Does inflation impact shariah (islamic) equity index and conventional equity index differently?the case of Malaysia

Omar, Abdullah and Masih, Mansur

INCEIF, Malaysia, Business School, Universiti Kuala Lumpur, Kuala Lumpur, Malaysia

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Abdullah Omar[1] and Mansur Masih[2]

Abstract

There have been a lot of works done on the impact of inflation on the conventional equity index. However, not much work has been done on the impact of inflation on Islamic equity index. This paper is an attempt at investigating whether the impact of inflation on Shariah (islamic) equity and conventional equity is similar or different. The standard time series techniques have been employed for the analysis. The finding tends to indicate that the impact of inflation on Shariah (islamic) equity index and conventional equity index is not significantly different but similar. This finding has an important implication for the policy makers, practitiners and investers in that they would be aware of whether an investment in islamic equity is any better or worse (than conventional equity) as a hedge against inflation at least in the context of Malaysia.

Keywords**:** Shariah (Islamic) equity, conventional equity, inflation, Malaysia

[1] INCEIF, Lorong Universiti A, 59100 Kuala Lumpur, Malaysia.

2 **Corresponding author**, Senior Professor, UniKL Business School, 50300, Kuala Lumpur, Malaysia.

Email: mansurmasih@unikl.edu.my

1.0 Introduction

The study of the relationship between inflation and stock prices as to whether or not stocks provide a hedge against inflation has important implications for investors. The case of Malaysia is of partiuclar interest due to the following reasons:

One of the many reasons people invest is to either create or preserve wealth. The preservation of wealth is one of the many objectives of Shariah and could be in many forms i.e. safekeeping, insuring, waqaf giving or even investing to protect the purchasing power. Being a country whose diversed ethnicity consist of mainly muslims it is only natural that a large number of investors would be of this faith. Hence it would be beneficial in a Malaysian context to see the relationship between Shariah stock prices and inflation.

It is worth mentioning that many research have been conducted focusing on the relationship between inflation and stock prices which have produced mixed results depending on the time horizon. However this study is different as it will look into Shariah compliant stocks whether they share the same hedging attribute as its counterpart (conventional stocks) have shown or even greater response from inflation.

2.0 Theoretical Framework and Literature Review

The Fisher hypothesis in its most common form explains that the expected nominal rates of return on assests move one to one with expected inflation. In other words the ex ante real rates are not correlated with expected inflation. Often an additional assumption is added to the above that the ex ante real rates are constant (Boudoukh and Richardson, 1993). In any case the Fisher model is expected to hold true for all asset classes across all time horizons as follows:

$$\sum R_{t+i} = \alpha_j + \beta_j \mathrm{E}\left[\sum \pi_{t+i} \mid \phi_t\right] + \epsilon_t(j)$$

with $H_0 : \beta_j = 1$, and R_t is countinously compounded nominal return on an asset, π_t is the continuosly compounded rate of inflation, ϕ_t is the economic agent information set and ϵ_t captures the prediction error of the nominal rate.

Given the conventional view on inflation that given the expected real rate is assumed constant, economic agents would require a nominal return that would compensate for any loss in purchasing power due to inflation. This implies that nominal interest rates moves one to one with inflation by means that a permanent change in inflation rates will have no impact on real interest rates. Looking from an equity investor's point of view, it implies a one to one movement between stock returns and inflation (*Anari and Kolari*, 2001).

Contrary to the above, empirical finance literature have inconclusive results that show a certain lack of support for the Fisher hypothesis. The varying results are mainly due to the differnt studies conducted on the same subject which looked into specific issues while testing the hedging attributes of stocks. Some studies focused on specific regions (different form of markets), whereas others were trying to look into time horizon effects on the relationship.

2.1 Short Run Relationship Between Returns and Inflation

Earlier empirical research between stock returns and inflation were spurred by two surprising results. First was that ex post nominal stock returns were found to be negatively correlated with inflation. The second emperical result was that ex ante nominal stock returns and ex ante inflation were negatively correlated (see e.g., John Linther, 1975; Zvie Bodie, 1976;) These two results were surprising as it contradicts the long standing theory that ex ante nominal rates and ex ante inflation should move one to one. It was pointed later that the above studies focus exclusively on the short run comparing nominal stock returns against inflation for a period of one year or less. This has led to other studies on the long run relationship between stock returns and inflation.

