Drivers of Equity Market: Empirical Evidence from Pakistan

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Abstract

In consistent with the arbitrage pricing theory by Ross in 1976, there are abundant of factors which can explain the return of a security. For this purpose, study examines the long term relation between national and international drivers of equity market in Pakistan. Study analyze the number of casualties in Pakistan, foreign geographical fierceness, exchange rate, interest rate as domestic drivers, while world economic policy uncertainty and world oil prices as international drivers of Pakistani equity market. The study period is about 15 years on monthly basis which starts from January 2000 to October 2014. We apply the Johnson and Juslius (1990) cointegration, Granger causality, variance decomposition and impulse response analysis for the said purpose. We finds that besides from the own shocks in Pakistani equity market, foreign economic uncertainty and international oil prices are proven a driver's role for equity market. In Pakistani perspective, currency market and interest rates have long run relation with equity market. Within reasonable limits, it can be inferred that Pakistani equity market are now absorbing the terrorist activities in Pakistan but still number of person killed in bomb blasts and foreign geographical fierceness in the shape of drone attacks exerting some pressure on equity market. Study recommend to the investors, policy makers and financial analysis that they should be quite vigilant about these national and international equity drivers in Pakistan.

1.   Introduction

In the economy of a country, an equity market plays a distinction role for the movements of fund between several parties having different interests. Broadly it acts as intermediary between the parties involved. On one side there are investors that want to invest their surplus or sacrifice today's need for the amelioration of their future. These investors are gorgeous for corporation as well as many other institutions. Equity market facilitates both of the parties in a sophisticated mode. It also props up the reallocation of resources between different companies (Sohail & Hussain, 2009). Equity markets can get disrupt through various factors. The efficient market hypothesis believe that the prices of any security is actually the true indication of the whole set of available information about that instruments.

In the existing literature there is chain of factors which directly or ultimately affect the return of equity market of a country (Bilson et al., 2000). This idea actually gets root from the most famous theory of finance called arbitrage pricing theory (APT) by Ross in 1976. According to this there are abundant of factors which can explain the return of a security. These factors may be international forces, country specific, industry specifics, company specific, behavioral specific etc. According to the literature these may includes economic activity (Fama, 1984), exchange rate (Jones et al.,1996), monetary policy (Pearce & Roley, 1985), money supply, interest rate, gold prices, oil prices, inflation, terrorism and oil prices. On the basis of theories, different researcher put different variables into econometrics model and presents their findings.

In recent era, terrorism emerges with new patterns especially in Pakistan. From last decade, Pakistan facing serious terrorist attacks in all fields of life. Pakistan markets are bearing the direct cost of terrorism in the shape of destruction of life, infrastructure and restoration of the system. Indirectly, terrorist activities destroying the economic activities in the country and dampen the investor confidence. Bruck & Wickstrom (2004) conclude that the economic loss of terrorist activities depends upon nature of attacks and varies from country to country. Further, Lacker (2004) argues that financial industry suffer huge loss due to world trade center attacks. Price of any stock can be the present value of future expected cash flows. Oil prices have direct or indirect ties with cash flows and hence equity prices. From past couple of decades, oil prices are considered a substantial attraction as financial indicators. Kilian & Park (2009) divides the total shock of oil prices on the basis of supply and demand. Therefore, oil prices can be treated as one of the equity drivers.

Exchange rate and interest rate both have a significant long run plus short term relation with the equity markets (Hasan & Nasir 2008). Exchange rate directly affects the cash flows of importers and exporters. Therefore, it can also drive the equity market. Some of the researcher explored the cointegration between the macro variables and equity markets like Aydemir & Demirhan (2009), Phylaktis & Ravazzolo (2000), Laopodis (2013), Hasan & Javed (2009), Mishra (2004) and Akmal (2007). Hasan & Javed (2009) analyze the relationship among the range of macro variables and equity market in Pakistan for a period of 11 year which starts from 1998 to 2008. But they only consider the factors at national levels. There is still need to

incorporate more factors at national and international grounds. From investors, financial analysts and fund managers, it is important to determine the drivers of equity markets. The basic objective of study is to determine the major equity drivers in Pakistani context. Further, these may be at national and international ground. This study employs the cointegration methodology to determine the equity drivers in Pakistani equity markets and finds that foreign economic uncertainty, international oil prices, currency market, interest rates and number of persons killed in bomb blast and drone attaches have long run relation with Pakistani equity market.

