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Financial Development in Emerging Markets the Indian Experience in "Shariah Finance"

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Abstract: Financial market in any country plays a pivotal role in the growth of economy and meeting country's socio economic goals. This is an important constituent of the financial system, given their role in the financial intermediation process and capital formation of the country. The importance of the financial market cannot be underemphasized for developing economy like India which needs significant amount of capital for the development of strong infrastructure. Globally, Shariah finance has been drawing attention from industry practitioners and regulators alike as an increasingly main stream offering. India is one of the largest Islamic geographical markets in the world as Muslims constitute about 13.40% of India's total population. The demographic factors coupled with the overall growth in the Indian financial services sector, present significant opportunity for global players to build and participate in a potentially large market for Islamic finance. However, the key to doing Shariah finance in India is to marry the existing Indian regulations with the Shariah law principles, without coming foul of either of them. Shariah (Islamic Law) does not permit Muslims to invest in companies that derive significant benefits from interest since usury is considered sinful under Islamic faith. Actually, it can be said that at the origin of moral investments lie perspectives of monotheistic religions towards commercial activities. Companies should not derive benefits from sale of products deemed harmful like alcohol, tobacco and weapons. This is the underlying principle why a separate index of equities called the Shariah index was formed to tap the ever increasing Islamic investors in businesses across the world. The aim is to enable the Islamic financial world to invest in Shariah-friendly businesses across the world.

Key words: Shariah compliance (Islamic law), haram (prohibited) and Shariahi nvestment, Islamic financial, intermediation, underemphasized, Indian financial

INTRODUCTION

Financial arrangements constitute an integral part of the process of economic development. A growing economy requires a progressively rising volume of savings and adequate institutional arrangements for the mobilization and allocation of savings. These arrangements must not only extend and expand but also adapt to the growing and varying financial needs of the economy. The task of the financial institutions or intermediaries is to design ways and means to mobilize savings and help ensure its proper and efficient allocation to meet the demands of the nation and facilitate broad-based inclusive growth.

Shariah finance or interest-free finance is one such novel mechanism which has the potential to boost our economic growth. The Prime Minister's Economic Advisor Prof. Raghuram G. Rajan has already advocated (in the report of the committee on financial sector reforms) inclusion of interest-free finance in our financial system. This according to the Committee report will help in financial inclusion of a large number of our people who are not part of our financial system because of their religious constraints. Successful functioning of this system in dozens of countries (including those from Europe and North America) further underscores that the system has more than just religious merit (as understood by some). During the recent financial crisis the resilience shown by this system has not only been noticed but also appreciated by regulators all over the world (Renneboog *et al*., 2008).

The preferred Islamic investment format is equity. However, equity comes along with ownership. Hence, Islamic investors have to ensure that the selected company's activities and structuring are not repugnant to Shariah norms. Shariah compliant products are particularly

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attractive to Islamic investors as these instruments allow followers of the Islamic faith to invest without violating their religious principles.

Objectives of the study: The specific objectives of the study are:

- To study the requirements of the Shariah financial markets
- To study the market efficiency of BSE 500 Shariah and BSE 500

MATERIALS AND METHODS

The data used has been collected from various secondary sources like books, journal, newspaper and internet. The accuracy of the study is limited to the accuracy of these sources. The data has been collected from TASIS (Taqwaa Advisory and Shariah Investment Solutions) and S and P Dow Jones indices.