2.2. Long Run Relationship Between Returns and Inflation

One of the importance of focusing on the long run relationship was that most equity investors hold stocks over long periods hence it is a more practical approach. Second, the relation between stock returns and inflation at long horizons is more of an interest given that the short term results appeared to be more of an anomaly. One of the earlier studies which tested data acorss subperiods, looking into ex ante and ex post, using different sets of instruments on the long run relationship between stocks and inflation provides a strong support of a positive relation (Boudoukh and Richardson, 1993).

2.3 Specific Region (Industrialized Countries)

A study on six industrialized countries provided reconciliation between the short run and long differences in the relation between stock returns and inflation with positive relation ranging from 1.04 to 1.65 in elasticity. This paper also used the impulse response function to look into the short run effects on stock returns given a shock in inflation. The results showed a negative impact in the short run which reconciles with past studies showing negative relations between the two (see e.g., *John Linther*, 1975; *Zvie Bodie*, 1976;). A theoratical explanation supporting this results was that the positive effects of inflation on stocks would require more time before it is fully reflected in the returns. Where as the negative effect on an increase in inflation has an immediate effect but are short lived (*Anari and Kolari*,2001).

2.4 Specific Region (African Countries)

One of the questions raised was that does the theory holds true for other markets particularly when looking at developing markets. A recent study on six african nations using the cointegration method showed that the long relation between stocks and inlfation tends to be positive with stock elasticity ranging from 0.015 to 2.264. The time path response also was in line with previous studies that showed a transitory negative response which overturns in the long run (*Alagidede and Panagiotidis*, 2010).

2.5 Horizon Sensitivity And Inflation Persistence

Riding on the two various results for two different horizons, further studies tried to look at the impact on the relation through out different time horizons. An interesting study conducted showed that stocks potential as a

hedge against inflation would become positive if the investment horizon exceeds 15 years or longer. More over it mentioned that stocks would still be a hedge against inflation even though returns are negatively correlated with unexpected inflation. The results of the study showed that key criterias in determining a positive or negative relation is the persistence of inflation, investment time horizon and minimal feedback between expected inflation and expected nominal returns (*Schotman and Schweitzer*, 2000).

Although there has been a great amount of studies that have been done with varying results, in nature they are inconclusive and there are certain spheres on the subject matter that remained unexplored. The following chapter will explain these aspects as the objective and motivation behind this paper.

3.0 Objective Of The Study

To ascertain the extent of influence Consumer Price Index has on Shariah equity index in comparison with its conventional counterpart in Malaysia.

To seek empirical evidence as to whether Consumer Price Index has a greater or lessor impact on the returns of Shariah equity index compared to conventional equity index.

Finally it asks the question, which of the two equity indices, Shariah or its conventional counterpart that is the most endogenous i.e. most affected index given a shock in Consumer Price Index?

4.0 Motivation of The Study

The topic of this paper is motivated and arises from the following questions:

i. Most research have been done on physical assets such as gold in trying to determine whether it possess any inflationary hedging characteristics? What about financial assets?

ii. Among the studies done on financial assets which were mostly on equities, there has been mixed results given different time horizons, where in the short run is has shown that a negative relationship exists between an increase in inflation and stock prices as opposed to the long run which have shown a positive relationship between the two thus stocks could serve as a hedge against inflation. These rather inconclusive results have spurred the need for further research.

iii. Adding a new perspective to past researches, will the results be indifferent, better or otherwise given the said asset class is a Shariah equity index?

The findings of this paper although limited in its scope would be of value to investors who are reluctant in adding Shariah equity assets as part of their portfolio. By investing in Shariah compliant stocks not only it ensures our adherence to our faith but hopefully would provide an added value of what investors look for particularly when investing in assets which is of value creation and protection.

