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The Interest Rates-Stock Prices Nexus in Highly Volatile Markets: Evidence from Pakistan

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ABSTRACT

In this study causal relationship of interest rate and stock prices is investigated using a VAR-based granger causality test. The motivation for this study comes from erratic behavior of KSE-100 Index from 2007 to 2010 while State Bank of Pakistan revised the key policy rate up several times during this time.Implementing ADF test for unit root and Johansen Cointegration test for long run relationship we found that interest rates and stock prices have no long run relationship. VAR-based granger causality test reveal that stock prices do not granger cause interest rates but interest rate does granger cause stock prices.
KEYWORDS: KSE-100 Index, Interest rates, Granger causality, Cointegration.

INTRODUCTION

In recent years, State Bank of Pakistan (SBP) revised interest rates up several times. The stock market reaction to these changes was somewhat mixed. Data from September 2007 to September 2010 reveal that not every increase in the key policy rate by SBP sent the Karachi Stock Exchange (KSE) 100 Index into a nosedive (see Table 1).Similarly, when the key policy rate was revised down by SBP in 2009, it did not boost the market morale; instead the market went down in 2 cases out of three in the first three days of the interest rate decrease (see Annexure1). And yet when the key policy rate remained unchanged in 2010, the market still fluctuated. The above facts show that the relationship between interest rates and the KSE-100 Index is not straight negative, as suggested by the financial economists, at least in the short-run. This observation raises an important query whether interest rates and stock market are cointegrated over a longer period of time in Pakistan. The interest rate-stock market nexus has received attention of researchers from a wide range of areas such as assets pricing [1; 2] and testing stock market efficiency [3, 4] among others. Impact of interest rate on the stock prices of the firms is an important occurrence to investors and regulatory authorities. Investors react to the decisions of regulatory authorities on monetary policy when regulatory authorities change interest rate to control money supply because the required rate of return on financial assets get affected due to changes in interest rate. Lenders consider interest rate as a rent of money and interest rate is the cost of borrowing from the borrower's point of view [5].This interest rate is most of the time thoughtto be a benchmark in comparison of returns to investors. Investors compare their returns on stocks with interest rate prevailing in the market, which they can earn on saving deposits or investing in other financial assets. Stock prices respond inversely with changes ininterestbecause a decrease (increase) in real interest rate causes a rise (decrease) in the value of financial asset [6]. In some unique circumstance, investors will invest even if rate of return is low such as the case with higher income investors who want to invest in order to shift the consumption, so they would invest even if the rate of return is lower [7]. But most of the investors would switch their investment from stock market to other sources where they can earn more than getting lower returns on stocks, which would result in lower demand for stocks and consequently would cause decrease in stock prices.Moreover, stock market reacts quickly to bad news (news suggesting overpricing) than good news (news suggesting over pricing), i.e. target rate changes signals different kind of information to the stock market [8]. This information may be considered as a negative signal because increase in interest has the potential of dampening economic activity in the coming times, which will negatively affect stock returns.

Interest rate fluctuation may affect stock prices in many ways but the degree of the effect may differ from firm to firm. Increase in interest rate would increase the cost of borrowing which wouldnegatively affect the future cash flows and also capacity of the firms to borrow. With increase in cost of borrowing, projects with lower internal rate of returns will be rejected. This means that not only the

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current net income will be affected, but also the future cash flows will be lower compared to otherwise. Resultantly, higher interest rates will lead to lowers stock prices. Stock prices of highly-leveraged firms would be affected more than stock prices of low-leveraged firms because of increase in cost of borrowing. Firms with highly leveraged capital structure would have low earnings for their investors after servicing debt (with high cost of borrowing). Second, interest rate is used as a discount rate and affects stock prices because stock prices considered as expected value of discounted dividends [9]. Interest rate used as a discount rate, so higher discount rate would result lower value of stocks. According to expectations theory of stock returns,stock return is the addition of nominal T-bill rate and a constant (Campbell, 1987). So rise in nominal T-bill rate would cause increase the required rate of return on stocks which would reduce the intrinsic values of shares.

