

# **Effects of Political and Financial Events on Islamic Banks Stock Prices: IIS Analysis**



**Submitted by**

**Ahmer Ali**

**Supervised by**

**Dr. Saud Ahmed Khan**

Assistant professor, PIDE

**Department of Management Studies**

**Pakistan Institute of Development Economics**

**Islamabad, Pakistan**

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**Submitted by**

**Ahmer Ali**

*A Dissertation Submitted to the Pakistan Institute of Development Economics,  
Islamabad, in partial fulfillment of the requirements of the Degree of Master of  
Business Administration 3.5.*

**Supervised by**

**Dr. Saud Ahmed Khan**

Assistant professor, PIDE

**Department of Management Studies**

**Pakistan Institute of Development Economics**

**Islamabad, Pakistan**

**Final Approval**

This Thesis Titled

**Effects of political and financial events on Islamic banks stock prices:  
IIS analysis**

**By**

**Ahmer Ali**

**Has been approved**

**For the Pakistan Institute of Development Economics, Islamabad**

**External Examiner:** \_\_\_\_\_

**Supervisor:** \_\_\_\_\_

**Dr. Saud Ahmed Khan**

Assistant Professor,

PIDE, Islamabad.

**Head of Department:** \_\_\_\_\_

**Dr. Nadeem Ahmed Khan**

Head, Department of Business Studies,

PIDE, Islamabad.

**Certificate:**

**It is certify that Mr. Ahmer Ali has carried out all the work related to this thesis  
under my supervision at the department of Business Studies,**

**Pakistan Institute of Development Economics, Islamabad.**

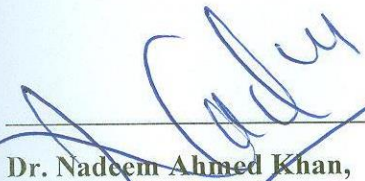
**Supervisor:**



**Dr. Saud Ahmed Khan**

Assistant Professor,  
PIDE, Islamabad.

**Submitted through:**



**Dr. Nadeem Ahmed Khan,**

Head, Department of Business Studies  
PIDE, Islamabad.

## **DECLARATION**

I AHMER ALI (Registration No. PIDE-FMBA2015 (3.5) 11student of (MBA) finance session 2015-2019, hereby undertake that, I have written this thesis entitle **“IMPACT OF POLITICAL AND FINANCIAL EVENTS ON ISLAMIC BANK STOCK PRICE IIS ANALYSIS”** by myself under the guidance of my supervisor Dr. Saud Ahmed Khan. I have read it carefully and take all the responsibilities of the mistakes.

AHMER ALI

## **DEDICATION**

This thesis is dedicated to My Parents. Especially, to my Father who always offered me unconditional love And support. My Mother, for her motherly care and support And who is always a source of motivation and Strength for me.

# **SIGNATURE SHEET**

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*In the beginning I would like to thank Allah Almighty for giving me ability and courage to complete this piece of work. I would like to pay gratitude to my supervisor Dr. Saud Ahmed Khan whose kind and consistent guidance made the task of completing this thesis easy and possible for me. He added a lot to my career, I owe him a lot. I am thankful to all of my teachers in PIDE, who opened my mind and enlightened it with their knowledge.*

*I am grateful to my family especially my father and my mother, whose support made me what I am today. They helped me in each and every step of this journey. I am thankful to all of them.*

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## **ABSTRACT**

This study inspects the effects of political and financial events on the stock prices of Islamic banks which are listed in KSE 100. Some of the main political and financial events are chosen from particular time span. The daily data are used for the period of Jan, 2007 to Dec, 2018. The GARCH model is employed to model the volatility and return series. The Impulse Indicator Saturation (IIS) is employed to measure the effects of political and financial events on the returns and the volatility of Islamic banks. The data revealed that 19 out of 21 political and financial events impacted the returns and the volatility of Islamic banks. While there is only 2 political events out of 18 that have insignificant effect on the returns and the volatility of Islamic banks. The state and Islamic banks can use these results to build an effective policy regarding Islamic banking sector.

Key words: *PSX, KSE 100, Islamic banks, Volatility, GARCH and IIS procedure*

## **CHAPTER 1**

### **INTRODUCTION**

There are many indicators which show the performance of every economy. The equity markets are significantly contributing in the economy of any country in current ages. The stock markets play a substantial role in the development of any country. The stock markets conquer strategic and significant position in process of economic growth of any country, particularly in developed economies. A economy without getting well established equity market not able to rise equity funding accessibility and cannot attains stable financial structure. The stock exchange offers firms with the facility to increase capital for development through trading shares to investors. When the investors invest their money into share buying instead of saving, it leads to wise use of assets. The reason is that the money can be consumed is mobilized and conveyed to endorse business activity. On the other hand it also bring changes in all related sectors such as industry, commerce, and agriculture which further leads to economic growth and firms efficiency.

Banking sector is considered as one of the main component of any economy. It originates from the time when the merchants of Babylonian market give loans to purchase different stuffs from the market. Modern banking sector developed in England as Bank of England was the earliest bank in the world which was established in 1694 in London. A bank actually play a role as mediator between the saver and investor (Opoku-agyemang, 2015). Banking sector is well established sector in Pakistan and it contributes to almost three-fourth of total financial sector (Fazl-E-Haider, 2018). According to Hamza and Khan (2014), the banking sector in Pakistan is rapidly growing and since 1990. Just like the banks of any other developed country

Pakistani banks provide extensive range of facilities to its customers like online banking, online billing and it deeply influence the economy of Pakistan.

In Pakistan stock exchange capitalization Islamic banks have major portion of total market capitalization. Islamic banks have a total market capitalization of about 2482 PKR billion in June 2018. In Pakistan stock market Islamic banks have total market capitalization of 12.9% in overall banking system. In Pakistan 21 Islamic banks are working but only 5 are full-fledged Islamic and remaining 16 are the standalone branches of Islamic banking of conventional banking. Total 2 Islamic banks are listed in KSE 100. The net investment of Islamic banking got increased 4.8% from 529 PKR billion to 529 PKR billion in June, 2018. Breakup of the net investment among pure Islamic banks and Islamic bank branches of conventional banks grew by 9 PKR billion in June, 2018. Pakistan Stock Exchange approved quotation and listing of 2 open ended mutual funds; the AKD Islamic Income Fund and the AKD Islamic Stock Fund in June, 2018.

As it is clear that Islamic banks contributes to a large sector in PSX, so it is evident that any fluctuations in PSX also affects the Islamic banking sector. Many studies have done in Pakistan depicting influence of political and social events on Pakistan stock market (; Khalid et al., 2010; Javed & Ahmad, 1999; Mahmood et al., 2014). Different studies explored the effect of financial events on the performance of Pakistan Stock Market (Sajid Nazir et al., 2011). As many previous studies explored the impact of terrorists, financial and political events on Pakistan stock exchange. But no particular study is made to explore the political and financial events which influence the stock prices Islamic banks listed on the KSE 100 index.

Mostly investigators analyzed the influence of financial events on Pakistan stock exchange volatility in occurrence of domestic and extraneous financial shocks (for example, Sohail & Javid 2014; Sajid Nazir et al., 2011 etc.)