5.0 Methodology Used

Advancement in regression analysis has resulted with the time series cointegrating procedure which will be used in this study and was initially published in the seminal paper by *Engle and Granger* (1987). This method starts off by testing two properties of any involved variables. The two properties tested are the stationarity and cointegration characteristics of the time series variables but with a limitation that the resulting cointegrating vectors might lack any theoratical foundation. Later as the empirical results are explained, a procedure called Long Run Structural Modelling (LRSM) will be used to rectify the problem.

The reason this method was used is due to the inherit limitation from traditional regressions applied that assumes variables are stationary which through time have shown the opposite that time series are in fact non-stationary in level form.

In a nutshell according to traditional regression method if the variables taken are non stationary at level form the statistical tests wouldn't be valid as the variances of the variables are changing therefore the estimated variables would be spurious.

6.0 Data, Emperical Results And Discussions

Given that this paper intends to focus on the relation of Shariah stock returns against inflation in comparison to conventional stocks in a Malaysian context the variables used to represent the equity indices are of the major benchmark indices listed on Bursa Malaysia, namely the FTSE Emas Shariah Index (FBMEMS) which consists of 189 Shariah compliant constituents taken as a proxy variable representing the Malaysian Shariah equity market and the Dow Jones Malaysia Titans 30 (DJTIMYL) as the conventional counterpart. Similar to past papers done on the topic other key variables include the Consumer Price Index (CPI) with a base of 100 since 2008. Indices for consumer prices are the most frequently used indicators of inflation and reflect changes in the cost of aquiring a fixed basket of goods and services by the average consumer (Alagidede and Panagiotidis, 2010). A fourth variable is a proxy of the Malaysia GDP known as the Malaysian Industrial Production Index (IPI) which was added to ensure the results are robust.

All the variables were taken from datastream and are in monthly frequencies as long annual time series data are not available over a long strech of time for the Shariah index (FBMEMS). As for the form of the variables all of the time series data were transformed into natural logarithms to obtain variance stationary. The period under study in this paper is from October 1996 and again is due to the short life of the Shariah index (FBMEMS).

6.1 Unit Root Tests And Optimal Lag

The long run relationship between stock returns and inflation crucially depends on the stationarity and cointegration of the time series data. Hence we tested the unit root of all variables using Philips-Perron (PP) and Augmented Dickey Fuller (ADF) methods. Both methods test the null of unit root and the results are presented for two scenarios; trend (level form) and no trend (differenced form) respectively. As tabulated in Table 1 all variables both in level and differenced form were found to be I(1) using ADF. As for the PP test, the level form showed that apart from IPI all other variables are non stationary. A study conducted by Paresh Kumar Narayan, 2006 using KPSS Univariate test with multiple structural breaks have shown that most Asian country's GDP are stationary. However leveraging on past research (e.g. refer to Nelson and Plosser, 1982) we will assume that the IPI is indeed non-stationary. The differenced form test of PP resulted in all variables being stationary. The optimal lag based on the AIC and SBC results gave us a range of 1 to 4 and therefore we chose 3 as the optimal lag for this test as the results in using 3 lags allowed us to pursue with the VECM test.

TABLE 1 – ADF Unit Root Test

Variable	Coefficient	Critical Value	Implication
Variables in Level Form			
LFBMEMS	2.32	3.48	Non-stationary
LDJTIMYL	2.49	3.48	Non-stationary
LCPI	2.99	3.48	Non-stationary
LIPI	2.12	3.48	Non-stationary

Variable	Coefficient	Critical Value	Implication
Variables in Differenced Form			
DLFBMEMS	4.43	2.90	Stationary
DLDJTIMYL	4.34	2.90	Stationary
DLCPI	4.59	2.90	Stationary
DLIPI	8.77	2.90	Stationary

TABLE 2 - Philips Perron Unit Root Test

Variable	Coefficient	Standard Error	Implication
Variables in Level Form			
LFBMEMS(-1)	.048	.036	Non-stationary
LDJTIMYL(-1)	.041	.034	Non-stationary
LCPI(-1)	.017	.015	Non-stationary
LIPI(-1)	.44	.10	Stationary

Variable	Coefficient	Standard Error	Implication
Variables in Differenced Form			
DLFBMEMS(-1)	.87	.11	Stationary
DLDJTIMYL(-1)	.83	.11	Stationary
DLCPI(-1)	.54	.10	Stationary
DLIPI(-1)	1.5	.09	Stationary

6.2 Cointegration And LRSM

Having established the order of integration and lags, the next step is to run the Johansen cointegration test and the Engle Granger test. For the Johansen test we used a lag length of 6 and used a 95% critical value as a benchmark.

