

## **Are Shariah and Non-Shariah Indices Related? Some Empirical Evidence from India**

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**Abstract:** *The article appraises dynamic interaction between Shariah and non-Shariah indices in India. The study uses an estimation of granger causality test and vector error correction model. The results suggest strong cause bi-directional relationship influences of BSE Sensex on Nifty 50 and Nifty Shariah 25 index and its uni-directional influences on Nifty Shariah 50 and Nifty Shariah 500 index. Thus, while the results suggest that Nifty 50 has bi-directional casual influences on BSE and Nifty Shariah 25 index but its uni-directional significant cause on Nifty Shariah 50 index and Nifty Shariah 500 index. In the case of BSE Shariah index does not cause to BSE as well as Nifty 50. An outcome of VECM reflects model is fitted between BSE and BSE Shariah index, Nifty and Nifty Shariah indices, respectively. Indian Islamic Shariah indices are working under supervision of the standard & poor and also in Shariah responsible index. This article appreciates the industrialist as well as investors for the investment of Shariah compliants in India.*

**Keywords:** *BSE, NSE, Shariah Indices, Causality, Vector Error Correction Model*

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### **I. Introduction**

Islamic finance has recorded huge growth rate on world scale. There are several Islamic finance products working in globe which are unfolded opportunities for investors. In the queue of success U.K. and Hang Kong was opened their opportunities doors for high profile Islamic bond (Sukuk) with debuts in 2014. In the coming years, African countries promote in the \$100 billion-a-year debt market. Credit rating agency Standard & Poor's estimated total Sukuk issuance across the world for 2015 at \$100-\$115 billion. For comparison, the global debt market stands at around \$100 trillion in amounts outstanding. The researcher used time series & forecasting to predict the trend of Islamic assets in billions USD. Al-Hersh is interpreted Islamic assets in 2020 will be around \$ 3,034.19 million. Islamic finance is working worldwide efficiently in stock market, Insurance (Takaful) and Islamic bond (Sukuk). Globally, Islamic finance is estimated to be worth about \$300 billion, growing at 20% annually. India has 19.8 percentage of Muslim population, which is highest in a non-Islamic country. It should have been in the forefront of Islamic banking initiatives, but it is yet to be permitted here. It will hugely benefit to the Indian economy by attracting investments from the cash rich Middle Eastern economies on the lookout for new investment destinations (AL-Hersh, 2014). India as compared to many other developing countries has been a star performer in recent years, both in terms of returns and attracting funds from overseas. Islamic finance promotes economic reforms, successful service industry, growing manufacturing activity, high corporate profitability. It also supported buoyant equity markets, robust merchandise exports & imports. Islamic finance is brightening prospects for the Indian economy in the future (Sadeghi, 2008). Islamic finance is not only financial exclusion or conservative sections of Muslim population but also to attract capital from Muslim investors of India. Islamic finance has increased foreign investments in recent years due to increased revenue from oil & gas sectors (BSE BTI Ltd., 2010). As it is mentioned earlier, around 50% of Indian stocks are believed to be Shariah complaint, but very few companies realize the potential, which is primarily due to non-availability of data on Shariah based investment. Investors, local as well as global, will find Indian stock market a better place to invest in all sectors like IT, pharmaceuticals, automobile and mining. Islamic financial institutions that are looking for investment opportunities beyond the Arabian Gulf can find Indian stock market a very good place to put their funds (Srinivasan, 2010). To evaluate the financial performance of Shariah indices are better to the conventional indices not only in Malaysia but also worldwid. Islamic finance contributing in the wealth of economy (Ahmad S. Z., 2008), Worldwide studies are conducted to measure the perception towards Islamic financial products and services, the Malaysian customers are patronage towards the Islamic financial products (Dusuki & Abdullah, 2007). International conference held in Kochi there number of eminent scholar figure discussed about the huge potential of Islamic finance in India (Srinivasan, 2010), Shariah investment is ethical investment vichle in India (Natarajan & Dharani, 2012).

India is focused on attaining inclusive growth which should be faster and sustainable. Growth will occur when investment comes. Since there has been low domestic investment and hence some foreign investment is allowed in the recent past. Though there are other avenues of finance and Islamic finance is one of those. Still the concept is in nascent stage in India due to awareness or other reasons; the growth can be achieved by exploring the investment through Islamic finance mode which is popular in the US, UK and other countries. To promote Islamic finance in India, the Government of India started the operation of S&P CNX Nifty Shariah, S&P CNX 500 Shariah in NSE on 1<sup>st</sup> Jan, 2007 and Shariah Index in BSE on 28 Dec, 2010 in India. Growth of Islamic finance will lead to growth of stock market and more finance will come in India.