The remaining part of study is plan in such a manner that next section includes the related literature. After this, collection and presentation of data is discussed along with a detail methodology. The next is finding of the study and finally there is a brief conclusion.

2.   Literature Review

Various researchers identify and argue different determinants of equity markets. These determinants also change from country to country, sector to sector and somehow different business groups may have different equity determinants. The linkages among interest rate, exchange rate and stock return are key issue since last couple of decades. Researchers always try to probe the relationship among interest rate, exchange rate and stock returns. In the presents literature there are number of studies which explore this dynamics relation by using various financial econometrics tools like Aydemir & Demirhan (2009), Phylaktis & Ravazzolo (2000), Hasan & Javed (2009), Hamao (1988), Hussain & Mahmood (2001), Mishra (2004), Akmal (2007), Muhammad & Rasheed (2003) and Bahmani & Sohrabian (1992). Aydemir & Demirhan (2009) analyzed the linkages among

exchange rate and equity market. The period of study is approximately 8 years which starts from 2001 to 2008. For stationarity of data unit root is employed. It is argued that data are stationary at first differences. They also employed the MWALD test for causality and found bidirectional causality between the variables under study. Furthermore it is also empirically reported that there exist negative causality from the foreign exchange rate and equity markets. Further Laopodis (2013), Arora & Tanner (2013), Huang, Mollick, & Nguyen (2015) and Cologni & Manera (2008) focused on the interest rate movements and its relation with equity markets.

The relationship among the six Pacific Basin stock markets and exchange rate is analyzed by Phylaktis & Ravazzolo (2000). Monthly data has been used for relatively long period which starts from 1980 to 1998. It is strongly argued from the cointegration test that there is no long run cointegration among equity markets and exchange rate for six countries except Hong Kong. They further analyzed that the US's market is a key variable and equity markets are tightly allied with the exchange rate markets. Hence policy maker should be proper cautious about the association between the countries' stock markets and exchange rate changes. Hasan & Javed (2009) explored the relationship between the range of macro variables and equity market in Pakistan for a period of 11 year which starts from 1998 to 2008. To examine this long nature relationship cointegration test of Johansen & Juslius (1990) is used. They also used granger causality to study the lead or lag relation of variables with stock markets in Pakistan. Overall it is concluded that there exist evidence that the monetary variables have long run relation with the return of stock markets in Pakistan for the whole period of study.

Only unidirectional causality is observed between the variables and stock markets. It is further concluded from the variance decomposition that the returns of Karachi stock exchange is explained by its own shocks. Similarly, Nishat (2001) also analyzed the relation between some of the monetary variables and returns of the stock markets and approximately found the same results as mention above.

The future forecast of investors about stock prices significantly affects the securities prices. Chen & Siems (2004) analyzed different terrorist attacks from the globe and found its negative effect on the equity market. Drakos (2009) and Pshisva & Suarez (2006) identified more than hundred internal conflicts and found that these are significantly caused the commodity and equity markets. Brounrn & Derwall (2010), Narayana & Narayan (2010), Guzel & Ozdemir (2011), Fernandez (2009), Barros & Alana (2008), Procasky & Ujah (2016), Haddad & Hakim (2008) and Kollias et al. (2013) also argued the importance of terrorism as equity drivers. Further Berrebi & Klor (2005) found the impact of attacks on Israeli companies. Study revealed that significant abnormal return is observed round the terrorist attacks. Similarly, Karolyi & Martell (2010) also concluded a negative effect of terrorist attacks on the equity markets. Oil prices have significant role in monetary policy as suggested by Hamilton & Herrera (2004). Nandha & Faff (2008) analyzed thirty five industrial sectors globally. It is found that oil prices have significant negative effect on equity prices. Further this affect cannot be generalized in oil and gas industries. Recently, Kang & Ratti (2014) used VAR approach to analyze the link of economic policy and stock market in china. Leahy & Whited (1996), Bloom

(2009) and Panousi & Papanikolaou (2012) concluded that uncertainty in polices ultimately reflected from the firm's share price.

