

Performance Comparison of Islamic and Conventional Indices of Pakistan, Malaysia and Indonesia

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ABSTRACT: *To examine whether the Islamic indices perform better than their conventional counterparts, this research aims to study the performance comparison of Islamic and conventional indices of Pakistan, Malaysia and Indonesia. In addition, this study also examines the impact of macroeconomic variables on these indices. Different risk adjusted performance measures like Sharpe ratio, Treynor ratio and Jensen's alpha were used in the study to compare the indices performance. Auto-Regressive Distributed Lag (ARDL) model was employed to see the impact of macroeconomic variables on these indices. Performance ratios results revealed that conventional indices outperformed the Islamic indices in Pakistan and Indonesia except for Malaysia where no difference was found in performance of both indices. ARDL Bound test indicated that cointegration existed between the macroeconomic variables and the stock market of all countries.*

KEY WORD: *Islamic index, Conventional Index, Macroeconomic variables, Performance ratios, ARDL model*

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I. INTRODUCTION AND LITERATURE REVIEW

Stock market has been widely used as an important barometer of a country's economic progress. To aid growth of the business sector, it specifies the accessibility to long-term funding. The stock market acts as a ground for investment which particularly plays a crucial role in the economy as a way of financing for companies and other institutions.(M.Shabri,2007). Stock market indices determine the price movements in market or of a market section.

Stocks under Islamic laws, i.e. Shariah, has shaped world financial system in less than two decades in response to a strong demand from Muslim community worldwide to have an alternative financial system that is much more invulnerable to moral hazard. Islamic finance differs from the conventional one by their distinctive features which are Shariah compliant. In last few years, it has achieved a rapid growth (Ahmed et al, 2002).

The main difference between these two investments is that the Islamic investment do not conflict with the Islamic principles. It is based on these main principles Islamic forbidding speculation (maysir), interest, excessive uncertainty, investing in 'unethical' industries and sharing of risk and return (Zahari et al, 2009). Islamic index follow Shariah principles. They are passed through different screening criteria of liquidity and financial ratios (Hakim and Rashidian,2002).

Undoubtedly, the conventional indices have proved to lead an exceptional role in the economic development and their history as compared to the Islamic Indices is much longer but due to the problems frequently occurring with the composite financial system, like mortgage crisis (subprime) financial crisis (2007), investors have become more conscious. Shocks related to these crisis proved to be less severe for the Islamic financial system. For this reason, Islamic finance was given great attention in the recent decades (Chaffai,2016). With the increasing growth in Islamic finance, Islamic equity funds traded in Islamic equity markets were launched in the early 1990's. Unlike conventional stock market, Islamic stock market is where the Shariah compliant stocks are traded.

Islamic finance has increased opportunities specially for the investors who are sensitive to religious beliefs. Islamic financial investments has contributed in the growth of Islamic finance. Investors have started to believe it as the alternative way of hedging. For the trading of Islamic funds these indices are quite new compared to their counterparts (Ali and Mehmet,2015).There are several other factors which effects the performance of equity markets. Equity market is much volatile and is affected by different factors like

macroeconomic variables, social, political and other factors. Stock indices movement is responsive to macroeconomic factors. Macroeconomic variables are one of the important indicator which effect the movement of stock prices. Any hostile change can have negative or positive effect on the economy making this topic more debatable (Ozby,2009).

When debating about the performance differences between the conventional and Islamic Indices literature provides different results. For instance, Hakim et al. (2002) examined the DJI (Dow Jones Islamic Index) performance against DJW (Dow Jones World index) and DJS (Dow Jones Sustainability Index) and concluded that DJI has inferior performance from DJS but outperformed DJW. The results were also supported by Hussain and Omran (2005). On the contrary Rubi Ahmed et al, (2008) worked on Malaysia Indices and found no difference between both indices (Islamic and conventional) performance.