The previous studied examined the influence of political and financial events on Pakistan stock exchange. There's no study which mainly examine the effect of political and financial events on Islamic banks stock prices. So, the key object of the study is to examine the impact of few major political and financial events on Islamic banks stock prices.

### **1.1 Objective of the Study**

The key objective of study id to explore the impact of major political and financial events on the returns and volatility of selected Islamic banks. Following are the sub objectives of study:

1. To estimate the volatility of Islamic banks stock prices returns.
2. To investigate the influence of political and financial events on returns series of Islamic banks.
3. To examine the impact of political and financial events on the volatility of stock prices of Islamic banks.

### **1.2. Significance of Study**

The literature review clearly shows that there is no specific study which explored the effect of political and financial events on the returns and volatility of Islamic banks stock prices. So this study has two main contributions. First is the volatility modeling of the KSE 100 listed Islamic banks return series. Second to explore the impact of political and the financial events on Islamic banks return and volatility series through



Impulse Indicator Saturation instead of event window analysis which is being used in previous studies.

We have 2 Islamic banks; BankIslamic Pakistan Limited (BIPL), and Meezan Bank Limited (MEBL) which are listed in the KSE 100 index. The data are from Jan, 2007 to Dec, 2018 and we selected some major political and financial events which lies in time span. The events are following:

<b>Dates</b>	<b>Category</b>	<b>Detail</b>
<b>14-Nov-07</b>	Internal Affair	Ban on TV Channels to go on air
<b>19-Feb-08</b>	Elections	PPP won with a 1/3 majority
<b>15-May-08</b>	Internal Affair	Strike for Justice Movement
<b>7-Sep-08</b>	financial crisis	Global financial crisis
<b>11-Mar-09</b>	Internal Affair	Long March/Riots
<b>10-Jun-10</b>	Internal Affair	Punjab Government Opposed Rah e Najat Operation
<b>2-May-11</b>	Foreign Affair	Osama Bin Laden Operation in Abbottabad
<b>28-Oct-11</b>	Long March/ Political Gathering	PML-N
<b>31-Oct-11</b>	Long March/ Political Gathering	PTI
<b>18-Jun-12</b>	Internal Affair	SC dismissed Yousaf Raza Gillani
<b>15-Jan-13</b>	Long March/ Political Gathering	Tahir ul Qadri Sit in Islamabad resulted from the long march
<b>13-May-13</b>	Elections	PMLN won
<b>5-Jun-13</b>	Internal Affair	NS the PM of Pakistan
<b>15-Aug-14</b>	Long March/ Political Gathering	PAT and PTI
<b>19-Aug-14</b>	Internal Affair	Civil disobedience by Imran khan
<b>20-Feb-18</b>	Internal Affair	SC dismissed Nawaz Sharif
<b>13-Jul-18</b>	Internal Affair	Mariam Nawaz and Nawaz Sharif arrested
<b>25-Jul-18</b>	Internal Affair	2018 general election
<b>26-Jul-18</b>	Internal Affair	PTI won
<b>9-Oct-18</b>	Exchange rate	Increase 122.44 to 132.58
<b>30-Nov-18</b>	Exchange rate	Increase 132 to 136.58

The material regarding the political and financial events collected from the from newspapers DAWN News, Tribune News, Express Newspaper, Geo News, KSE. There no special categorization of the events.

## **CHAPTER 2**

### **LITERATURE REVIEW**

This chapter comprehensively reviews previous studies which are conducted on the related issues. In every study researchers presented their theoretical and empirical models to capture the impact of political and financial events on stock market prices. In this study we check the significant effect of political and financial events on returns and volatility of stock market prices of Islamic banks; Bank Islamic Pakistan Limited (BIPL) and Meezan bank Limited (MEBL). The major political and financial events are selected between Jan, 2007 to Dec, 2018. The literature review is divided into domestic perspective and foreign perspective regarding this topic.

#### **2.1 Domestic Perspective**

Maqbool et al. (2018) investigated the effect of local and external political events on volatility and returns of Karachi stock exchange. The conclusion of this study was that the volatility of the financial indicators is impacted by these political events. While all these internal and external political events significantly impacted the returns and volatility of KSE 100 index.

Murtaza et al. (2015) examined that the major political events impacted the KSE 100 performance. These events significantly compressed the returns of KSE 100 index. These major political events are; assassination of Benazir Bhutto, Musharaf's Emergency rule, Resignation of Musharaf, General Elections 2008, Abbotabad operation, Restoration of the Chief Justice of Pakistan, Salala Attack and there were some external political events like, Elections of USA in 2012. There are some events which significantly affected the public policies and some major events did not impact

the government policies. They also found that the major which impacted the government policies effected the performance of KSE 100.

The nuclear experiments significantly impacted the volume, volatility and returns of Pakistan and India stock markets. The GARCH type modeling was used to estimate the degree of influence on the major indices of Pakistan and India stock market indices. This event negatively impacted the returns and volume of stock markets and also increased the volatility in Indian stock market. In Pakistan case only volatility was affected from this experiment but there was no impact on returns of Pakistan stock market (Javed et al., 1999).

Irshad (2011) found that the consequences of Afghan war on Pakistan economy. All the issues are discussed on theoretical basis. This study concluded that the economy of Pakistan lost a lot in war on terror among United State of America and Jihadi Militant. This war and terror consequences reduced the investment in Pakistan and due to many other reason which were emerged because of war and terror increased inflation in country. This situation generated panic and insecurity for the investor from foreign and domestic people of Pakistan.

Ahmed and Farooq (2008) investigated the consequences of 9/11 world trade center terrorism attack on Karachi stock exchange. This study explored the empirical evidence of impact of 9/11 world trade center terrorism attack on Karachi stock exchange. They explored that the volatility of KSE 100 increased in response of 9/11 world trade center attack. They also found that there was a significant impact of 9/11 attack on KSE 100 index.

Aslam (2014) studies the effect of terrorism attacks on Karachi stock exchange performance and volatility. He carefully chosen 330 major attacks and examined their

impact on the performance, volatility and returns of KSE 100. The EGARCH model applied in this study and measured Event Type, Terrorism Events Analysis, Target Type Events Analysis, Event Day Analysis, and Location Wise Impact of these selected events. He concluded that the KSE 100 converged towards normal constant point after taking shock.

Aslam (2015) studies the outcome of terrorism attacks on Karachi stock exchange performance and volatility. He carefully chosen 300 major attacks and examined their impact on the performance, volatility and returns of KSE 100. The EGARCH model applied in this study and measured Event Type, Terrorism Events Analysis, Target Type Events Analysis, Event Day Analysis, and Location Wise Impact of these selected events. He concluded that the KSE 100 converged towards normal constant point after taking shock.

Hassan et al. (2014) explored that the terrorism events impacted the Karachi stock exchange. They took 12 firms and check the impact of these events on the performance of these firms. The major selected events are Darra Adam Khel Attack, Benazir Bhutto murdered, and Attack on Marriot Hotel. They came to know that these events badly impacted the performance of these 12 firms and the returns converged towards the standard point after short period of time.