Literature review: Islamic and conventional market indices have been compared in terms of performance criteria. Besides, the existence of differences in terms of index performances has been investigated. In several studies conducted (Hussein, 2007; Abdullah *et al*., 2007; Hassan and Girard 2011; Lobe *et al*., 2012; Albaity and Mudor, 2012; Hossen and Mohanty, 2017), it has been observed that there isno statistically significant difference between the performances of Islamic indices and conventional indices. However, there can be differences in index performances during bear and bull market periods. In their study, Hussein (2007) states that Islamic indices perform better during bull market periods. However, Abdullah *et al*. (2007) have reached the conclusion that Islamic indices perform better during bear market rather than bullmarket periods. The study by Lobe *et al*. (2012) has provided results consistent with the study by Hussein (2007). In other words, Islamic indices show lower performance during a bear market period and higher performance during a bull market period. On the other hand in their study on S and P Shariah Index and conventional indices, Alam and Rajjaque (2010) have found out that during periods of overall economicstagnation or distress Islamic indices perform better. Most recently in a study conducted by Ho *et al*. it has been concluded that most of the Islamic indices perform better especially during crisis and what is calledbear market periods. Sukmana and Kolid (2012) have compared Jakarta Islamic and conventional indices in terms of risksand have concluded that the Islamic indices are less risky. In the conducted studies, although, different resultshave been reached in terms of the Islamic indice's risk and return performances, findings concerning how the Islamic indices show higher performances especially during post-crisis periods are prevalent. In the study by Albaity and Mudor (2012) on the causal relationship between Islamic and conventional indices, the Islamic indices in Malaysia have been compared with non-Islamic indices and it has beenconcluded that in terms of long term relationships in pre-and post-crisis periods, the Islamic indices are moreintegrated.

Shariah finance: Shariah is an understanding of Islamic Law. The most important source of Shariah is Islam's Holy book (i.e., Quran) and recorded traditions of the Prophet (Sunnah). There are somesecondary sources of the Shariah as well which include analogical deduction (reasoning) consensus of scholars, customs which are not contrary to Islamicethos and aim of public welfare. Basic guidelines of Shariah finance are received from Islamic fiqh which enforcesa ban on certain types of economic activities. Major prohibitions under these include:

- Receipt and payment of interest (known as Riba)
- Excessive ambiguity (known as Gharar)
- Any kind of non-productive speculative activities such as gambling, wagering (known as Maysir)

Need for the study: Islamic finance in India depends on two important aspects: first is the domestic demand and the second is India's position in the globalization of the financial sector. Domestically India is unable to generate enough capital largely due to its major Muslim population is being discouraged to enter into the Indian market because of the perception of haram (prohibited) and globally the large number of global capital is getting generated from middle east or many other Islamic countries. So, if India wants to satisfy the demand of investment and capital it has to have an Islamic financial market both domestically and globally.

Raghuram Rajan Committee, chapter 3; broadening access to finance, page 35: Looking at overall developments at private, government as well as international levels it can be expected that India has the potential to become the next big market for Shariah finance in the world. Its success also likely depends upon the preparedness of our corporate sector and the support it receives from our regulators.

Potential of Shariah finance in India: Muslims constitute 13.4% of India's total populations. In absolute terms Muslim population in India is second only to that of Muslims in Indonesia. According to current estimates and research, India's Muslim population is close to 175 million. About 6% of the community's population is below 25 years of age and over 35% of the community's total population lives in urban areas, thus, making Muslims one of India's youngest and most urbanized communities. Economically, the Muslim community is not much dependent on agriculture which is the main stay of a major part (65%) of India's population. Community participation in the financial system of the country is minimal. A report dated November 2006 by a committee headed by Justice Rajender Sachar (Sachar Committee report) has reported that almost 50% of the community's population is excluded from the formal financial sector. According to a Report by the country's central bank (RBI), credit deposit ratio of Muslims is 47% against the national average of 74%. Another important study focusing on remittances coming from the Middle East to the Indian state of Kerala highlights that annually about INR 120.000 million (USD 2.4 billion) are sent back by expats of the community. A great majority of this money is either lying idle in bank accounts (more popularly known as 786 accounts) or is invested in real estate and jewellery. These findings indicate the community's indifference towards the financial system for religious reasons.

In the past few years, Indian regulators have approved schemes with exclusive claims of Shariah compliance. The following Table 1 gives a glimpse of the important actions that Indian government and institutions have taken in the recent past. These actions are seen to have important ramifications for Shariah-compliant business in the country.