Sinclair (2005) analyzed SRI (Socially Responsible Investment) funds in different (developed) countries against its composite parts and concluded that both exhibited same performance. Some of researchers argued that because of limited diversification Islamic funds underperform compared to conventional funds (Hassan 2002). While other researchers claimed that their performance differs in different regions (Hoepner et al, 2009) in different market periods (bear and bull) (Abdullah et al, 2002).

Khaled (2004) worked on FTSE Islamic and convention index series and configured that both have similar return and risk profiles. Hassan and Girard (2010) studied Dow Jones Index series (Islamic & conventional) and concluded that their performance is not statistically different. Khalid Mehmood et al (2016) empirically investigated the performance of Islamic and conventional indices of eight countries during the global financial crisis. They took the data of eight countries (Japan, China, Malaysia, Indonesia, UK, USA, Canada and Turkey) and four geographical regions (Asia, Europe, North America and The World). The results revealed that during the overall period, conventional stock indices outperformed the Islamic indices with the risk adjusted performance measures only. However, Islamic stock markets outperformed their counterparts during the period of global financial crisis with both risk and non-risk adjusted performance techniques.

The relationship between the two (equity market and macroeconomic variables) varies in developed and developing economies. Co-movement between these two has become one of the important debate over the last few decades. Ahmad et al (2016) assessed the stock market of Turkey and the macroeconomic variables. Industrial production, short term interest rate, exchange rate, inflation and money supply were used for the analysis. Johansen cointegration, unit root, VAR model was applied for the analysis. The results confirmed the long-run association among these macroeconomic factors and the stock market. The impact of commodity prices and macroeconomic variables on the Malaysian stock performance was analyzed by Nordin et al (2014). Explanatory variables used in the study were commodity prices, exchange rate and interest rate.. There was a significant influence of palm oil price on the Malaysian stock market index whereas, no significant influence was found for both oil and gold price. Both the interest and exchange rate were having a negative relationship with the stock market index.

Talla et al (2013) analyzed these variables including inflation, exchange rate and money supply on the Stockholm stock exchange 30 (Sweden) and found that inflation and exchange rate were found to be significantly affecting the stock market whereas MS (money supply) and IR (interest rate) were found to be insignificant.

Several researchers have conducted studies on the impact of these variables and the stock markets (Haruna et al, 2013). Many investors believe that changes in these factors has either positive or negative impact on the stock prices. These factors strongly affect the investors as well as the researchers to assess this relationship (Khalid,2012).

1.2 Research Objectives

The main purpose of this research is two-fold. Firstly, to determine the performance differences of the Islamic indices and their counterparts. And further to analyze the impact of macroeconomic variables on both of the indices. The research objectives are classified as follows

- Examine the performance of both Islamic and conventional indices.
- To analyze the performance differences of both the indices.
- To determine the volatility of these indices.
- Analyze the macroeconomic variables impact on conventional indices.
- Analyze the macroeconomic variables impact on Islamic indices.

1.3 Research Methodology and Data Analysis

Population of the study is the Muslim countries included in the Asia-Pacific region. From the population, three countries indices namely Pakistan, Malaysia and Indonesia are selected on the basis of data availability.

Pakistan

- Karachi Stock Exchange (KSE-100) Index
- Karachi Meezan (KMI-30) Index
- All Share (KSE) Index used as benchmark index

Malaysia

- Bursa Malaysia Top 100 (FTSE BM 100)
- Bursa Malaysia Hijrah (FTSE BMH) Index
- Emas (FTSE) Index used as benchmark index

Indonesia

- LQ 45 Index
- Jakarta Islamic (JII) Index
- Jakarta Composite Index (JCI) used as benchmark index

Monthly data covering the period January 2010 to December 2016 is collected for research purpose.