Mahmood et al. (2014) studied that the influence of political events on KSE 100 performance. The data used for this study was for the period of 1998 to 2013. They applied 60 days events analysis and explored that there is impact of all different political events on the volatility of KSE 100. They also came with conclusion is that the returns of KSE 100 negatively affected by political events.

Khalid et al. (2010) examined the influence of external and internal political events on the three main financial indicators. The data used for this study were from 1999 to 2006. They came up with the results that the volatility of these financial indicators reacted on the occurrences of selected political events.

Sohail and Javid (2014) explored the dependence between financial crisis 2008 and behavior of investors. They divided sectors into two categories; financial sector and the non-financial sector. They explored that financial sector highly influenced by the shock of global financial crisis and the shock of persisted 12 to 24 weeks. While the nonfinancial sector also effected but the persistence of shock retained only one week.

Sajid Nazir et al. (2011) explored that consequences of martial law and democracy regimes on the performance of Karachi stock exchange. The data used for this study were from 1999 to 2011. They used window event study and the mean adjustment model and concluded that the stock prices reacted over these regime shifting.

## **2.2 International Perspective**

Blalock et al. (2005) checked the influence of 9/11 terrorist attack on 14 different economies stock markets. They explored that all the national and international markets in sample reacted over this attack. They also came to know that the stock market of Hong Kong converged towards the average value but the Johannesburg converged to average point after 162 days.

Erb et al. (1996) investigated the dependence among expected returns and 117 economies 5 measures of risk. The equity markets are divided into different categories. They came up with conclusion that these measures are linked with returns of 117 economies.

Beaulieu et al. (2005) explored the impact of domestic political events on 102 firms which are listed in the Montreal and Toronto equity markets. They concluded that the volatility of the financial markets found to be sensitive over these political events.

Dangol (2008) explored the expected and unexpected political events on Nepalese financial market. The event window analysis applied to empirically find out impact of the expected and unexpected political events on volatility of stock market. They concluded that bad impact had been emerged due to bad events and positive because of good events. The stock market converged to the standard point after 2 to 3 days after shock.

Clark et al. (2008) investigated the consequences of different political events on the performance of Karachi stock market. The study was based on the documented analysis and interviews from the different stock holder and other people which are directly and indirectly attached with stock market. They included all the main political events for the period of 1947 to 2001. The Bayesian Econometrics model applied for analysis and found that these events influenced the stock market prices.

Dadurkevicius and Janssonaite (2017) explored the influence of anticipated political events on Brexit allies' economies equity markets. They came to know that the volatilities of equity markets of allies of Brexit economies reacted over these events. They also found huge dependence between expected political events and volatility of these economies. The stock prices converged to normal average point after shock shortly but vary sector to sector.

## CHAPTER 3

### METHODOLOGY AND MODEL SPECIFICATIONS

#### 3.1. Methodology

This chapter describes the empirical analysis of volatility modeling and tracing impact of political and financial events on Islamic banks returns and volatility series. The selected Islamic banks are listed in KSE 100 index. The stock prices series of the banks are having ARCH effect that is for volatility series we used GARCH modeling. Because the basic assumption OLS model is the homogeneity of variances but when the variance are dependent of time then we cannot use the OLS model. That is why for volatility series we used GARCH modeling. The GARCH model is an extension of ARCH model which is used to avoid the long lag length problem of ARCH model. We used the Impulse Indicator Saturation (IIS) technique is used to detect the impact of political and financial events on Islamic banks returns and volatility series. This procedure is used some researcher for the detection of structural breaks.

#### 3.2. Model Specifications

The financial raw series are mostly having stochastic trend. That is why it is not possible to estimate valid results from time series when there is stochastic trend through GARCH modeling. On the other hand when series have ARCH effect then the hetroscedasticity can be reduced by taking log. That is why we make returns series by using following formula:

$$R_t = \log\left(\frac{l_t}{l_{t-1}}\right) \quad (3.1)$$

$l_t$  Current price i.e. stock price at t time.

$l_{t-1}$  Lag price of the series.



### 3.2.1. Autoregressive Conditional Heteroscedastic (ARCH) Model

To model the time series when the variance is varying with time Engle (1982) introduced ARCH model. The ARCH model simultaneously estimate two equations; conditional mean equation which estimates the data generating process of returns commonly ARMA process and conditional variance equation which estimates the data generating process of variance which is based on the squared lag value of residual. The general form of ARCH model equations are following:

#### Conditional mean

$$R_t = \delta_0 + \delta_1 M_t + \varepsilon_t \quad (3.2)$$

Where  $\varepsilon_t = z_t \sigma_t$ ,  $z_t \sim N(0,1)$

#### Conditional variance

$$\sigma_t^2 = \tau_0 + \sum_{i=1}^q \tau_i \varepsilon_{t-i}^2 + \nu_t \quad (3.3)$$

where  $i= 1, 2, \dots, q$

The  $R_t$  is the presentations of return series and the  $\delta_1$  directs parameters vector of ARMA (p, q) process. The  $\delta_1 M_t$  term is the general form of ARMA (p, q) process. This process can be ARMA (0, 0) in some particular scenarios. There are some assumptions of the ARCH model; the parameters of the conditional variance equation must come up with positive sign, the ARCH model only capture symmetric effect in returns. The  $\varepsilon_t$  is the error term and  $\varepsilon_{t-i}^2$  is known as ARCH term.

### 3.2.2. GARCH Model

There is big problem with ARCH model is the long lag length of the ARCH process which reduces the degree of freedom. To overcome this problem Bollerslev (1986)

introduced a valuable extension of the ARCH model which is known as Generalized Autoregressive Conditional Heteroscedastic (GARCH) model. In this model to tackle this problem the lag value of the conditional variance equation introduced in the conditional variance equation as independent variable. Ghose and Khan (2017) employed GARCH modeling to model the stock indices Pakistani and foreign stock markets.

The general form of the equations of GARCH (p, q) model are following:

### **Conditional mean**

$$R_t = \delta_0 + \delta_1 M_t + \varepsilon_t \quad (3.4)$$

Where  $\varepsilon_t = z_t \sigma_t$ ,  $z_t \sim N(0,1)$

### **Conditional variance**

$$\sigma_t^2 = \tau_0 + \sum_{i=1}^q \tau_i \varepsilon_{t-i}^2 + \sum_{j=1}^p \theta_j \sigma_{t-j}^2 + v_t \quad (3.5)$$

The  $R_t$  is the presentations of return series and the  $\delta_1$  directs parameters vector of ARMA (p, q) process. The  $\delta_1 M_t$  term is the general form of ARMA (p, q) process. This process can be ARMA (0, 0) in some particular scenarios. There are some assumptions of the ARCH model; the parameters of the conditional variance equation must come up with positive sign, the ARCH model only capture symmetric effect in returns. The  $\varepsilon_t$  is the error term and  $\varepsilon_{t-i}^2$  is known as ARCH term. The  $\theta_j$  is the parameter of lag value of conditional variance.

### **3.2.3. Impulse Indicator Saturation (IIS)**

The Impulse Indicator Saturation (IIS) process is presented by (Hendry et al., 2008).

