

Impact of Macro Variables on Karachi Stock Exchange

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Abstract

In this paper we have studied that impact of macro variables on Karachi stock exchange. Karachi stock exchange is very interesting topic for the discussion. Karachi stock exchange is known as one of the oldest stock exchange of Asia. Karachi stock exchange is the largest stock exchange of Pakistan. Karachi stock exchange is the dependent variables and inflation, interest rate and exchange rate and GDP are the independent variables. We have taken the data from period 1992 to 2012. We have found that there is 80 %variation. Therefore we can say there is a strong relationship among the variables. While other variables have shown that GDP, interest rate and inflation has strong relationship with kse stock index while interest rate have negative relationship with Karachi stock exchange. The increase and decrease the stock prices will affect the performance of the economy. In this paper researcher want to found out the fundamental macro variables which have impact on stock exchange and also want to found out that what are the impact of these variables on the government policies like monetary and fiscal policy. Fundamental macro variables are export, money, supply, interest rate.

Keywords: Fiscal policy; Monetary policy; Asia; GDP; interest rate; Inflation

Introduction

Karachi stock exchange is very interesting topic for the discussion. In this paper we have find out impact of macro variables on Karachi stock exchange. Karachi stock exchange is known as oldest stock exchange of Asia Karachi stock exchange is the largest stock exchange of Pakistan. Stock market means the prices of securities which are traded in stock exchange. Stock exchange has a vital role for the fostering capital formation. Stock exchange has a main role for the healthy economy of any country. Stock exchange is work as a channel between stock investors and stock borrowers. In the words simple stock market is place where we can trade securities. According to different approaches states that stock market contain two types of investors. One approaches says that investors use their different techniques to overcome the stock market prices and market is insufficient there. The second approaches says that all the investors have the same information and cannot beat the stock prices. Koh says that share price depends upon the effect of macro variables. Khenet et al. analysis that stock market performances are affected because macroeconomic variables are flotation in nature [1-4]. Lee and Wang in Thailand stock exchange and stock return have positive relationship. Mohamed et al. analyzed that impact of different variables on stock return. Bollersley investors are very attractive towards the profits. With the help of determination of value of demand and supply we can know prices of securities which are traded in stock market as daily basis. The fluctuation in stock market due to different factors like economic and political behavior of country. Karachi stock exchange also reacts due to these factors. In simple words during business hours buyers and sellers exchange their holdings. Stock exchange is the place where investors seek reward in the shape of capital gain. Exchange investment projects are useful to mobilize the nation's saving. Stock market is the channel between savings and borrower's. According to leading stocks of world reported that negative growth ranging from Pakistan 50.8% and china 2.7% during the fiscal year. Since the last decade the Pakistani stock market was highly disturbed due to financial crises. In March 2005 stock market was crashed in year 2005. The second collapse was observed in year 2006. The biggest crash in the may 2008 to January 2009 it was the worst crash in the history of Pakistan. Karachi stock exchange was dropped more than 12 thousand points. There are many reasons due to which prices of demand and

supply increases and decrease and have impact on market behavior. According to different researches increase in inflation will increase in the income of demand and supply. The main reason for inflation of any country is there is inverse relationship between demand and supply. According to different economist view that increase in prices of things will indicate the inflation. In other words inflation means expansion of money supply. Many researchers have proved that the rate on inflation has impact on the stock market volatility. Commonly we can say inflation has two main parts 1) expected inflation 2) unexpected inflation. Expected inflation rate is plan one year to year between economists and consumer. Unexpected inflation means that what we can expect between economic and consumers. In this study has shown that main effect of unexpected inflation is due to redistribution of wealth. After the world war 2 in USA the inflation rate is between 3% to 6% for many years which has impact On the performance of the stock market inflation created natural bias. Due to inflation in the world every country has worst stock market. In this paper also explores that if government could not control the inflation then worst stock market ratio will increase. In the high inflation many assets failed to keep up. Government should control it soon otherwise stock will be collapse over 95%. Moreover, many studies has shown that in the period of high inflation dividend will increase in consumer prices. For the policy point of review stock prices and inflation has relationship. According to famous stock market are reflect from the macroeconomic variable therefore it is efficient. Chakravarty shows that stock market and inflation relationship. Mukherjee has shown there is two way causation between stock market performance and inflation. Inflation is due to increase rate and volatility. Inflation has very huge impact on the economic competitiveness. This study has shown that how there is relationship between interest rate and inflation rate. According to

