MOVEMENT ANALYSIS OF KARACHI STOCK EXCHANGE (1993 - 2012)

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Abstract

The variation in the stock market prices is a significant indicator of the economy. The intention of this study was to examine the movement analysis of the Karachi stock market. For this, the yearly data of money supply, interest rate (discount rate), inflation rate, exchange rate, gold prices, industrial production (GDP) as independent variables and stock market returns (KSE-100 index) as dependent variable over the period of 1993 – 2012 is collected. Descriptive statistics, Regression analysis, Augmented Dickey Fuller (ADF) unit root test and Johansen co integration models are used to test the movement of macroeconomic factors affecting on stock market return. The empirical outcome shows that money supply, rate of inflation, gold prices, industrial production have positive association with stock market return while interest rate and exchange rate correlate negatively with stock market. Finding reveals that money supply is the largest positive determinant of the stock market return while interest rate is largest negative determinant of movement in Karachi stock market. These results further signified that gold prices used as diversification tool to hedge against inflation in slump economy, contractionary monetary policy generally depress equity return in short-term as well as long-term and furthermore increasing in economic productivity promotes stock market development.

Keywords: Karachi stock market, Inflation rate, Money supply, interest rate, exchange rate, gold prices, industrial production

Introduction

Background of the Study

Frequent “collapses” of the stock market reported the year 1994 suggest that the Karachi bourse is rapidly converting into a volatile market. This cannot be viewed as a positive sign for this developing market of South Asia. Though heavy fluctuations in stock prices are not an unusual phenomena and it has been observed at almost all big and small exchanges of

the world. Focusing on the reasons for such fluctuations is instructive and likely to have important policy implications. Proponents of the efficient market hypothesis argue that changes in stock prices are mainly dependent on the arrival of information regarding the expected returns from the stock.

In overall phase of economy, Ologunde & Asaolu (2005) stated that equity market enables the economy and makes it viable to formulate certain long-run assurances in real capital. Due to this, the efficiency, propensity, level of equity market holds immense importance for potential investors, policy makers and other key group of actors, who make certain or guarantee long-run real capital in an economy. Pakistan's financial market has been involved in the reforms' process since 1980s. Two major effects of the development of Pakistan's financial sector have been observed: 1) equity markets opened for foreign investors, and 2) market based instruments' implementation like monetary policy. According to Hussain and Qayyum (2006), a sharp boost in the inflows of portfolio investment is the result of opening up of the stock markets. On one side such an investment helps in increase the investable money and on other side it fashioned wild swings in the equity market. For example, the Karachi Stock Exchange (KSE-100 Index) increased to 2643 points in 1995 but declined sharply to just 892 in 1998. From this low level it crossed 11000 figures in early 2005 and by May 2005 it had decline to just around 7000 point. In April 2008, market crosses the figure of 15500 but within 3 months it bearishly decline to 11000. However, few months later it had again drop badly by 42% due to global financial crisis and stock market frozen because of the Floor-Price-Level limit implemented in KSE during Aug 27 to Dec 28, 2008. But recently few months ago market still stable and crossed the almost up high index of 25000. Researchers argue that the instability is low in 'bear' market as compared to 'bullish' stock market.

However, financial sector acts as significant base for economic growth, since it promotes creation of capital as well as elevates economic development. Securities' trading in the financial market facilitates the users as well as savers of assets/funds by sharing risk, pooling funds, and relocating capital. Having a number of studies, there is still a contradiction about the relationship between Stock market and factors effecting and this topic is yet open for discussion and investigation.

The Karachi Stock Exchange

KSE - Historical trends

The Security and Exchange Commission of Pakistan (SECP) was developed in 1997, by substituting the Corporate Law Authority, to regulate the capital market of Pakistan. Basically the 3 stock exchanges working in Pakistan, including Karachi Stock Exchange short termed by KSE, Lahore

Stock Exchange and Islamabad Stock Exchange. Among these three stock exchanges, KSE is the major and leading stock exchange in Pakistan. KSE established on 1947, LSE on 1974 and the third one ISE established on 1997. The Government of Pakistan very much focused on the industrialization policies during the decade of 1990s which was effect in the increase of equity market.

