

Causal Relationship between Macroeconomic Factors and Stock Prices in Pakistan

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Abstract: The research paper aims to investigate the significant macro-economic factors affecting the stock Prices of KSE-100 Index. Time series Data for Stock Prices on monthly basis for the period ranging January, 2005 to March, 2014 has been taken from KSE-100 Index. The study used time series data analysis. Sample comprises of 30 companies from KSE-100 Index for analysis. Macro-economic variables selected in the study are Inflation (CPI), Producer Price Index (PPI), Gold price, Silver price, Exports and Imports. Augmented Dickey Fuller test has been used to check stationarity of data, Johansen's Cointegration test and Ganger's causality tests has been used to measure the causal relationship between stock prices and selected macro-economic variables. The results suggested that stock prices are cointegrated with macro-economic variables in long term. Furthermore, macro-economic variables Inflation, PPI, Gold price and Exports have long term causal relationship with stock prices in Pakistan.

Keywords: Stock prices, PPI, Gold price, causal relationship, Silver price.

1. INTRODUCTION

Study of causal relationship between macroeconomic indicators and stock prices is one of the most significant topics in the field of finance and stock market (Hasan and Javed, 2009). Stock market is considered to be an important economic indicator for any economy. Different economic variables effects the stock returns of the firms listed at Karachi stock exchange (Butt, Rehman, Khan and Safwan, 2010). Stock market development is considered to be an important factor for the growth of the economy (Enisan and Olufisayo, 2009). In order to bring growth in economy, stock market must keep on developing (Enisan and Olufisayo, 2009). To keep the stock market on path of development, we must identify the significant factors affecting the stock prices in stock market.

Karachi Stock exchange which is the largest stock exchnage of Pakistan was established in 1949. KSE-100 Index is the index of top 100 companies listed at KSE. KSE-100 Index was launched in 1991 and with the passage of time it became of the most accepted projection of stock market performance (Ali, Rehman, Yilmaz, Khan and Afzal, 2010). Karachi Stock exchnage has the prevelage of receiving the award for "Best performing Stock Market of the World for the year 2002" Ali et al., (2010).

This paper aims to identify the significant macroeconomic factors among the selected variables along their causal relationship with the stock prices of selected companies listed in Karachi Stock Exchange-100 Index. The selected macroeconomic variables in this study are overall exports of Pakistan, overall imports of Pakistan, Gold prices, Silver Prices, Inflation rate (CPI) and PPI. The study selected a total of 30 companies from KSE-100 Index. The study uses time series data for the stock prices of these selected companies and the selecetd macroeconomic variables for the period January, 2005 to March, 2014 on monthly basis. Data for stock prices for the period September 2008 to December 2008 was not available on KSE webiste so due to limitation of data, these four months were not included in the data extracted for stock prices and selecetd macroeconomic variables. Table-1 Shows the list of companies selected in this analysis along their sector wise representation. The selecetd companies covers 21 sectors of KSE out of 32 operational sectors.

Table 1. List of Companies

Symbol Used	Name of Company	Sector	Symbol Used	Name of Company	Sector
ADAM	Adamjee Insurance Ltd	Non Life Insurance	MCB	Muslim Commercial bank	Commercial Banks
ADOS	Ados Pakistan	Engineering	MEEZAN	Meezan Bank	Commercial Banks
ATLAS	Atlas Honda ltd	Automobile & Parts	GUL	Gul Ahmed Textile Mills Ltd	Textile
CENTURY	Century Paper	Forestry	NISHAT	Nishat Mills Ltd	Textile
EFU	Efu Life Insurance	Life Insurance	PACKAGES	Packages Ltd	General Industries
ENGRO	ENGRO Corp	Chemicals	PAKELEKTRON	Pak Elektron Ltd	Household Goods
FAUJI	Fauji Cements	Cement	QUICE	Quice Food Ltd	Food Producers
GADOON	Gadoon Textile Mills ltd	Textile	SAIF	Saif Textile Mills Ltd	Textile
GILLETE	Gillete Pakistan Ltd	Textile	SAUDIPAK	Saudi Pak Leasing Ltd	Financial Services
GLAXO	Glaxo Smith	Pharma & Bio Tech	SHELL	Shell Pakistan Ltd	Oil & Gas
GOLDEN	Golden Arrow Funds Ltd	Equit Investments	SHIFA	Shifa Int'l Hospitals Ltd	Health Care
HABIB	Habib Sugar Mills Ltd	Food Producers	SUI	Sui Northern Gas Pipelines Ltd	Gas and Water
HUB	Hub Power	Electricity	TELECARD	Telecard Ltd	Fixed Line Telecom
IBRAHIM	Ibrahim Fibre Ltd	Textile	SEARL	The Searle Company Ltd	Pharma & Bio Tech
JAHANGIR	Jahangir Siddiqui Ltd	Financial Services	YOUSUF	Yousuf Weaving Mills Ltd	Textile

