

The Moderating Impact of Political Stability on the Relationship between Macro-economic Variables and Stocks Performance in the Era of Digitalisation: Evidence from the Pakistan Stock Exchange (PSX)

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ABSTRACT

The stock market is considered the backbone of the economic system of any country. However, the stock market's performance is influenced by many factors, especially the macroeconomic variables. Specifically, the political stability in a country plays a vital role in the functioning of the overall economy. Thus, the current research aims to analyse the moderating impact of political stability on the relationship between macroeconomic variables (interest rate, inflation, and economic growth) and the performance of the Pakistan Stock Exchange (PSX) proxied by the KSE-100 Index in the era of digitalisation. The monthly data of selected variables was collected from 2009 to 2016, and the multiple Ordinary Least Squares (OLS) technique was applied for analysis purposes. The study revealed that political stability positively influences the relationship between selected macroeconomic variables and stock prices. The results of this study provide helpful insight to shareholders, managers, and policymakers in Pakistan.

KEYWORDS: Stock Market, Digitalization, Pakistan, Political Stability, Performance.

1. INTRODUCTION

Stock exchange is of crucial importance in the modern economic system. It is a source to promote the entrepreneurial progress in a country and plays two critical roles. The first role is price discovery, and the second is liquidity. As a secondary issue market, the stock exchange allows corporations to undertake massive projects and provides companies access to the pool of institutional and private investors for raising funds (London Stock Exchange, 2018). Regarding the liquidity aspect of the stock exchange, it provides incentives to ultimate savers in an overall economic system. In a nutshell, a well-regulated and efficient stock market works as a bridge between borrowers (deficit units) and savers (surplus units) of funds (Pethe & Karnik, 2015).

Pakistan Stock Exchange (PSX) was incorporated on March 10, 1949. At this stage, it had five listed securities with PKR. 37 million paid-up capital. Before January 2016, PSX worked under the Karachi Stock Exchange (KSE) name. However, On January 11, 2016, the KSE name

was changed to the Pakistan Stock Exchange, witnessing the operations of two other stock exchanges of Pakistan, namely the Islamabad Stock Exchange (ISE) and Lahore Stock Exchange (LSE) merged into the PSX. As of 2016, The PSX is Pakistan's largest stock market with a US \$ 72.3 billion market capitalisation (Pakistan Stock Exchange Limited, 2018). Furthermore, PSX consists of 36 sectors, which contain a total of 582 listed companies.

Since the stock market performance plays a vital role in the economic development of a country, it is itself impacted by significant macro-economic variables like inflation, interest rate and market return in the era of digitalisation, which is also evident from previous literature (Huang et al. 2015; Uwubanmwun & Eghosa, 2015). Specifically, in the Pakistani market context, abnormal inflation and interest rate behaviour were observed during 2008-09. The inflation rate reached a record figure of 24% in year 2008 from 8.9% in 2007. Accordingly, to compensate for the higher inflation rate, the interest rate also rose rapidly to 16.11% in

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2008 from 10.4% in 2007. Such uncertain economic conditions were referred to as economic instability by Khan, Zainuddin, and Md-Jadi's (2018a) study. Considering such a phenomenon, the current research also addresses the role of inflation and interest rates regarding Pakistan's stock market performance during economic instability.

The country's political stability affects its overall economics. In the last four decades, Pakistan's economy has faced several issues related to its political stability, as it was governed by an elected democratic system and a dictatorship (Hira, 2017). It showed the instability of the government in the last four decades. This also indicates that the country's economic growth was unstable due to political turmoil. Such a governing system mix-up contributed to overall economic instability in Pakistan. Even though the data period of this study is related to the democratic type of government system, many events occurred during the period, which created uncertainty in the overall economic scenario.

The uncertainty of the political system also affected Pakistan's stock market from time to time. This study includes the period from year 2009 to 2016. During this period, many events occurred, such as the tension between the government and military regarding the "memogate" scandal in 2012. Disqualification of Prime Minister Gilani by the Supreme Court in June 2012. However, the major event was anti-government protests in 2014, during which Pakistan's economy suffered a loss of Rs. 547 billion. The economy suffered another Rs. 319 billion loss due to a decrease in overall stock market performance. Meanwhile, a 4.3 per cent depreciation was observed in the Pakistani rupee value against the US dollar (The Economic Times, 2014).

The current study attempts to analyse the moderating impact of political stability towards the stock market performance of PSX proxied by the KSE 100 index. To the authors' knowledge, such a relation has not been analysed before. The prime objective of this study is to check the impact of inflation, interest rate and economic growth on the KSE 100-index performance. Because of such an unstable economic environment in Pakistan, this study analysed whether political stability plays any role in defining the relationship between macroeconomic variables and stock market performance.