The functions and policies of stock market were changed in 1990s. The overseas financiers allow investing in the domestic marketplace. As a result, the market grew in the positive direction and economy increased in the 1st year due to the opening of market for the international investors. The market reached high rank for the best performance and observing the bullish trend in the market.

KSE has been showing consistent growth since 1991 when several records have been surpassed with wide margin. In 1991, there were 628 companies listed in KSE with market capitalization of Rs. 218.4 billion. Since then KSE has shown an upward trend. The KSE is the leading stock market and a tone setter for the overall capital sector of Pakistan. More than 17% growth is seen in the capital market as regards its Paid-up capital in 1999 and resulted 20% decline in the deposits of Non-Bank Financial institutions-NBFI. But after few years due to the political instability the Pakistani equity market collapsed. KSE established an account which is named as the "Defaulting Companies Counter" in which those companies are listed who committed defaults and did not follow the rules and regulations of the Exchange. There is improvement occur during 1999 to 2000 in the KSE performance. KSE introduced the computerized trading system that is "KATS" (Karachi Automated Trading System). Because of this new technology the listed companies increased in 2000, which will be the resulted as the boost in market capitalization and the turnover ratio was splendid, reached to the 500% in 2003 which is the dramatic change. So in this period of time Pakistan ranks top of the world in term of turnover ratio.

After then in Dec 26, 2007 KSE-100 index reached its uppermost target of 14,819 points, a day prior to the murder of ex- Prime Minister Benazir Bhutto, while the index nosedive. However, in 2008 it recovered quickly but few months later it had again drop badly by 42% due to global financial crisis and stock market frozen because of the Floor-Price-Level limit implemented in KSE during Aug 27 to Dec 28, 2008. Although the market remained in a bearish mood during the earlier period of 2010 especially on the back of political disturbance over NRO issues and Positive developments on the regulatory front served to refurbish otherwise terrible volumes and resultantly domestic investors also did not hesitate from taking counter positions against foreigners in certain stocks. In the late 2011, many energy crises together with NATO attack and deteriorating PAK-US

relationship caused the market to behave bearish. KSE is very volatile market due to economic issue as well as monetary issue.

Karachi Stock Exchange – At Present

The KSE based on dividend yield was ranked amongst the top globally in recent years. During 2012-13, the vigorous performance of stock markets in Pakistan was because of some motivating actions such as significant decrease in interest rates by 250 bps as announced by SBP, Capital Gain Tax Ordinance implementation, enhanced political settings resulting in the conclusion of general elections and enhancement in private remittances by foreign Pakistanis. KSE consistently represented its bullish trend and observed spiky boost not only with respect to volumes but index as well. Among international stock markets such as China, India, Hong Kong, USA, Tokyo and UK, the stock market of Pakistan outperformed throughout July-March 2012-13. The key cause behind improved performance of KSE was the participation of oversees investments.

Statement of Problem

Stock markets are responsive to many political interference, economic situations and varying phases of international relations. In addition, these days, the financial markets are getting better capital movements, financial reforms and progressing in technology. These factors have increases the ability to respond quickly to news and shocks originating anywhere in the world. Similarly KSE had been responsive to the internal and external shocks over the years and has shown bearish and bullish movement over the years. There is a need to study the reasons behind the movement and analyze the trends in the stock market empirically.

Objectives

Specific objectives set up for this research are out lined below:

1. To explore the incessant ups and downs in the Karachi stock market.
2. To analyze the behavior of fundamentals of KSE and to find the chief macroeconomic factors and their relative importance in influencing the price movement.
3. To examine the co-integration among fundamental factors of KSE.
4. To find the impact of investor behavior on factors causing stock market volatility.