In line with the above discussion, interest rate and stock prices are expected to have a negative relationship. This study attempts to answers the empirical question whether or not interest rates have influences on stock prices in Pakistan in a manner as described in previous literature and theories. For this purpose, the case of KSE 100 Index is selected in this study. TheKSE 100 is the most liquid and the largest stock market with comparison to other stock exchanges in Pakistan. The mainobjective of the study is to find out bilateral causality between interest rate and stock prices. For this purpose, this study uses monthly closing KSE 100 index points and six months Treasury bill rate from 31^{st} January 1996 through 31^{th} December 2010.

The organization of the paper is as follows. After introduction in Section 1, review of the previous literature is discussed in Section 2. Section 3 presents the methodology of the study. Analysis and conclusion are given in Section 4 and Section 5, respectively.

2.LITERATURE REVIEW

Several theories rationalize the existence of a relationship between stock prices and interest rates. In their study, Geske& Roll [6] argued that a change in real interest rate would cause a changeinstock prices in an opposite direction. They explained that higher interest rates signals higher unemployment, lower level of economic activity and hence lower earnings of firms.

Chen, Roll, & Ross [1]) described stock a price as discounted dividends in which discount rate isa composite of risk-free rate and firm-related risk premiums.The influence of interest rates on stock prices is opposite because increase in risk free rate would increase the discount rate.Poterba& Summers[10] pointed out the same, arguing if volatility persists and is expected to increase it will increase the discount rates, and resultantly decrease the stock prices.

Sweeney& Warga [11] asserted that the present value of dividends would be affected due to decrease in interest rate but that decrease in interest rate would not affect the dividends in the absense of nominal contracting effect. Flannery & James [12] argued that interest rate fluctuations will affect the real value of financial assets (but not the real assets) and that it should benefit a firm instead of facing a decrease in its stock price if the firm has morefinancial liabilities than financial assets.

Campbell [13] examined the relationship between conditional mean and varaince of T-bill, bonds and stocks. He found that one of the assets was perfectly correlated with the benchmark portfolio for the economy, suggested expected return should move in proportion with its conditional variance. He found that expected stock returns negatively while two-month Treasury bill returns are positively related to their conditional variance but stock returns do not explain the term structure.

Ferson [14]empirically tested in monthly regressions the relationship between one month treasury bill rate andstock returns. He found that that one month treasury bill rate explained small variation of expected stock returns relative to total variations. The treasury bill excess reurns are positively ralated to interest rate.

Lee[15] stated that there is a negative relationship among nominal interest rates and growth rate in industrial production. He explained that when the nominal interest rate rises because of inflationary expectations, growth in industrial production should bo lower. In empirical tests, he found that that small variation in inflation was explained by stock returns. However, interest rate explained significant variation in inflation and stocks.

Thorbecke [16] examined the effects of monetary policy on stock returns and found that exansionary (contractionary) monitory policy had huge positive (negative) effect on stock returns. He concluded that the monetary shocks have a larger impact on small firms than on large firms. Their explanation for this findings was that higher interest rates affects borrowing capacity of small firms more because they have few assets as collateral as compared to large firms.

Ely & Salehizadeh [7]considered dividend yields, term premium, monetary policy and real interest rate variableto predict stock and bond returns. They pointed out that Federal Fund Rate and term structure were correlated with each other while real interest rate was highly correlated with default premium & term structure. They found that the real interest rate was an important variable to explain variation in returns. However, the base model of their study predicted variation in stock and bond returns but their global model (second model where they replaced all variables with global variables) failed to predict variation in stock returns.

In his study Lobo [8] measured the asymmetric effect of target rate announcements on stock prices and mentioned that the asymmetric stock price adjustment process has no influence on Federal fund rate fluctuations. It may be because stock market adjusts in response to bad news quicker than it responds to the good news. Lobo found that past bad events has greater impact on stock market volatility than the past good events. Study results indicated that the target rate announcements affected stock prices affected andconveyed information about future actions of monetary policy and inflation.

