Shariah-compliant options as an alternative to short selling

Recently, a wide variety of shariah-compliant products are available for Islamic hedge funds, (Khan, 2003):

- ❖ **Bai Al Arbun:** is a down payment sale. The hedge fund manager can make a partial payment on a share whose market price will decline in the future and take delivery of the share. But, with a assure to complete the purchase by paying the remaining sum within the fixed time or the fund has to return the stock and lose the down payment. Bai Al Arbun includes the recent options on the stock exchange
- ❖ **Bai Al-Salam:** is a sale contract that includes advance payment for goods that are to be delivered later. The Malaysian Shariah Council has extended Salam's applicability to financial securities.
- ❖ **Sale and Promise:** The Malaysian Shariah Council created a new technique where the central exchange buys a security from the dealer along with a promise to buy it back when the exchange sells at an upcoming date. Yet, the seller's rights to recall are fixed in the regulations and he has the right to effect it at his comfort, and the same technique for the sale process.
- ❖ **Exchange of conditional promises (Wa'dan):** This technique of short-selling two conditional promises is a trade among the broker and the Islamic hedge fund. Still, at a future date, only one promise will be in realize due to the condition.

II.2.6. Challenges Facing Islamic Hedge Funds

shariah guidelines make it hard to operate an Islamic hedge fund. Since, Islamic principles necessitate that transactions be backed by real assets, which restricts the scope of permissible strategies.

the Islamic hedge funds faced limitations with the adaptation of conventional strategies. The commonly used tools like short selling (one cannot sell what he/she does not own), leverage (Riba) and derivatives (uncertainty or gambling) are not permissible by the Shariah. (Bindesh & Amiri) argue that from an Islamic perspective, the shorting in the conventional sense is not allowed. First, shorting involves selling something you don't own, and under Islamic law that is illegal. Secondly, when a manager receives the short proceeds, they are put in a bank account and earn interest – which is also not allowed.

Islamic funds are very time-consuming and difficult to launch. A conventional hedge fund takes, on average, a year and a half to go from idea to market. By contrast, it can take at least three years to launch a Shariah-compliant fund. An Islamic fund faces hurdles of constructing a Shariah vehicle and getting it approved by Shariah scholars. The other issue with an Islamic hedge fund is that Shariah-compliant funds will tend to have fewer managers than conventional funds, principally because there are fewer managers who can meet the criteria of an Islamic fund. while fund needs a multiplicity of underlying managers to gain the benefits of diversification.

II.3 Relevant Literature

There is a lack of applied studies related to hedge funds in general and Islamic hedge funds in particular. Studies on the relationship between financial market returns and hedge funds performance mostly have been conceptual. Whilst there are limited studies discuss Islamic hedge funds, often comparing Islamic funds and conventional funds.

(Eichengreen & Park, 2002, p. 20) used regression methods and survey data to investigate how leverage varies with hedge fund attributes in 1998 and 1999. The study showed that leverage varies with investment style, regulatory status, and a selection of other fund characteristics. The study also showed that fund managers and counterparties better recognized the risky nature of

highly-leveraged positions as a result of the collapse of LTCM and adjusted their behavior accordingly.

(Chen, 2007, p. 66) examined the timing ability of hedge funds covering various investment categories With a large sample of hedge funds during 1994-2002. They proposed the concept of a focus market extend by extended the Treynor-Mazuy And Henriksson-Merton's market timing models to a multiple market framework. The results showed evidence of significant timing ability in the focus markets including bond, currency, and equity markets at both the category and the fund levels. Tests of performance persistence present some supportive evidence over a short horizon.

(Blundell-Wignall, 2007, p. 41) suggested that hedge funds play an important function in presenting liquidity for mis-priced assets, This activity is given the rapid growth in the volume of structured products issued by investment banks. He also suggested that structured products are highly exposed to downward price gaps in the risky assets used in their construction. Considering the potential for such a crisis scenario, two major policy conclusions emerge: The importance of (1) stress testing of investment banks' balance sheets; and, (2) given the large retail market segment, consumer education and protection.

A study by (Metzger & Shenai, 2019, p. 2) analyzes the performance of ten major strategies, during and after the financial crisis from June 2007 to January 2017. They used the Hedge Index database with over 9500 hedge funds. The result showed that seven strategies performed better than the S&P500: Global Macro, Multi-Strategy, Emerging Markets, Long/Short Equity, Event-Driven, Convertible Arbitrage, and Fixed Income.