2. LITERATURE REVIEW

The relationship of macroeconomic variables with stock prices has been an area of interest for academicians and researchers for the last few decades. Moreover, it is often argued that some fundamental variables, such as inflation and interest rate, are the determinants of share prices in the era of digitalisation (Gan, Lee, Yong, & Zhang, 2006). Mazviona et al. (2017) define inflation as an overall change in the price level in an economic system. However, it is difficult to predetermine the direction of the impact of inflation on stock prices (Joshi, 2015). For example, an increase in inflation can decrease stock prices by reducing people's purchasing power (Singh et al. 2011). Furthermore, a study by Uwubanmwun and Eghosa (2015) on the market in Nigeria also concluded a significant negative relationship between inflation and stock prices.

On the contrary, inflation can increase stock prices in the long run because, on a long-term basis, companies pass the impact of inflation towards their customers. Hussin et al. (2012) empirically supported this point of view in the Malaysian stock

market. Therefore, this study establishes a positive relationship between inflation and stock market performance.

H1: Inflation and stock market performance have a significant positive relationship.

The interest rate is also a potential macroeconomic factor that can influence stock prices. This is because an increase in the interest rate level creates an opportunity cost for not investing in interest-bearing securities such as bonds or t-bills (Joshi, 2015). Thus, due to increased interest rates, people can shift their investment from stock markets to the bond market, which can decrease the share prices (Ray, 2012). A study done by Huang et al. (2015) in the United States market also concluded a significant negative relationship between interest rates and stock prices. Therefore, this study hypothesises a significant negative relationship between interest rates and stock market performance.

H2: Interest rate and stock market performance have a significant negative relationship.

Economic growth increases also create more opportunities (Njagi, 2017) through which positive financial results can be achieved (Drvoshanova-Eliskovska, 2015). Karubari (2018) claimed that in the long run, healthy economic growth increases the firm's profit and improves the stock market performance. In addition, studies done by Sireesha (2013) and Ray (2012) also found that economic growth has a positive relationship with stock prices. This study also claims a significant positive relationship between economic growth and stock market performance.

H3: Economic growth and stock market performance have a significant positive relationship.

3. THE MODERATING ROLE OF POLITICAL STABILITY IN DEFINING STOCK MARKET PERFORMANCE

Radu (2015) defines stability as a situation where the political environment is predictable, and such a predictable economic environment can attract investment from within the country and the rest of the world. It was argued by Hira (2017) that instability in the political system ultimately declines the performance of the stock market. Shahzad and Al-Swidi (2013) also stated that political stability plays a vital role in a suitable business environment and the macroeconomic balance of a country. In addition, Shahzad (2013) argued that investors also remained concerned about the political stability of a nation. Furthermore, in case of an increase in political instability, a country's investments and economic growth are adversely impacted. Thus, because of the utmost importance of political stability in the economic scenario of a country, its role as a moderating variable is analysed in this study. Therefore, the following hypotheses are formed in this study.

H4: Political stability and stock market performance have a significant positive relationship.

H5: Political stability has a significant positive moderating impact on the relationship between inflation and stock market performance.

H6: Political stability has a significant positive moderating impact on the relationship between interest rates and stock market performance.

H7: Political stability has a significant positive moderating impact on the relationship between economic growth and stock market performance.

4. DATA AND METHODOLOGY

This study collects selected variables' monthly time series data from 2009 to 2016. The share price performance of the

stock market is chosen as a dependent variable, whereas inflation, interest rate, political stability and economic growth are selected as independent variables.

Table 1. Measurement of Selected Variable.

Variable	Notation	Measurement	Support	Data Source
Share Price Performance	SP	KSE 100 Index	Zaighum (2014); Sohail and Hussain (2011); Sohail and Hussain (2009)	Data Stream
Inflation	INF	Consumer Price Index	Joshi (2015); Tangjitprom (2012); Singh, Mehta and Varsha (2011)	Data Stream
Interest Rate	IR	6-Month T-Bill Rates	Insurance Ordinance (2000)	Data Stream
Political Stability	PS	“Political stability and absence of violence/terrorism measure perceptions of the likelihood of political instability and politically-motivated violence, including terrorism”.	Muslija et al. (2018)	Data Stream
Economic Growth	EG	Dividing the GDP at current market prices by the population	Beck and Webb (2003)	Word Bank Website

Source: Author's Compilation Based on Previous Literature

Table 1 provides the measurement of selected variables. Furthermore, the relationship among selected variables will be analysed through the multiple Ordinary Least Squares (OLS) method. The equation of the analysis is formed as follows:

$$SP_t = \beta_1 + \beta_2 INF_t + \beta_3 IR_t + \beta_4 PS_t + \beta_5 EG_t + \mu_t \quad (1)$$

In addition, the equation for the moderating variable, named political stability, is defined below:

$$SP_t = \beta_1 + \beta_2 PS_t * INF_t + \beta_3 PS_t * IR_t + \beta_5 PS_t EG_t + \mu_t \quad (2)$$

Whereas:

SP_t = Stock Prices of listed companies of PSX at time t; β₁ =

Intercept; INF_t = Inflation at time t; INT_t = Interest rate at time t; PS = Political Stability at time t; EG = Economic Growth at time t and μ_t = error term

5. RESULTS AND INTERPRETATIONS

This section deals with the results and interpretation of performance determinants of PSX stock prices. Before running the final analysis, different diagnostic tests such as multicollinearity, normality, autocorrelation and heteroscedasticity were applied to meet the Best Linear Unbiased Estimator (BLUE) assumptions. The results of these tests are reported in Appendix A.