The purpose of this process is to detect the shift in intercept, co-breaks, breaks and

multiple breaks. This process is unrestricted and general in nature that is why also known as unrestricted model (GUM). The IIS procedure check break on each point of the data. The dummy variable is generated against each value in data to capture the effect of events or break. There is a general rule in econometrics that the number of estimated parameters must be less number of observation. This procedure deals with this rule by introducing specific amount of dummy variables and runs regression, after that second regression with next dummies and so on. In this way the rule of regression analysis remains unviolated. The break could be significant on different level of significance that is why we can set a specific level of significance according to our objective of study. We use Impulse Indicator Saturation (IIS) technique to estimate the effect of political and financial events on Islamic banks which are listed in KSE 100 index.

The data is used from Jan 2007 to Dec, 2018 and the total number of observation are 2968. We set a criteria to introduce 250 dummies in one regression and then the IIS runs 12 regressions. The generalized form of regression are following:

$$R_{it} = \pi_0 + \pi_1 R_{it-1} + \sum_{t_1=1}^{250} \tau_{t_1} B_{it} + \varepsilon_{it} \quad (3.6)$$

$$\varepsilon_{1t} \sim \text{IIN}(0, \sigma_t^2)$$

$$t_1 = 1, 2, \dots, 250$$

$$R_{i,t} = \pi_0 + \pi_1 R_{it-1} + \sum_{t_2=251}^{500} \tau_{t_2} B_{i,t} + \varepsilon_{it} \quad (3.7)$$

$$\varepsilon_{it} \sim \text{IIN}(0, \sigma_t^2)$$

$$t_2 = 251, 252, \dots, 500$$

.

.

$$R_{it} = \pi_0 + \pi_1 R_{it-1} + \sum_{t_{12}=2501}^{2968} \tau_{t_{12}} B_{i,t} + \varepsilon_{i,t} ; \quad (3.8)$$

$$\varepsilon_{i,t} \sim \text{IIN}(0, \sigma_t^2)$$

$$t_{12} = 2501, \dots, 2968$$

### 3.2.4 Residual Analysis

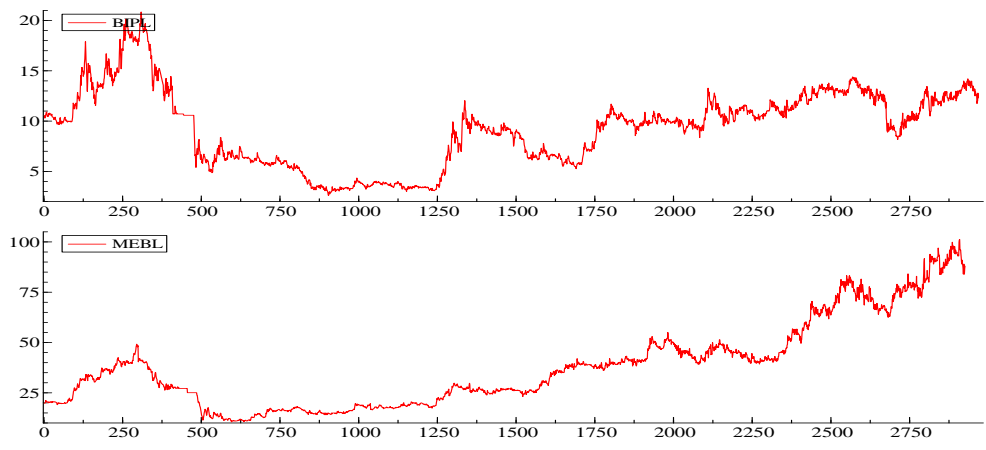
The residual analysis or post estimation is necessary to check the reliability of the output of econometric models. The Jarque-Bera test is known as normality test, we use it to check the normality of residuals. The check autocorrelation in residuals Q stat test is employed. Q-stat square test employed to estimate the heteroscedasticity in the residuals. To check ARCH effect in residuals the LM ARCH test is used.

### 3.3. Structure of Methodology

The data visualization is employed to understand the nature and behavior of raw and return time series. The descriptive statistics explained the basic characteristics of returns series of Islamic banks. The GARCH type model is used to model the volatility of Islamic banks stock prices. At the end the IIS procedure is adopted to check the impact of political and financial events on Islamic banks returns and volatility series.

### 3.4. Description of Data and sources

The daily data are used for the period of Jan, 2007 to Dec, 2018. The data related to stock prices of Bank Islami Pakistan Limited and Meezan Bank Limited are collected from Business recorder. The Information regarding the political and financial events is collected from social media; Express Newspaper, DAWN News, Geo News, Tribune News, and KSE.



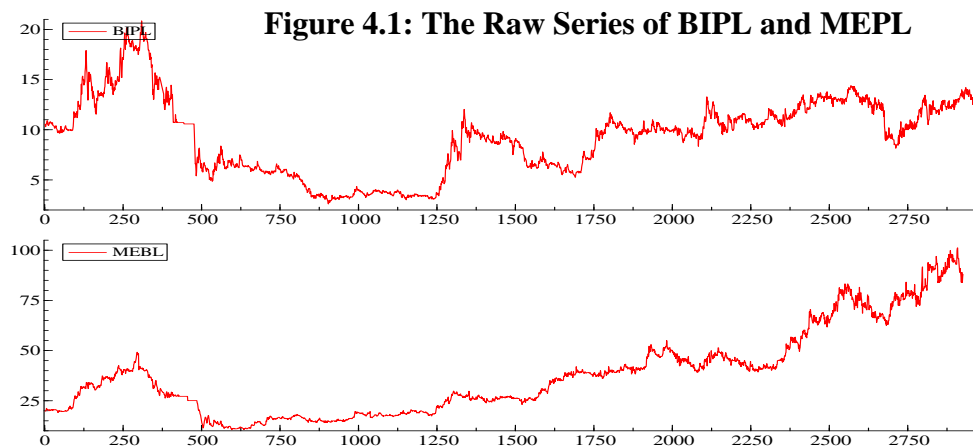
## CHAPTER 4

### RESULTS AND DISCUSSION

This chapter based on the empirical of all the tools. The purpose of this study id to analyze the effect of political and financial events on Islamic banks which are listed in KSE 100. In this chapter first section bases on data visualization. The second section contains descriptive statistics. The third section comprises on the volatility modeling and fourth section encompasses the results of political and financial events on Islamic banks returns and volatility.