The results of this study will help the investors and policy makers to know that which significant macroeconomic variables have more causal relationship with the stock prices of the companies listed at KSE-100 Index. The study will also help to identify the non significant macroeconomic variables having less causal relationship with the stock prices of the companies listed at KSE-100 Index. This paper will help foreign investors willing to invest huge funds in stock market of Pakistan by identifying the significant macroeconomic variables having more causal relationship with the stock prices of companies listed in KSE-100 Index.

Rest of the paper will be following the sequence as Literature review, data & methodology and Conclusion.

2. LITERATURE REVIEW

Farooq, Keung and Kazmi (2005) studied the causality linkage between Stock Market Prices and Exchange rate. Later on Akmal (2007) investigated the relationship between Stock Returns and Inflation in Pakistan in Long run and Short run. In the same year Mamoon (2007) studied the relationship between stock market activities and some macroeconomic variables. Later on in same year Rizwan and Khan (2007) studied the role of some selected macroeconomic variables and global factors on stock returns volatility. Hasan and Javed (2009) conducted an empirical research on the causal relationship between monetary variables and equity market returns. In the same year 2009, Sohail and Hussain (2009) studied long run and short run relationship between macroeconomic variables and stock prices in Pakistan by taking a case of lahore stock exchange. Hasan and Nasir (2009) conducted an empirical investigation to explore relationship between macroeconomic factors and equity prices. Mohammad, Hussain, Jalil and Ali (2009) studied impact of some macroeconomic variables on stock prices in KSE. Next year Akbar and Baig (2010) studied the reaction of stock prices to dividend announcements and market efficiency in Pakistan. Later on Mehr-un-Nisa and Nishat (2011) investigated on the determinants responsible for stock prices in Pakistan.

Akmal (2007) studied the relationship between stock returns and inflation and found that stock returns hedges against inflation in long run. Ali et al., (2010) studied causal relationship of macroeconomic indicators inflation, exchnage rate, balance of trade and index of industrial production with stock returns and results suggested co-integration between industrial production index and stock returns. Sohail and Hussain (2009) investigated relationship of CPI, IPI, Real effective exchange rate and money supply with stock returns and concluded that IPI, Real effective exchange rate and Money supply have significant effect on stock prices in Pakistan. Hasan and Javed (2009) studied the relationship of IPI, broad money, oil prices, exchnage rate, inflation and interest rate with equity prices and the results suggested broad money, Exchange rate and interest rate to be significant. Mehr-un-Nisa and Nishat (2011) study found GDP growth rate, interest rate and financial depth to be significant factors effecting the stock prices in Pakistan. Mohammad et al., (2009) found Federal exchange reserves and foreign exchange rate to be significantly effecting the stock prices in Pakistan. Mamoon (2007) studied relationship of bank call rates, wholesale price index, trading volume, M2 and Quantum Index of manufacturing sector with stock returns volatility and the results suggested that trading volume and stock prices have negative relation in long run. Rizwan and Khan (2007) studied the effect of exchange rate, interest rate, industrial production, monet supply, MSCI world index and 6-months LIBOR on stock prices volatility and concluded that MSCI world index and 6-months LIBOR can be used to explain the stock prices volatility.

Akmal (2007) applied ARDL, Co-integration and ECM for analysis in his research paper. Farooq et al., (2005) and Mamoon (2007) both applied Co-integration technique for the analysis in their research papers. Granger causality technique was used by Hasan and Javed (2009) and Ali et al., (2010) in their research papers. Farooq et al., (2005) also applied ganger causality technique for analysis in his research paper. Augmented Dicky Fuller test was applied in order to identify the stationarity in the data for generalizing the results (Ali et al., 2010). Some researchers used ARIMA technique for data analysis (Mohammad, Hussain, Jalil and Ali, 2009). Literature review suggests that ADF, Johansens Co-integration and Gangers Causality tests are relevant for this research paper.