Fifield, Power,& Sinclair [17]) analysed the effect of local variables (e.g. GDP, inflation, money supply, short term interest rates) and global variables (world inflation, industrial production, comodity prices) on stock returns of many countories. They regressed the local and global variables on stock returns and found that the global variables explainedstock returns in many countories and local variables explained stock returns in some of the markets. Their results were different from what Ely & Salehizadeh [7] found when they replaced local variables by global variables to find their effect on stocks and bond returns.

Alam & Uddin [5]examind relationship among interest rate and stock prices of developed and developing countories and found that none of the marketsfollow random walk. They found a significant negative relationship among interest rate and stock prices of all countries. Thay concluded that these countories can improve performance of their stock exchanges by contrlling interest rate considerably.

Czaja, Scholz, & Wilkens [18] investigated whether or not interest rate risk is priced in the German stock market. Constructing benchmark prtfolio of stocks having same risk exposure, they studied time series returns of thebenchmark portfolio. They found a significant difference between the benchmark returns and stock returns in different industries. Disregarding the indusrty association, their findings suggests thatinvestors should receive positive reward when exposed to interest rate risk. They also found that the benchmark returns of financial institutions were greater than the benchmark returns of non-financial institutions. It means stocks of financial institutions bear more interest rate risk than stocks of non-financial institutions.

In line with the above literature, there is an evidence about realtionship among interest rate and stock prices. Somehow interest rates lead stock market and interest rates makes a useful forecast for stock market. From the above, the following hypothesis can be developed and tested.

H0: Interest rates do not Granger cause stock prices

H0: Stock prices do not Granger cause interest rates

3. DATA AND METHODOLOGY

3.1DataDescription

The monthly realization of six month Treasury bill rate and closing points of KSE 100 from 1996 to 2010 are selected for the analysis. The monthly data of six month T-bill rate is collected from the official website of State Bank of Pakistan and the monthly data of closing stock points are collected from the official website of the Karachi Stock Exchange.

3.2EmpiricalDesign

The primary intention to conduct this study is to investigate causal relationship between interest rate and index points of the KSE100Index. To investigate causal relationship between the two variables, this study applies granger causality test based on the following equations:

$$lnS_t = \sum_{j=1}^{k} \beta_{12j}\, lnS_{t-j} + \sum_{j=1}^{k} \beta_{13j} lnIR_{t-j} + \varepsilon_{1t} \qquad (1)$$

$$lnIR_t = \sum_{j=1}^{k} \beta_{22j}\, lnS_{t-j} + \sum_{j=1}^{k} \beta_{23j} lnIR_{t-j} + \varepsilon_{2t} \qquad (2),$$

where

lnSt = Stock Price in period t.
lnIRt = Interest Rate in period t.
εt = Error term
α = Constant

The variables are transformed in to log form to capture nonlinear elements in the model where the first difference is considered as growth rate [19]. Data should be normally distributed for the validity of model statisticswhen the data are time series in nature. If data arenotstationary Granger [20] causality test yield spurious results. To check unit root, Augmented Dickey Fuller Testis employed. The ADF test is used to highlight whether or not the data are stationary. The following regressions (3), (4) & (5) are estimated to test the hypothesis; H_0: δ=0 (non-stationary) and H_1: δ≠0 (stationary).

$$\Delta Y_t = \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad (3)$$

$$\Delta Y_t = \beta_1 + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad (4)$$

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad (5)$$

The equation (1) & (2) are estimated to get the desired results If null hypothesis (H_0: δ=0) of ADF is rejected to confirm variables as stationary. In case, if variables are found to be non-stationary but their first difference is stationary (Y~I (1)) thenJohansen & Juselius [22] precedure of cointegration is followed to determine long run relationship among both time series. This is because both variables will have long run relationship if they are cointegrated [21]. Johansen cointegration [22]test through VAR is implemented to find out cointegration. Johansen cointegration test is sensitive to lag length and produce different results with different lags. Therefore, appropriate lag length is determined by using Likelihood Ratio test (LR), Akaike Information Criterion (AIC) and Final Prediction Error (FPE). For testing hypothesis of no cointegration, Trace test and Maximum Eigen value test developed by Johansen cointegrationapproach are conducted. If cointegration relationship is found then there must be a causation among variables as depicted by Granger representation theorem (Rathinam & Raja, 2008). Granger Causality test in VECM is conducted if evidence of cointegration is found. Following equations are estimated to test the hypothesis.