Research Design & Method

One of the most important tasks of a research-based project is to collect authentic data and analyze it on the basis of information and techniques utilized. Research design of this dissertation is descriptive in

nature. In which the major emphasis is on determining the frequency with which something occur and the extent to which two variables covert and examines the casual relationship between the dependent and independent variables. Which require an apparent design of what, where, when, who, how, and why of the study under research.

Sources of Data

Secondary data source was used for data collection to get the current and relevant information concerning the affect of macroeconomic variables (independent variables) on the Karachi stock market.

Literature Review

Fama's (1981) deliberated that the anticipated rate of return is adversely associated with the equity market returns. Cash flows of firms will be decreased after being discounted when the interest rates are higher (contractionary monetary policy). It is further suggested by **Fama (1981)** that inflation is increased due to increase in money supply, which further results in boost in discount rates and thereby stock market goes down. In such a case, there is a negative association among stock market and money supply. Nevertheless, this negative consequence of money supply on stock market might be offset when the supply of money enlarges leads to economic growth via an increase in business earnings and productivity, and returns on stock market boost up. The rise in economic growth is resulted by an expansionary monetary policy, which causes stock market returns to grow and there will be an affirmative association among returns on stock prices and money supply.

The research study of **Aggarwal (1981)** advocates that changes in stock prices could be the result of variations in exchange rates. **Jaffe (1989)** confirmed that the little association of gold with equities allows it a position in a sound diversified portfolio. **Mukherjee and Naka (1995)** led to the findings that there is a negative association among interest rates and returns on equity market by applying vector error correction model. As the contractionary monetary policy leads to higher interest rates, the cash flows of businesses are declined after being discounted. Thus, making investments less striking, thereby leading to reduction in stock market returns.

F. Hussian & T. Mahmood (1999) analyzed impact of expansionary monetary policy on the return in stock market of Pakistan and reported that money supply M2 resulted in variations in share prices not only in short-term but also in a long-term. However on the other hand, Error Correction Model represents no support for the long-term association among M1 and share prices. Overall results show that Pakistan's stock market is not competent in terms of money supply.

The research of **Smith (2002)** after the terrorist attack of 9/11, the equity prices in United Kingdom fell while the gold prices increased. However, in recent years gold has been utilized along with equities as a constructive instrument for the purpose of diversification as well as for the progress of speculative investment tactics.

The volatility of interest in emerging markets is studied by **S. Edwards and R. Susmel (2003)**, as they gathered the 30-days national discount rates of 5 economies (Brazil, Argentina, Mexico, Hong Kong and Chile) & run EGARCH Model. They suggested that interest rate have negative relation with the stock market in emerging countries. The role of gold and commodities in equity market is assessed by **Hiller et al. (2006)** and he found out that during the years 1976-2004 gold represented a low association with the index of S&P 500. It was discovered that portfolios without gold performed poor as compared to the portfolios consist of 5 percent to 10 percent gold. The long-term as well as short-term determinants of gold price were analyzed by **Levin and Wright (2006)** and they suggested that gold prices affect the majority of the sectors in an economy, thus stock market in particular. Major investors inclined towards having a share of gold in their portfolios, since the reason that gold prices is anticipated to increase with respect to inflation rate, thereby serving as a hedge against inflation, which leads stock market to rise.

Pan et al (2007) studied the correlation among stock market prices and exchange rates with reference to East Asian markets. They observed the rate of exchange as a probable determinant of share prices. The impact that exchange rate has on shares value is empirically evident. When exchange rate depreciates, exports become inexpensive or economical and foreign demand as well as sales of domestic firms increase. When domestic currency depreciates, it results in increase in exports; while appreciation of local currency leads to reduction in exports. However, it is the case only when import and export demand is elastic.