Exchange rate that is the value of one country's currency in term of other country's currency directly linked with the exporter and importers business. Yanliang & Lintao (2007) analyzed the volatility of exchange rate and equity markets in china. It is empirically reported that this volatility in exchange rate have an impact on equity markets. Almost same conclusion is also drawn by study of Hatzius et al. (2012), Mezrich & Ishikawa (2013). Joseph & Vezos (2006) empirically assessed the effect of changes in exchange rate and interest rate with the return of US banks. To capture the volatility in return series an ARCH and EGARCH model is used on the daily data from 1990 to 2001. The sensitivity coefficient for exchange rate is positive for both of the model whereas interest rate showed a blend of positive and negative values. Finally they revealed that the returns of banks are not able to echo the hedging policies. Chowdhury, Mollik & Akhter (2006) investigated the effect of macroeconomic variables on return of the stock markets in Bangladesh. They used monthly data for their study which starts from 1990 to 2004. Further to understand the nature of the relation between variables, VAR test also used. There exist association among the macro variables and the equity markets in Bangladesh under studied periods. Yanliang & Lintao (2007) analyzed the effect of exchange rate on the equity markets in china. It is empirically reported that the exchange rate have an impact on the stock markets. Bachmann et al. (2013), Jones & Olson (2013), Fishman et al. (2012), Li et al. (2013), Taylor (2010), Hoshi (2011), and Antonakakis et al. (2013) studied the economics policy uncertainty and its relation with equity markets.

On the basis of all above literature, it can be said that equity markets are not prove to be exogenous. There is battery of drivers which directly or indirectly putting pressure on equity markets. These may be the national or international forces which ultimately reflect into the stock prices. Therefore, on the basis of above literature this particular study empirically evaluate the relation between the exchange rate, interest rate, terrorism, foreign geographical fierceness, international economic policy uncertainty and oil prices with equity markets in Pakistan. The methodologies that will be exercise for this study are described in the next section.

3.   Data and Methodology

The study period for this study is about 15 years on monthly basis which starts from January 2000 to October 2014. Table 1 shows the drivers of equity market along their proxies. The data regarding the stock market index, foreign exchange rates are collected from Bloomberg database and interest rate are obtained from the State bank of Pakistan. Data related to casualties and drone attacks collected from published national newspapers, international oil prices are collected from US energy information administration. These all considered well known and reliable sources for economic and financial data collection.

Table 1. List of considered variables[1]

Variable	Studied Proxies
Stock Market Index	KSE-100 Index
Exchange Rate	USD/PKR
Interest Rate	1-Month T-Bill Rate
World Economic Policy Uncertainty	UK Economic Policy Uncertainty Index

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[1] Study used the UK economic policy uncertainty index to measure the world economic policy uncertainty. For this an index is maintained, mutually, by Stanford University, Kellogg School of Management and Booth School of Business. This index is composed of three component i.e. Budget Balance, CPI and news index.

No of casualties in Pakistan	Person Killed in Bomb Blast
Foreign Geographical Fierceness	Person Killed in Drone Attacks
Oil Prices	Europe Brent Spot Price (Dollars/Barrel)

Monthly series on the basis of continuously compounded for the variables are calculated with the help of equation 1. Further we use simple change for the variables world economic policy uncertainty, no of casualties in Pakistan and foreign geographical fierceness.

$$Y_t = \ln \left(\frac{x_t}{x_{t-1}} \right) \dots \dots \dots (1)$$

Y_t = Change in value for current period

X_t And X_{t-1} symbolize each period's current and previous period's values respectively