#### 4.1. Data Visualization

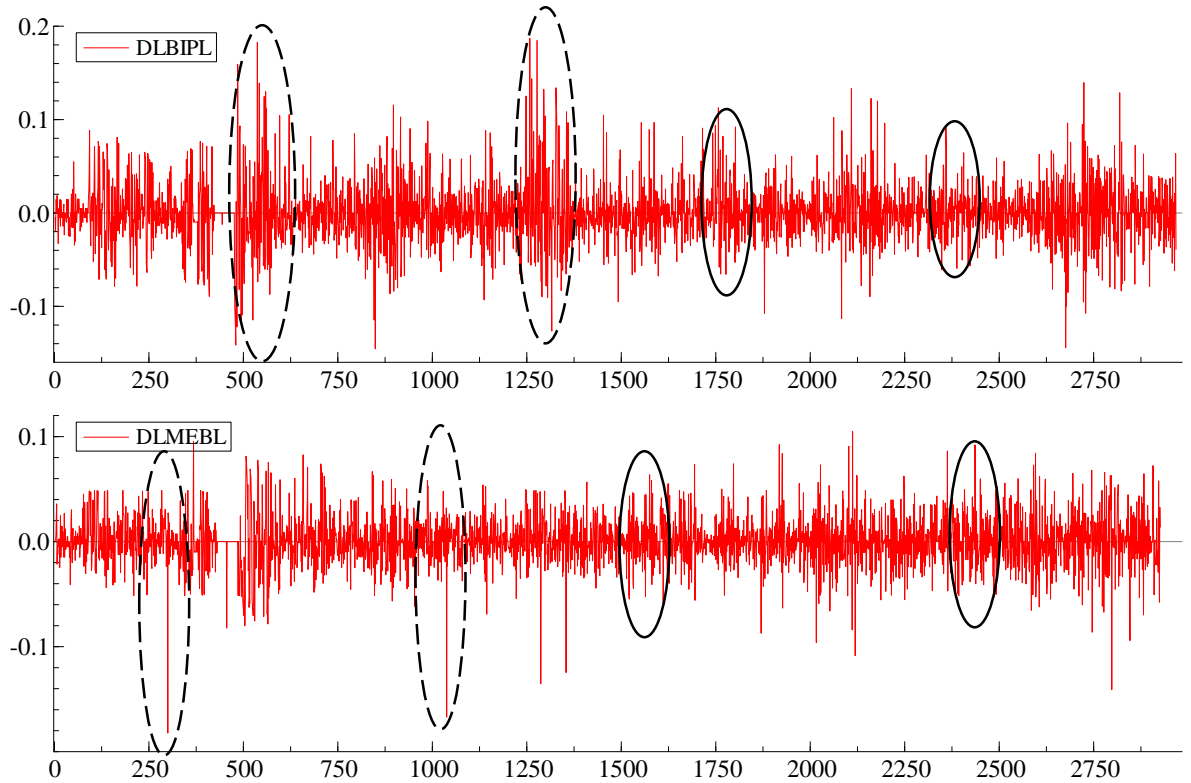
In this section we visualize the raw and return series and their characteristics which provides us the basic understating about the nature and behavior of the series.



The figure 4.1 shows that the series stock prices series of both banks are overall moving upward or having upward trend with some fluctuations.

These fluctuations are emerged due to some external and internal shock which make series volatile.

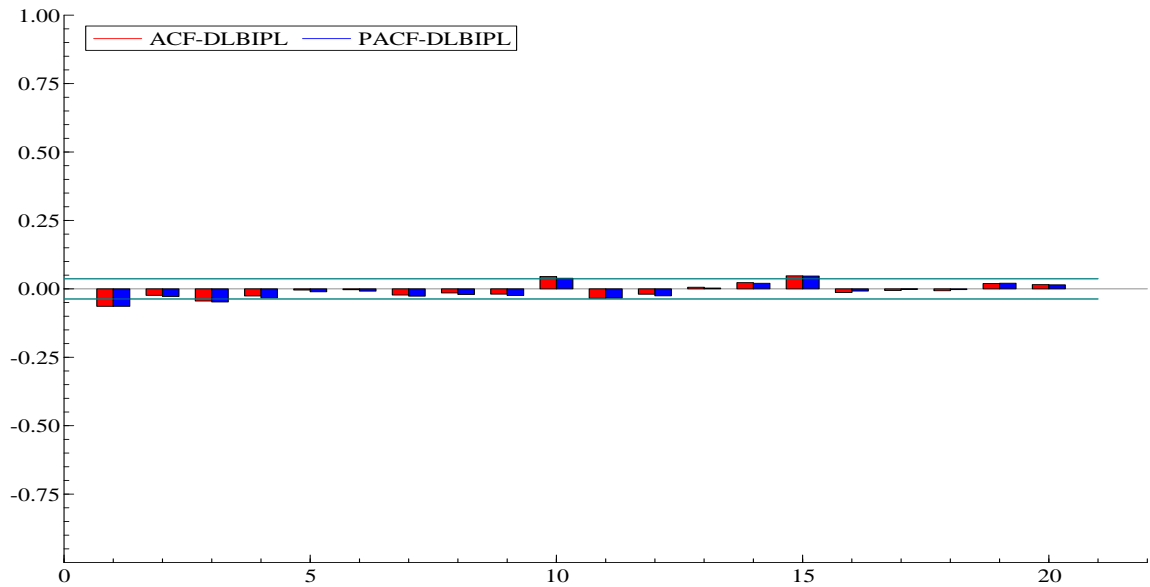
**Figure 4.2: The Returns Series of BIPL and MEPL**



The figure 4.2 displays the returns series of BIPL and MEPL banks. It shows the dispersion of return from mean value which is some time also known as volatility. There are some circles which are explaining the low volatility and high volatility clustering. Like, the dashed line circles show the high volatility clustering and plan line circles indicate about low volatility clustering. These clustering points also indicates about the presence of ARCH effect.

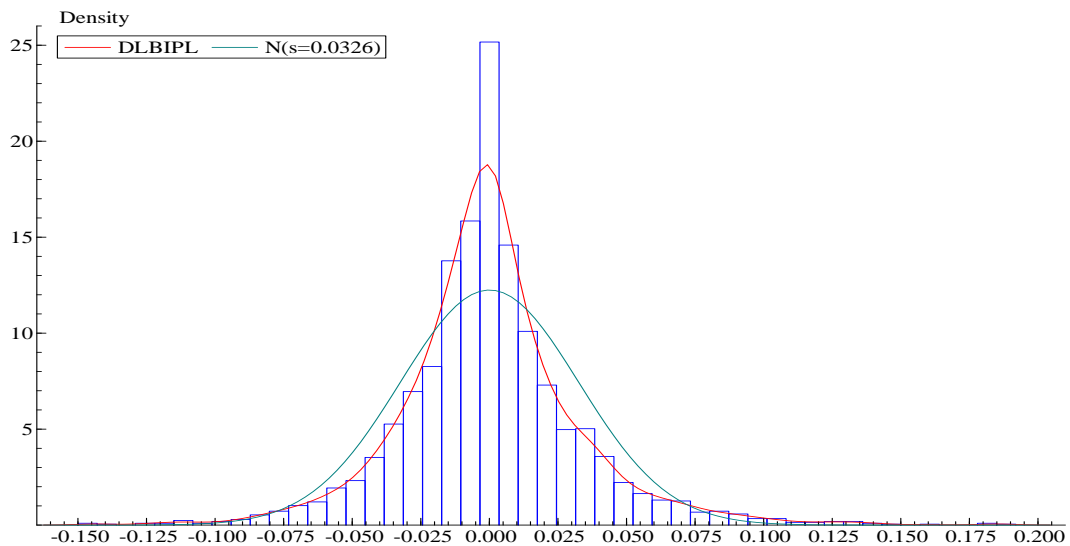
The figure 4.3 shows the ACF and PACF of returns series of BIPL bank. The ACF explains about the autoregressive behavior of BIPL which means the lag of effects the current value and PACF shows the moving average which shows the lag variation effects current variation. The red line is about the ACF and blue line is about the PACF.