Table 1: Variables Description:

Variables	Description
Index Price	It measures the (average) performance of the stocks listed in the index.
Consumer Price Index (CPI)	It is used as a measure of inflation and refers to the rate of change in the price of any commodities. CPI is an important economic indicator.
Gross Domestic Product (GDP)	This variable represents the growth of an economy and measures the price of services and goods produced within a country's border.
Industrial Production (IP)	This variable measures the growth of the industrial sector of any economy. It is also considered important for the performance of economy of a country.
Interest Rate	Interest rate represent the percentage of amount that have been charged to provide services. It is the price of money which is borrowed in order to provide funds to investors. A growth in the rate normally results in prices of stocks to fall. It is an important macroeconomic variables associated to economy development.
Exchange Rate	It is the rate at which one currency is traded for another currency. Any fluctuation or change in the value of a currency can lead to various outcomes affecting the stock market.
WTI Oil Price	WTI stands for West Texas Intermediate and is used as standard in pricing of oil. It has great impact on the economy of a country. For this purpose, this variable is used in the research to see its impact on the stock prices. The impact can be either negative or positive.

1.3.1 Hypothesis

- H₁: There is performance difference between the Islamic Index and conventional index.
- H₂ : A significant relationship exists between CPI and share prices.
- H₃: A significant relationship exists between interest rate and share prices.
- H₄: A significant relationship exists relationship between GDP and share prices.
- H₅: A significant relationship exists between oil and share prices.
- H₆: A significant relationship exists between exchange rate and share prices.
- H₇: A significant relationship exists between industrial production and share prices.

1.3.2 Data Analysis to examine the performance difference between the Islamic and conventional index

Performance ratios also known as CAPM statistics namely Sharpe ratio, Treynor ratio and Jensen's alpha are used in the research to calculate the performance of both Islamic and conventional indices. A number of researchers have used these measures in their study to compare different funds performances (Dewi and Ferdian, 2012; El Khamlichi, Sarkar, Arouri, and Teulon, 2014 ; Habib and Islam, 2014).

1.3.2 (a) Sharpe Ratio

Sharpe (1966) developed Sharpe ratio that evaluates risk and returns together to choose an investment that generates higher returns but for optimal risk taken. The ratio gives extra reruns for the risk taken (systematic and unsystematic risk) of a fund/ index. The risk of the index is measured by standard deviation. Mathematically, Sharpe ratio is represented as follow:

$$S_p = \frac{R_p - R_f}{\sigma_p}$$

R_p =Average stock return of index (Conventional/Islamic)

R_f=Risk Free Rate (90 days-Treasury Bill Rate)

σ_p=Standard Deviation of the average stock return of index

1.3.2 (b) Treynor Ratio

This ratio considers only systematic risk. Here the risk is measured by beta for which a benchmark is required. Higher the ratio improves the index performance and vice versa. Mathematically, the ratio is expressed as:

$$T_p = \frac{R_p - R_f}{\beta_p}$$

R_p = Stock return of index (Conventional/Islamic)

R_f = Risk Free Rate (90 Days Treasury Bill Rate)

β_p = Portfolio systematic risk

1.3.2 (c) Jensen's Alpha

Michael Jensen (1970) gave this ratio based upon Linter (1965) CAPM and Sharpe (1966). It represents return of an investment estimated by CAPM. It is the portfolio's alpha. Alpha is the performance of fund in comparison to a benchmark. On other hand, beta measures the volatility, ups and downs of stock prices or fund. Beta is also compared to a benchmark. Mathematically, the ratio is expressed as :

$$\alpha_0 = R_p - [R_f + (R_m - R_f)\beta_p]$$

R_p = Average stock return of index (Conventional/Islamic)

R_f = Risk Free Rate (90 Days Treasury Bill Rate)

R_m = Market return (Benchmark Index)

β_p = Portfolio systematic risk

Positive value of the ratio means the fund is performing better than its benchmark and negative value indicates that the fund is underperforming in comparison to its benchmark.