N Zafar & S F Urroj (2008) studied the volatility of interest rates and returns on shares. For this purpose they collect the monthly returns of (KSE 100-index) and 90 days T-bill rate for the period of Jan 2002 to June 2006 and using Two distinct GARCH (1,1) models, one with the effect of interest rate and second without interest rate and reported that restrictive market return has a negatively momentous correlation with rate of interest where as restrictive discrepancy of returns represents negative but insignificant correlation with interest rate.

M. Ishraf Ahmed & R U Rehman (2010) studied whether the exchange rate and interest rate impacts on stock prices (from a Pakistani perspective). They used a Simple Multiple regression model and result shows that increase in rate of interest boosts the business expenditure which

eventually declines returns. However, a reduction in discount rate shows a positive signal to the stock market and thereby returns increase ultimately. Same is the case with exchange rate changes but in reverse track. **Joel Hinaunye Eita (2011)** examined the determinants of share prices in Namibia market. By using the VECM econometric methodology, Namibian Stock Market is mainly determined by inflation, economic activity, money supply, interest rates, as well as exchange rates. Stock market prices increased by an increase in money supply and economic activity, while share prices decline due to increase in interest rate and inflation. Findings reveal that in Namibia equities are not a hedge against inflation and contractionary monetary policy normally reduces prices of shares. Conversely, stock market price progress is promoted due to an increase in economic activity.

Conceptual Framework

After the problem statement and literature survey, the next step is to examine the critical variables and developing a conceptual framework. The critical variables in our study are:

Variables

Dependent Variable:

- Karachi Stock Market (KSE-100 Index)

Independent Variable:

- Money Supply
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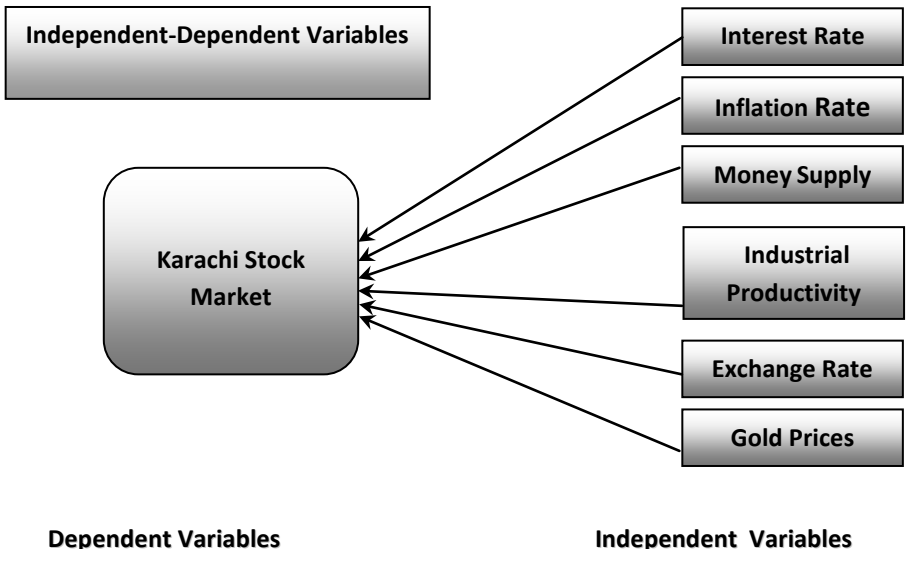
- Interest Rate
- Inflation Rate
- Exchange Rate
- Industrial Productivity
- Gold Prices



Hypotheses

Ha1: There is a significant positive effect of money supply on stock market return.
Ha2: There is a significant negative effect of interest rate on stock market return..
Ha3: There is a significant negative effect of inflation rate on stock market return.
Ha4: There is a significant positive/negative effect of exchange rate on stock market return.
Ha5: There is a significant positive effect of industrial production on stock market return.
Ha6: There is a significant negative effect of gold prices on stock market return.