3. DATA AND METHODOLOGY

Data for stock prices and macroeconomic variables was collected on monthly basis. Data for stock prices of the 30 selected companies was taken from KSE website from January, 2005 to March, 2014 and for this closing stock price on the first working day of every month was taken. Data for CPI, Exports, Imports and PPI were taken from Pakistan Bureau of Statistics. Data for Gold prices and Silver prices were taken from Xignite (Market data Cloud).

Table-2 exhibits the results of descriptive statistics for the selected macroeconomic variables and stock prices. To collect descriptive statistics of stock prices of 30 selected companies, average of their stock prices was taken. The average return of these 30 companies during January, 2005 to March, 2014 stood at Rs.78/Share. Gold price increased from Rs. 797/gram to Rs. 2.866/gram suggesting an increase of about 259% while price of silver increased from Rs. 129/10grams to Rs. 1,207/10grams suggesting an increase of about 835% which means prices of silver increased more rapidly. Exports increased by almost 312% in terms of range while imports increased by almost 355% suggesting deficit. Value of PPI increased by almost 200% suggesting rapid increase in prices of general commodities CPI increased by almost 400% resulting in huge increase in prices while average CPI stood at 10.75%.

Table 2: Descriptive Statistics

	PRICES	GOLD	SILVER	EXPORTS	IMPORTS	PPI	CPI
Mean	77.9	2866.4	521.3	139184.2	249908.3	135.4	10.8
Median	73.7	2680.0	436.0	132000.0	250513.0	130.0	9.8
Std Dev	30.8	1551.1	310.7	51107.7	91961.2	48.1	3.9
Skewness	0.9	0.1	0.5	0.4	0.2	0.1	1.5
Minimum	39.7	797.9	129.0	66951.0	95724.0	70.6	5.1
Maximum	165.9	5428.1	1207.0	275917.0	435995.0	212.2	25.3
Kurtosis	3.0	1.5	1.9	1.9	1.8	1.5	5.5
JarqueBera	14.8	10.4	9.7	7.3	7.0	10.4	67.5
Probability	0.0	0.0	0.0	0.0	0.0	0.0	0.0

In this paper, Augmented Dickey Fuller test (ADF) designed by (Dickey and Fuller, 1979) has been employed in order to make the data stationary and to determine the order of integration for stationarity. After determining the value for integration, Johansen's co integration test has been used to study the prevalence of long term relationship between stock prices and selected independent variables in the study. Co integration test has been applied by using likelihood ratio test including trace statistics and maximum Eigen value statistics. Table-3 exhibits the results of ADF test applied on the macro-economic independent variables while Table-3 exhibits the results of ADF test applied on stock prices of 30 selected companies.

Table 3: Unit Root Analysis of independent variables

ADF test statistics - GD	-12.32596	1% critical value	-3.493129
		5% critical value	-2.888932
		10% critical value	-2.581453
		Prob.*	0.0000

ADF test statistics - SR	-11.67227	1% critical value 5% critical value 10% critical value Probability	-3.493129 -2.888932 -2.581453 0.0000
ADF test statistics - EX	-12.24327	1% critical value 5% critical value 10% critical value Prob.*	-3.494378 -2.889474 -2.581741 0.0000
ADF test statistics - IM	-17.33620	1% critical value 5% critical value 10% critical value Prob.*	-3.493747 -2.8892 -2.581596 0.0000
ADF test statistics - PPI	-7.187089	1% critical value 5% critical value 10% critical value Prob.*	-3.493747 -2.8892 -2.581596 0.0000
ADF test statistics - CPI	-8.190463	1% critical value 5% critical value 10% critical value Prob.*	-3.493747 -2.8892 -2.581596 0.0000

*Variable is stationary at first difference.

Table-3 depicts that all the six independent variables are stationary at integration 1. These variables were non-stationary at level in their original form. Hence, the integration order for the selected time series is I (1).