Action year:

2005

- Establishment of Anand sinha committee under the Reserve Bank of India for studying Islamic financial products
- Appointment of Justice Rajinder Sachar Committee to report on the social, economic and educational status of the Muslim community of India

2008

- Committee led by Prof. Raghuram G. Rajan recommends interest-free banking for financial inclusion of Muslim community in India
- Government of India calls for bids in connection with reconstruction of National Minority Development Finance Corporation (NMDFC) on Shariah lines

2009

- SEBI permits India's first Shariah tolerant Mutual Fund 2009
- SEBI permits India's first Shariah tolerant venture capital fund 2009
- Government owned general insurance company starts international re-takaful operations 2009
- Government of the state of Kerala announces launching of a Shariah-compliant Investment company (Research by TASIS)

The above actions indicate a cautious but systematic approach adopted by Indian policy makers towards Shariah finance. India Inc., having sensed the momentum building up in favor of Shariah finance has started looking for strategic vantage positions to exploit the niche opportunity.

A study on Shariah compliant stocks in India

Equity-S and P BSE 500: The S and P BSE 500 index designed to be broad representation of Indian market, consisting of the top 500 companies listed at BSE LTd., the index covers all the major industries of Indian economy. It is calculating using a floating adjusted market cap weighted methodology.

Equity-S and P BSE 500 Shariah: The S ans P BSE 500 Shariah index designed to track the performance of the Shariah compliant companies in the S and P BSE 500 index. The index is calculated in Indian rupees. The BSE and S and P Dow Jones indices have launched an Islamic equity index-S and P BSE 500 Shariah index-comprising the largest 500 companies in the Indian index. The S and P BSE 500 Shariah index, the first index from the strategic partnership between BSE and S and P Dow Jones indices was designed to represent all Shariah-compliant stocks of the broad-based S and P BSE 500 index.Indices created for the trading of Islamic funds are quite new compared to conventional indices. The first Islamic index is the DMI 150 index launched in 1998 by Faisal finance and Bank Vontebel in order to measure the performance of 150 publicly traded global companies. The Dow Jones Islamic Market Index (DJIMI) whose data have been used in this study was created in 1999 (Khamlichi *et al*., 2014).

The Dow Jones Islamic index was being created, questions of compliance with Islamic rules have been asked to scientists related to the subject and companies whose business did not involve production related to gambling, alcohol, hotels, entertainment, pork or similar products from 34, different countries have been determined (Hussein, 2007).

Highlights:

- The index is screened for Shariah compliance
- The index is liquid and investable
- Shariah compliance is as per the strictest standards observed by Middle Eastern countries
- The index is maintained for compliance on a periodic basis

Test of normality

Jarque Bera statistics: Jarque-Bera is a test statistic for testing whether the series is normally distributed. The test statistic measures the difference of the skewness and kurtosis of the series with those from the normal distribution. The statistic is computed as:

$$JB = \frac{N}{6}S + \frac{N}{24}K$$

or

$$JB = \frac{N-k}{6}\left(S^2 + \frac{1}{4}(K-3)^2\right)$$

Where:

S = The Skewness
K = The Kurtosis
k = The number of estimated coefficients used to create the series:

- H_0: random elements are subject to the normal distribution
- H_1: random elements are not subject to the normal distribution

The Jarque-Bera Lagrange multiplier test is perhaps the most commonly used procedure for testing whether a univariate sample of t data points or estimated regression residuals are drawn from a normal distribution.

The statistic JB has an asymptotic chi-square distribution with two degrees of freedom and can be used to test the null hypothesis that the data are from a normal distribution. The null hypothesis is a joint hypothesis of the skewness being zero and the excess kurtosis being 0, since, samples from a normal distribution have an expected skewness of 0 and an expected excess kurtosis of 0 (which is the same as a kurtosis of 3). As the definition of JB shows, any deviation from this increases the JB statistic. As we have data from stock markets it will be reasonable to assume that it has trend and would not has a normal distribution (Fig. 1).

Condition: If the corresponding p value of jb statistics >0.05, null hypothesis (h_0) is accepted and alternative hypothesis (h_1) is rejected. If the corresponding p value of jb statistics <0.05, null hypothesis (h_0) is rejected and alternative hypothesis (h_1) is accepted.