### **Objectives of the Study**

- To examine the dynamic interaction between Shariah indices and Non-Shariah indices.
- To give the suggestion for implementation of Islamic finance in India.

### **Hypothesis of the Study**

To accomplish these objectives the following null hypotheses have been developed for the empirical testing.

H<sub>01</sub>: There is no long-run relationship between Shariah and Benchmark indices.

H<sub>02</sub>: There is no stationarity in data of Shariah and Benchmark indices.

H<sub>03</sub>: There is no co-integration between Shariah and Benchmark indices.

H<sub>04</sub>: There is no bi-direction relationship between Shariah and Benchmark indices.

H<sub>05</sub>: There is no uni-direction relationship between Shariah and Benchmark indices.

## **II. Literature Review**

There are numerous study conducted on relationship between the different sectoral indices in India. The study examined the performance of the MSCI India Islamic Index and MSCI Malaysia Islamic for the time period of 2003-2013. this study focused on the pre and post crisis period. This study measure the risk and return by the through of beta and standard deviation. The study revealed that Indian Islamic indices has underperformed in comparison to Malaysia Islamic indices. But outperformed in the respect of conventional index during the crisis period. However in the both cases Islamic Index outperformed in Malaysia (**Habib & Islam, 2014**). This study compared the risk and return of the S&P CNX Nifty Shariah index and S&P CNX Nifty index. The analysis focused on the day wise, month wise and quarter wise from 2nd January 2007 to 31st December 2010. The results of the study found that there is a significance return difference between Shariah and benchmark indices during third quarter. Finally, the study found that Ramazan effect prevailed in the Shariah index during third quarter of the study period (**Dharani & Natarajan, 2011**). This study measured the performance and relationship between KLSI and KLCE over the period of April 1999 to December 2005 in Malaysia. The study applied risk adjusted performance measurement techniques includes Sharpe, Treynor and Jensen. To identified the long run relationship by applying the Johansen co-integration test and Granger causality test. The result of the study found that there is an insignificant return difference and long run bi-directional relationship between both indices (**Albaity & Ahmad, 2008**). The study accessed the risk and return of Dow Jones Islamic World Index, Dow Jones World index and Dow Jones Sustainability (DJS) World index. Weekly data were used for indices. This study used LIBOR (the risk-free rate) during period January 5, 2000 to August 30, 2004 by employing CAPM. The result of the study reveals that the most popular index is part of competitive market. Conventional indices were underperformed in comparison to the Islamic indices. The study concluded that Islamic indices investors are reaping the return from the investment and not suffering from any kind of cost (**Hakim & Rashidian, 2004**). The study compared the risk and return performance of Kuala Lumpur Shariah Index (KLSI) with Kuala Lumpur Composite index (KLCE) during the period 1999 to 2002. The sample period of the study is divided into growing period, decline period and overall period. They have employed relative return technique, Standard deviation, risk adjusted performance measurement and two sample t - test to measure the performance of both indices. The study found that KLSI underperforms during overall period and decline period but it over perform in growing period. Finally they find that there is no significant difference in performance of both indices during three sample period (**Ahmad. & H., 2002**). The study examined the performance of the Islamic fund and conventional fund, they may have significance difference. For the study 65 unit trust funds were selected from both Islamic and conventional funds. Monthly data were collected from 1992 to 2001. The measure of risk performance applied through the risk-adjusted performance measures. The finding revealed that Islamic and conventional funds were performed equally well. Specially both funds were under performed but not statistically proved. It also influenced by the economic condition. Islamic funds were better in the bearish time and other sight conventional funds were performed better in the bullish period of the time. Conventional funds were better diversifying in comparison to the Islamic funds (**Abdullah, Mohamad, & Hassan, 2002**). This study measured the performance of Islamic and conventional mutual funds in Malaysia from the time period of 1996 - 2009. The observation of the aggregate returns of the 128 Islamic

mutual funds and 350 Conventional mutual funds, Consistently 160 mutual funds were well performed market portfolios. The outcome of the study revealed that Islamic funds are less performed in comparison to the conventional funds. In the opposite study revealed that Islamic funds are less riskier than the conventional funds. But basically Islamic and conventional funds were opened upon the market portfolios (**Mansor & Bhatti, 2011**). The study investigated the relationship between risk and return of Islamic portfolio by using the cross sectional regression analysis. The finding of this paper suggested that Beta could be used as a tool to explain the cross sectional difference in the Islamic unit trust and also measure the market risk. It also found that Beta is higher in the down market in comparison to the up market. Beta and R-square both are appropriate measurement of the conditional relationship (**Ismaila & Shakranib, 2003**).