Table 4: Unit Root Analysis of Stock Prices

Stocks	At level	At difference	Stocks	At level	At difference	Stocks	At level	At difference
ADAM	-1.345	-8.397*	GOLDEN	-1.739	-6.142*	PAKELEKTRON	-1.3275	-9.1035*
ADOS	-2.109	-7.814*	HABIB	-3.121	-11.100*	QUICE	-1.8784	-10.1497*
ATLAS	-1.996	-11.360*	HUB	-0.789	-9.028*	SAUDIPAK	-1.5403	-12.4363*
CENTURY	-2.238	-10.320*	IBRAHIM	-1.162	-10.050*	SHELL	-1.3826	-10.2405*
EFU	-2.000	-5.385*	JAHANGIR	-2.305	-3.828*	SAIF	-1.92	-9.34191*
ENGRO	-2.250	-10.075*	GUL	-2.927	-10.138*	SHIFA	2.3401	-5.0840*
FAUJI	-1.281	-8.972*	MCB	-2.369	-10.076*	SUI	-1.3015	-11.3451*
GADOON	1.355	-5.890*	MEEZAN	-1.926	-5.236*	TELECARD	-1.7727	-11.0621*
GILLETE	-2.418	-7.304*	NISHAT	-1.590	-6.108*	SEARL	0.0766	-9.6433*
GLAXO	-1.824	-10.825*	PACKAGES	-1.431	-10.630*	YOUSUF	-2.2509	-8.0166*

*Stock Prices are stationary at first difference.

Table-4 exhibits the results of ADT test conducted on the stock prices of 30 selected companies. The results suggest that Stock prices of all selected 30 companies are stationary at first difference level. Due to the existence of stationarity at same order, we can proceed toward Johansen’s co integration test.

After applying the ADF test, Johansen’s co integration test can be applied to test the long-run relationship between selected stock prices and macro-economic factors. Johansen’s co integration test (Johansen, 1988) is applied on non-stationary time series to find the co integrating equations in the time series. Trace statistics technique has been used to test the null hypothesis in the co integration test. Results in Table-5 fail to reject the null hypothesis that there is no co integration between macro-economic variables and stock prices. Trace test suggests that at out of 30 companies, at 0.05 level 16 companies have the presence of two co integrating equations, 12 companies have the presence of three co integrating equations while Meezan Bank has the presence of four co integrating equations and Gul Ahmed has the presence of only one co integrating equation. So, the results provide empirical evidence that in common stock prices have long run relationship with macro economic variables.

Table 5: Johansen Co integration test

Dependent Variable	Hypothesized No. of CE(s) None*				Hypothesized No. of CE(s) At most 1*				Hypothesized No. of CE(s) At most 2*			
	Eigenvalue	Trace Stats	Critical Value 0.05	Prob.	Eigenvalue	Trace Stats	Critical Value 0.05	Prob.	Eigenvalue	Trace Stats	Critical Value 0.05	Prob.
ADAM	0.480928	190.4581	125.6154	0.0000	0.452375	123.5753	95.75366	0.0002	-	-	-	-
ADOS	0.439425	166.1551	125.6154	0.0000	0.347960	107.1183	95.75366	0.0066	-	-	-	-
ATLAS	0.487260	178.1059	125.6154	0.0000	0.419196	109.9713	95.75366	0.0037	-	-	-	-
CENTURY	0.493057	182.1736	125.6154	0.0000	0.399738	112.8792	95.75366	0.0020	-	-	-	-
EFU	0.542232	208.7827	125.6154	0.0000	0.436631	129.0807	95.75366	0.0000	0.348467	70.55101	69.81889	0.0437
ENGRO	0.475884	179.5998	125.6154	0.0000	0.407885	113.7034	95.75366	0.0017	-	-	-	-
FAUJI	0.490439	179.0753	125.6154	0.0000	0.342831	110.3062	95.75366	0.0034	-	-	-	-
GADDOON	0.493045	211.4829	125.6154	0.0000	0.408639	142.1909	95.75366	0.0000	0.332416	88.60736	69.81889	0.0008
GILLETE	0.520818	189.2366	125.6154	0.0000	0.396245	114.1977	95.75366	0.0015	-	-	-	-
GLAXO	0.484830	181.1377	125.6154	0.0000	0.339095	113.4854	95.75366	0.0017	0.291019	71.24258	69.81889	0.0383
GOLDEN	0.533204	193.2342	125.6154	0.0000	0.345233	115.5242	95.75366	0.0011	0.294303	72.32963	69.81889	0.0311
HABIB	0.507912	199.9268	125.6154	0.0000	0.436189	127.5988	95.75366	0.0001	-	-	-	-
HUB	0.480875	178.1286	125.6154	0.0000	0.368559	111.2562	95.75366	0.0028	-	-	-	-
IBRAHIM	0.500605	195.0886	125.6154	0.0000	0.361657	124.2640	95.75366	0.0002	0.300489	78.47839	69.81889	0.0087
JAHANGIR	0.538474	209.7161	125.6154	0.0000	0.469704	130.8478	95.75366	0.0000	-	-	-	-
MCB	0.512987	192.2846	125.6154	0.0000	0.454466	118.8992	95.75366	0.0005	-	-	-	-
MEEZAN	0.490644	186.3864	125.6154	0.0000	0.359974	117.5764	95.75366	0.0007	0.349014	72.05931	69.81889	0.0328
GUL	0.508285	165.9655	125.6154	0.0000	-	-	-	-	-	-	-	-
NISHAT	0.516955	185.6209	125.6154	0.0000	0.363632	111.4011	95.75366	0.0027	-	-	-	-
PACKAGES	0.491015	192.6293	125.6154	0.0000	0.427130	123.7450	95.75366	0.0002	-	-	-	-
PAKELEKTRON	0.507693	170.2908	125.6154	0.0000	0.318813	98.00809	95.75366	0.0347	-	-	-	-
QUICE	0.544783	201.5145	125.6154	0.0000	0.366264	121.2425	95.75366	0.0003	0.297369	74.71797	69.81889	0.0193
SAIF	0.492389	211.4161	125.6154	0.0000	0.465862	142.2560	95.75366	0.0000	0.264647	78.29169	69.81889	0.0090
SAUDIPAK	0.513822	192.2687	125.6154	0.0000	0.360411	118.7083	95.75366	0.0005	0.295505	73.12149	69.81889	0.0266
SHELL	0.458898	160.8776	125.6154	0.0001	0.353552	98.23460	95.75366	0.0334	-	-	-	-
SHIFA	0.509759	198.8207	125.6154	0.0000	0.373352	126.1091	95.75366	0.0001	0.254512	78.43734	69.81889	0.0087
SUI	0.490636	185.6449	125.6154	0.0000	0.340893	116.8364	95.75366	0.0008	0.316170	74.31574	69.81889	0.0209
TELECARD	0.494942	174.3413	125.6154	0.0000	0.340206	104.6670	95.75366	0.0106	-	-	-	-
SEARL	0.492944	186.9988	125.6154	0.0000	0.356445	117.7272	95.75366	0.0007	0.295940	72.77095	69.81889	0.0285
YOUSUF	0.489697	192.2987	125.6154	0.0000	0.407742	123.6781	95.75366	0.0002	0.304746	70.24919	69.81889	0.0462