Applying the Johansen test for cointegration we found as per Table 3 that the cointegrating vector from the Maximal Eigenvalue test is 1 at a 95% significance level. The results from the Trace test also support the above results on the number of cointegrating vectors. We can hereby conclude that the relation between stock returns and inflation is not spurious and in the long run are in equilibrium. The second method applied is the Engle and Granger Residual Based Approach which failed to show any cointegration vector between the variables as shown in Table 4 including explanations as to why this could have happened. Nonetheless the

Johansen test will serve as our justification to continue with our test as to whether stock returns and inflation have a one to one relationship in the long run. Moreover to ensure that the coefficients of the cointegrating vectors are consistent with both established theory and apriori information of the economy, the LRSM test will be applied.

A third method to test for cointegration is by using the Autoregressive-Distributed Lag (ARDL) estimation with its main advantage being applicable irrespective whether the time series data are I(1) or 1(0). The first step of ARDL which looks at the F statistics of each variable assuming it is the dependent variable suggests that there exists a long run relationship among all the variables with FBMEMS, DJTIMYL and CPI being the long run forcing variables and IPI as the explained variable. This result is in line with the VECM test results which will be shown later in Table 7. The second step of ARDL intends to estimate the long-run coefficients of the said variables including their standard errors and the associated (error correction model) ECM. The F statistics from the ECM table which test the existence of a long run relationship is significant when compared to the F critical of 3.625 (as computed by Pesaran et al., 1996) hence supports the previous test (*Johansen ML*) that there is a cointegrating vector among the variables.

TABLE 3 - *Johansen ML* Results for Multiple Cointegrating Vectors – FBMEMS, DJTIMYL, CPI and IPI (1996M12-2012M09)

Maximum Eigen Value Statistics

Null	Alternative	Statistic	95% Critical	90% Critical
r = 0	r = 1	37.63*	27.42	24.99
r<= 1	r = 2	10.72	21.12	19.02

Trace Statistics

Null	Alternative	Statistic	95% Critical	90%Critical
r = 0	r>= 1	54.88*	48.88	45.70
r<= 1	r>= 2	17.25	31.54	28.78

The underlying VAR model is order of 3 and is computed using 69 monthly observations.*Indicates significance at the 5% level or more.

Note: The first statistics refer to Johansen's log-likelihood based on maximal eigenvalue and trace test statistics based on cointegration with unrestricted intercepts and no trends in the VAR. From the above results we select 1 cointergrating vector based on the eigenvalue statistics.

TABLE 4 - *Engle & Granger* Residual Based Approach Results for Cointegrating Vectors - FBMEMS, DJTIMYL, CPI, IPI, (2006M12 to 2012M9)

	Test Statistic	LL	AIC	SBC	HQC
DF	-4.0227	156.3117	155.3117	154.2323	154.8865
ADF(1)	-2.1517	161.0620	159.0620	156.9031	158.2115
ADF(2)	-2.0913	161.1187	158.1187	154.8804	156.8430
ADF(3)	-1.5761	161.5482	157.5482	153.2304	155.8472

95% critical value for the Dickey-Fuller statistic = -4.2732

The second statistics refer to Engle and Granger's Residual Based Approach using ADF test statistics based on Ordinary Lease Squares (OLS). Although the test results fail to reject the hypothesis of no cointegrating vectors, given the limitation of the test that's able to detect at most one cointegration based on residuals and the established Fisher hypothesis theory we conclude that there exists a cointegrating vector of 1 which is supported by the Johansen's test as well.