$$\Delta lnS_t = \beta_{10} + \beta_{11} z_{t-1} + \sum_{j=1}^{k} \beta_{12j} \Delta lnS_{t-j} + \sum_{j=1}^{k} \beta_{13j} \Delta lnIR_{t-j} + \varepsilon_{1t} \quad (6)$$

$$\Delta lnIR_t = \beta_{20} + \beta_{21} z_{t-1} + \sum_{j=1}^{k} \beta_{22j} \Delta lnS_{t-j} + \sum_{j=1}^{k} \beta_{23j} \Delta lnIR_{t-j} + \varepsilon_{2t} \quad (7)$$

If variables are not found to be cointegrated then VAR based Granger Causality test is implemented to test the bilateral causality. The basic VAR model is:

$$\Delta lnS_t = \beta_1 + \sum_{j=1}^{k} \beta_{12j} \Delta lnS_{t-j} + \sum_{j=1}^{k} \beta_{13j} \Delta lnIR_{t-j} + \varepsilon_{1t} \quad (8)$$

$$\Delta lnIR_t = \beta_2 + \sum_{j=1}^{k} \beta_{22j} \Delta lnS_{t-j} + \sum_{j=1}^{k} \beta_{23j} \Delta lnIR_{t-j} + \varepsilon_{2t} \quad (9)$$

To get further insights this study also uses Variance decomposition and Impulse response function to examine the causal flow of interest rates and stock prices by giving one unit shock to each variable.

4. Analysis

This section presents and discusses the empirical results of ADF test, Johansen Cointegration test, VAR Granger Causality Test, Impulse Response Function and Variance Decomposition. The discussion starts with statistics to check normality of the data.

Table1DescriptiveStatistics:

	LNIR	LNS
Mean	2.122875	8.192409
Median	2.290512	8.185004
Maximum	2.857619	9.624163
Minimum	0.190620	6.735424
Std. Dev.	0.636732	0.923367
Skewness	−1.573858	0.071341
Kurtosis	4.752782	1.380418
Jarque − Bera	97.35266	19.82554
Probability	0.000000	0.000050
Sum	382.1174	1474.634
SumSq. Dev.	72.57153	152.6166
Observations	180	180

Descriptive statistics as shown in Table 1 is used to check normality of the variables. There is no problem in terms of mean and median as their values are close to each other. Interest rates data is negatively skewed (-1.573858) but stock prices data is not as its value is closer to zero.Jarque-Bera test results rejected the null hypothesis of normal distribution as its probability values are less than 0.05. But the overall results seem to indicate the normality of the data and there is no need to normalize the data. Thus, Dickey-Fuller test is employed to test whether or not time series has a unit root. The existence of unit root would suggest time series are non-stationary. The results of the ADF test are shown below in Table 2.

Table2: **AugmentedDickeyFullerTestResults**

Level&1stdifference		ADFcalculatedteststatistics	Testcriticalvalues	
LnIRatLevel	None	−0.335917	1% level	−2.578018
			5% level	−1.942624
			10% level	−1.615515
	Intercept	−1.816395	1% level	−3.467633
			5% level	−2.877823
			10% level	−2.575530
	Intercept&Trend	−1.165567`	1% level	−4.010440
			5% level	−3.435269
			10% level	−3.141649
LnIRat 1stDifference	None	−9.308733	1% level	−2.578018
			5% level	−1.942624
			10% level	−1.615515
	Intercept	−9.282487	1% level	−3.467205
			5% level	−2.877636
			10% level	−2.575430
	Intercept&Trend	−9.327601`	1% level	−4.010440
			5% level	−3.435269
			10% level	−3.141649
LnSatLevel	None	1.463831	1% level	−2.577945
			5% level	−1.942614
			10% level	−1.615522
	Intercept	−0.399707	1% level	−3.466994
			5% level	−2.877544
			10% level	−2.575381
	Intercept&Trend	−1.924880	1% level	−4.010143
			5% level	−3.435125
			10% level	−3.141565
LnSat 1stDifference	None	−12.89459	1% level	−2.578018
			5% level	−1.942624
			10% level	−1.615515
	Intercept	−13.01008	1% level	−3.467205
			5% level	−2.877636
			10% level	−2.575430
	Intercept&Trend	−12.99727`	1% level	−4.010440
			5% level	−3.435269
			10% level	−3.141649