(Seddiqi & hrubi, 2008) compared Islamic investment funds and hedge funds based on different factors: the advantages and disadvantages of each, differences and similarities between the two and investment portfolio including both kinds. They suggested that the main difference is that Islamic investments offer more risk control by cooperative arrangements. This characteristic enables an investor to cover the risk of hedge funds by investing in Islamic investment funds. Because, Islamic hedge funds are not receiving sufficient attention from researchers, this study provides practical knowledge about the relationship among Islamic hedge funds and stock market returns.

III. Data and methodology

III. 1 Data

The empirical data consist of monthly net asset values (NAVs) of 10 Islamic hedge funds, during the period from January 2009 to September 2018. Information on these funds was obtained from EurekaHedge's database.

We use two kinds of stock market indices as benchmarks in the study to evaluate the performance of Malaysian stock market returns:

1. Islamic market index represented in the FTSE Bursa Malaysia Shariah Index.
2. Conventional broad market index represented in the FTSE Bursa Malaysia KLCI.

The indices series was gathered from: investing.com

III. 2 Study Variables Definitions

The definitions of the study variables are presented in the following table:

Table (1) Variable and their Proxies

variables	definition	source
Net Asset Value	NAV measures the value of a fund's assets, minus its liabilities. NAV is typically calculated on a per-share basis. The formula for NAV is: $NAV = (\text{Market Value of All Securities Held by Fund} + \text{Cash and Equivalent Holdings} - \text{Fund Liabilities}) / \text{Total Fund Shares Outstanding}$	investinganswers.com
The FTSE Bursa Malaysia EMAS Shariah Index	The Index has been designed to provide investors with a broad benchmark for Shariah-compliant investment. Constituents are screened according to the Malaysian Securities Commission's Shariah Advisory Council (SAC) screening methodology.	Bursa Malaysia website

FTSE Malaysia KLCI	Bursa Malaysia	This index comprises the largest 30 companies by full market capitalization that meet stated eligibility requirements.	Bursa Malaysia website
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Source: Prepared by the researchers.

III. 3 The Study Models

the linear model is used to examine the impact of Malaysian stock returns on the financial performance of Islamic hedge funds. Quantitative data on Islamic hedge fund NAV's was collected in the form of monthly returns, between January 2009 and September 2018. Regressions were estimated as follows:

$$NAV_{i,t} = \beta_1 + \beta_2 RSHARIAH_{i,t-1} + \beta_3 RKLCI_{i,t-1} + \varepsilon_{i,t}; (01)$$

Where : NAV : Net Asset Value of Islamic hedge fund

RSHARIAH: Continuously compounded returns of EMAS Shariah Index.

RKLCI: Continuously compounded returns of KLCI Index.

For this study; The indices are used on a monthly basis; while the Continuously compounded returns are calculated as the natural log differences in prices:

$$RETURN = LOG(P_t / P_{t-1}).$$

The econometric analysis helps us to determine whether the Islamic hedge funds are connected to stock market returns in Bursa Malaysia. We begin by examining the unit root presence of each variable. Furthermore, we set out the correlation of NAVs and the various returns, in the whole period. (Ganger, 1969) provides appropriate most likelihood techniques for investigating causality among time series. We run the Granger Causality test to examine the 'causality' between two variables. In order to determine whether the Net Asset Value of Islamic hedge funds does Granger-cause returns in Bursa Malaysia or vice versa, by using the following equations:

$$NAV^t = \alpha_1 + \sum_{i=1}^n \beta_i RETURN_{t-i} + \sum_{j=1}^m \gamma_j NAV_{t-1} + \varepsilon_{1t} \quad (02)$$

$$RETURN^t = \alpha_2 + \sum_{i=1}^n \theta_i NAV_{t-i} + \sum_{j=1}^m \delta_j RETURN_{t-1} + \varepsilon_{2t} \quad (03)$$

IV- Results and discussion:

IV.1.The unit root test results

The unit root test results applying Levin, Lin & Chu test, are presented in table (2). Our findings show that the null hypothesis of the unit root existence is rejected at 1% and 5% level respectively. So we can report that Islamic hedge funds NAVs and both stock market returns are stationary. Hence, first differencing is not required.