Generally correlation matrix considers a weak method to measure the association within variables. It works without any economic rational of relation among the variables and treats all the variables in the same eye. It tells, numerically, the direction as well the strength of relationship. So to analyze the long run relationship, this study uses the Cointegration analysis. Stationarity of the data is one of the basic and important features especially for economic time series. A series is said to be stationarity, if the mean, variance and covariance of the time series does not depend upon time. It means the data should be random in all the aspect. Its significant purpose is that when we are inferring something for future then first isolate the data form its own trend and make it random. For stationarity, Augmented Dicky Fuler (1979) and Philips-Peron (1988) are the widely used measure in literature. This particular study also performs the above renewed test for stationarity with the null hypothesis that individual series are non stationary. The rejection of this hypothesis confirms

that the particular time series is stationary at that particular level. The ADF (1979) test uses an auto-regressive model for the level of integration. Mathematically basic and simple autoregressive i.e. AR (1) is:

$$A_t = \psi A_{t-1} + \varepsilon_t$$

A_t, is the symbol of dependant variable, "t" and ε_t represents the time period and error term respectively. The regression equation is:

$$\Delta A_t = (\psi - 1)A_{t-1} + \varepsilon_t = \delta A_{t-1} + \varepsilon_t \ldots\ldots\ldots (2)$$

In the equation 2, Δ represents the difference operator and this equation is estimated to check the stationarity by ADF test. Generally speaking, ADF test consider a little bit rigid test for stationarity because it works on the two assumptions. First one is that the error term in the model is independent and secondly they are homoscedastic. To relax this assumption, this study also applies the Philips-Peron (1988) test. The assumptions under Philips-Peron are that it permits error term to be weekly dependant and distributed heterogeneously. In mathematics form:

$$A_t = \xi + \lambda_1 A_{t-1} + \lambda_t \left\{ t - \frac{T}{2} \right\} + \varepsilon_t$$

This study also gets support from most widely Johnson-Juslius (1990) method. It can be tested via two test i.e. maximal eigen-value test and the other is the trace test. Objective of both these is to find the cointegrated vectors. This particular study applies both of the tests for the determination of long nature relation. Mathematically, maximal eigen-value test:

$$Y\,(r) = -N \sum \ln(1 - Y_{r+1}) \ldots\ldots\ldots (3)$$

In equation 3 "N" shows the totality of the observation and $Y_{r+1}, Y_{r+2}, \ldots, Y_n$ denotes the $(n - r)$ lowest squared correlation. The

other test of the Johnson & Juslius (1990) method is the trace test. The purpose of both of these tests is only to ensure the results under controlled and up to some extent the relax situations. In trace test the null hypothesis i.e. there are "r" cointegrating vector having alternative of "r" or more cointegrating vector and written as:

$$Y(r) = -N \sum In(1 - Y_i)$$

The second important step is the determination of lag length for the VAR model. There are several well recognize measure for the choice of this like AIC, SIC and HQ. This particular study makes use of these criterions for lag length. The lag length is one where the value of SIC, AIC and HQ criterion is minimum.

Correlation matrix assumes to be less reliable measure because it ignores the causation. In literature the idea of Granger (1969) is applied for the determination of lead and lag nature of relationship. If variable 'X' granger cause variable 'Y' then we can easily forecast 'Y' on the basis of 'X'. The following equation is run for the said purpose.

$$X_t = \beta_0 + \sum_{i=1}^{n} \beta_i X_{t-i} + \sum_{i=1}^{n} \alpha_i Y_{t-i} + +\mu_t \ldots\ldots\ldots (4)$$

$$Y_t = \beta_0 + \sum_{i=1}^{n} \beta_i Y_{t-i} + \sum_{i=1}^{n} \alpha_i X_{t-i} + \varepsilon_t \ldots\ldots\ldots (5)$$

In equation (4) and (5), the value of optimal lag length is denoted by 'n' and the Wald statistic is used to test the joint hypothesis $\alpha_i = 0$. This particular study also uses the variance decomposition and it measures the total change in the explained variable in particular period. This change or shocks may be due to its own dynamics and may be due to other explanatory variable in the

model. In this analysis, the selection of the period can be depending upon the researcher and this study put it up to 10 periods.