Data Analysis

The research under study is based on time series econometrics. Based on the theoretical discussion, empirical studies, data availability, six variables are chosen for our basic model to explain the volatility in stock market. These are defined below:

$$\boldsymbol{LSM = \beta + \beta 1LMT + \beta 2LPT + \beta 3LYT + \beta 4LET + \beta 5LRT + \beta 6LGTS + \varepsilon t} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.. (\mathbf{1})$$

Where LSM is the log of stock market index and LMT is the log of money supply, LPT is the log of inflation rate, LYT is the log of industrial productivity, LET is the log of exchange rate, LRT is the log of discount rate, LGT is the log of gold prices and εt is the error term of equation. For the analysis used the average yearly data from 1993 to 2012. The data of stock market is collected from Karachi Stock Exchange i.e.: KSE-100 index; where, money supply and industrial production are collected from statistical bulletin of Economic Survey, consumer price index and exchange rate are obtained from monthly bulletin of Federal Bureau Statistics, discount rate are obtained from statistical bulletin of SBP and prices of gold are obtained from the daily bulletin of bullion rate.

Descriptive Statistics

Regression model is used to analyze the data in order to find out the association among exchange rate, inflation rate, interest/discount rate, money supply, gold prices and industrial production with Karachi stock market return. Table 1 represents the summary of information gathered for this research:

Table 1: Descriptive Statistics

	KSE -100	M2 (M)	Inflation Rate	GDP (M)	Interest Rate	Exchange Rate	Gold Prices
Mean	5598.30	2,954,046	9.09%	106,455	13.11%	57.7409	15741
Median	2875.50	2,094,695	9.40%	78,598	12.56%	59.0450	7403
Maximum	15021.00	8,019,284	20.30%	231,181	20.14%	93.65240	58693
Minimum	1148.00	608,606	2.90%	51,478	7.50%	28.35990	4941
Std. Dev	4817.498	2,236,729	4.44%	56,301	3.89%	19.03264	16407.61
Skewness	0.586747	0.861537	0.49411	0.870553	0.20900	0.22258	1.57409
Kurtosis	1.784823	2.565212	3.12811	2.495255	1.94440	2.24616	4.17383
Jarque-Bera	2.378118	2.631687	0.82750	2.738516	1.07414	0.63870	9.40751
N	20	20	20	20	20	20	20

Table 1 summarizes the descriptive statistic data of KSE-100 Index, money supply (M2), rate of inflation, discount rate, prices of gold, industrial production and exchange rate, indicating that the frequency distribution of the return series of KSE-100 index, money supply, inflation rate, discount rate, prices of gold, industrial production and exchange rate are not normal. The variation from the regularity in the returns on equity is represented by the extra positive/affirmative kurtosis, implying that there is the long right tails of an underlying distribution. Normal distribution's Kurtosis is supposed to be equivalent to 3. When it surpasses 3, the allotment is sharp comparative to leptokurtic i.e. normal. Thus, returns on equity assessed in the given research represent non-normality.

Pair Wise Correlation

The Table 2 reveals Pair wise correlation; correlation coefficient represents the association between -1 to +1 ranges. Positive and negative signs represent the direction of association and the nature of relationship (either weak or strong) is indicated by the value of correlation coefficient. Results shows that money supply, industrial production and gold prices are strong correlation with the stock market return as their values are 0.905, 0.928 and 0.885 respectively. Exchange rate is positive correlated as value is 0.739 with respect to Stock market. Inflation rate is moderately positively related as value is 0.449. Interest rate is weekly negative correlated with Stock market index by its value of -0.468.