*Trace test indicates 1 cointegrating equation(s) at the 5% level

**Trace test indicates 2 cointegrating equation(s) at the 5% level

***Trace test indicates 3 cointegrating equation(s) at the 5% level

The presence of long term co integration between stock prices and macro economic variables provides us the direction for applying Granger-causality test in order to identify that which macro economic variables are affecting stock prices in long run.

Table 6: Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
INF does not Granger Cause ADAM	104	5.15910	0.0074
ADAM does not Granger Cause INF		0.50483	0.6052
PPI does not Granger Cause ADAM	104	3.92110	0.0230
ADAM does not Granger Cause PPI		0.19543	0.8228
GOLD does not Granger Cause ADOS	104	3.84122	0.0247
ADOS does not Granger Cause GOLD		3.76907	0.0265
EXPORT does not Granger Cause CENTURY	104	6.06823	0.0033
CENTURY does not Granger Cause EXPORT		0.09384	0.9105
EXPORT does not Granger Cause ENGRO	104	0.11568	0.8909
ENGRO does not Granger Cause EXPORT		6.71115	0.0018
EXPORT does not Granger Cause GLAXO	104	1.37594	0.2574
GLAXO does not Granger Cause EXPORT		4.45788	0.0140
EXPORT does not Granger Cause GOLDEN	104	3.90082	0.0234
GOLDEN does not Granger Cause EXPORT		1.74981	0.1791
GOLD does not Granger Cause GOLDEN	104	3.35054	0.0391
GOLDEN does not Granger Cause GOLD		0.15007	0.8608
EXPORT does not Granger Cause HUB	104	1.32514	0.2704
HUB does not Granger Cause EXPORT		3.16983	0.0463