### III. Research Methodology

This research work is an effort to investigate the multi-dimensional approach of Islamic finance in India. To compare the relationship between Shariah and Non Shariah indices in India.

#### Data Collection

This research is based on the secondary data which consists of the daily closing prices from 1<sup>st</sup> April 2010 to 31<sup>st</sup> March 2015 of Bombay Stock Exchange, Nifty Stock Exchange, S&P BSE 500 Shariah Index, Nifty 500 Shariah, Nifty 50 Shariah Index and Nifty Shariah 25 Index. Data was collected from the website of BSE India, NSE India and Asian Index.

**Table 1, Description of Data**

Ticker	Islamic and Conventional Indices	Data Sources
BSE Ltd.	S&P BSE SENSEX	www.bseindia.com
BSE 500 Shariah	S&P BSE 500 Shariah Index	www.asiaindex.co.in
NIFTY50	Nifty Stock Exchange	www.nseindia.com
NIFTY500 Shariah	Nifty 500 Shariah Index	www.nseindia.com
NIFTY50 Shariah	Nifty 50 Shariah Index	www.nseindia.com
NIFTY Shariah 25	Nifty Shariah 25 Index	www.nseindia.com

#### Tools & techniques of the Study

In this study, daily returns, without any adjustment for dividends, has computed by using this formula:

$$R_t = \ln(P_t / P_{t-1}) * 100$$

Where:

R<sub>t</sub> = is the daily return at time t of the Shariah and Non-Shariah Indices.

P<sub>t</sub> = is the daily price in time period t.

P<sub>t-1</sub> = is the daily price one period t.

For analyzing the hypothesis various tests are applied like, Augmented Dickey–Fuller (ADF) test, Johansen Test of co-integration, Vector Error Correction Model (VECM) and Granger test for the causality. Data preparation begins primarily with checking of the entire closing prices of Shariah and benchmark indices for the log returns. The following steps have been followed during the data preparation process.

To check the stationarity of the data ADF test is used. If the data found to be stationary then the Johansen test of co-integration can be applied, otherwise data need to be made stationary. For making data stationary log returns or first difference technique can be used. After making data stationary Johansen test of co-integration is applied. If there is one co-integration equations then go for the VECM (Vector Error Correction Model). At last run the Engle Granger Test for checking the unidirectional and bi-directional relationship between Shariah and benchmark indices (BSE and NSE). Eview 8 version has been used for the analysis of data.

### IV. Results And Discussion

This part of study narrates the risk and return behavior of BSE, NSE and Shariah indices. The daily return of BSE, NSE (Benchmark indices) and Shariah indices are calculated as natural logarithm of today price divided by tomorrow price.

**Table 2: Descriptive Statistics of Daily Returns of Shariah and Conventional Indices**

Property	BSE	BSE Shariah	Nifty	Nifty Shariah 50	Nifty Shariah 500	Shariah 25
Mean	0.0697	0.0793	0.0039	0.0619	0.0751	0.0773
Median	0.0680	0.0867	0.0007	0.0243	0.0752	0.0695
Maximum	15.9900	14.2131	4.8069	16.6192	15.3070	16.2042
Minimum	-6.0084	-4.9127	-0.0602	-5.3521	-5.1484	-4.8664
Std. Dev.	1.2189	1.0275	0.1252	1.1657	1.0727	1.0883
Skewness	1.5350	1.6198	37.9923	1.8849	1.8118	2.1983
Kurtosis	23.32	27.76	1458.42	30.70	30.83	35.53
Jarque-Bera	26203	38689	132000	48491	48871	66856
Probability	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Sum	103.7949	118.1062	5.7793	92.0944	111.7719	115.1689
Sum Sq. Dev.	2210.82	1570.84	23.31	2022.13	1712.24	1762.49
Observations	1489	1489	1489	1489	1489	1489