Table 2 shows that the calculated t-values of interest rate and stock prices at level are greater than ADF critical values. So the calculated ADF statistics cannot reject the null hypothesis, showing that interest rate and stock prices have unit root. But At first difference ADF test calculated t-values are less than the critical values depicting interest rate and stock prices are stationary at first difference and present same order of integration ($Y_t \sim I(1)$). ADF test results satisfy the requirements to test for cointegration which is VECM representation. Johansen cointegration test through VAR is implemented and appropriate lag length is selected by LR test, FPE, and AIC criterion. The results of LR test, AIC, and FPE are displayed in Table 3.

Table4. 3: VARLagOrderSelectionCriteria

Lag	LogL	LR	FPE	AIC
0	−404.9000	NA	0.349277	4.623863
1	342.4022	1469.128	7.50e − 05	− 3.822752
2	354.1869	22.89989 *	6.86e − 05 *	− 3.911215 *
3	356.2932	4.044977	7.01e − 05	−3.889695
4	360.9885	8.910504	6.96e − 05	− 3.897597

* indicateslagorderselectedbythecriterion. LR: sequentialmodifiedLRteststatistic (eachtestat 5% level)
FPE: Finalpredictionerror
AIC: Akaikeinformationcriterion

The criterion for appropriate lag length selection is the one at which LR statistics are higher with minimum statistics of AIC and FPE criterion function. Table 3 shows that the appropriate lag length for Johansen cointegration test based on VAR approach is 2 as the LR value is maximum and values of FPE and AIC statistics are minimum at this lag length. The Johansen cointegration test is implemented through VAR with lag length 2 to test the main hypothesis. The results of Johansen cointegration test are displayed in a Table 4(a) and 4(b).

Table4 (a): CointegrationRankTest (Trace)

Hypothesized No. ofCE(s)	Eigenvalue	Trace Statistic	0.05 CriticalValue
None	0.044562	9.966724	15.49471
At most 1	0.010667	1.898182	3.841466

Trace test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
** MacKinnon − Haug − Michelis (1999) p − values

Table4(b): CointegrationRankTest (MaximumEigenvalue)

Hypothesized No. ofCE(s)	Eigenvalue	Max − Eigen Statistic	0.05 CriticalValue
None	0.044562	8.068542	14.26460
Atmost 1	0.010667	1.898182	3.841466

Max − eigen value test indicates nocointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
** MacKinnon − Haug − Michelis (1999) p − values

Table 4(a) shows that the trace test statistics (7.071) is less than the critical value, showing no cointegration. This leads to the acceptance of and null hypothesis at significance level 5%.Maximum eigenvalue test statistics as shown in Table 4(b) is also less than its critical value, which again shows that no long run relationship exist between interest rate and stock prices. So from trace test and maximum eigenvalue test study may conclude there is no evidence of cointegration between interest rate and stock prices. As both the series are notcointegrated, it is inappropriate to use VECM. VAR model is appropriate when series are I(1) but not cointegrated [23].Consequently Granger Causality test through VAR model is implemented to find out causal relationship among variables. The results of the VAR Granger Causality test are shown in Table 5.

Table 5 displaysresults of VAR Granger Causality test which implies that stock prices do not Granger cause interest rates at significant level of 5% but interest rates do Granger cause stock prices. The results also indicate that interest rate leads the stock market and hence interest rate can be used as a leading indicator of stock market. The obtained results are in line with the literature and economic theories.