Table 2: Performance Ratios of Pakistan, Malaysia and Indonesia:

Country	Sharpe Ratio		Treynor Ratio		Jensen's Alpha Ratio	
	CVI	ISI	CVI	ISI	CVI	ISI
Pakistan	1.15	1.00	17.79	14.76	2.77	0.034
Malaysia	0.46	0.42	3.81	3.46	1.07	0.89
Indonesia	0.37	0.19	2.97	0.95	-5.79	-6.57

Table 2 represents the results of performance ratios of all countries. The results of Sharpe and Treynor ratio reveal that the conventional index of Pakistan and Indonesia have outperformed the Islamic indices. Jensen's alpha ratio indicated that in case of Pakistan both the indices Islamic as well as conventional outperformed the benchmark index while with context to Indonesia both the indices underperformed the benchmark index. On the contrary, Islamic index and conventional index were performing in a similar manner in case of Malaysia and they also performed superior than the benchmark index.

1.3.3 Data analysis to calculate the volatility of Indices

Table 3: Beta Calculation

Years	Pakistan		Malaysia		Indonesia	
	Beta (Conventional Index)	Beta (Islamic Index)s	Beta (Conventional Index)	Beta (Islamic Index)	Beta (Conventional Index)	Beta (Islamic Index)
2010	1.0	0.9	0.95	0.90	0.95	0.96
2011	0.9	0.6	0.98	0.85	0.96	0.88
2012	0.6	0.7	1.00	1.1	0.84	0.84
2013	1.1	1.1	1.00	0.99	0.94	0.69
2014	0.9	0.6	0.72	0.69	0.99	0.99
2015	1.0	1.0	0.87	0.97	0.92	0.79
2016	1.1	1.0	1.00	0.97	0.80	0.82

Table 3 is indicating the volatility of all the indices by calculating beta. For beta calculation following formula has been used.

$$\text{Beta } (\beta) = \frac{\text{Covariance } (R_p, R_m)}{\text{Variance } (R_m)}$$

where R_p is the portfolio/index return and R_m is the market return/benchmark index .

Overall, on the average the results of beta indicates that the Islamic index is less risky as compared to conventional index in all countries. But talking individually, both the indices have almost same risk.

1.3.4 Data analysis to analyze the impact of macroeconomic variables on the indices

The second part of the research is to determine the impact of macroeconomic variables on the indices. For this purpose, the Autoregressive Distributed Lagged model (ARDL) is used in the empirical analysis. This type of regression models have been used in the studies for long. In the recent times, this model has become a valuable vehicle for analyzing the relationship (long-term) between the variables. In ARDL model the dependent variable is the function of its own past values as well as the current and previous values of the other independent variables. ARDL model was given by Pesaran and Shin (1999) and Pesaran et al (2001). ARDL model has some advantages over conventional cointegration testing. For instance:

- This model can be used with I(I) and I(0) data.
- It is simple to implement and interpret involving a single-equation set-up.
- As the variables enter in the model, they can be assigned different lags-lengths.

The assumptions of ARDL model are as follows;

- The variables are stationary at level or 1st difference or both.
- The model cannot be applied if any variable is stationary at second difference I(2).
- Model must be dynamically stable.
- Data must be free from autocorrelation.
- Data must be normally distributed.
- Data should be free from heteroscedasticity.
- Lags must be appropriate.

The autoregressive distributed (ARDL) model general form is written as:

$$y_t = \beta_0 + \beta_1 y_{t-1} \dots + \beta_k y_{t-k} + \alpha_0 x_t + \alpha_1 x_{t-1} + \alpha_2 x_{t-2} \dots + \alpha_q x_{t-q} + \varepsilon_t$$

where y_t = Dependent Variable

β_0 = Coefficient Value

y_{t-1} = Lagged Value (Dependent Variable)

α_0 = Coefficient value (Explanatory Variable)

x_{t-1} = Lagged Value (Explanatory Variable)

ε_t = Error term

1.3.4 (a) Unit Root Test

Unit root test is used to check stationary in data series. The principle of test assumes that the variable is stationary when Augmented Dickey-Fuller and Phillips-Perron t-statistics value is greater than critical value of t-statistics in the model.