**Source:** Researcher's estimates by excel

Table 2, shows the summarize data of Shariah and Conventional indices. The distribution of all indices data are positively skewed that means number of high values are more in comparison low values in the time series data. The kurtosis value of Islamic and conventional indices are greater than 3 that mean leptokurtic distribution, sharper than the normal distribution. The volatility of variables is in terms of standard deviation (SD) as percentage (%) of means highest in BSE (12.18 percent) and lowest in NSE (1.25 percent), which means BSE (Sensex) is high volatile in comparison to all indices (Shariah and NSE). As per Jarque-Bera statistics (JB-test), Shariah and Benchmark indices (BSE and NSE) are non-normal at the confidence interval of 95 percent, since P-value is less than 0.05. So, it is also needed to convert the all indices series into stationary series.

**Table 3:** Correlation Matrix of Shariah with Conventional Indices

Indices	Nifty	BSE	Nifty 500	BSE 500	BSE Shariah	Nifty Shariah 50	Nifty Shariah 500	Shariah 25
Nifty	1	0.1893	0.1906	0.1863	0.1887	0.1766	0.1774	0.1758
BSE		1	0.9721	0.9772	0.9361	0.8053	0.8103	0.7716
Nifty 500			1	0.9965	0.9376	0.7882	0.8171	0.7563
BSE 500				1	0.9402	0.7898	0.8182	0.7603
BSE Shariah					1	0.8328	0.8466	0.8116
Nifty Shariah 50						1	0.9868	0.6680
Nifty Shariah 500							1	0.6715
Nifty Shariah 25								1

**Source:** Author's estimates, research calculation.

Table 3, Correlation coefficient measures the strength and direction of linear relationship between two variables. This correlation matrix shows the correlation between all indices of data set. NSE (Nifty) has weak positive relationship with all other indices. BSE (Sensex), CNX Nifty 500, BSE 500 and CNX Shariah index have strong positive linear relationship with all selected indices. Shariah 25 index have strong positive correlation with BSE, Nifty 500, BSE 500 and BSE Shariah but it has moderate relationship with Nifty Shariah and CNX Shariah. This relationship is similar to the result of (Ahmad. & H., 2002), Malaysia and (Dharani & Natarajan, 2011) in India.

**Table 4:** Unit Root Test on ADF- Test of Shariah and Conventional Indices

Variables	Models		Augmented Dickey–Fuller Test Statistic					
			t-Statistic	Prob.*	Coefficient	1% level	5% level	10% level
BSE	M1	Intercept	-36.2070	0.0000	-0.9331	-3.4345	-2.8633	-2.5677
		Trend & Intercept	-36.2104	0.0000	-0.9337	-3.9642	-3.4128	-3.1284
	M2	Intercept	-17.5273	0.0000	-9.3828	-3.4346	-2.8633	-2.5678
		Trend & Intercept	-17.5224	0.0000	-9.3831	-3.9643	-3.4129	-3.1284
BSE Shariah	M1	Intercept	-36.4143	0.0000	-0.9383	-3.4345	-2.8633	-2.5677
		Trend & Intercept	-36.4054	0.0000	-0.9385	-3.9642	-3.4128	-3.1284
	M2	Intercept	-17.3123	0.0000	-9.0150	-3.4346	-2.8633	-2.5678
		Trend & Intercept	-17.3078	0.0000	-9.0156	-3.9643	-3.4129	-3.1284
NSE	M1	Intercept	-391.209	0.0001	-0.9967	-3.4345	-2.8633	-2.5677
		Trend & Intercept	-390.735	0.0001	-0.9968	-3.9642	-3.4128	-3.1284
	M2	Intercept	-16.8281	0.0000	-8.2644	-3.4346	-2.8633	-2.5678
		Trend & Intercept	-16.8227	0.0000	-8.2646	-3.9643	-3.4129	-3.1284
Nifty Shariah	M1	Intercept	-37.2404	0.0000	-0.9606	-3.4345	-2.8633	-2.5677
		Trend & Intercept	-37.2373	0.0000	-0.9610	-3.9642	-3.4128	-3.1284