Table 5: VAR Granger Causality/Block Exogeneity Wald Tests

Dependentvariable: LNIR			
Excluded	Chi − sq	Df	Prob.
LNS	4.766735	2	0.0922
All	4.766735	2	0.0922
Dependentvariable: LNS			
Excluded	Chi − sq	Df	Prob.
LNIR	9.897260	2	0.0071
All	9.897260	2	0.0071

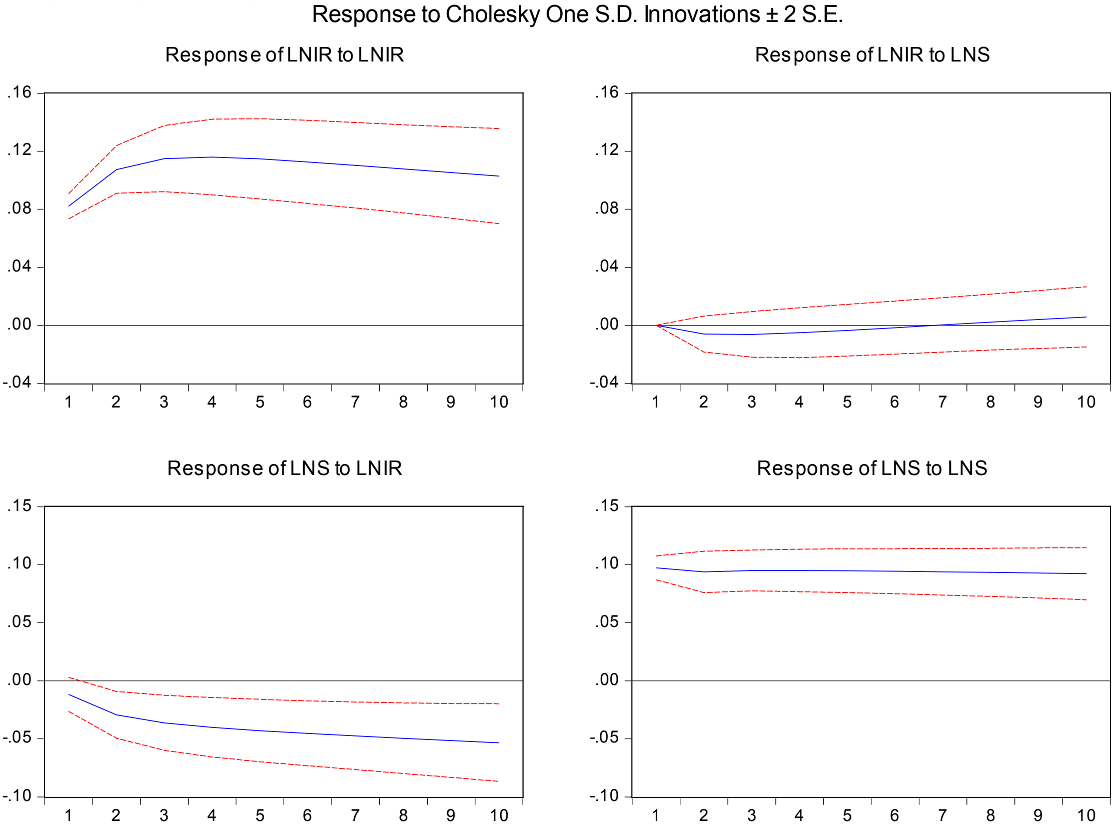
Variance decomposition and impulse response function are also conducted in VAR to analyze dynamic behavior of the estimated model. Variance decomposition is used to reveal that how much a variable has information to forecast another variable. Results of variance decomposition are displayed in Table 6 as shown below.