4.   Empirical Results

Figure 1 shows the trend in the series of number of persons killed in bomb blast and drone attacks for the whole period of study. It is quite visible that casualties suddenly increases about mid of 2007 and reaches its peak at 2010. Anyhow from last years, there is decreasing trend in the number of casualties in Pakistan.
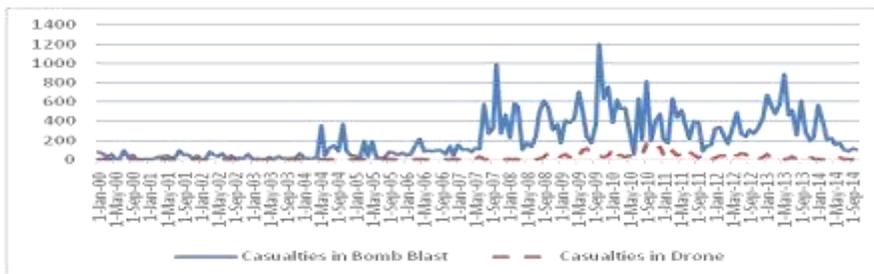
Figure 1: Trend in Casualties in Pakistan over the sample period

Figure 2 shows the trend in the series of the mentioned variables for the whole period under study. It is quite visible that KSE-100 index has an increasing trend, exchange rates are increasing at the beginning and then constant period which is followed by a little bit increasing trend. In case of economic policy, index is coming to certainty from uncertainty under last couple of periods.

Figure 2: Plot of the log of the series

Results of descriptive statistics are reported at Table 2. KSE-100 index, on an average offer a 1.6% monthly return with a standard deviation of approximately 8%. The maximum value of monthly return is 24% and those of maximum loss are 45%. Maximum (Max) casualties in bomb blast in Pakistan are 1198 at October 2009 and in drone attacks are 162 at September 2010. The results of skewness show that the returns of KSE-100 index are negatively skewed. Similarly the descriptive statistics can be interpreted for the other variables under study. From the results of Kurtosis and Jarque-Bera (JB), for most of the variables we can reject the assumption of normality in data.

Table 2. Descriptive Statistics

	Δ KSE	ΔUSD/ PKR	ΔT-Bill	Blasts**	Drone**	Δ Oil	Δ EUP
Mean	0.016	0.0039	0.0011	217.88	16.2697	0.008	0.008
Std. Dev.	0.081	0.0124	0.0891	227.36	29.3661	0.087	0.205
Max	0.241	0.0612	0.3252	1198	162.00	0.198	0.533
Min	-0.449	-0.0449	-0.5104	0.0000	0.0000	-0.311	-0.49
Skewness	-1.181	1.2853	-1.9999	1.3487	2.2768	-1.046	0.060
Kurtosis	8.895	8.8631	16.0058	4.7526	8.5159	4.781	2.820
JB	299.2*	303.96*	1373.2*	76.74*	379.44*	56.02*	0.346

* Significant level 99%, **Number of casualties

Correlation matrix is a technique used to measure the strength as well as direction of relation among all the variables under study. In the literature of finance the matrix of correlation get importance just because of its simplicity and ease to calculate. It works without any economic rational of relation among the variables and treats all the variables in the same eye. Results of Table 3 show that return of KSE-100 index has negative relationship with T-bill rates similarly, casualties also has weak relation with equity market in Pakistan.

Table 3. Correlation Matrix

	KSE	T-bill	USD/PKR	Bomb	Drone	EPU	Oil
KSE	1.00						
T-bill	-0.184	1.00					
USD/PKR	-0.191	0.224	1.00				
Bomb	0.041	-0.009	0.023	1.00			
Drone	0.052	0.551	0.067	0.019	1.00		
EPU	-0.271	0.052	0.097	-0.172	-0.020	1.00	
Oil	0.114	-0.130	-0.112	0.058	0.011	0.039	1.00

Since major drawback of correlation matrix is that it does not talks about any causal relationship. To deeply understand the relationship this study also applies the cointegration techniques. The basic assumption of Johnson & Juslius (1990) is about the stationarity of variables. It requires that all the time series should be integrated at same level. For stationarity of data, most widely ADF and Philips Peron are applied. It is clear from Table 4 that all the time series are non-stationary at level but become stationarity at their first differences. PP (1988) results also confirm the ADF results. Anyhow, paper only reports the ADF test statistics. Hence result of unit root test confirms the application of cointegration test.