	M2	Intercept	-17.4323	0.0000	-9.5369	-3.4346	-2.8633	-2.5678
		Trend & Intercept	-17.4274	0.0000	-9.5372	-3.9643	-3.4129	-3.1284
CNX 500 Shariah	M1	Intercept	-36.5426	0.0000	-0.9418	-3.4345	-2.8633	-2.5677
		Trend & Intercept	-36.5411	0.0000	-0.9422	-3.9642	-3.4128	-3.1284
	M2	Intercept	-17.3677	0.0000	-9.1684	-3.4346	-2.8633	-2.5678
		Trend & Intercept	-17.3631	0.0000	-9.1690	-3.9643	-3.4129	-3.1284
Shariah 25	M1	Intercept	-36.8489	0.0000	-0.9502	-3.4345	-2.8633	-2.5677
		Trend & Intercept	-36.8435	0.0000	-0.9505	-3.9642	-3.4128	-3.1284
	M2	Intercept	-17.2294	0.0000	-9.3404	-3.4346	-2.8633	-2.5678
		Trend & Intercept	-17.2245	0.0000	-9.3407	-3.9643	-3.4129	-3.1284

**Source:** Researcher's estimates by eviews

Table 4: shows ADF test statistic. ADF Test is used to check the stationarity of the data. There are three assumptions to accept the ADF test for the stationary.

1. T-test Statistic is more than 1 percent, 5 percent and 10 percent level of critical value.
2. P-value (Probability value) is less than 5%.
3. And the coefficient should be negative.

These assumptions are followed by Indian Islamic Stock and Benchmark indices. This ADF test has been checked in Model 1 (level) on intercept and trend & intercept. And also checked in Model 2 (first difference) with intercept and trend & intercept both. The outcome shows that all Shariah and Benchmark indices are stationary. Therefore the data can be used for the Johansen test of statistic.

#### Johansen's Co-integration Test

**Table 5, Johansen's Co-integration Test of BSE and BSE Shariah Indices**

Trace Statistic					Max-Eigen Statistic				
Hypothesized No. of CE(s)	Eigen value	Trace Statistic	Critical Value 0.05	Prob.**	Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	Critical Value 0.05	Prob.**
None *	0.0492	130.9666	15.4947	0.0001	None *	0.0492	73.8931	14.2646	0.0000
At most 1 *	0.0382	57.0735	3.8415	0.0000	At most 1 *	0.0382	57.0735	3.8415	0.0000

**Source:** Researcher's estimates by eviews

The results of Johansen co-integration test are shown in table 5. Trace test indicates 2 co-integration equations at 0.05 levels of significance. It presents long run equilibrium between BSE Shariah and BSE (Sensex). Max-Eigen test also indicates that there are 2 co-integration equations at the level of 0.05. It also shows that there is long run equilibrium between BSE Shariah and BSE (Sensex).

**Table 6, Johansen's Co-integration Test of Nifty and Nifty Shariah Index**

Trace Statistic					Max-Eigen Statistic				
Hypothesized No. of CE(s)	Eigen value	Trace Statistic	Critical Value 0.05	Prob.**	Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	Critical Value 0.05	Prob.**
None *	0.0489	125.4931	15.4947	0.0001	None *	0.0489	73.4994	14.2646	0.0000
At most 1 *	0.0349	51.9937	3.8415	0.0000	At most 1 *	0.0349	51.9937	3.8415	0.0000

**Source:** Researcher's estimates by eviews

Table 6: summarize the results of Johansen Co-integration test. Trace statistic and Max-Eigen statistic indicate that 2 co-integration equations at 0.05 levels of significance, it shows long run equilibrium between Nifty Shariah and Nifty.

**Table 7, Johansen's Co-integration Test of CNX Shariah Index**

Trace Statistic					Max-Eigen Statistic				
Hypothesized No. of CE(s)	Eigen value	Trace Statistic	Critical Value 0.05	Prob.**	Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	Critical Value 0.05	Prob.**
None *	0.0492	135.8211	15.4947	0.0001	None *	0.0492	73.9679	14.2646	0.0000
At most 1 *	0.0413	61.8533	3.8415	0.0000	At most 1 *	0.0413	61.8533	3.8415	0.0000

**Source:** Researcher's estimates by eviews

Table 7, outlines the Johansen Co-integration test and observed result of trace statistic and Max Eigen value. Trace statistic and Max-eigen both have 2 co-integration equations at 0.05 levels of significance. It shows long run equilibrium between CNX Shariah and Nifty.