Table 4: Results of Unit Root Test

Variables	Pakistan		Malaysia		Indonesia			
	ADF Value	t-stats.	PP value	t-stats.	ADF t-stats. value	PP t-stats. value		
CVI	-8.9633		-8.9621		-9.9889	-9.9906	-8.6890	8.7015
ISI	-8.6987		-8.5903		-10.0047	-9.9758	-9.4674	-9.4655
CPI	-3.5274*		-3.6782*		-3.6672*	-3.0613*	-7.2626	-7.2144
IR	-6.0742		-6.1446		-3.6434*	-3.5105*	-3.7350	-8.0817
ER	-5.9034		-5.9440		-6.2106	-6.2303	-7.3917	-7.3917
GDP	-2.2316		-9.1403		-9.0311	-9.0591	-9.4880	3.0779
IP	-5.0597*		-7.1387*		-6.2305*	-6.1534*	-6.4604*	-6.4604*
OIL	-6.6260		-6.4287		-6.6260	-6.4287	-6.6260	-6.4287

Notes: The value of ADF and PP t-stats value is compared with critical value of t-statistics against each variable used in model at 1%, 5%, and 10% significance level where *p-value < 0.05 which indicates that variables are stationary at level.

Table 4 results show that the variables are stationary at different levels. In case of Pakistan, it is revealed that CPI and IP is stationary at level while all other variables are stationary at first difference. In case of Malaysia, consumer price index (CPI), industrial production (IP) and interest rate (IR) are stationary at l (0) while all other variables are stationary at l (1). With context to Indonesia, all variables are stationary at first difference l(1) except for interest rate which is stationary at level l(0).

1.3.4 (b) Bound Test Results

Bound Test is pre-requisite of ARDL Model. Bound test is a test which is applied to confirm that whether long-run relationship among the variables a exists or not. Before running ARDL model we have to apply this test. If cointegration exists between the variables, only then we can proceed for this model.

Rule of thumb for the bound test is that if the bound test (F-Statistics) calculated value is more than the upper and lower bound value then we say that cointegration exists. If F-statistics value is lower than the lower bound value then no cointegration exist and if F-statistics value lies within these two bounds the test is indecisive.

Table 5: Bound Test Results

Countries						
	Pakistan		Malaysia		Indonesia	
	CVI	ISI	CVI	ISI	CVI	ISI
F-statistics	12.84	11.87	7.34	7.75	6	7.20
Notes: (i) The upper bound critical values at 1%, 2.5%, 5% and 10% significance level is 4.43, 3.99, 3.61 and 3.23 respectively, whereas lower bound critical values at 1%, 2.5%, 5% and 10% level of significance is 3.15, 2.75, 2.45 and 2.12 respectively, (ii) F-statistics critical value has exceeded upper bound values indicating cointegration among the variables.						

From the results of **Table 5** it is clear that there is cointegration among the macroeconomic variables and the stock market index of all three countries as the F-statistics value is greater than the critical values of upper and lower bound at all levels of significance. So we can further proceed for the model.

1.3.4 (c) Auto Regressive Distributed Lag Model Results

Table 6(a): Auto Regressive Distributed Lag Model Long-run Results (Conventional Index)

Variables	Pakistan		Malaysia		Indonesia	
	Coefficient	t-Stats	Coefficient	t-Stats	Coefficient	t-Stats
CPI	0.041	0.29	-12.521**	-2.54	-0.003	-1.15
ER	-4.064***	-3.13	11.844	0.55	-0.0001***	-6.77
IP	0.764	0.07	-1.193	-0.26	0.0004**	2.45
GDP	36.145***	5.90	-3.076*	-1.81	0.013***	4.81
IR	-24.793***	-3.51	-8.462*	-1.83	0.023***	6.03
OIL	1.848***	4.08	0.780**	2.37	-0.0001	-1.11
Notes: (i) Coefficients that are highlighted show that the variables are significant, (ii) where ***indicates p-value <0.01, ** indicates p-value < 0.05, *indicates p-value<0.1						