Table 2: Correlation

Correlation	Stock Market	Money Supply	Interest Rate	Inflation Rate	Exchange Rate	Gold Prices	Industrial Production
Stock Market	1.0000						
Money Supply	0.9056	1.0000					
Interest Rate	-0.4687	-0.5088	1.0000				
Inflation Rate	0.4492	0.2207	0.4425	1.0000			
Exchange Rate	0.7396	0.9503	-0.5275	0.0040	1.0000		
Gold Prices	0.8853	0.9303	-0.2346	0.4360	0.8471	1.0000	
Industrial Production	0.9281	0.9739	-0.3914	0.3549	0.8889	0.9718	1.0000

Unit Root Test

Economic time series for stationarity is vital to test prior to going for the test of co integration and determining long-term correlations. Augmented Dickey Fuller (ADF) test is used in this research study to find out the unit roots in time series. All the conducted tests indicates that each variable is non-stationary in phases and stationary at first disparity that is the frequent tendency in the majority of time series, as shown in the Table 3(a) without log and Table 3(b) with log.

Table 3(a). Augmented Dickey Fuller Unit Root Test (Without log)

Varaibles	**With Intercept & Trend**		**N**	**Critical Values**		
	Level	1st Difference		1%	5%	10%
KSE-100 Index	-2.6350	-3.7018	20	-4.572	-3.691	-3.287
Money Supply	2.3690	-3.2225	20	-4.572	-3.691	-3.287
Inflation Rate	-2.0511	-5.2995	20	-4.572	-3.691	-3.287
Interest Rate	-2.5759	-3.7198	20	-4.572	-3.691	-3.287
Exchange Rate	-2.9851	-3.7764	20	-4.572	-3.691	-3.287
Gold Prices	3.1088	-3.2792	20	-4.617	-3.104	-3.297
Industrial Production	-0.1545	-4.2032	20	-4.617	-3.104	-3.297

Table 3(b). Augmented Dickey Fuller Unit Root Test (With log)

Varaibles	**With Intercept & Trend**		**N**	**Critical Values**		
	Level	1st Difference		1%	5%	10%
KSE-100 Index	-2.8818	-3.7492	20	-4.572	-3.691	-3.287
Money Supply	-2.3423	-3.8615	20	-4.572	-3.691	-3.287
Inflation Rate	-2.6373	-4.3929	20	-4.532	-3.673	-3.277
Interest Rate	-1.6007	-3.6477	20	-4.572	-3.691	-3.287
Exchange Rate	-2.2851	-3.7135	20	-4.572	-3.691	-3.287
Gold Prices	-0.7217	-4.3960	20	-4.532	-3.673	-3.277
Industrial Production	-1.8778	-5.2063	20	-4.532	-3.673	-3.277

Before proceeding further it is vital to ensure that an underlying data are stationary. For this ADF test, it is presumed that errors are statistically independent and have constant variances. The co-integration between the variables of equation (1) exists, which demonstrates long-term equilibrium connection between the variables.

Johansen Co-Integration Test

Table 4. Johansen Co-Integration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob **
None*	0.9361	169.1721	125.6154	0.0000
At Most 1*	0.8830	116.9275	95.7537	0.0008
At Most 2*	0.8450	76.1680	69.8189	0.0142
At Most 3	0.6348	40.7426	47.8561	0.1970
At Most 4	0.4951	21.6049	29.7971	0.3210
At Most 5	0.3005	8.6198	15.4947	0.4017
At Most 6	0.0918	1.8297	3.8415	0.1762

Trace test indicates 3 Cointegrating equation(s) at the 0.05 level

* denotes rejection of the hupothesis at the 0.05 level

** MacKinnon-Haug-Michelis (1999) P-value

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob **
None*	0.9361	52.2446	46.2314	0.0102
At Most 1*	0.8830	40.7595	40.0776	0.0418
At Most 2*	0.8450	35.4255	33.8769	0.0324
At Most 3	0.6348	19.1377	27.5843	0.4039
At Most 4	0.4951	12.9850	21.1316	0.4536
At Most 5	0.3005	6.7902	14.2646	0.5143
At Most 6	0.0918	1.8297	3.8415	0.1762