**Table 8, Johansen’s Co-integration Test of Shariah 25 Index**

Trace Statistic					Max-Eigen Statistic				
Hypothesized No. of CE(s)	Eigen value	Trace Statistic	Critical Value 0.05	Prob.**	Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	Critical Value 0.05	Prob.**
None *	0.0495	133.7899	15.4947	0.0001	None *	0.0495	74.3033	14.2646	0.0000
At most 1 *	0.0398	59.4865	3.8415	0.0000	At most 1 *	0.0398	59.4865	3.8415	0.0000

**Source:** Researcher’s estimates by eviews

Table 8 shows the outcome of Johansen co-integration test statistics. An empirical result of Trace test and Max-Eigen indicate the rejection of null hypothesis at 5% critical values it means there is no co-integration vector. Trace test and Max-Eigen statistic indicate that 2 co-integration equations at 0.05 levels of significance. It shows long run relationship between Shariah 25 and Nifty.

**Table 9, Johansen’s Co-integration Test of Shariah and Benchmark Indices**

Trace Statistic					Max-Eigen Statistic				
Hypothesized No. of CE(s)	Eigen value	Trace Statistic	Critical Value 0.05	Prob.**	Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	Critical Value 0.05	Prob.**
None *	0.0704	418.4699	95.7537	0.0001	None *	0.0704	106.8905	40.0776	0.0000
At most 1 *	0.0661	311.5794	69.8189	0.0001	At most 1 *	0.0661	100.1384	33.8769	0.0000
At most 2 *	0.0523	211.4410	47.8561	0.0000	At most 2 *	0.0523	78.6956	27.5843	0.0000
At most 3 *	0.0383	132.7454	29.7971	0.0000	At most 3 *	0.0383	57.1361	21.1316	0.0000
At most 4 *	0.0299	75.6094	15.4947	0.0000	At most 4 *	0.0299	44.4260	14.2646	0.0000
At most 5 *	0.0211	31.1833	3.8415	0.0000	At most 5 *	0.0211	31.1833	3.8415	0.0000

**Source:** Researcher’s estimates by eviews

Table 9, Performance of Johansen co-integration test and empirical result of the Trace test statistic lead to the rejection of null hypothesis at 5% critical values. There is no co-integration vector. Trace test and Max-Eigen test indicate 5 Co-integration equations at 0.05 levels of significance. It shows the long run equilibrium between Shariah and Benchmark indices.

**Table 10: Pragmatic analysis of Vector Error Correction Mechanism (VECM)**

Variables	Coefficient	Std. Error	t-statistics
BSE	-1.848828	-0.07411	-0.03641
BSE Shariah	-1.112778	-0.08392	-13.2602
R-squared	.6270		
Adj. R-squared	.6251		
F-statistic	220.6627		
Prob(F-statistic)	0.0000		

**Source:** Researcher’s estimates by eviews

Table 10, The Error Correction rate of BSE coefficient (-1.8488) is negative and R-square is 62.70%, that means model is best fitted. And the value of F-statistic is less than 0.05 which again shows the model is best fitted. In the BSE Shariah coefficient (-1.1127) is negative and R-square is 62.70%, continuously F-statistic is less than 5% (0.0000) that means model is best fitted.

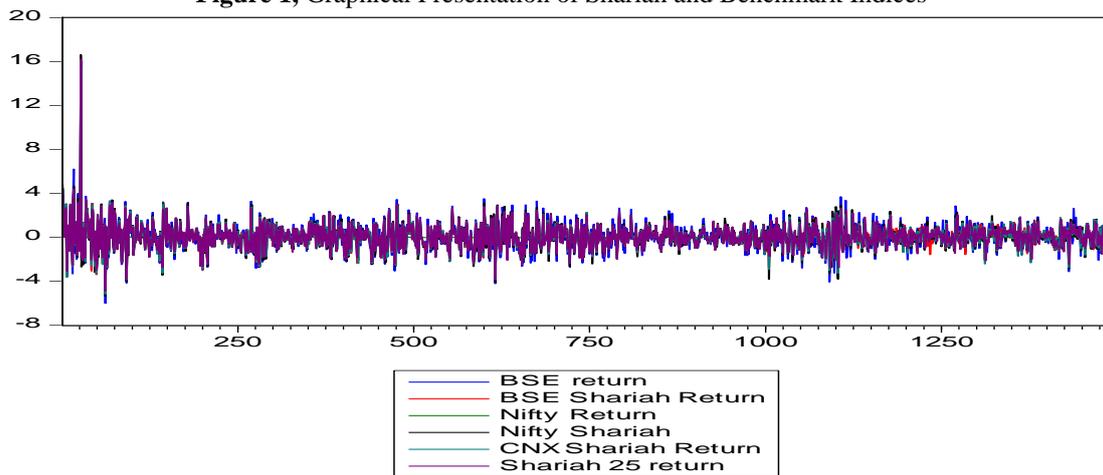
**Table 11:** Pragmatic analysis of Vector Error Correction Mechanism (VECM)