TABLE 5 - Error Correction Representation for the Selected ARDL Model
ARDL(1,1,0,0) selected based on Schwarz Bayesian Criterion

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
dLDJTIMYL	.86	.05	16.96 [.00]
dLCPI	-.13	.08	-1.64 [.105]
dLIPI	.06	.07	.81 [.416]

dCONSTANT	2.10	.65	3.24	[.002]
ecm(-1)	-.49	.12	-4.11	[.00]

****

F-stat. F(4, 55) 93.72 [.000]

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Note: Comparing the F statistic of 93.72 with an F critical of 4.378 (as computed by Pesaran et al.,1996 based on intercept and no trend table at 5% significance level) we conclude that there exists a cointegrating vector among the variables.

The exact identifying test conducted in Table 6 uses the FBMEMS variable for normalization and resulted in two out of three being significant i.e. DJTIMYL and IPI variables. Surprisingly the CPI variable was found to be insignificant which is against the Fisher hypothesis. Although the CPI came out to be insignificant but since theory has proven the significance of the said variable it is impossible to omit it from the variables.

The next step which is over identification added a restriction of zero (0) to the CPI variable whilst the X^2 test was accepted. Therefore we are able proceed with the rest of the paper with Panel B but as mentioned we will still include the CPI variable as there is a strong backing of theory that supports the inclusion of it.

Also worth mentioning that since the first four steps including LRSM is merely testing theory there will be no equality sign in the below equation. CPI's coefficient has an incorrect sign as CPI and FBMEMS theoratically have a positive correlation (fisher hypothesis). This could be explained by research that have shown a negative short run relationship between inflation and stock returns and given the limited observations the results aren't suprising. As for IPI, though some studies have shown a positive relation does exist with output, past research have shown that index would be correlated if possesing the following charecteristics is such as a high market capitalization to GDP ratio, English legal origin and the number of listed domestic companies and initial public offerings. Given that Shariah indices lacks the above, it is unlikely to have a positive relation with IPI.

Cointegration Equation:

1LFBMEMS : -.12LCPI + -.63LDJTIMYL+ -1.60LIPI

TABLE 6 - Exact and Over Identifying Restrictions on the Cointegrating Vector

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	Panel A	Panel B
LFBMEMS	1.00	1.00
	(*NONE*)	(*NONE*)
LDJTIMYL	-.59*	-.63*
	(.130)	(.104)
LCPI	-.12	.00
	(.187)	(*NONE*)
LIPI	-1.71*	-1.60*
	(.561)	(.484)
LLikelihood	723.80	723.56
Chi-Square	None	.477[0.490]

****

Note: The output above shows the maximum likelihood estimates subject to exactly identifying (Panel A) and over identifying (Panel B) restrictions. The 'Panel A' shows that two out of four variables are significant (standard errors are in parenthesis). *Indicates significance level at 5% level. The over-identifying restriction on CPI equals to zero is accepted (with a p-value of 0.49 error while failing to reject the null) as a result we were able to proceed with 'Panel B' throughout the rest of the paper.

Having establised a relationship between stock returns and inflation we have yet to identify which of the

variables are insignificant and significant. The VECM test will show the long term *Granger causality* by depicting which of the variables are exogenous and endogeneous. Looking at Table 7 it is interesting to note that apart from the IPI variable all other variables are endogenous. This indicates that contrary to the Fisher hypothesis on the relation of stock returns with inflation, both indices are exogenous and reflects their indepence from CPI.

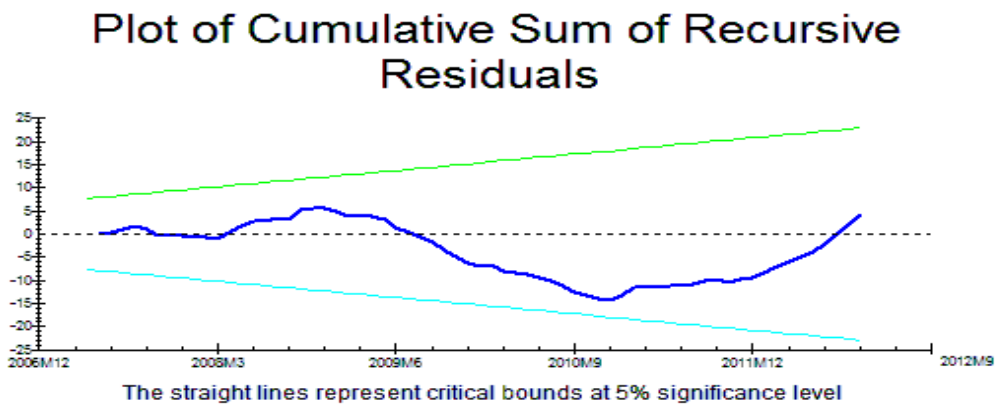
TABLE 7 - Error Correction Models – FBMEMS, DJTIMYL, CPI, and IPI