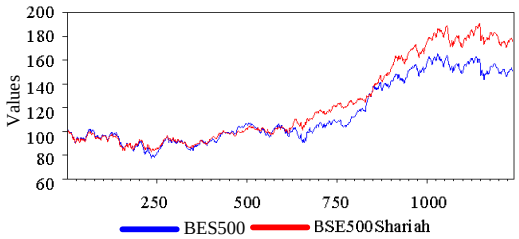

Fig. 1: BSE 500 and BSE 500 Shariah movement

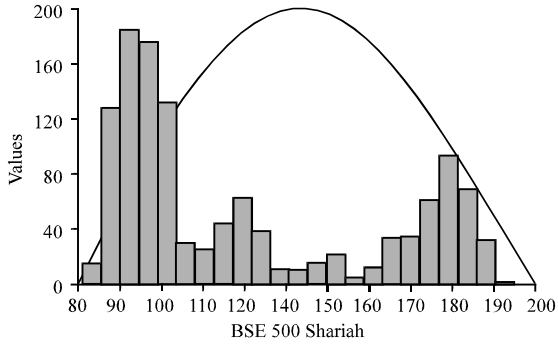

Fig. 2: Skewness and kurtosis (BSE 500 Shariah)

Skewness and kurtosis: Skewness is a measure of the asymmetry of the probability distribution of a real-valued random variable. Roughly speaking, a distribution has positive skew if the positive tail is longer and negative skew if the negative tail is longer. When skewness is negative, the market will have a downtrend and when it is positive there will be an uptrend.

Kurtosis is a measure of the "Peakedness" of the probability distribution of a real-valued random variable. Higher kurtosis means more of the variance is due to infrequent extreme deviations as opposed to frequent modestly-sized deviations. Kurtosis can be both positive and negative. Random variables that have a negative kurtosis are called subgaussian and those with positive kurtosis are called supergaussian. In statistical literature, the corresponding expressions platykurtic and leptokurtic are also used. Normal distributions have a kurtosis of 3 (irrespective of their mean or standard deviation). If a distribution's kurtosis is <3, it is said to be leptokurtic. If its kurtosis is >3, it is said to be platy kurtic (Fig. 2 and 3).

Autocorrelation: Auto correlation (matrices) or serial correlation (matrices) method is used to test and detect statistical dependencies (randomness).

H_0: randomness hypothesis:

- Stock prices follow random path in the market
- Stock prices independent of each other

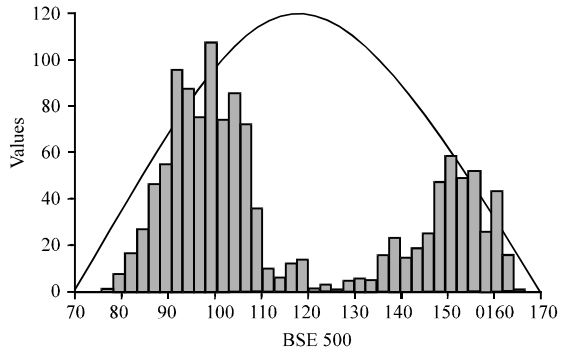

Fig. 3: Skewness and kurtosis (BSE 500)

- Support the weak form market efficiency proposition
- That successive interdependence in stock market prices is not statistically, significant and approximately follows a Chi-square distribution
- Efficiency

H_1:non-randomness hypothesis:

- Stock prices follow non-random path in the market
- Stock prices dependent of each other
- Support the strong form market efficiency proposition
- That successive interdependence in stock market prices is statistically significant
- Efficiency

Fama noted that markets could be efficient at three levels based on what information was reflected in prices. Under weak form efficiency, current stock prices reflect information contained in past prices, suggesting that charts and technical analyses based on past prices alone would not be enough to generate excess returns. Under semi-strong form efficiency, current prices are expected to reflect information contained not only in past prices but also all public information including financial statements and news reports and no approach based on using this information would be useful in finding undervalued stocks. Under strong form efficiency, current stock price is supposed to reflect all information, public as well as private and no investor will be able to consistently outperform naïve investors through a buy and hold policy.