Variables	Coefficient	Std. Error	t-statistics
NSE	-0.0201	-0.0204	-0.9825
Nifty Shariah	-8.0163	-1.8790	-5.8627
CNX Shariah	-9.8851	-1.7129	-5.7710
Shariah 25	-5.6732	-1.6336	-4.7156
R-squared	.4996		
Adj. R-squared	.4954		
F-statistic	70.1835		
Prob(F-statistic)	0.0000		

**Source:** Researcher’s estimates by eviews

Table, 11 shows the outcome of VECM. In VECM all Coefficients are negative, R square is (49.96%) and F-statistic probability is less than 5% i.e. (0.0000). It means the VECM model is best fitted.

**Figure 1,** Graphical Presentation of Shariah and Benchmark Indices



**Table 12:** Paired Granger Causality Test of Shariah and Benchmark Indices

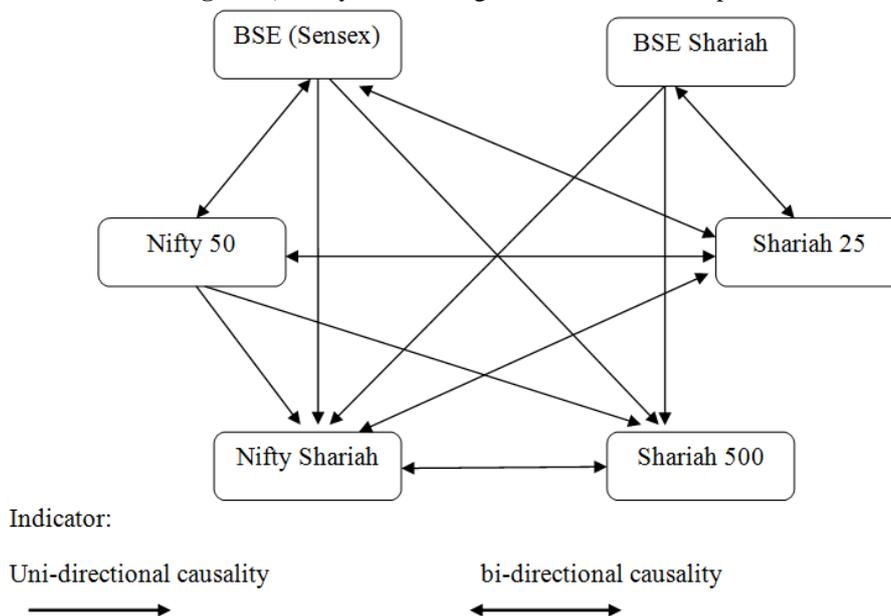
Null Hypothesis:	Obs	F-Statistic	Prob.
BSE Shariah does not Granger Cause BSE	1466	1.0063	0.4533
BSE does not Granger Cause BSE Shariah		1.0614	0.3828
Nifty does not Granger Cause BSE	1466	2.0379	0.0026
BSE does not Granger Cause Nifty		2.2494	0.0006
Nifty Shariah does not Granger Cause BSE	1466	0.8097	0.7220
BSE does not Granger Cause Nifty Shariah		5.5170	0.0000
Nifty Shariah 500 does not Granger Cause BSE	1466	0.8940	0.6077
BSE does not Granger Cause Nifty Shariah 500		6.2400	0.0000
Shariah 25 does not Granger Cause BSE	1466	1.5323	0.0512
BSE does not Granger Cause Shariah 25		8.5165	0.0000
Nifty does not Granger Cause BSE Shariah	1466	0.8875	0.6167
BSE Shariah does not Granger Cause Nifty		0.9504	0.5291
Nifty Shariah 50 does not Granger Cause BSE Shariah	1466	0.8510	0.6669
BSE Shariah does not Granger Cause Nifty Shariah 50		6.0693	0.0000
Nifty Shariah 500 does not Granger Cause BSE Shariah	1466	0.8031	0.7306
BSE Shariah does not Granger Cause Nifty Shariah 500		7.4303	0.0000
Shariah 25 does not Granger Cause BSE Shariah	1466	1.4363	0.0829
BSE Shariah does not Granger Cause Shariah 25		9.1753	0.0000