Table (2): Tests for the presence of a unit root

Variables	T-Statistic	Probability**	Decision
NAV	-4.45693	0.0000	Reject H ₀ : there is no Unit root
KLCI	36.3242	0.0000	Reject H ₀ : there is no Unit root
Shariah	-37.2506	0.0000	Reject H ₀ : there is no Unit root

Source: Eviews 10 output

Note: ** Probabilities are computed assuming asymptotic normality

IV.2.Correlation Matrix

Table (3) presents the correlation coefficient between variables from January 2009 to September 2018. Clearly, there is a strong positive relationship between net asset values of Islamic hedge funds and conventional stock market return (56%). For a positive increase in NAVS, there is also a positive increase in the FTSE Bursa Malaysia KLCI Return. Besides the correlation coefficient indicates a strong uphill (positive) relationship between NAVs and The FTSE Bursa Malaysia Shariah return (63%). it means the NAV is increasing when the Islamic stock market return is increasing.

Table (3): Correlations of stock market returns with the NAVs of Islamic hedge funds

	NAV	RKLCI	RShariah
NAV	1.000000		
RKLCI	0.568222	1.000000	

RShariah	0.636138	0.940293	1.000000
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Source: Eviews 10 output.

High pair-wise correlations between independent variables (94%) may refer to the Multicollinearity issue; Thus we are going to run the Multicollinearity test.

IV.3. Multicollinearity Test

Multicollinearity is essentially a sample phenomenon, arising out of the largely nonexperimental data collected in most social sciences, we can detect Multicollinearity by estimated the variance inflation factor (VIF) and the Tolerance (TOL). If the VIF of a variable exceeds 10, which will happen if R^2 exceeds 0.90, that variable is said to be highly collinear. The closer is TOL to zero, the greater the degree of collinearity of that variable with the other regressors. On the other hand, the closer the TOL j is to 1, the greater the evidence that X j is not collinear with the other regressors. (Gujurati, 2009, pp. 359-363)

Table (4) indicates that all the variables have VIF less than 10 and a TOL more than 0, which means there is no multicollinearity problem.

Table (4): The Multicollinearity Test Results

VARIABLE	Coefficient variance	variance inflation factor	Tolerance
klci	38.78976	8.783343	0.1138
Shariah	33.47303	8.776689	0.1140

Source: Eviews 10 output

IV.4.The Regression Model

A multiple linear regression helps to develop an equation in which two or more explanatory variables are used to predict the dependent variable. , before we can decide on the best regression method, we have first to detect the Homogeneity with the Hsiao test. Then we have to figure out if our predictor variables are endogenous. By applying the Hausman test (see Appendix 2). Panel EGLS Method (Cross-section random effects) is used to explain the relationship between NAVs and stock market returns. Table (5) shows that R^2 explained 41% of the variation of Islamic hedge funds NAVs. The value of F-ratio is statistically significant at 5%. The F statistic confirms the utility of the linear model. The Jarque-Bera normality test shows that the residuals of the model have a normal distribution. (See Appendix 3).

Table (5): Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.153522	0.098386	1.560394	0.1189
RKlci	24.45188	6.228143	3.926031	0.0001
RShariah	77.28005	5.785588	13.35734	0.0000
Weighted Statistics				
R-squared	0.415321	Mean dependent var		0.312957
Adjusted R-squared	0.414310	S.D. dependent var		2.715792
S.E. of regression	2.078406	Sum squared resid		4997.978
F-statistic	410.9312	Durbin-Watson stat		2.196538
Prob(F-statistic)	0.000000			

Source: Eviews 10 output

This finding implies that Islamic hedge funds are linked to the changes in the Malaysian stock market. And it suggests that variables are positively related. That is in accordance with correlation results indicating that all variables move together.

IV.5. The Granger-Causality Results

With reference to table (6) which presents the results of the Granger-causality tests, we reject the null hypothesis that conventional stock market return does not Granger-cause NAVs of

Islamic hedge funds. In interpreting this result, we conclude at the 5% level of significance that conventional stock market return do Granger Cause Islamic hedge funds net asset value. While, the null hypothesis that NAV does not Granger-cause conventional stock market return cannot be rejected, at the 5% level of significance, which means Islamic hedge funds NAVs do not Granger-Cause conventional stock market return.