**Figure 4.3: The ACF and PACF of BIPL**



The bar which is outside the lines considers as significant lag value. The figure shows that only first 3 lags are outside the lines. For convenience it is made only for BIPL and it can be made for other bank return series.

**Figure 4.4: The Distribution of the Returns of BIPL**



The figure 4.4 shows the distribution of the returns of Bank Islamic (BIPL), which indicates that the distribution has large tail as compare to the normal distribution. In his figure the red line shows the actual distribution of returns and green line shows



the reference normal distribution. It means that the distribution is not symmetric. The peak of distribution is also higher than the normal distribution which means that the distribution is leptokurtic in nature. This overall shows that the distribution is not normal.

## 4.2. Descriptive Statistics

The descriptive statistics provides initial stats about the nature and the characteristics of the data series. The outputs of the summary of statistics are given below in table 1:

**Table 4.1. The Descriptive Statistics of BIPL and MEBL**

Series	Mean	Std.Error	Skewness	Jarque Bera	Excess Kurtosis	Q-stat (5)	Q2-stat (5)	ARCH 1-2	KPSS
<b>BIPL</b>	0.00005	0.03257	0.47269 (0.000)	1502.3 (0.002)	3.3812 (0.000)	20.1270 (0.001)	393.971 (0.000)	63.815 (0.000)	0.11966
<b>MEBL</b>	0.00051	0.02448	-0.2617 (0.000)	1741.9 (0.000)	3.7441 (0.000)	39.9162 (0.000)	90.8753 (0.000)	31.168 (0.000)	0.12908

### Null Hypotheses

“KPSS H0: Return series is level stationary, Asymptotic significant values 1% (0.739), 5% (0.463), 10% (0.347). Q-stat (return series) there is no serial autocorrelation. Q2-stat (square return series) H0: there is no serial autocorrelation. Jarque-Bera H0: distribution of series is normal. LM-ARCH H0: there is no ARCH effect. Use these Asymptotic Significance values of t-stat 1% (0.01), 5% (0.05), 10% (0.1) and compare these critical values with P-values (Probability values). P-values are in the parenthesis.”

The table 4.2 describes the results of summary of statistics. The mean value is indicates the average value of the series which shows on average the returns are close to zero. It means the returns series follows mean reversion behavior. The standard deviation explains the deviation from mean value, the deviation for both series from the mean is not too high. The skewness explains the symmetry of distribution and in both cases the skewness values are significant it mean both series are asymmetric in

nature. While the BIPL distribution is positively tailed and distribution of MEBL is negative skewed. The Jarque-Bera is the test of normality with null hypothesis that the distribution is normal. The statistics of Jarque-Bera shows that the distribution is not normal because it rejects the null hypothesis. The excess kurtosis shows that the distribution does not have normal peak, it is higher than the normal level that is why it is leptokurtic. The Q stat explain that the returns have autoregressive behavior while the Q square stat shows that the returns square which is equal to the variance is also have autoregressive behavior. The ARCH effect test explains that the returns series have ARCH effect that is for GARCH modeling is being used. The KPSS test shows that the both returns series are stationary.

### **4.3. Volatility Modeling**

The objective of this study to check the impact of political and financial events on the returns and volatility of Islamic banks which are listed in KSE 100. The descriptive statistics show that the returns series of banks are having ARCH effect. So to find out the volatility series we employ GARCH modeling. The volatility series are generated through the conditional variance equation. The results of GARCH modeling given below in table 4.2 and 4.3.

The table 4.3 explains the results of GARCH model of BIPL. The first panel of the table 4.2 explains that the  $\vartheta_1$  autoregressive parameter is significant. The  $\emptyset_1$  is the parameter of moving average is also significant. It mean that the returns of BIPL follows ARMA (1, 1) process. The second panel of table 4.3 shows the results of conditional variance equation of GARCH model.

**Table 4.2: The Volatility Modeling of Return Series of BIPL**

Parameters	Coefficient	Std.Error	t-value	t-prob
<b>Conditional Mean Equation</b>				
<b>Constant</b> $\theta_0$	-0.0014	0.0001	-0.4852	0.6276
<b>AR(1)</b> $\vartheta_1$	0.4365	0.1081	4.0370	0.0001***
<b>MA(1)</b> $\phi_1$	-0.5944	0.0973	-6.1120	0.0000***
<b>Conditional Variance Equation</b>				
<b>Constant</b> $\gamma_0$	-0.0027	0.0002	-0.5387	0.5901
<b>ARCH(1)</b> $\gamma_1$	0.4055	0.1915	2.1170	0.0343**
<b>GARCH(1)</b> $\delta_1$	0.7813	0.0584	13.3700	0.0000***
<b>Student (DF)</b>	2.9999	0.3811	7.8710	0.0000***
<b>Persistence of shock</b>	0.9990			

**Null Hypotheses**

“AR (p)  $H_0: \vartheta_i = 0$  No AR Process, MA (q)  $H_0: \phi_i = 0$  No MA Process, ARCH  $H_0: \theta_i = 0$  No ARCH effect, GARCH  $H_0: \varphi_i = 0$  No GARCH effect. The \*, \*\* and \*\*\* are showing the significance at 10%, 5% and 1% respectively”.

**Residual Analysis**

Tests	Jarque - Bera	Q Stat (5)	Q Stat (10)	Q <sup>2</sup> Stat (5)	Q <sup>2</sup> Stat (10)	LM ARCH (1-2)	LM ARCH (1-5)
<b>Values</b>	8.4392 (0.0000)	1.0853 (0.1653)	0.2386 (0.8375)	0.5632 (0.4382)	0.3187 (0.4386)	0.6538 (0.9140)	0.4370 (0.5821)

**Null Hypotheses**

“Q-stat (return series) there is no serial autocorrelation. Q<sup>2</sup>-stat (square return series)  $H_0$ : there is no serial autocorrelation. Jarque-Bera  $H_0$ : distribution of series is normal. LM-ARCH  $H_0$ : there is no ARCH effect. P-values are in the parenthesis”.

The ARCH term coefficient  $\gamma_1$  is significant which mean that there is ARCH which effect conditional variance of BIPL. The coefficient of GARCH term  $\delta_1$  is also significant. It means that the conditional variance is also following GARCH (1, 1) specification. The student t term is also significant which means that it follows t distribution. The persistence of shock is close to 1 which shows that the ARCH and GARCH effect take long time to decay.

The third panel of table 4.3 describes the results of residual analysis which validate the results of regression. The Jarque-Bera is the test of normality with null hypothesis that the distribution is normal. The statistics of Jarque-Bera shows that the distribution is not normal because it rejects the null hypothesis. The normality of the residual is not necessary for validation of results. The Q stat explain that the residuals have autoregressive behavior while the Q square stat shows that the residuals square which is equal to the variance is also have autoregressive behavior. The statistics of test show that they are insignificant which means that there is no more autocorrelation and hetroscedasticity. The ARCH test explains that the residuals have not ARCH effect.