Table 6(b): Auto Regressive Distributed Lag Model Long-run Results (Islamic Index)

Variables	Pakistan		Malaysia		Indonesia	
	Coefficient	t-Stats	Coefficient	t-Stats	Coefficient	t-Stats
CPI	0.409**	2.32	-0.048**	-2.22	-0.001	-1.71
ER	-1.304	-1.49	-0.012	-0.19	-0.000***	-5.14
IP	17.713	1.32	0.221*	1.72	0.000	0.89
GDP	3.222	0.81	-0.036*	-1.85	0.002***	4.05
IR	12.163**	2.31	-0.083	-1.00	0.004***	4.63
OIL	1.142***	4.38	0.004**	2.26	0.000**	0.49
Notes: (i) Coefficients that are highlighted show that the variables are significant, (ii) where ***indicates p-value <0.01, ** indicates p-value < 0.05, *indicates p-value<0.1						

Table 6(a) and **Table 6(b)** indicates the long-run results of ARDL model for conventional and Islamic indices respectively of all three countries. With context to Pakistan exchange rate, gross domestic product, interest rate and oil are significantly affecting the conventional index whereas consumer price index, interest rate and oil prices are significantly affecting the Islamic index. Consumer price index, gross domestic product, and oil were found to be significant for both indices in case of Malaysia. While referring to Indonesia, exchange rate, gross domestic product and interest rate were having a significant impact on both the indices.

1.3.4 (d) Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Lagrange Multiplier test is used to check the existence of high serial correlation among variables in the study.

The serial correlation exists if covariance between variables and its lag value is not zero. If the probability value of Chi-square is insignificant it means that there is no serial correlation and vice versa.

Null and alternate hypothesis for this test is given below.

H₀: Variables are not serially correlated.

H₁: Variables are serially correlated.

Rule of thumb for the test is that if the p-value is more than 5% then accept null hypothesis of no serial correlation and vice versa.

Table 7: Results of Breusch-Godfrey Serial Correlation LM Test

Countries						
	Pakistan		Malaysia		Indonesia	
	CVI	ISI	CVI	ISI	CVI	ISI
Probability	0.35	0.14	0.37	0.89	0.31	0.97
Notes: (i) The conventional and Islamic index indicates the probability chi-square values >0.05						

Table 7 shows probability of Chi square is more than 5% for all variables in Pakistan, Malaysia and Indonesia. The results indicate that there is no serial correlation in data.

1.3.4 (e) Heteroscedasticity Test-Breusch-Pagan-Godfrey

Heteroscedasticity test is used to check the heteroscedasticity in variables. Null and alternate hypothesis for this test is given below.

H₀: Homoskedasticity

H₁: Heteroskedasticity

Rule of thumb for the test is same as of the other tests that if the p-value is more than 5% than accept null hypothesis of homoscedasticity and vice versa.

Table 8: Results of Heteroscedasticity Test-Breusch-Pagan-Godfrey

Countries						
	Pakistan		Malaysia		Indonesia	
	CVI	ISI	CVI	ISI	CVI	ISI
Probability	0.41	0.81	0.51	0.26	0.95	0.70
Notes: (i) The conventional and Islamic index indicates the probability chi-square values >0.05						

Table 8 indicates the probability values which is more than 5% indicating that there is no heteroscedasticity.

1.3.4 (f) Normality Test

Normality Test is applied to check the normality of all variables irrespective of independent and dependent variables. The normality of residuals is when probability value of Jarque-Bera is greater than 5%.

Table 9 : Results of Normality Test

Countries						
	Pakistan		Malaysia		Indonesia	
	CVI	ISI	CVI	ISI	CVI	ISI
JB-Probability	0.91	0.92	0.85	0.15	0.45	0.69
Notes: (i) JB is the Jarque-Bera probability values, (ii) The JB p-value > 0.05 shows the normality of the variables.						