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different hypothesis high inflation shows high uncertainty. According to Li henggua inflation and stock prices has multiple relationships [5]. According to Zhaorang shows that we cannot consider impact of inflation on stock prices a single factor. Modern economy has common feature is called stock market. Stock market is famous for the development of the economy. After the stock market failure government has enable of raise financing for new projects. The status of investment in stock market is long term. Any variable which has impact on economy also impact of stock exchange [6]. According to different economist's inflation is one of the factors which have negative impact of stock exchange. We can measure stock market performance with the help of market capitalization. In this paper we discuss the following issue like 1) what is correlation between stock market and inflation 2) how much correlation between stock market liquidity and inflation. In all the countries inflation caused by monetary authorizes. Therefore, we can say impact of inflation on the stock market has implications on policy market. All the studies shown that stock market performance has effect on the economy [7-9]. The basic characteristics of this Indian economy that it has strong economic growth. A unique feature of this economy is that it has become second faster economy of the world. In the financial year 2008, 2010 the GDP growth has average near about 6.8% [10]. The target growth rate is 8% and the growth of Indian s service sector was 9.5% in 2008-2009. The best feature of Indian economy that

it has high growth. In recent years Asian economy was facing crisis and Indian economy has proven its strength. According to different research foreign exchange reserves has record level in June [11-15]. In June 2009, the foreign exchange reserves were reaching a record level of \$300. In May 2002, the Indian rupees were in strength as compared to dollar \$1=rs 43.51. In 2004, the inflation rate contained at 5.5% in 2006 the inflation rate was at 6% and slow down at the beginning of the year 2009 was 9% (Figures 1-4 and Table 1).

Scope of Study

The scope of this study is find nature and strength of relation between stock return and inflation, and interest rate.

Objectives

- 1) What are the relationship between stock market and inflation?
- 2) What are the relationship between stock market and interest rate?
- 3) What are the relationship between stock market and exchange rate?

Methodology

The purpose of this study is to measure that affect of marc variables on the stock prices of Karachi. We explained the research model by

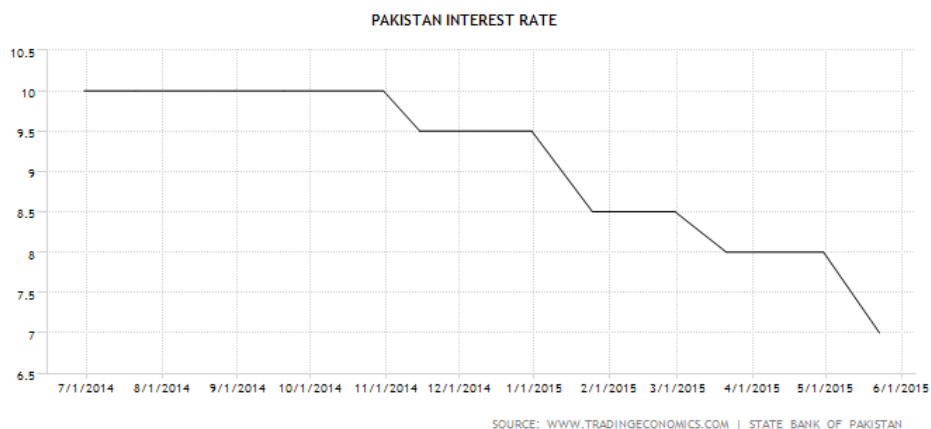


Figure 1: Pakistani interest rate.



Figure 2: Pakistani Growth rate.