The table 4.4 below describes the results of volatility modeling of MEBL. The first panel of the table 4.3 refers that the  $\vartheta_1$  autoregressive parameter is significant in conditional mean equation. The  $\emptyset_1$  is the parameter of moving average is also significant. It mean that the returns of MEBL follows ARMA (1, 1) process. The second panel of table 4.2 displays the results of conditional variance equation of volatility modeling of MEBL. The ARCH term coefficient  $\gamma_1$  is statistically significant which shows that there is ARCH effect which effects the conditional variance of MEBL. The coefficient of GARCH term  $\delta_1$  is also significant. It means that the conditional variance is also following GARCH (1, 1) specification. The student t term is also significant which means that it follows t distribution. The persistence of shock is close to 1 which shows that the ARCH and GARCH effect take long time to decay.

**Table 4.3: The Volatility Modeling of Return Series of MEBL**

Parameters	Coefficient	Std.Error	t-value	t-prob
<b>Conditional Mean Equation</b>				
Constant $\theta_0$	0.0001	0.0003	0.3784	0.7052
AR(1) $\vartheta_1$	0.0747	0.0767	0.9744	0.0300**
MA(1) $\phi_1$	-0.2789	0.0731	-3.8140	0.0001***
<b>Conditional Variance Equation</b>				
Constant $\gamma_0$	0.8525	0.2732	3.1200	0.0018***
ARCH(1) $\gamma_1$	0.3319	0.0605	5.4820	0.0000***
GARCH(1) $\delta_1$	0.5954	0.0760	7.8380	0.0000***
Student (DF)	4.2501	0.4087	10.4000	0.0000****
			0.92725	
<b>Persistence of shock</b>				

**Null Hypotheses**

“AR (p) H0:  $\vartheta_i = 0$  No AR Process, MA (q) H0:  $\phi_i = 0$  No MA Process, ARCH H0:  $\theta_i = 0$  No ARCH effect, GARCH H0:  $\varphi_i = 0$  No GARCH effect. The \*, \*\* and \*\*\* are showing the significance at 10%, 5% and 1% respectively”.

**Residual Analysis**

Tests	Jarque-Bera	Q Stat (5)	Q Stat (10)	Q <sup>2</sup> Stat (5)	Q <sup>2</sup> Stat (10)	LM ARCH (1-2)	LM ARCH (1-5)
Values	19.7562 (0.0000)	1.6892 (0.26982)	0.9874 (0.2037)	0.9851 (0.7822)	0.8371 (0.7239)	0.7312 (0.2464)	0.8748 (0.8371)

**Null Hypotheses**

“Q-stat (return series) there is no serial autocorrelation. Q<sup>2</sup>-stat (square return series) H0: there is no serial autocorrelation. Jarque-Bera H0: distribution of series is normal. LM-ARCH H0: there is no ARCH effect. P-values are in the parenthesis”.

The third panel of table 4.3 describes the results of residual analysis which validate the results of regression. The Jarque-Bera is the test of normality with null hypothesis

that the distribution is normal. The statistics of Jarque-Bera shows that the distribution is not normal because it rejects the null hypothesis. The normality of the residual is not necessary for validation of results. The Q stat explain that the residuals have autoregressive behavior while the Q square stat shows that the residuals square which is equal to the variance is also have autoregressive behavior. The statistics of test show that they are insignificant which means that there is no more autocorrelation and hetroscedasticity. The ARCH test explains that the residuals have not ARCH effect.

#### **4.4. The Impact of political and financial events on BIPL and MEBL Returns and Volatility Series**

The Impulse Indicator Saturation procedure is used to check the significance of these political and financial events on returns and volatility of BIPL and MEBL. The major 21 events have been selected which are appeared in selected data span. The results are given in below tables 4.5 and 4.6.

The results in table 4.4 show that all the political and financial events effects the performance of BIPL and MEBL. The results show that there is significant impact of all the political and financial events on returns of BIPL and MEBL except Ban on TV Channels to go on air, Punjab Government Opposed Rah e Najat Operation at NS the PM of Pakistan at 14 Nov 2007, 10 Jun 2010 and NS the PM of Pakistan respectively. There are some events which weakly impacted the returns of BIPL and MEBL. These events are not significant at 5% level of significance but they are significant at 10% like, Osama Bin Laden Operation in Abbottabad and Civil disobedience by Imran khan at 2 May 2011 and 19 Aug 2014.

**Table 4.4: The Impact of Political and Financial Events on Returns of BIPL and MEBL**

<b>Date</b>	<b>Category</b>	<b>Detail</b>	<b>BIPL (F-stat)</b>	<b>MEBL (F-stat)</b>
<b>14-Nov-07</b>	Internal Affair	Ban on TV Channels to go on air	1.8742 0.2835	0.4991 0.3759
<b>19-Feb-08</b>	Elections	PPP won with a 1/3 majority	11.7542 0.0007***	16.9443 0.0001***
<b>15-May-08</b>	Internal Affair	Strike for Justice Movement	82.7620 0.0043**	72.7621 0.0092**
<b>7-Sep-08</b>	financial crisis	Global financial crisis	57.8313 0.0000***	9.7822 0.0000***
<b>11-Mar-09</b>	Internal Affair	Long March/Riots	34.8653 0.0000***	23.3945 0.0000***
<b>10-Jun-10</b>	Internal Affair	Punjab Government Opposed Rah e Najat Operation	0.7218 0.4968	2.1362 0.3949
<b>2-May-11</b>	Foreign Affair	Osama Bin Laden Operation in Abbottabad	46.8434 0.0748***	39.9853 0.0517***
<b>28-Oct-11</b>	Long March/ Political Gathering	PML-N	76.7522 0.0000***	85.7642 0.0000***
<b>31-Oct-11</b>	Long March/ Political Gathering	PTI	21.7842 0.0000***	48.7638 0.0000***
<b>18-Jun-12</b>	Internal Affair	SC dismissed Yousaf Raza Gillani	87.9472 0.0000***	34.4074 0.0000***
<b>15-Jan-13</b>	Long March/ Political Gathering	Tahir ul Qadri Sit in Islamabad resulted from the long march	62.7492 0.0000***	72.7842 0.0009***
<b>13-May-13</b>	Elections	PMLN won	65.7462 0.0000***	23.4982 0.0000***
<b>5-Jun-13</b>	Internal Affair	NS the PM of Pakistan	3.8364 0.2621	3.7821 0.4580
<b>15-Aug-14</b>	Long March/ Political Gathering	PAT and PTI	49.4952 0.0000***	63.9848 0.0000***
<b>19-Aug-14</b>	Internal Affair	Civil disobedience by Imran khan	4.4023 0.0654*	3.6482 0.0721*
<b>20-Feb-18</b>	Internal Affair	SC dismissed Nawaz Sharif	47.8031 0.0000***	24.7492 0.0000***
<b>13-Jul-18</b>	Internal Affair	Mariam Nawaz and Nawaz Sharif arrested	12.2693 0.0002***	23.7592 0.0007***
<b>25-Jul-18</b>	Internal Affair	2018 general election	19.9824 0.0048***	54.8132 0.0014***
<b>26-Jul-18</b>	Internal Affair	PTI won	4.4369 0.0729*	5.8426 0.0821*
<b>9-Oct-18</b>	Exchange rate	Increase 122.44 to 132.58	43.4958 0.0054***	62.8642 0.0049***
<b>30-Nov-18</b>	Exchange rate	Increase 132 to 136.58	37.8419 0.0159**	26.9352 0.0421**