Under the weak form of EMH, successive price changes are considered independent. Serial correlation test statistic is widely used to notice any perceptible trend in stock prices. It measures the correlation between price changes in consecutive time periods and is also a measure of how much price change in any period depends upon price change over the previous time period. Significant matrices indicated a relative inefficiency in the Indian stock markets: A serial correlation of zero would imply that price changes in consecutive time periods are uncorrelated with each other and can thus be viewed as a rejection of the hypothesis that investors can learn about future price changes from the past ones.

A positive and statistically significant serial correlation could be viewed as evidence of price momentum in markets and would suggest that returns in a period are more likely to be positive (negative) if the prior period returns were positive (negative).

Similarly, a negative and statistically significant serial correlation could be evidence of price reversals and would be consistent with a market where positive returns were to follow negative returns and vice versa.

In a more precise way, serial correlation coefficients provide a measure of relationship between value of a random variable (Xt) in time t and its value k-periods earlier. It indicates whether price changes in the week t are influenced by price changes occurring k-days earlier where k = 1, 2, 3, …, n. In the present study we have considered time lags of 1, 2, 3, ..., 16 weeks. The autocorrelation coefficient/autocorrelation matrices/ autocorrelation function at lag k is given by:

$$R_k = \frac{\sum_{i=1}^{N-k}\left(X_i-\overline{X}\right)\left(X_{i+k}-\overline{X}\right)}{\sum_{i=1}^{N}\left(X_i-\overline{X}\right)^2}$$

The objective here is to determine whether a series has significant trend or whether it is a random walk, the t-test is applied on the series of first differences for 36 lags of daily indexes.

As it is observed that the p value for both BSE 500 and BSE 500 Sariah is <0.05, hence, null hypothesis (stock prices independent of each other) is rejected. This implies both BSE 500 and BSE 500 SARIAH follow non-random path in the market or stock prices dependent of each other

Unit root test of stationary: The unit root test indicates that both BSE 500 and BSE 500 Shariah indexes are non-stationary. Since, all the p-values of the two indices are significantly larger than 5% level. The results show that both BSE 500 and BSE 500 Shariah indices are not weak-form efficient. Since, all the p-values are significantly <0.005. Therefore, we reject the null hypothesis and accept the alternative hypothesis.

RESULTS AND DISCUSSION

It can be observed from the Table 1 that the corresponding p-value of the Jarque Bera statistics is 0.00000 for both BSE 500 and BSE 500 shariah. Since, p-value is more than 5% ($p<0.05$), we reject the null hypothesis and accept the alternative hypothesis that both BSE 500 and BSE 500 Shariah are not normally distributed.

Table 1: Jarque-Bera test

Variables	BSE 500	BSE 500 Shariah
Mean	114.9551	123.1325
Median	103.2500	103.8400
Maximum	165.4500	191.0700
Minimum	77.23000	82.62000
SD	26.39219	34.89716
Skewness	0.617871	0.677864
Kurtosis	1.760505	1.827541
Jarque-Bera	158.4036	166.1211
Probability	0.000000	0.000000
Sum	142659.3	152807.4
Sum Sq. Dev.	863719.3	1510086
Observations	1241	1241