We now turn our attention to the Islamic stock market return; the result shows that the Granger causality test statistics in the case of Islamic stock market return does Granger-cause Islamic hedge fund NAVs. While in the case of the Net asset values of Islamic hedge funds do not Granger-cause Islamic stock market return, at the 5% level of significance but it does cause at the 10% level of significance.

Table (6): Pairwise Granger Causality Tests

Null Hypothesis:	F-Statistic	Prob.
KLCI does not Granger Cause NAV	4.09155	0.0433
NAV does not Granger Cause KLCI	2.98566	0.0843
SHARIAH does not Granger Cause NAV	3.71389	0.0247
NAV does not Granger Cause SHARIAH	1.09068	0.3363

Source: EvIEWS 10 output

An intuitive explanation for this is, that since Islamic hedge funds are restricted to invest only in Sharia-compliant instruments, and they are prohibited from investing in traditional market instruments. As for the existence of an effect of both index returns on Islamic hedge funds, it is due to no significant difference between the daily return of EMAS Shariah index and KLCI index during the period from January 2009 to September 2018.

IV.6. Hypotheses Testing Results

In this section we provide the hypotheses testing as follow:

H1.1: There is a strong correlation between Islamic market return and Islamic hedge funds performance in Malaysia. Indeed, the correlation coefficient indicates a strong positive correlation between them. Thus, the (H2.1) hypothesis is accepted.

H1.2: There is a strong correlation between conventional market return and Islamic hedge funds performance in Malaysia. However, a high positive correlation does exist between the KLCI return and the NAV of the Islamic hedge fund. which means that the (H2.2) hypothesis is accepted.

According to the results of H1.1 and H1.2. Hypothesis **H1:** There is a strong correlation between stock market returns and Islamic hedge funds performance in Malaysia; it is accepted.

H2.1: Islamic market return has a positive significant statistical impact on Malaysian Islamic hedge funds performance. The FTSE Bursa Malaysia Shariah trails behind a positive and statistically significant impact at 5 percent significance level, with a 1% change in The FTSE Bursa Malaysia Shariah return results about 770 % change in Islamic hedge funds performance. So, the (H1.1) hypothesis is accepted.

H2.2: Conventional market return has a positive significant statistical impact on Malaysian Islamic hedge funds performance. The conventional market return has a positive statistical significant effect at 5% level on Islamic hedge funds performance. with a 1% change in klcI return triggers about 244% changes in Islamic hedge funds NAVs, which means that the (H1.2) hypothesis is accepted.

According to the results of H2.1 and H2.2. Hypothesis **H2:** Stock market returns have a positive significant statistical impact on Malaysian Islamic hedge funds performance; it is accepted.

H3.1: There is a short-run relationship between Islamic market return and Islamic hedge funds in Malaysia. The causality test confirms the presence of a short run relationship from The FTSE Bursa Malaysia Shariah return to Islamic hedge funds variable. Therefore, the (H3.1) hypothesis is accepted.

H3.2: There is a short-run relationship among conventional market return and Islamic hedge funds in Malaysia. Indeed there is causality (short run relationship) between KLCI return and NAV. Consequently, the (H3.2) hypothesis is accepted.

According to the results of H3.1 and H3.2. Hypothesis **H3:-**There is a short run relationship between financial market returns and Islamic hedge funds in Malaysia- is accepted.

V-Conclusion:

Using a data of 10 Islamic hedge funds available from the EurekaHedge database, returns of 2 stock market indices in Bursa Malaysia -during the period from January 2009 to September 2018-were investigated in this study. The ten-year data-sample was analyzed for correlations, linear Regressions and Granger Causality test.

The aim of this study is to examine the existing and the course of the relationship between Islamic hedge funds performance and stock market returns for the periods of 2009:01-2018:09. Panel Cross-section analysis is used to investigate the relations between these variables. First, we conducted unit root tests on to specify the stability of series and, then Granger Causality Test is carried out having regard to the possibility of being bidirectional causality between variables. In this paper, we show that the Malaysian stock market returns and Islamic Hedge funds may have a strong link. Particularly, first, the findings of the correlation coefficient indicate a strong relationship between Islamic hedge funds performance and both Malaysian stock market returns. Second, the multiple linear regressions suggest that Islamic stock market returns positively affect Islamic hedge funds performance; when Conventional market return has also a positive effect. Finally, Granger test affirms that there is one-way causality from stock market returns to Islamic hedge funds.