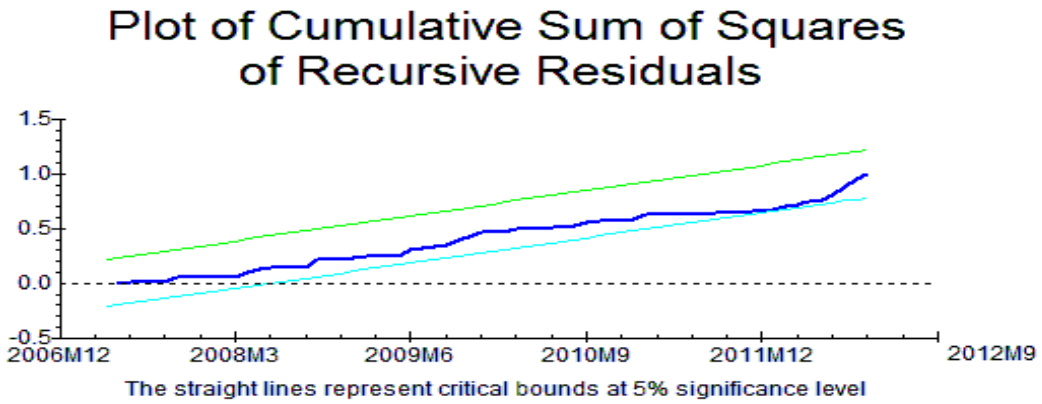
Dependent Variable	dlfbmems	dldjtimyl	dlcpi	dlipi
dlfbmems(1)	-.22 (.33)	.05 (.34)	.03 (.03)	-.32 (.21)
dldjtimyl(1)	.35 (.32)	.019 (.32)	-.01 (.03)	.17 (.19)
dlcpi(1)	-1.36 (1.24)	-1.28 (1.26)	.48 (.12)	.42 (.78)
dlipi(1)	.28 (.21)	.21 (.21)	.002 (.02)	-.26 (.13)
ECM(-1)	-.05 (.15)	.03 (.15)	-.013 (.015)	.57 (.096)*
Chi-sq SC	19.46[.078]	21.52[.043]	25.73[.012]	23.32[.025]
Chi-sq FF	.24[.621]	.01[.915]	.006[.937]	2.79[.095]
Chi-sq N	4.31[.116]	25.46[.000]	1635.4[.000]	4.32[.115]
Chi-sq Het	.32[.569]	.56[.455]	9.12[.003]	.10[.747]

Note: Standard Errors are given in parenthesis.*Indicates significance at 5% level. The diagnostics are chi-squared statistics for: serial correlation (SC), functional form(FF), normality (N), and heteroskedasticity (Het) and indicate that the equations are not fully specified with some (N) and (SC) available due to limited observations and nature of the data which is time series.

The diagnostic test on the all the equations of the error correction model(testing for the presence of auto correlation, functional form, normality, and heteroskedasticity) indicates that there are some normality and serial correlation in CPI and DJTIMYL which could be due to the small number of observations and nature of the data which is time series. Nonetheless, since most of the test are correct we consider it is sufficient to proceed giving factors such the purpose of the research and time constraint. The CUSUM and CUSUM SQUARE tests (Figure 1) were also conducted to check the stability of the coefficeints and resulted in a stable set of coefficients through out the all variables.