Table 2: Auto correlation BSE 500

Autocorrelation	Correlation partial	AC	PAC	Q-Stat	Prob.
|*******	|*******	1(0.998)	0.998	1239.7	0.000
|*******	...	2(0.996)	-0.052	2475.8	0.000
|*******	...	3(0.994)	-0.028	3707.9	0.000
|*******	...	4(0.992)	-0.012	4935.9	0.000
|*******	...	5(0.990)	0.007	6159.9	0.000
|*******	...	6(0.988)	-0.025	7379.7	0.000
|*******	...	7(0.986)	0.020	8595.4	0.000
|*******	...	8(0.984)	-0.004	9807.1	0.000
|*******	...	9(0.982)	-0.000	11015.0	0.000
|*******	...	10(0.980)	-0.010	12218.0	0.000
|*******	...	11(0.978)	0.014	13418.0	0.000
|*******	...	12(0.976)	0.011	14613.0	0.000
|*******	...	13(0.974)	0.010	15805.0	0.000
|*******	...	14(0.972)	-0.007	16993.0	0.000
|*******	...	15(0.970)	-0.008	18177.0	0.000
|*******	...	16(0.968)	-0.003	19358.0	0.000
|*******	...	17(0.966)	0.049	20534.0	0.000
|*******	...	18(0.965)	0.006	21708.0	0.000
|*******	...	19(0.963)	-0.010	22878.0	0.000
|*******	...	20(0.961)	-0.020	24044.0	0.000
|*******	...	21(0.959)	-0.037	25207.0	0.000
|*******	...	22(0.957)	0.033	26366.0	0.000
|*******	...	23(0.955)	-0.015	27521.0	0.000
|*******	...	24(0.953)	0.003	28673.0	0.000
|*******	...	25(0.951)	0.020	29821.0	0.000
|*******	...	26(0.949)	-0.006	30965.0	0.000
|*******	...	27(0.948)	-0.020	32106.0	0.000
|*******	...	28(0.946)	0.049	33243.0	0.000
|*******	...	29(0.944)	0.018	34378.0	0.000
|*******	...	30(0.942)	0.007	35509.0	0.000
|*******	...	31(0.941)	-0.017	36637.0	0.000
|*******	...	32(0.939)	-0.026	37762.0	0.000
|*******	...	33(0.937)	-0.018	38884.0	0.000
|*******	...	34(0.935)	-0.015	40001.0	0.000
|*******	...	35(0.933)	-0.025	41115.0	0.000
|*******	...	36(0.931)	0.065	42226.0	0.000

Date: 01/15/16 time: 12:18, sample: 1 1241, included observations: 1241

It is observed that the skewness is positive for both BSE 500 and BSE 500 Shariah, hence, we may conclude that the market will have an uptrend. It is also observed that for all the cases, i.e., BSE 500 and BSE 500 Shariah, kurtosis is <3, it is said to be platykurtic.

Then, we have used autocorrelation test. The objective here is to determine whether a series has significant trend or whether it is a random walk, the t-test is applied on the series of first differences for 36 lags of daily indexes.We can see from the Table 2 and 3 that both BSE 500 and BSE 500 Shariah have significant lags (i.e., they are significantly different from zero) at the 95% confidence level. Hence, we may conclude that on the basis of ACF test, the null hypothesis of the random walk cannot be accepted for any index.

From Table 4-7, we conclude that the unit root test indicates that both BSE 500 and BSE 500 Shariah indexes are non-stationary. Since, all the p-values of the two indices are significantly larger than 5% level.

Table 3: Autocorrelation BSE 500 Shariah

Autocorrelation	Partial correlation	AC	PAC	Q-Stat	Prob.
|*******	|*******	1(0.999)	0.999	1240.4	0.000
|*******	...	2(0.997)	-0.032	2477.9	0.000
|*******	...	3(0.995)	-0.046	3712.2	0.000
|*******	...	4(0.994)	-0.007	4943.3	0.000
|*******	...	5(0.992)	-0.003	6171.2	0.000
|*******	...	6(0.990)	-0.028	7395.5	0.000
|*******	...	7(0.988)	0.013	8616.5	0.000
|*******	...	8(0.987)	0.004	9834.1	0.000
|*******	...	9(0.985)	-0.003	11048.	0.000
|*******	...	10(0.983)	-0.004	12259.	0.000
|*******	...	11(0.981)	0.020	13467.	0.000
|*******	...	12(0.980)	0.001	14671.	0.000
|*******	...	13(0.978)	0.007	15873.	0.000
|*******	...	14(0.976)	-0.010	17071.	0.000
|*******	...	15(0.975)	-0.003	18266.	0.000
|*******	...	16(0.973)	-0.011	19457.	0.000
|*******	...	17(0.971)	0.047	20646.	0.000
|*******	...	18(0.970)	0.014	21832.	0.000
|*******	...	19(0.968)	-0.000	23015.	0.000
|*******	...	20(0.967)	-0.009	24195.	0.000
|*******	...	21(0.965)	-0.025	25373.	0.000
|*******	...	22(0.963)	0.010	26547.	0.000
|*******	...	23(0.962)	-0.028	27718.	0.000
|*******	...	24(0.960)	-0.007	28886.	0.000
|*******	...	25(0.958)	0.024	30051.	0.000
|*******	...	26(0.957)	0.003	31214.	0.000
|*******	...	27(0.955)	-0.018	32373.	0.000
|*******	...	28(0.953)	0.033	33529.	0.000
|*******	...	29(0.952)	0.018	34682.	0.000
|*******	...	30(0.950)	0.006	35833.	0.000
|*******	...	31(0.949)	-0.006	36981.	0.000
|*******	...	32(0.947)	-0.019	38126.	0.000
|*******	...	33(0.946)	-0.030	39268.	0.000
|*******	...	34(0.944)	-0.014	40408.	0.000
|*******	...	35(0.942)	-0.015	41544.	0.000
|*******	...	36(0.941)	0.034	42677.	0.000