Table6: VarianceDecomposition

VarianceDecompositionof LNIR : Period	**S. E.**	**LNIR**	**LNS**
1	0.082203	100.0000	0.000000
2	0.135393	99.80181	0.198191
3	0.177693	99.75890	0.241100
4	0.212235	99.77211	0.227886
5	0.241268	99.80305	0.196949
6	0.266268	99.83461	0.165390
7	0.288201	99.85874	0.141257
8	0.307715	99.87130	0.128702
9	0.325262	99.86992	0.130085
10	0.341168	99.85311	0.146886
VarianceDecompositionof LNS: Period	**S. E.**	**LNIR**	**LNS**
1	0.097921	1.467456	98.53254
2	0.138700	5.222570	94.77743
3	0.171978	7.837009	92.16299
4	0.200540	9.776634	90.22337
5	0.225917	11.32126	88.67874
6	0.248985	12.63474	87.36526
7	0.270298	13.80728	86.19272
8	0.290225	14.88959	85.11041
9	0.309024	15.91115	84.08885
10	0.326880	16.88971	83.11029
Cholesky Ordering: LNIRLNS			

Results of variance decomposition, as shown in Table 6,show that variation in interest rates is mostly accounted by itself and stock market contributes only a negligible variation to interest rates. Stock market contributes minor variation in 2nd and 3rd month and then its involvement is decreased in next periods. In contrast, interest rates explain significant variation in stock prices. In first three months interest rates contribute more than 7% variation in stock prices and its contribution increase in subsequent periods. Results produced by variance decomposition describe the involvement of interest rates in volatility of stock market.

Graph1: ImpulseResponseFunction



Graph 4 shows response of the interest rate and stock index after giving one unit shock to interest rates and stock prices.An external shock to interest rates reveals that any change in interest rate (six month Treasury bill rate) never influenced itself significantly. It reaches its maximum at month four and then moves consistently. Stock prices showed significant volatility in response to one unit shock to interest rates, depicting significance impact of interest rate on stock prices. Stock prices decreases significantly during first three months, then comes around to its baseline and moves above to its baseline. In contrast, interest rates showed a decrease and then behaved consistently after giving one unit shock to stock prices depicting insignificant influence of stock prices on interest rates. Stock prices show no influence on itself.

5. Conclusion

In this study, VAR-based granger causality test isused to investigate bivariate causalitybetween six month Treasury bill rate and the KSE100 Index points. ADF test was conducted to check for unit root test of both the interest rates and the KSE 100 index. The test indicated that both of the time series were non-stationary. However, they were stationary at first difference. Johansen & Juselius [22] approach to cointegrationwasimplemented to investigate for the existence of long-run relationship among interest rate and stock prices. Cointegration test revealed that there is no long-run relationship or equilibrium between six month Treasury bill rate and the KSE100 Index. Then VAR-granger causality test was implemented for checking the existence of causal relationship between the two variables. The test results revealed that interest rates do Granger cause stock prices but stock prices do not Granger cause interest rates. The study concluded that the interest rates lead stock market up to 3 months.

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Annexure 1: The Movement of KSE-100 with Changes in Discount Rates

Dates	Discount Rate	KSE-100	KSE-100 after 3 days	% change	KSE-100 after one week	% change	KSE-100 after one Month	% change
31/07/2007	10%	13738	13763	0.18%	13179	-4.07%	12214	-11.09%
31/01/2008	10.50%	13990	14018	0.20%	13885	-0.75%	14934	6.75%
21/05/2008	12%	13974	12584	-9.95%	12130	-13.20%	11655	-16.60%
31/07/2008	13%	10583	10042	-5.11%	10171	-3.89%	9208	-12.99%
12/11/2008	15%	9183	9187	0.04%	9187	0.04%	6041	-34.22%
31/01/2009	15%	5377	5534	2.92%	5429	0.97%	5727	6.51%
21/04/2009	14%	7834	7620	-2.73%	7202	-8.07%	6969	-11.04%
17/08/2009	13%	7932	7952	0.25%	8319	4.88%	9223	16.28%
24/11/2009	12.50%	9233	9013	-2.38%	8992	-2.61%	9422	2.05%
31/01/2010	12.50%	9614	9627	0.14%	9733	1.24%	9657	0.45%
24/03/2010	12.50%	10146	10056	-0.89%	10416	2.66%	10607	4.54%
21/05/2010	12.50%	9871	9611	-2.63%	9294	-5.85%	9791	-0.81%