It should be noted that there are limitations of this paper to motivate more robust study in the future. Firstly, this study is focused on the Malaysian context limiting the scope of the study. This study can be expanded and the results tested to be validated for other countries. Secondly, the period of the study encompasses 10 years only, whereas a study considering a longer period would be greater intensive.

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Appendices:

Appendix (1): Classification of hedge funds

Non-Directional Strategies	
Fixed Income Arbitrage	A strategy having long and short bond positions via cash or derivatives

	markets in government, corporate and/or asset-backed securities. The risk of these strategies varies depending on duration, credit exposure and the degree of leverage employed.
Event-Driven	A strategy that hopes to benefit from mispricing arising in different events such as merger arbitrage, restructurings etc. The manager takes a position in undervalued security that is anticipated to rise in value because of events such as mergers, reorganizations, or takeovers. The main risk in such strategies is the non-realization of the event.
Equity Hedge	A strategy of investing in equity or equity-like instruments where the net exposure (gross long minus gross short) is generally low. The manager may invest globally, or have a more defined geographic, industry or capitalization focus. The risk primarily pertains to the specific risk of the long and short positions.
Distressed Securities	A strategy of buying and occasionally shorting securities of companies that are undergoing some form of reorganization. The securities range from senior secured debt to common stock. The liquidation of a financially distressed company is the main source of risk in these strategies.
Merger Arbitrage	A strategy of purchasing securities of a company being acquired, and shorting that of the acquiring company. The risk associated with such strategies is more of a “deal” risk rather than market risk.
Convertible Arbitrage	A strategy of buying and selling different securities of the same issuer (e.g. convertibles/common stock) seeking to obtain low volatility returns by arbitraging the relative mispricing of these securities.
Directional Strategies	
Macro	A strategy that seeks to capitalize on a country, regional and/or economic change affecting securities, commodities, interest rates and currency rates. Asset allocation can be aggressive, and leverage and derivatives may be utilized. The method and degree of hedging can vary significantly.
Emerging Markets	A strategy that employs a “growth” or “value” approach to investing in equities with no shorting or hedging to minimize inherent market risk. These funds mainly invest in the emerging markets where there may be restrictions on short sales.
Equity Non-Hedge	A strategy similar to equity hedge with significant net long exposure.
Short Selling	A strategy that focuses on selling short over-valued securities, with the hope of repurchasing them in the future at a lower price.

Source: Agarwal V., Naik N.Y. (2000), Multi-period performance persistence analysis of hedge funds Journal of financial and quantitative analysis, volume 35, N° 3, pp327-342

Appendix (2) : Diagnostic tests

Specification Tests of Hsiao (1986)

H1 = Null Hypothesis : panel is homogeneous vs Alternative Hypothesis : H2

H2 = Null Hypothesis : H3 vs Alternative Hypothesis : panel is heterogeneous

H3 = Null Hypothesis : panel is homogeneous vs Alternative Hypothesis : panel is partially homogeneous

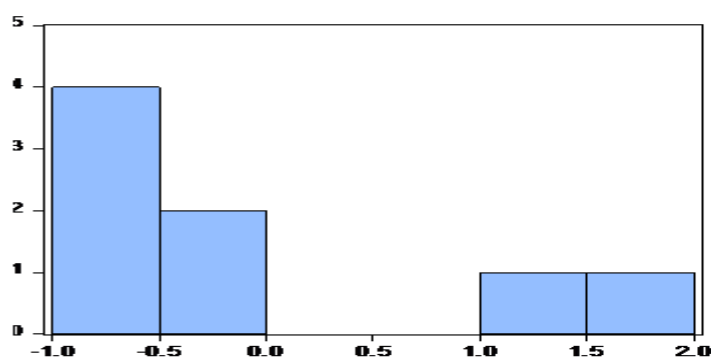
Hypotheses	F-Stat	P-Value
H1	1.949922	0.024642
H2	0.715990	0.839507
H3	1.824233	0.047694

Correlated Random Effects – Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq.		
	Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.015423	2	0.9383

Appendix (3) : Jarque–Bera Test

Series: Standardized Residuals Sample 2009M06 2018M09 Observations 1160	
Mean	-0.008597
Median	-0.490467
Maximum	1.932937
Minimum	-0.895166
Std. Dev.	1.025903
Skewness	1.134881
Kurtosis	2.622287
Jarque-Bera	1.764828
Probability	0.413783

Source: Eviews 10 output