Date: 01/15/16 time: 12:21, sample: 1 1241, included observations: 1241

Table 4: Augmented Dickey Fuller (ADF) test for bse 500

	t-statistic	Prob.*
Variables	-0.503264	0.8880
Augmented Dickey-Fuller test statistic		
Test critical values	1% level	-3.435415
	5% level	-2.863664
	10% level	-2.567951

*MacKinnon one-sided p-values, null hypothesis: BSE500 has a unit root, Exogenous: constant, lag length: 1 (automatic-based on SIC, max lag = 22)

Table 5: Coefficient of ADF

Variables	Coefficient	SE	t-statistic	Prob.
BSE 500(-1)	-0.000624	0.001241	-0.503264	0.6149
D(BSE 500(-1))	0.110001	0.028293	3.887908	0.0001
C	0.106340	0.146283	0.726942	0.4674

R^2, 0.012194, mean dependent var, 0.038725, adjusted R^2, 0.010596, SD dependent var, 1.157750, SE of regression, 1.151600, Akaike info criterion, 3.122601, sum squared resid, 1639.163, Schwarz criterion, 3.135003, log likelihood, -1931.451, Hannan-Quinn criter, 3.127265, F-statistic, 7.629137, Durbin-Watson stat, 1.992787, Prob. (F-statistic), 0.000509, augmented Dickey-Fuller test equation, dependent variable: D(BSE500), method: Least squares, Date: 01/15/16 Time: 12:34, Sample (adjusted): 3 1241 included observations: 1239 after adjustments

Table 6: Augmented Dickey Fuller (ADF) test for BSE 500 Shariah

	t-statistic	Prob.*
Variables	0.048076	0.9616
Augmented Dickey-Fuller test statistic		
Test critical values	1% level	-3.435415
	5% level	-2.863664
	10% level	-2.567951

*MacKinnon one-sided p-values, augmented dickey-fuller test equation, dependent variable: d(bse500shariah), method: least squares, date: 01/15/16 time: 12:37, sample (adjusted): 3 1241, included observations: 1239 after adjustments. Null hypothesis: (BSE 500) Shariah has a unit root, exogenous: constant, lag length: 1 (automatic-based on sic, maxlag = 22)

Table 7: Coefficient of ADF

Variables	Coefficient	SE	t-statistic	Prob.
BSE500SHARIAH(-1)	4.15E-05	0.000863	0.048076	0.9617
D(BSE500SHARIAH(-1))	0.117167	0.028270	4.144627	0.0000
C	0.047109	0.110382	0.426784	0.6696

R^2, 0.013737, mean dependent var, 0.059023, adjusted R^2, 0.012142, SD dependent var, 1.065321, SE of regression, 1.058833, akaike info criterion, 2.954631, sum squared resid, 1385.715, schwarz criterion, 2.967033, log likelihood, -1827.394, hannan-quinn criter, 2.959295, F-statistic, 8.608000, Durbin-Watson stat, 1.999713, prob. (F-statistic), 0.000194

Table 8: Augmented Dickey Fuller (ADF) test for BSE 500 (1st difference)

	t-statistic	Prob.*
Variables	-31.49890	0.0000
Augmented Dickey-Fuller test statistic (%)		
Test critical values:	1 level	-3.435415
	5 level	-2.863664
	10 level	-2.567951

*MacKinnon one-sided p-values, null hypothesis: d(bse500) has a unit root, exogenous: constant, lag length: 0 (automatic-based on SIC, maxlag = 22), augmented Dickey-Fuller test equation, dependent variable; d(BSE 500,2) method; least squares, date: 01/15/16 time: 12:41, sample (adjusted): 3 1241 included observations: 1239 after adjustments.