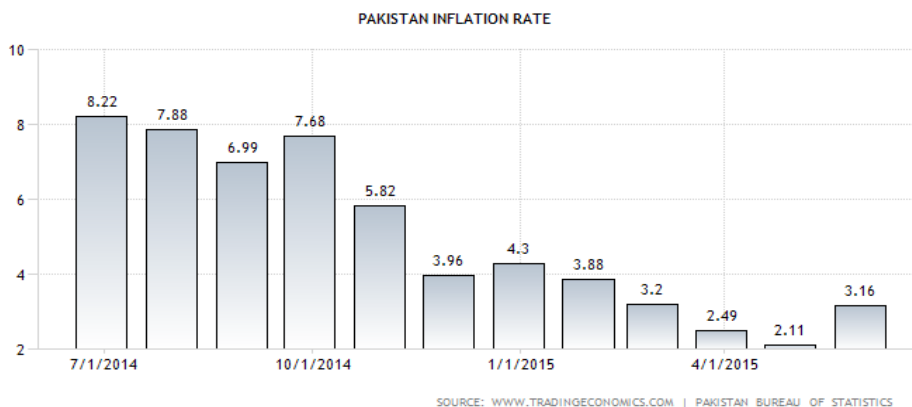


Figure 3: Pakistani inflation rate.

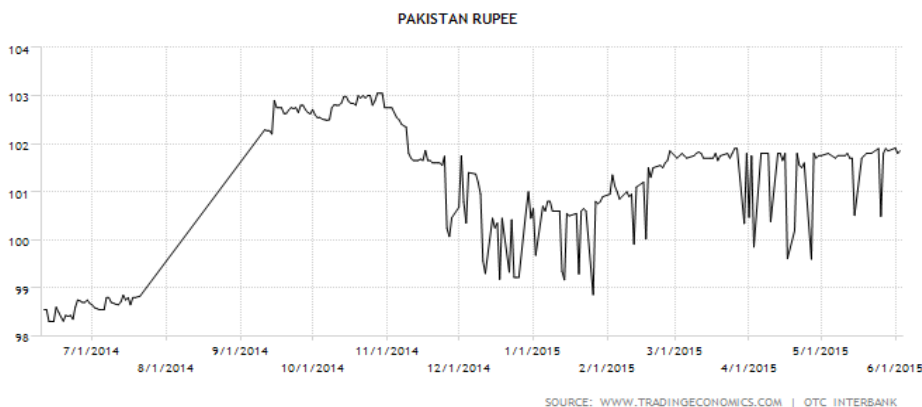


Figure 4: Pakistani rupee.

No.	Market	%
1	United States	47.7
2	Japan	10.3
3	United Kingdom	10.4
4	France	4.3
5	Canada	3.4
6	Germany	2.8
7	Switzerland	2.7
8	Italy	2.2
9	Australia	2.1
10	Netherlands	2.1

Table 1: Top Ten Biggest Stock Markets in the World (% of Total).

using the different variables. In this model Karachi stock exchange is the dependent variables and other are independent variables. We use yearly data from 1992 to 2012 (Figures 5 and 6).

The model:

$$Y = a + b_1(x_1) + b_2(x_2) + b_3(x_3) + b_4(x_4) + e$$

$$Y = a + b_1(\Delta exc) + b_2(\Delta gdp) + b_3(\Delta inflation) + b_4(\Delta int \text{ rate})$$