Max-Eigenvalue test indicates 3 Cointegrating equation(s) at the 0.05 level

* denotes rejection of the hupothesis at the 0.05 level

** MacKinnon-Haug-Michelis (1999) P-value

Table 4 illustrates the fallout of Johansen co-integration test. This table also explains the long run co movement amongst the variables undertaken for research. Findings represented in the given table explain that three co-integrating equation exists at 5% levels of significance as trace statistics are greater than the critical value (169.1712 > 125.6154 and p-value is 0.0000), (116.9275 > 95.75366 and p value is 0.0008) and (76.1680 > 69.8189 and p value is 0.0142). Implying that null hypothesis is rejected i.e. Ho: r=0 and accepts the alternative hypothesis i.e. $r \geq 0$. Similar to the highest eigen-value test representation i.e. there is three co integration equation with linear trend and intercept assumption as the maximum eigen-value statistics are larger as compared to the critical value (52.2446 > 46.2314 and p value is 0.0102), (40.7595 > 40.0775 and p value is 0.0418) and (35.4254 > 33.8768 and p value is 0.0324). This implies that there is

three co integrating relationship amongst the Six 1(1) variables, thus eigen value test as well as the trace rejects null hypothesis at 5% level of significance and suggest that there is a unique co integrating vector amongst the dependent variable (stock market) and independent variables (money supply, inflation rate, exchange rate, gold prices, industrial production, and interest rate).

Long Run Relationship

Since study demonstrate that variables in the systems are I(1), the OLS Regression result of the equation (1) are presented in table 5:

Table 5: OLS Regression

	Coefficient	t-stats	Probability
Constant	-14.783	-3.802	0.0019
LM_T	1.710	4.297	0.0009
LP_T	0.239	1.915	0.0778
LR_T	-0.828	-3.575	0.0034
LE_T	-2.695	-5.399	0.0001
LG_T	0.319	1.417	0.1789
LY_T	0.013	0.024	0.0981
Adjusted R^2	0.9788	----	----
Durbin Watson Test	2.3647	----	----
F-Statistic	147.8205	----	0.0000

The following equation in log transformation was estimated as below:

$$\boldsymbol{LSM = -14.783 + 1.710LMT + 0.239LPT - 0.828LRT - 2.695LET + 0.319LGT + 0.013LYT} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \mathbf{(1)}$$

Table No. 5 in order to certify our correlation result stock market (LSM) show a positive relation with money supply (MT), inflation rate (PT), industrial production (YT) and gold prices (GT) while Showing negative relationship with interest rate (RT) and exchange rate (ET). This table has following results:

1% elevation in money supply; LSM would be raised by 1.710, 1% elevation in inflation rate; LSM would be raised by 0.239, 1% elevation in discount rate; LSM would decline by 0.828.1% elevation in exchange rate; LSM would decline by 2.695, 1% elevation in gold price; LSM would be raised by 0.319 and 1% elevation in industrial production, LSM would be raised by 0.013. Further it reveals value of R square 0.9855 shows the strong relationship between dependent and independent variables. It represents that changes in dependent variables by 98% is explained by the independent variables; where, remaining 2% is un-explained. This huge value indicates that the model is vigorous according to statistics. Adjusted R square has a range between 0 ≤ R squares ≤ 1, it attempt to correct R squared for reflecting the goodness of this model more closely.

Hypothesis Testing & Results

The significant value of money supply is 0.0009 that is below 0.05. Thus, the null hypothesis (Ho) is rejected and alternate hypothesis (H1) is accepted. This means that Karachi stock market returns are considerable related with money supply. The result is consistent with previous researches as money supply determines the stock prices.

Inflation rate's significant value is 0.0778 that is above 0.05. Thus, Null hypothesis (Ho) is failed to reject. This means that inflation rate has not a significant relationship with the Karachi stock market return. The significant value of interest rate is 0.0034 that is below 0.05. Thus, Null hypothesis (Ho) is rejected and alternate hypothesis (H3) is accepted. This indicates Karachi stock market returns are significantly related with interest rate.