INF does not Granger Cause JAHANGIR	104	4.70161	0.0112
JAHANGIR does not Granger Cause INF		0.84474	0.4327
INF does not Granger Cause MCB	104	3.75851	0.0267
MCB does not Granger Cause INF		0.64799	0.5253
PPI does not Granger Cause MCB	104	4.25107	0.0169
MCB does not Granger Cause PPI		0.14905	0.8617
EXPORT does not Granger Cause NISHAT	104	0.10101	0.9040
NISHAT does not Granger Cause EXPORT		4.67777	0.0115
PPI does not Granger Cause NISHAT	104	3.82945	0.0250
NISHAT does not Granger Cause PPI		0.06311	0.9389
INF does not Granger Cause PACKAGES	104	5.07333	0.0080
PACKAGES does not Granger Cause INF		0.46396	0.6302
PPI does not Granger Cause PACKAGES	104	6.95743	0.0015
PACKAGES does not Granger Cause PPI		0.59933	0.5512
INF does not Granger Cause PAKELEKTRON	104	4.78604	0.0104
PAKELEKTRON does not Granger Cause INF		0.22018	0.8028
PPI does not Granger Cause PAKELEKTRON	104	3.67037	0.0290
PAKELEKTRON does not Granger Cause PPI		0.33980	0.7127
EXPORT does not Granger Cause SHIFA	104	4.44193	0.0142
SHIF does not Granger Cause EXPORT		0.11435	0.8921
INF does not Granger Cause SUI	104	3.85232	0.0245
SUI does not Granger Cause INF		0.15411	0.8574
GOLD does not Granger Cause THESEARL	104	3.23407	0.0436
THESEARL does not Granger Cause GOLD		0.00930	0.9907
GOLD does not Granger Cause EXPORT	104	4.28223	0.0165
EXPORT does not Granger Cause GOLD		3.08813	0.0500
PPI does not Granger Cause EXPORT	104	4.08609	0.0197
EXPORT does not Granger Cause PPI		4.95820	0.0089
SILVER does not Granger Cause GOLD	104	1.62806	0.2015
GOLD does not Granger Cause SILVER		3.35127	0.0391
SILVER does not Granger Cause IMPORT	104	2.11242	0.1264
IMPORT does not Granger Cause SILVER		4.06823	0.0200
SILVER does not Granger Cause PPI	104	0.50885	0.6028
PPI does not Granger Cause SILVER		6.25173	0.0028

The results of Granger-causality test have been conducted on stationary data at lag 2. The results in Table-6 contain only the significant factors affecting stock prices. Rejection of first null hypothesis at 0.05 level suggests that there prevails unidirectional Granger-causality between the macroeconomic variable and stock prices while rejection of both null hypotheses suggests that there prevails bidirectional Ganger-causality between macroeconomic variable and stock prices. There exists unidirectional Granger-Causality between Inflation and Stock prices of Adamjee Insurance, Jahangir Siddiqui, MCB, Packages, Pak Elektron and Sui Northern Gas Limited. Hasan and Javed (2009) found similar result that inflation does Granger-Cause Stock prices. PPI has unidirectional Granger-Causality with Stock prices of Adamjee Insurance, MCB, Nishat, Packages and Pak Elektron. Hardouvelis (1987) studied affect of PPI on stock prices and found it insignificant. In contrast, Pearce and Roley (1985) found PPI statistically significantly affecting stock prices before 1979. Gold rate has unidirectional Ganger-Causality with Stock prices of Ados Pakistan, Golden Arrow selected Funds and the Searle Company. There prevails bidirectional Ganger-Causality between Gold rates and Stock prices of Ados Pakistan. Hasanzadeh and Kianvand (2012) found negative short run relationship between Stock returns in Tehran Stock market and Gold prices. Draper, Faff and Hillier (2006) found weak correlation for Stock returns with Gold prices and Silver prices. Our results also suggest that silver prices are not Granger-causing stock prices. Exports has unidirectional Ganger-Causality with Stock prices of Century paper, Golden Arrow selected Funds and the Searle Company.

4. CONCLUSION

This research examines the causal relationship between stock prices in KSE and macroeconomic factors which are Inflation, Gold rates, Silver rates, Exports, Imports and PPI for the period January 2005 to March 2014 by using Co-integration technique and Granger-Causality test. The research concluded that the stock prices of selected 30 companies from KSE are co integrated with Inflation, Gold rates, Silver rates, Exports, Imports and PPI in long run. It means all these macroeconomic variables are associated with stock prices in KSE in long run. The results found Inflation, Exports,

PPI and Gold rates having Granger-Causal affect on stock prices in KSE. Other macroeconomic variables Silver rates and Imports were found not having Ganger-Causal affect on stock prices in KSE. Identification of factors affecting stock prices in KSE would help the individual investors to make better decision in future in order to make their investments less risky. This would also help the brokers to study the relevant and significant macroeconomic variables affecting stock prices before taking their decision. The results can help policy makers to focus on the identified significant factors to boost up the stock market and attract more investors. Foreign investors could study the identified factors before making their decision to invest in the KSE.

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