In **Table 9** the p-values of Jarque-Bera of all the countries are greater than 5% indicating that our residuals are normally distributed.

1.3.4 (g) Stability Diagnosis Ramsey-Reset Tests:

Stability diagnostic test is employed to examine that whether the parameters of the model implied is stable or not. Ramsey-Reset test will be used to check the stability of the model. This test was proposed by James B. Ramsey in 1969. This test checks the model stability. Rule of thumb for the test is that the F-statistics probability value should be significant.

Table 10: Ramsey-Reset Test Results:

Countries						
	Pakistan		Malaysia		Indonesia	
	CVI	ISI	CVI	ISI	CVI	ISI
F-statistic	0.27	0.16	0.24	0.31	0.11	0.18
Notes: The results shows F-statistic p-value >0.05 indicating the model is correctly specified.						

Table 10 shows that our model is dynamically stable with context to all three countries as F-statistics value is significant.

1.4 Findings and Interpretation

The present study aims to contribute to the empirical literature by exploring the performance of these indices and their potential for diversification in comparison with the conventional benchmarks. The aim of this

research is two-fold, to assess the performance differences of Islamic and Conventional Indices of Pakistan, Malaysia and Indonesia. Secondly to analyze the relationship between these indices and the macroeconomic variables in these countries.

For this purpose, different risk-adjusted performance measures like Sharpe ratio, Treynor ratio and Jensen's alpha are employed in the study. The results of risk-adjusted performance measures revealed that the conventional index of Pakistan (KSE-100) and conventional index of Indonesia (JCI) performed better than their Islamic indices. However, no difference was found in the performance of both the Islamic and conventional index in case of Malaysia. Both the indices performed almost in a similar manner. All the indices Islamic and conventional outperformed their respective benchmarks except for Indonesia. From, the results it is revealed that Muslim investors can invest in Islamic indices as they are less risky and there is no much difference in their performances compared to their counterparts. Moreover, investing in Shariah compliant indices will also give a peace of mind from the religious and ethical perspective.

Auto-Regressive Distributed Lag (ARDL) model was implemented to see the impact of macroeconomic variables on both Islamic and conventional indices. ARDL bound test confirmed the long-run association between the variables and the stock market index of all the countries. The results show that in the long-run KSE-100 index was more driven by exchange rate, gross domestic product, oil prices and interest rate whereas KMI-30 was more driven by interest rate, oil prices and consumer price index. In case of Malaysia consumer price index, gross domestic product and oil were found to be significant in the long-run for both the indices. However in Indonesia, exchange rate, gross domestic product and interest rate were significant in the long-run for both LQ45 and JII index.

1.4.1 Policy Recommendations:

Several practical implications can be derived from the results:

1. Some of the macroeconomic variables like interest rate, CPI and exchange rate have proven to be strongly associated with the stock market index. Government should consider this association and should reform such policies related to these factors which will ultimately lead to a stable stock market.
2. The evidence of cointegration among the macroeconomic variables and the Islamic and conventional indices may have significant impact for portfolio diversification for investors.
3. Government can stable the economy by stabilizing the stock market which will attract more investors and firms and this will help to control bad economic situation.
4. Some specific actions could be applied by the respective stock exchanges to promote Islamic index such as
 - a) educating societies, investors to promote the Islamic index through several events held in universities, communities and institutions.
 - b) reducing transaction fee for Shariah account
 - c) Regulatory bodies should supervise the trading of Shariah compliant stocks to prevent illegal acts.

1.4.2 Future study:

This study has further scope to explore new areas of research. Firstly, this study can be expanded to other countries also. Time span can be changed by taking the daily or weekly prices of the indices. Secondly, this study can take the new dimensions like by adding the impact of microeconomic variables on these indices.

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