Exchange rate's significant value is 0.0001 that is below 0.05. Thus, null hypothesis (Ho) is rejected and alternate hypothesis (H4) is accepted. This indicates that exchange rate has a significant relationship with the Karachi Stock market return.

Gold prices' significant value is 0.1789 that is above 0.05. Thus, Null hypothesis (Ho) is failed to reject. This means that gold prices have not a momentous relationship with the returns of Karachi stock market as gold prices follow the international trends in the prices.

Industrial production's significant value is 0.0981 that is above 0.05. Thus, Null hypothesis (Ho) is rejected at 10% level of significant and accepted the alternate hypothesis (H6). This means that industrial production has a significant relationship with the Karachi Stock market return.

Conclusion

The paper investigates the analysis on movement of the Karachi stock market for the period 1993 to 2012. This research was done trough relevant theoretical and empirical literature review. Descriptive statistics, regression analysis, Augmented Dickey fuller (ADF) unit root test and Johansen's co integration models are use to test the fluctuation of Karachi stock market through macroeconomic variables. The Analysis shows that money supply, inflation rate, gold prices, industrial production have positive association with stock market return on one hand while interest rate and exchange rate correlate negatively with the equity market on the other. The empirical outcome reveals that money supply is the largest positive determinant of the stock market. This suggests that increase in money supply leads to boost economy through increased cash flows and stock market prices go up.

Interest rate is largest negative determinant of volatility in Karachi stock market; it is generally conventional that with an increase in rates of

interest people be likely to deposit their savings in bank accounts rather than investing in financial equity market. Also it shrinks the profitability of firms and thus stock prices go down and vice versa. The co integration between the variables exists, which demonstrates long-term equilibrium connection between these variables.

During the last decade, thousands of investors, both professional and amateur, lost large sums of money and abandoned KSE because of decline not only in the particular security's price but also KSE-100 share index. Prices decline because of a decrease in profits due to inflation, record high rate gilt-edge securities yield, monetary and fiscal restraint, unstable socio-economic conditions, political instability, injudicious use of funds, shortage of foreign investment, lack of administrative skill due to which KSE has been monopolized by the chosen few privileged speculators.

Hypothetical analysis reveals that the null hypothesis of money supply is rejected (Ho) and alternate hypothesis is accepted, this means Karachi stock market are considerable related with money supply. Interest rate and exchange rate's hypothesis are rejected as well at 5% level of significant and accepted the alternate that means both are significantly correlated with Karachi stock market return, on the other hand inflation rate, industrial production and gold prices are not significantly correlated with stock market return so that failed to reject the null hypothesis at 5% level of significant. After substantiating presence of volatility in Karachi stock market, the results further conclude that gold prices used as diversification tool to hedge against inflation in down economy, contractionary monetary policy generally depress equity return in short term as well as in long term, increase in inflation predicts down movement in economy and economic productivity promotes stock market development.

Recommendations

- SBP should take steps for maintaining the monetary policy to stabilize inflation rate and it's critically impact on interest rate.
- Monetary authorities should compose attractive policy for foreign investor and also encourage them to invest in Karachi equity market.
- Continuously increasing borrowing needs of government from the banking institutions is a major element that is positively impacting on the stock price index.
- Decisive and deep monetary policy is required by the economy as well as it needs an early realization of planned overseas monetary inflows for mitigating improbability to stabilize financial markets.
- Should tolerate to use the treasury share in attractive the equity market during financial disaster and extraordinary market price instability.

- When banks pay interest rate to depositors, the rate of lending (loans) also rises and results in dwindling the funds in the state, which is one more causes of declining stock prices. So, the monetary and regulatory authorities should implement such a stable monetary policy to overcome that badly impact on stock market.

The current challenges require us to train, educate, motivate and prepare new investors, so that , they may accept the risk as a part of the investment process and may play as active role in mobilizing the national savings, it is only possible when the lower, middle and upper-middle class people come ahead to invest their saving in securities.

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