Table 9: Coefficient of ADF

Variables	Coefficient	SE	t-statistic	Prob.
D(BSE 500(-1))	-0.890461	0.028270	-31.49890	0.0000
C	0.034587	0.032724	01.056938	0.2907

R^2, 0.445088, Mean dependent var, 0.000952, Adjusted R^2, 0.444639, SD dependent var, 1.544838, SE of regression, 1.151253, Akaike info criterion, 3.121191, Sum squared resid, 1639.499, Schwarz criterion, 3.129459, Log likelihood,-1931.578, Hannan-Quinn criter., 3.124301, F-statistic, 992.1808, Durbin-Watson stat, 1.992724, Prob. (F-statistic), 0.000000

Table 10: Augmented Dickey Fuller (ADF) test for BSE 500 Shariah (1st difference)

	t-statistic	Prob.*
Variables	-31.25945	0.0000
Augmented dickey-fuller test statistic (%)		
Test critical values	1 level	-3.435415
	5 level	-2.863664
	10 level	-2.567951

*MacKinnon one-sided p-values, Augmented Dickey-Fuller Test Equation, Dependent Variable: D(BSE 500 Shariah,2), Method: Least Squares, Date: 01/15/16 Time: 12:42, Sample (adjusted): 3 1241, Included observations: 1239 after adjustments

Table 11: Coefficient of ADF

Variable	Coefficient	SE	t-statistic	Prob.
D(BSE500SHARIAH(-1))	-0.882784	0.028241	-31.25945	0.0000
C	0.052215	0.030114	01.733926	0.0832

R^2, 0.441321, mean dependent var, 0.000936, adjusted R^2, 0.440870, SD dependent var, 1.415455, SE of regression, 1.058406, Akaike info criterion, 2.953019, sum squared resid, 1385.717, Schwarz criterion, 2.961287, log likelihood, -1827.395, Hannan-Quinn criter., 2.956128, F-statistic, 977.1532, Durbin-Watson stat, 1.999723, prob (F-statistic), 0.000000

Table 12: Runs test

Runs test	
Variables	BSE_500
Test value[a]	103.25
Cases<test value	620
Cases> = test value	621
Total cases	1241
Number of runs	26
Z-value	-33.822
Asymp. Sig. (2-tailed) Median	0.000
BSE 500 shariah	
Test value[a]	103.84
Cases<test value	620
Cases>= test value	621
Total cases	1241
Number of runs	16
Z-value	-34.390
Asymp. Sig. (2-tailed) median	0.000

Then by making first difference of both BSE 500 and BSE 500 Shariah indices, (Table 8-12) all of the variables have no unit root which means they have become stationary. From Table 8, run test, we confirm that the series are not random. Thus, both BSE 500 and BSE 500 Shariah indices are not weak-form efficient

CONCLUSION

The hundreds of Indian companies complying with the economic laws of Shariah, India has now become an attractive destination for Islamic investments. Islamic financial institutions and Shariah conscious domestic investors are finding the Indian stock market a good place to invest. Islamic options available in India are wider than those in many Islamic countries. This shows the vast potential that India can tap in the field of Islamic banking and finance. Investors from across the world, who are looking at Shariah compliant investment opportunities, could find India as an attractive destination. In fact Indian markets may throw wider options vis-a-vis many Islamic countries.

There is a strong likelihood of a substantial increase in the funds available for Shariah investment as a result of growing wealth in Islamic countries and communities. Complementing this is the fact that India is becoming extremely important for investor's portfolios and long-term Shariah investors will find this story a difficult one to ignore.

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