**Table 4.5: The Impact of Political and Financial Events on Volatility of BIPL and MEBL**

<b>Date</b>	<b>Category</b>	<b>Detail</b>	<b>BIPL (F-stat)</b>	<b>MEBL (F-stat)</b>
<b>14-Nov-07</b>	Internal Affair	Ban on TV Channels to go on air	2.8329 0.6392	0.3791 0.6920
<b>19-Feb-08</b>	Elections	PPP won with a 1/3 majority	14.4297 0.0000***	27.9312 0.0000***
<b>15-May-08</b>	Internal Affair	Strike for Justice Movement	63.4783 0.0004**	49.3849 0.0018**
<b>7-Sep-08</b>	financial crisis	Global financial crisis	57.6492 0.0000***	56.3821 0.0000***
<b>11-Mar-09</b>	Internal Affair	Long March/Riots	49.3871 0.0000***	37.3923 0.0000***
<b>10-Jun-10</b>	Internal Affair	Punjab Government Opposed Rah e Najat Operation	0.3293 0.1522	1.3739 0.3949
<b>2-May-11</b>	Foreign Affair	Osama Bin Laden Operation in Abbottabad	5.3901 0.0561***	9.6948 0.0849***
<b>28-Oct-11</b>	Long March/ Political Gathering	PML-N	62.7823 0.0000***	38.3981 0.0000***
<b>31-Oct-11</b>	Long March/ Political Gathering	PTI	32.4629 0.0000***	24.4821 0.0000***
<b>18-Jun-12</b>	Internal Affair	SC dismissed Yousaf Raza Gillani	21.3031 0.0000***	35.3309 0.0000***
<b>15-Jan-13</b>	Long March/ Political Gathering	Tahir ul Qadri Sit in Islamabad resulted from the long march	42.3916 0.0000***	19.1093 0.0000***
<b>13-May-13</b>	Elections	PMLN won	65.7462 0.0000***	23.4982 0.0000***
<b>5-Jun-13</b>	Internal Affair	NS the PM of Pakistan	5.8749 0.0872*	4.3782 0.07492*
<b>15-Aug-14</b>	Long March/ Political Gathering	PAT and PTI	83.3879 0.0000***	92.4829 0.0000***
<b>19-Aug-14</b>	Internal Affair	Civil disobedience by Imran khan	8.3783 0.06293*	3.3982 0.0932*
<b>20-Feb-18</b>	Internal Affair	SC dismissed Nawaz Sharif	72.8992 0.0000***	31.4872 0.0000***
<b>13-Jul-18</b>	Internal Affair	Mariam Nawaz and Nawaz Sharif arrested	46.7322 0.0000***	64.4762 0.0000***
<b>25-Jul-18</b>	Internal Affair	2018 general election	46.4581 0.0002***	32.4892 0.0000***
<b>26-Jul-18</b>	Internal Affair	PTI won	63893 0.05193*	8.4873 0.0621*
<b>9-Oct-18</b>	Exchange rate	Increase 122.44 to 132.58	42.4934 0.0000***	37.4213 0.0000***
<b>30-Nov-18</b>	Exchange rate	Increase 132 to 136.58	42.3091 0.0047**	34.8423 0.0124**



The results in table 4.6 express that all the political and financial events effects the performance of BIPL and MEBL. The results display that there is significant impact of all the political and financial events on volatility of BIPL and MEBL except Ban on TV Channels to go on air and Punjab Government Opposed Rah e Najat Operation at 14 Nov 2007 and 10 Jun 2010 respectively. There are some events which weakly impacted the volatility of BIPL and MEBL. These events are not significant at 5% level of significance but they are significant at 10% like, Osama Bin Laden Operation in Abbottabad, Civil disobedience by Imran khan and PTI won general election at 2 May 2011, 19 Aug 2014 and 26 Jul 2018.

The overall results indicate data the political and financial events impacted the returns and volatilities of Islamic banks listed in KSE 100. There are only two political events which did not hit the returns and volatility are Ban on TV Channels to go on air and Punjab Government Opposed Rah e Najat Operation at 14 Nov 2007 and 10 Jun 2010 respectively.

## **CHAPTER 5**

### **CONCLUSION AND POLICY DISCUSSION**

This chapter discusses the conclusion of the study and policy discussion on the basis of results of the study. There are many external and internal shock which effected the Pakistan economy and all the major segments of economy of Pakistan. The stock markets are very important role in any economy. The stability of an economy also based on the performance of stock market. The Islamic banking sector in stock market of Pakistan is showing it importance with the passage of time. But when any shock hits the stock market its effect also seen in the stock prices of all the sectors which are listed in Pakistan stock exchange like, Islamic banking. We selected some major political and financial events form the history and explore their impact on performance of Islamic banks which are listed in KSE 100 index.

#### **5.1. Conclusion**

Following are the conclusion of this study:

- 1.** The Returns series of Islamic banks BIPL and MEBL impacted by 19 political events out of 21 events.
- 2.** The volatility series of Islamic banks BIPL and MEBL impacted by 19 political events out of 21 events.
- 3.** The Returns series of Islamic banks BIPL and MEBL impacted by all internal and external financial events.
- 4.** The volatility series of Islamic banks BIPL and MEBL impacted by all internal and external financial events.

5. The political events which did not affect the return and volatility of Islamic banks are; TV Channels to go on air and Punjab Government opposed Rah-e-Najat operation at 14 Nov, 2007 and 10 Jun, 2010 respectively.

6. All the financial events which did not affect the return and volatility of Islamic banks are; TV Channels to go on air and Punjab Government opposed Rah-e-Najat operation at 14 Nov, 2007 and 10 Jun, 2010 respectively.

7. There are some political events which weakly effected the return and volatility of Islamic banks; Osama Bin Laden Operation in Abbottabad and PTI won at 2 May 2011 and 26 Jul 2018 respectively.

Overall conclusion is that all the political and financial events effects the performance of Islamic banking sector expect only 2 events.

## **5.2. Policy Recommendations**

The results could provide a direction to central bank of Pakistan regarding Islamic banks policy in the occurrence of political and financial events effects. The Islamic banks can also use these results for making policy regarding stock market shares. The Islamic banks can use these results for future policy for the treatments of such political and financial events.

## **5.3. Limitations of the study**

These are the limitations of the study:

1. This study run this analysis only on two banks which are listed in KSE 100. In future a study can be done by taking all the Islamic banks or by taking the Islamic index.

**2.** This study took a few events and specific time period for analysis, in future a study can be done by taking long data set and many other major events.

**3.** A study can be done in future by comparing other brake testing studies and IIS.

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