Where y =dependent variable

X1=exchange rate

X2=GDP

X3=inflation

X4=interest rate

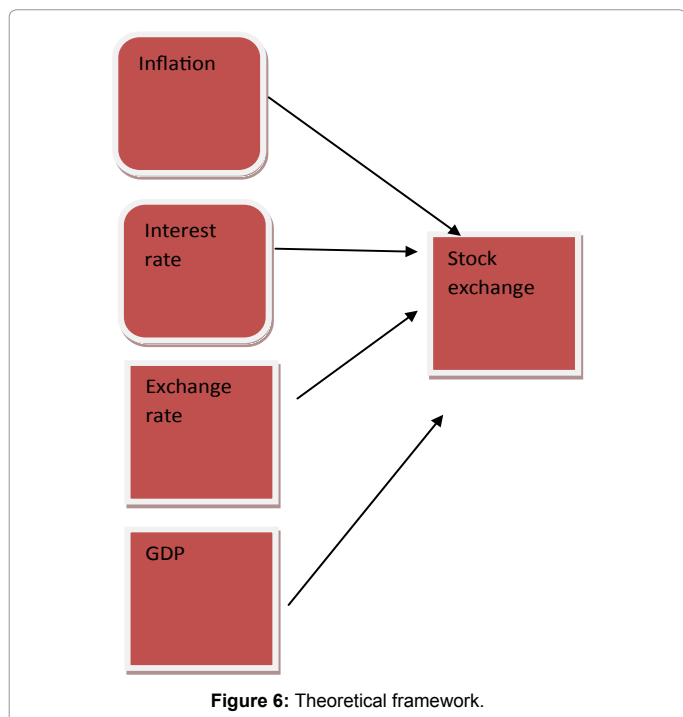
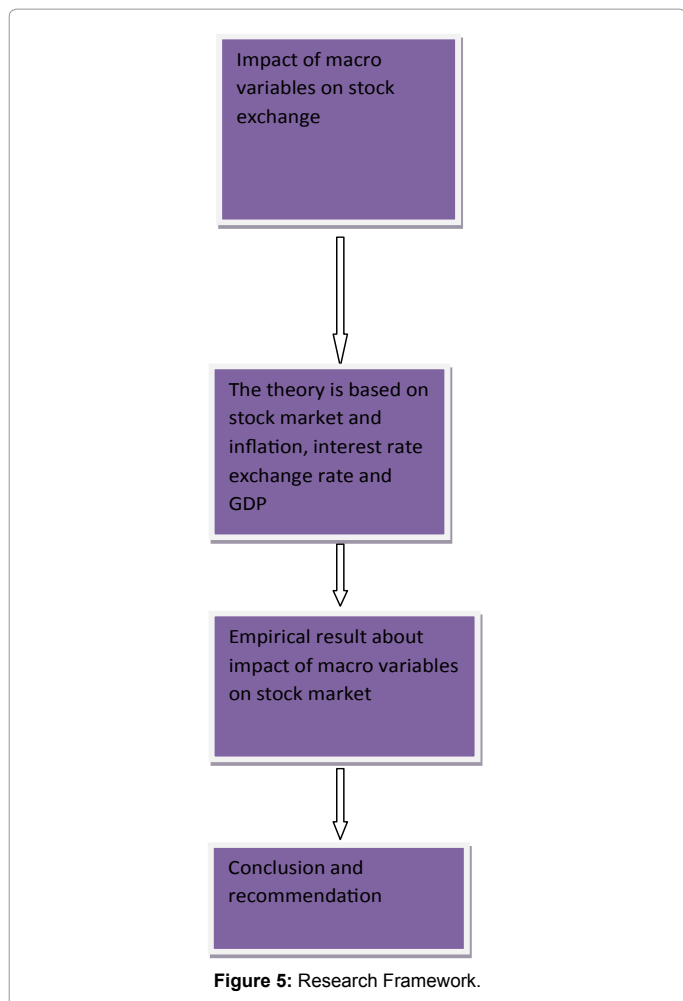
Statistical tools

For the interpretation of the model we have used Pearson product movement correlation coefficient and multiple regression models. Table 2 shows that there is positive relationship between Karachi stock prices and exchange rate and there is negative relationship between interest rate and Karachi stock prices. At the end 100% change in independent variable will lead to 5.3033% change in stock prices [16]. For the purpose of checking that data is significant or not we use t ratio.

Method

Table 2 shows the relationship between dependent variables and independents variables.

$$\Delta kse \text{ 100 index} = a + b_1(\Delta ex) + b_2(\Delta IR) + b_3(\Delta inf) + b_4(\Delta GDP)$$



All the data have shown that change in the independent variable will cause change in dependent variable. Table 2 shows that exchange rate, interest rate and gdp has positive and inflation show the negative relationship.

R2

R2 is used to checking that data is fit or not. It ranges normally from 0 to 1. The value of r2 is 0.8098 which is nearest to 1. It means there is 80% variation and this model is good fit.

Pearson’s product movement correlation coefficient:

The purpose of person’s product movement correlation is the show the relationship is positive and negative. It is represented by p and denoted by greek letter. It ranges from +1 to -1.

GDP and KSE 100 index

After the evaluation of data in Tables 6 and 10 shows that have not strong relationship. The model suggests that there is 15.5% correlation is present (Table 3-4).

F ratio

The purpose of f ratio is that overall model is significant or not. For this purpose we use a confidence interval. The value of f ratio in Table 4 is 15.9593 which shows that exchange rate and stock prices are the positive relationship.

Sample size	20
Coefficient of determination R ²	0.8098
Readjusted	0.7591
Multiple correlation coefficient	0.8998
Residual standard deviation	21.3378

Table 2: Relationship between dependent variables and independents variables.