Table 4.Unit Root test

	"ADF" (Level)	"ADF" (First Dif.)
KSE-100 Index	1.9225	-12.660
T-bill	-1.8561	-4.7380
USD/PKR	0.0314	-8.2018
Bomb	-2.0577	-11.8008
Drone	-2.7908	-10.0175
EPU	-2.2689	-16.4811
Oil	-1.5903	-9.0463
Critical Values		
1%	-3.4674	-3.4676
5%	-2.8777	-2.8778
10%	-2.5755	-2.5755

The issue of proper lag length is also important for cointegration test. Prior the implementation of Johnson & Juslius

(1990) cointegration test, this study uses SC for the selection of lag length. The suitable lag length is one at which this criterion will be found minimum. According to the values of SC, the suitable lag length is one (1). This study uses two different types of tests to test the cointegration which are Trace and Max-Eigen statistics.

The results of both of the test for cointegration are described in below Table 5 & Table 6 respectively. The values of MacKinnon-Haug-Michelis are presented as P value in both of the Tables. The results of trace statistics cointegration clear that there exist long term relation among the studied variables. This results of trace statistics also confirmed by the Max Eigen value test which clearly depicts the phenomena of cointegration among equity market, interest rate, exchange rate, number of casualties in Pakistan, Foreign Geographical Fierceness, world economic policy uncertainty and international oil prices.

Table 5. Trace Statistics for Cointegration

Hypothesis	Eigen-value	Trace- Statistic	Critical Value (5%)	P-value
r = 0	0.250	161.101	125.615	0.000
r ≤ 1	0.210	110.389	95.754	0.003
r ≤ 2	0.171	68.845	69.819	0.060
r ≤ 3	0.094	35.798	47.856	0.407
r ≤ 4	0.052	18.459	29.797	0.532
r ≤ 5	0.039	9.131	15.495	0.353
r ≤ 6	0.012	2.172	3.841	0.141

Table 6. Max-Eigen Value Statistics for cointegration

Hypothesis	Eigenvalue	Max-Eigen	Critical Value (5%)	P value
r = 0	0.250	50.712	46.231	0.016
r ≤ 1	0.210	41.543	40.078	0.034
r ≤ 2	0.171	33.047	33.877	0.063
r ≤ 3	0.094	17.339	27.584	0.551
r ≤ 4	0.052	9.329	21.132	0.805
r ≤ 5	0.039	6.959	14.265	0.494
r ≤ 6	0.012	2.172	3.841	0.141

In literature the idea of Granger (1969) is applied for the determination of lead and lag nature of relationship. If variable 'X' granger cause variable 'Y' then we can easily forecast 'Y' on the basis of 'X'. The F-statistics and associated P values are given in the below Table 7. It is quite evident that exchange rate, foreign economic uncertainty, international oil prices granger causes equity market, but these all are unidirectional causality. Whereas, as per these findings there is no cause and effect relation observed between person killed in bomb blast and drone attacks in Pakistan with equity market of Pakistan.

Table 7. Pairwise Granger Causality Tests

H_0	F-Statistic	P Value
KSE does not Granger Cause person killed in bomb blast	1.2899	0.2780
person killed in bomb blast does not Granger Cause KSE	1.1709	0.3126
KSE does not Granger Cause USD/PKR	2.1794	0.1162
USD/PKR does not Granger Cause KSE	6.4906	0.0019
KSE does not Granger Cause EUP	1.7490	0.1770
EUP does not Granger Cause KSE	4.0613	0.0189
Oil does not Granger Cause KSE	1.2444	0.2907
KSE does not Granger Cause Oil	2.9633	0.0543
T-bill does not Granger Cause KSE	0.1841	0.8320
KSE does not Granger Cause T-bill	1.8422	0.1616
Person killed in Drone does not Granger Cause KSE	1.8502	0.1603
KSE does not Granger Cause person killed in Drone	1.3229	0.2691

Variance decomposition is in fact the breakdown of variance of dependent variable to the other explanatory variables. Variance decomposition analysis is used to comment upon the variance of equity market and tries to check whether equity market get disturb due to its own innovation or exogenous variables are exerting pressure on equity market of Pakistan. The breakdown of the variance of KSE-100 index up to 10 periods is given in the Table 8. Results openly evaluate that up to 86% of the variation in the variance of KSE-100 index are due to its own shocks. Major equity

drivers here seems to be the world economic policy uncertainty, exchange rate, world oil prices, number of killed in bomb blast and drone attacks and interest rates respectively. The results of impulse response analysis are at appendix A.