Table 2. Results of the Impact of Macro-economic Variables on the Stock Market's Performance.

Variable	Coefficient Beta	T-stat	P-value
C	-2.511	-2.715	0
INF	2.440***	13.985	0
IR	-0.036***	-3.206	0
PS	1.065***	4.242	0
EG	-0.036	-1.483	0.1414
R-squared (R²)	0.970		
Adjusted R²	0.969		
F-Statistics	755.5302		
Prob(F-statistic)	0		

Note: Variable definitions are as follows:
 INF = Inflation Measured by Consumer Price Index
 IR = Interest Rate proxied by 6 Month T-Bill rates
 PS = Political Stability Measured by Estimate of governance ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance.
 EG = Economic Growth Measured by GDP Per Capita.
 *, ** and *** indicates significance level of 10%, 5% and 1% respectively

According to the result reported in Table 2, INF, IR, and PS have a highly significant relationship with stock performance. However, the relationship between EG and SP is insignificant. Concerning the relationship between INF and SP, the beta coefficient value is 2.440, which indicates that one unit increase in INF will increase the SP by 2.440 units. These results support the claim of Hussin et al. (2012) that in the long term, inflation has a positive impact on stock prices since companies, with time, can adjust the effect of inflation by passing it on to their customers. The relationship between IR and SP is also highly significant, with a beta coefficient

value of -0.036. It shows the inverse relationship between IR and SP by highlighting that one unit increase in IR will decrease the share prices by -0.036 units. This result reflects that as the banks in Pakistan increase the interest rate, then the shareholders shift their investment from the stock market to banks. As a result, demand for shares and share price decrease. In the case of the relationship between PS and SP, it has a positive beta coefficient value of 1.065 with a highly significant level of 0.01. It means the stable economic environment leads to better performance for PSX.



Table 3. Results of the Moderating Impact of Political Stability on the Relationship Between Selected Macroeconomic Variables and Stock Market's Performance.

Variable	Coefficient	T-stat	P-value
PS*INF	8.432238	5.40908	0
PS*IR	-0.423886	-5.930622	0
PS*EG	0.839225	5.487562	0

Note: Variable definitions are as follows:
 PS = Political Stability Measured by Estimate of governance' ranges between -2.5 (weak) to 2.5 (strong) governance performance
 INF = Inflation Measured by Consumer Price Index
 IR = Interest Rate Measured by 6-Month T-Bill Rates
 EG = Economic Growth Measured by GDP Per Capita.
 , * and * indicates significance level of 10%, 5% and 1% respectively

Table 3 reports the relationship regarding the moderating impact of PS on the relationship between selected macroeconomic variables and stock prices. Concerning the above table, PS is a moderating variable, whereas INF, IR and EG are independent variables. It can be observed that PS has a significant moderating impact concerning all selected variables. However, the direction of the effects is different. It can be observed from Table 3 that PS significantly and positively moderate the relationship between INF and SP. It indicates that stability in the economic environment in Pakistan helps listed companies of PSX to get the positive impact of inflation. These results are also supported by Aisen and Veiga (2005), who claim that if the institutions of countries are not stable, it may lead to higher inflation rates.

In addition, the interaction of PS*IR hurts stock prices. It highlights that even the interaction of PS cannot positively impact IR on stock price performance. So, in the case of IR, the direct relationship of IR with stock prices and the interaction of PS*IR has a negative relationship with stock prices. One of the important findings of this study is that the interaction of PS* EG transforms the insignificant relationship between EG and SP into a significant positive. Thus, an increase in political stability helps companies in getting a positive impact on economic growth.

6. CONCLUSION

Political stability is a key factor in the economic prosperity of a country. So, due to the critical role of political stability, this study explored the moderating impact of political stability on the relationship between selected macroeconomic variables and PSX's stock price performance in the digitalisation era. For this purpose, monthly time series data of selected variables was collected from 2009 to 2016, and multiple OLS techniques were applied for analysis. The study revealed that political stability is crucial in defining stock market performance. In this regard, the direct and moderating role of firm efficiency was found to be significant. In light of this study, it is recommended that policymakers take maximum advantage of political stability in a country by creating a favourable macroeconomic environment for stock markets.

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APPENDIX A

Table A1. Multicollinearity Results.

	VIF	1/VIF	INF	IR	PS	GDP
INF	4.064	0.246	1			
IR	5.192	0.192	-0.832	1		
PS	2.416	0.413	0.658	-0.744	1	
EG	5.404	0.185	0.844	-0.868	0.735	1

Table A2. Jarque-Bera Normality Test Results.

Jarque-Bera	1.277
Probability	0.527

Table A3. Autocorrelation Test Results.

F-statistic	84.908	Probability	0
Obs.*R-squared	62.988	Probability	0

Table A4. Heteroscedasticity Test Results.

F-statistic	9.607	Probability	0
Obs.*R-squared	28.503	Probability	0

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