Independent variables	Coefficient	Std. Error	Partial	T	P
(Constant)	-65.7771				
Exchange	1.5386	0.3921	0.7119	3.926	0.0015
Interest	-2.3135	2.3151	-0.2499	-0.998	0.3336
Inflation	4.1828	1.3476	0.6255	3.105	0.0074
GDP	5.3033	3.0641	0.4081	1.732	0.1041

Table 3: Relationship between dependent variables and independents variables.

Source	DF	Sum of Squares	Mean Square
Regression	4	29065.1541	7266.2886
Residual	16	6829.5823	455.3056

Table 4: Relationship between dependent variables and independents variables.

F-ratio	15.9593
Significance level	P<0.002

Table 5: Relationship between dependent variables and independents variables.

Variable	R
Exchange	0.7558
Interest	-0.4301
Inflation	0.4649
GDP	0.1538

Table 6: Relationship between dependent variables and independents variables.

Interest rate and kse stock prices:

Tables 5-9 shows that there is negative relationship between stock exchange and interest rate and correlation is insignificant because value of 0.585 is greater than 0.05. The study of nishat and shaheen in 2007 shows that there is negative correlation between interest rate and stock prices. When inflation rates moved to high then government should try to control hyper inflation. Increase the rate of has a bad impact on stock prices [17,18].

Inflation rate and kse 100 index

Tables 10 and 11 shows that there is moderate positive relationship between inflation and stock prices index and the p value is less than 0.05 therefore correlation is significant. For all the tables it has shown that independent variables shows positive and negative and weak correlation [19-21].

Conclusion

We have discussed the brief summary of the paper that changes in the macroeconomic variable have impact on the stock exchange prices in any nation. There are no variables which have impact on the stock prices. There are three types of stock exchange in Pakistani economy. 1) Islamabad stock exchange, 2) Karachi stock exchange, 3) Lahore stock exchange. Karachi stock exchange is one of biggest stock exchange of Pakistan economy and it has capacity to capture 76% of

		KSE	Exchange
KSE	Correlation Coefficient Significance Level Pn		0.757 0.0002 20
Exchange	Correlation Coefficient Significance Level Pn	0.757 0.0002 20	

Table 7: Relationship between dependent variables and independents variables.

		KSE	Interest
KSE	Correlation Coefficient Significance Level Pn		-0.431 0.0585 20
Interest	Correlation Coefficient Significance Level Pn	-0.431 0.0585 20	

Table 8: Relationship between dependent variables and independents variables.

		KSE	Inflation
KSE	Correlation Coefficient Significance Level Pn		0.466 0.0388 20
Inflation	Correlation Coefficient Significance Level Pn	0.466 0.0388 20	

Table 9: Relationship between dependent variables and independents variables.

		KSE	GDP
KSE	Correlation Coefficient Significance Level Pn		0.155 0.5172 20
GDP	Correlation Coefficient Significance Level Pn	0.155 0.5172 20	

Table 10: Relationship between dependent variables and independents variables.

		Exchange	Interest	Inflation	GDP
Exchange	Correlation Coefficient Significance Level Pn		-0.437 0.0547 20	0.194 0.4158 20	-0.219 0.3567 20
Interest	Correlation Coefficient Significance Level Pn	-0.437 0.0547 20		0.345 0.1382 20	-0.418 0.0657 20
Inflation	Correlation Coefficient Significance Level Pn	0.194 0.4158 20	0.345 0.1382 20		-0.098 0.6788 20
GDP	Correlation Coefficient Significance Level Pn	-0.219 0.3567 20	-0.418 0.0657 20	-0.098 0.6788 20	

Table 11: Relationship between dependent variables and independents variables.

the capital market of Pakistan. Karachi stock exchange is the backbone four economies. In the Table 1 r2 is used to check that model is good or not. Value of r2 shows that model is good. And we used the t test to check that individual significant and f test is used to check that model is significant or not. According to Pearson's correlation model shows that exchange rate and stock prices have positive correlation. There is a moderate positive correlation between inflation and stock exchange. The relationship between interest rate and stock prices is negative. All these relationship has shown that there is not strong correlation among the variables.

Recommended

- 1) Practitioners and analysts should try to prediction about the future stock prices.
- 2) They should find out the stock market movement.
- 3) Investors should forecast how financial market changes.

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