Figure 1- FBMEMS, DJTIMYL, CPI and IPI





6.3 Variance Decomposition And Impulse Response

The following method of Variance Decomposition Function (VDF) tends to shed more light on the *Granger causality* by indicating the relative degree of exogeneity and endogeneity of each variable. The level of exogeneity and endogeneity can be specified by what extent the variable is explained by its own past. The variable explained mostly by its own shocks and not the opposite is considered to be the most independent of all. Looking at Table 8 with a forecast horizon at month 15, the shock on different variables towards explaining the error variance forecast of FBMEMS are as follows: FBMEMS (own shock) (79%), DJTIMYL (80%), CPI (27%) and IPI (1%). The tabulated results exibits that inflation (CPI) has a significant role in explaining the forcast error variance of the Shariah index (FBMEMS). Summarizing Table 8 below, the most exogenous variable (looking at month 15 which is more representing the long-run) are in the following order:

i. DJTIMYL with 0.83	ii. FBMEMS with 0.79	iii. CPI with 0.76

IPI as per the VECM test has shown it to be the only endogenous variable with a shock on itself explaining only .17 of the relative variance.

Table 8 – Generalized Variance Decompositions

Percentage of Forecast Variance Explained by Innovations in:

Horizon: Months	Variable	ΔLFBMEMS	ΔLDJTIMYL	ΔLCPI	ΔLIPI
	Relative Variance in ΔLFBMEMS				
1		.96	.86	.03	.07
5		.87	.83	.18	.02
15		.79	.80	.27	.01

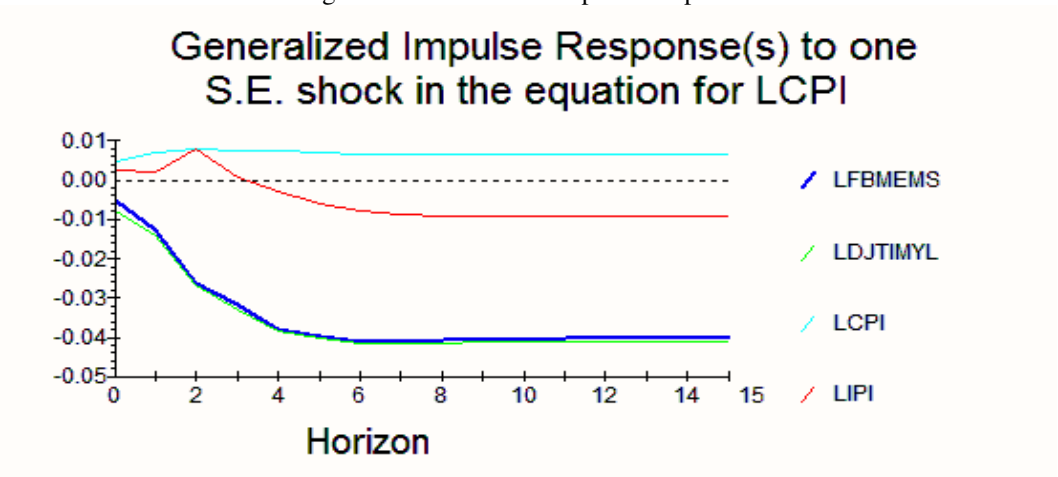
Horizon: Months	Variable	ΔLFBMEMS	ΔLDJTIMYL	ΔLCPI	ΔLIPI
	Relative Variance in ΔLDJTIMYL				
1		.84	.98	.05	.03
5		.75	.89	.19	.01
15		.67	.83	.28	.003

Horizon: Months	Variable	ΔLFBMEMS	ΔLDJTIMYL	ΔLCPI	ΔLIPI
	Relative Variance in ΔLCPI				
1		.003	.01	.98	.03
5		.07	.02	.83	.09
15		.12	.04	.76	.11

Horizon: Months	Variable	ΔLFBMEMS	ΔLDJTIMYL	ΔLCPI	ΔLIPI
	Relative Variance in ΔLIPI				
1		.04	.02	.01	.93
5		.44	.04	.05	.45
15		.67	.02	.12	.17

The applied generalized impulse response function exibited in Figure 2 shows that both the Shariah index (FBMEMS) and conventional index (DJTIMYL) are significantly impacted by a one per cent standard deviation shock to the inflation (CPI) variable.