Nifty Shariah 50 does not Granger Cause Nifty	1466	0.9679	0.5051
Nifty does not Granger Cause Nifty Shariah 50		5.0976	0.0000
Nifty Shariah 500 does not Granger Cause Nifty	1466	1.0541	0.3919
Nifty does not Granger Cause Nifty Shariah 500		5.8942	0.0000
Shariah 25 does not Granger Cause Nifty	1466	1.6631	0.0253
Nifty does not Granger Cause Shariah 25		7.9290	0.0000
Nifty Shariah 500 does not Granger Cause Nifty Shariah	1466	1.7241	0.0179
Nifty Shariah 50 does not Granger Cause Nifty Shariah 500		1.7745	0.0134
Shariah 25 does not Granger Cause Nifty Shariah 50	1466	3.5098	0.0000
Nifty Shariah 50 does not Granger Cause Shariah 25		8.9577	0.0000
Shariah 25 does not Granger Cause Nifty Shariah 500	1466	3.2500	0.0000
Nifty Shariah 500 does not Granger Cause Shariah 25		9.0441	0.0000

Source: Researcher’s estimates by eviews

Table 12 shows the P-value of BSE and BSE Shariah is greater than 5% which indicates BSE Shariah does not Granger Cause BSE. Nifty & BSE (Sensex), Shariah 25 & Nifty Shariah 500, Shariah 25 & Nifty Shariah, Nifty Shariah 500 & Nifty Shariah, Shariah 25 & Nifty and BSE Shariah & Shariah 25 have bi-directional relationship because their P-values are less than 5%. Nifty Shariah & BSE (Sensex), BSE (Sensex) & Nifty Shariah 500, BSE (Sensex) & Shariah 25, Nifty Shariah & BSE Shariah, CNX Shariah & BSE Shariah, Nifty Shariah & Nifty and Nifty Shariah 500 & Nifty have uni-directional relationship because as per the table their P-value is less than 5%.

Figure 2, Analysis on Granger Causal Relationship



V. Finding and Suggestions

Indian stock market is world famous investing place where all foreign direct investment and foreign institutional investors are willing to invest in it. BSE and NSE are the part of sustainable stock exchange. This article proved that Indian Islamic indices have cointegration with conventional indices (BSE and NSE). Performance of Johansen co-integration test and empirical result of the Trace test statistic leads to the rejection of null hypothesis. There is no co-integration vector. Trace test and Max-Eigen test indicate 5 co-integration equations at 5 percent level of significance. It shows the long run equilibrium between Shariah and conventional indices. It shows directional relationship. In most of the cases Shariah indices have bi-directional relationship with conventional indices. The result of Granger causality test shows that BSE Shariah does not granger causes BSE and its vice-versa. Nifty does cause to the BSE and also shows that the bi-directional relationship between BSE to Shariah 25. BSE has ui-directional relationship with Nifty Shraih and Nifty 500 Shariah. Nifty has uni-directional relationship Nifty Shariah and Nifty 500 Shariah. A result of VECM reflected is best fitted model

between BSE and BSE Shariah index, Nifty and Nifty Shariah indices. This article helps out the investor as well as industrialist. Shariah indices have high returns in comparison to benchmark indices (BSE and NSE). People believe in the social responsible index where investor, client and society go hand by hand. So, Islamic finance is not only deals with capital market also working with non banking finance corporation (NBFC). Islamic finance is the big initiative of NBFC where needy person can get the interest free loan easily. After the demonetization take place in the Dec, 2016, RBI has proposed to open Islamic finance window in commercial bank. The way of Islamic finance investment is economic and viable solution for the investor.

### Scope for the Future Research

There is still bright scope of the research in Islamic finance in India. There numbers of topics are unfolded in it like valuation of Shariah complaints, accounting & auditing of Shariah compliants, corporate social responsibility dealing with Shariah index, business ethics by Shariah Law, performance of non-financial activities in Sharaih index. The study reveals the wider scope for the further research on the following areas.

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