Table 8. Results of Variance Decomposition

Period	KSE-100	T-Bill	Drone*	Blasts*	USD/PKR	EUP	OIL
1	90.604	0.0000	0.0000	0.4108	3.0970	5.8873	0.0000
2	88.211	0.0445	0.0794	0.5035	3.9873	6.4571	0.7170
3	87.766	0.1044	0.1130	0.5013	4.1298	6.6271	0.7580
4	87.687	0.1063	0.1449	0.5054	4.1740	6.6244	0.7576
5	87.666	0.1066	0.1628	0.5054	4.1777	6.6231	0.7576
6	87.657	0.1066	0.1726	0.5056	4.1778	6.6225	0.7575
7	87.65	0.1066	0.1778	0.5056	4.1775	6.6221	0.7575
8	87.650	0.1066	0.1804	0.5056	4.1774	6.6220	0.7574
9	87.649	0.1067	0.1818	0.5056	4.1774	6.6219	0.7574
10	87.648	0.1067	0.1825	0.5056	4.1774	6.6218	0.7574

*Number of casualties

5. Conclusion

Arbitrage pricing theory by Ross in 1976 suggests that securities returns can be generated by multiple factors. These factors may ranges from some fundamental to global factors. For this purpose, study analyzes the long term relation between some national and international determinants of equity market. Study analyze the exchange rate, interest rate, number of casualties in Pakistan, foreign geographical fierceness as domestic and world economic policy uncertainty and world oil prices as international drivers of equity market in Pakistan. The study period for this study is about 15 years on monthly basis which starts from January 2000 to October 2014. It is quite visible that casualties as a result of bomb blast suddenly increases about mid of 2007 and reaches its peak at 2010. Anyhow from last year, there is decreasing trend in the number of casualties in Pakistan. In case of world economic policy index, index is coming to

certainty from uncertainty under last couple of periods. Maximum casualties in bomb blast in Pakistan are 1198 at October 2009 and in drone attacks are 162 at September 2010. From the results of Kurtosis and Jarque-Bera, for most of the variables we can reject the assumption of normality in data.

Further all the series are found stationary at their first difference and confirms the application of Johnson & Juslius (1990) cointegration test. Results clearly depicts the phenomena of cointegration in long run among equity market, interest rate, exchange rate, number of casualties in Pakistan, Foreign Geographical Fierceness, world economic policy uncertainty and international oil prices. It is quite evident that exchange rate, foreign economic uncertainty, international oil prices granger causes equity market, but these all are unidirectional causality. Whereas, as per these findings there is no cause and effect relation observed between person killed in bomb blast and drone attacks in Pakistan. Major equity drivers of Pakistani equity market are: world economic policy uncertainty, exchange rate, world oil prices, number of killed in bomb blast and drone attacks and interest rates respectively.

Based upon the empirical findings of this study, we claim that besides from the own shocks in Pakistani equity market, foreign economic uncertainty and international oil prices are proven a driver's role for equity market. Exchange rate and interest rates also putting pressure on the equity market of Pakistan. As for as, terrorism is concern, equity market seems to be exogenous for this, anyhow, foreign geographical fierceness exerting some pressure on the equity market. Within reasonable limits, it can be inferred that Pakistani equity market are now absorbing the terrorist activities in Pakistan

but still number of person killed in bomb blasts and foreign geographical fierceness in the shape of drone attacks exerting some pressure on equity market. Study recommend to the investors, policy makers and fund managers that they should be quite vigilant about these national and international equity drivers in Pakistan.

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Appendix A: Impulse Response Analysis

Response to Cholesky One S.D. Innovations