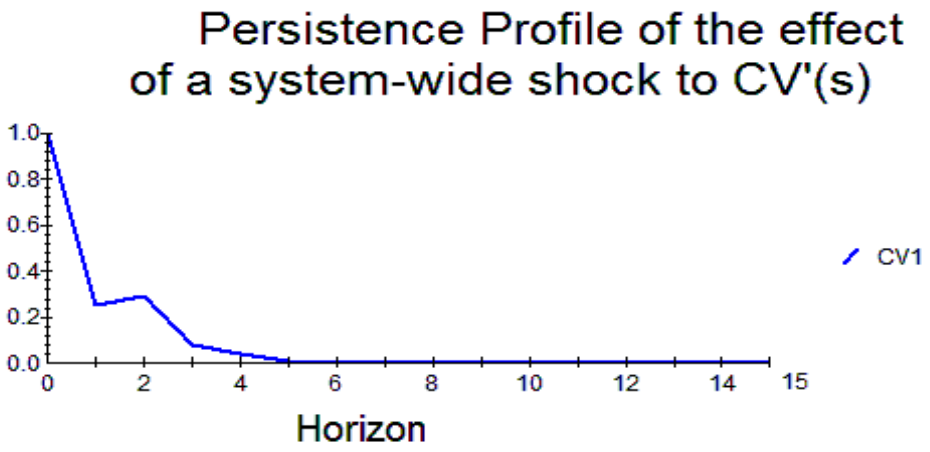
Figure 2 – Generalized Impulse Responses



Note: The above Generalized Impulse Response function is generated when we impose a one standard error shock in the equation for CPI.

A step further to see the impact on the whole cointegrating relationship using the persistance profile test (Figure 3) showed a period of five (5) months is what it takes for all the variables to return to equilibrium.

Figure 3 – Persistence Profile



Note: The above graph shows the persistence profile from a system wide shock, which indicates that it takes appoximately 5 months for the entire system to reach equilibrium.

7.0 Conclusion, Implication and Limitation

The effectiveness of hedging against inflation depends crucially on whether the relation between stock returns and inflation is positive as per the Fisher hypothesis. This paper intends to investigate this relation in the context of an open economy with established stock exchange markets accomodating both Shariah

compliant and non compliant indices such as Malaysia. However, given the relatively young age of Shariah compliant indices, long span of data is a perennial problem that most studies on Islamic finance are facing when involving time series. Nonetheless, using a vector error correction approach (VECM) we are able to test and see whether we are able to reconcile the theoretical long run relationship between stock returns (particularly Shariah compliant stocks) and inflation to that of reality. Moreover, the functions were also proven to be stable as shown by the CUSUM and $CUSUM^2$ test.

Our results of the cointegration test support the notion that there tends to exist a relationship between stock returns and inflation. However the LRSM showed that inflation (CPI) is insignificant and the VECM test supports this with results of both FBMEMS and DJTIMYL being highly exogenous. The generalized VDC test however shows that as the time horizon expands, the degree of change in both FBMEMS and DJTIMYL explained by a shock in CPI increases which in a way supports the Fisher hypothesis. In comparison between FBMEMS and DJTIMYL, CPI tends to explain slightly more the variance change of DJTIMYL although negligeble. Although the orthogonolized VDC test has its drawbacks for the sake of comparison and robustness, the results from the test were found to be similar by way that a shock in inflation (CPI) tends to explain more and more the variance change of both FBMEMS and DJTIMYL the longer the time horizon. We finally see the relation between stock returns and inflation through the generalized impulse response, whereby the time path of the response of both stock returns i.e. FBMEMS and DJTIMYL to a shock in inflation (CPI) exibits a similar negative response.

Although the results show a negative relation between both stock indices and inflation, the results are similar with previous studies that looked into the short run relationship between stock returns and inflation. Given the limited time horizon, the result of this paper isn't surprising. In a nutshell the implications from this paper is that the impact of inflation on stocks are similar irrespective of it being Shariah compliant or otherwise. Hence Muslim investors who are reluctant to invest in Shariah compliant stocks shouldn't have any prejudice towards Shariah compliant stocks as the impact of inflation is the same. As to whether stocks serve as a hedge against inflation, in the short run it seems that the results are against the Fisher hypothesis. Nonethe less the limitation of a longer time horizon should encourage others to conduct further tests given a longer time span is available.

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