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Research Article

Fiscal Policy and Stock Returns: A Cointegration Analysis

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Farah Saeed [1], Baber Amin [2,*]
[1]Research Assistant, Government College University Lahore, Pakistan
[2]Lecturer, International Institute of Islamic Economics (IIIE), International Islamic University, Islamabad, Pakistan

*Corresponding Email: baber.amin@iiu.edu.pk
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Abstract

The role of government intervention through fiscal policy is central to the functioning and development of an economy, particularly in influencing financial markets. This study examines the long-run and short-run relationship between fiscal policy instruments and stock market performance in Pakistan using annual time-series data from 1973 to 2008. Stock returns are analyzed in relation to key fiscal and macroeconomic variables, including government taxes, government expenditure, gross domestic product, inflation, and interest rates. Stationarity of the data is assessed using Augmented Dickey–Fuller and Phillips–Perron unit root tests, while the Johansen and Juselius cointegration approach is employed to investigate long-run relationships. The empirical findings reveal a significant negative relationship between government taxes and stock returns, indicating that higher taxation discourages equity market performance. Interest rates and inflation are also found to negatively affect stock returns. Government expenditure shows a positive but statistically insignificant relationship with stock returns, whereas economic growth, measured by GDP, positively influences stock market performance. The results highlight the importance of fiscal policy in shaping stock market dynamics.
Keywords: Fiscal Policy, Stock Returns, Cointegration Analysis.

Introduction

Classical economists hold that the economy is self-regulated and government intervention is not required to ensure its functioning. After the Great Depression in the 1930s, John Keynes proposed that government intervention is necessary and that the government can perform the functions of regulating and stabilizing the economy. Indeed, fiscal and monetary policies are important instruments of stabilization policy through which an economy may be regulated. A lot of attention is paid to the initiatives, like monetary policy ($MP\ hereafter$), of the central bank and the resulting consequences on the economy and financial markets, whereas fewer studies, such as Tavares and Valkanov (2001), Afonso and Sousa (2011), Agnello and Sousa (2013), focused on analyzing the influence of fiscal policy ($FP\ hereafter$) on equity markets. The primary mission of the Central Bank is to provide macroeconomic stability by maintaining monetary policy in the country. Instead of having significant operational autonomy, the central bank needs the coordination and support of the government to achieve macroeconomic stability (Effiong et al., 2012).

FP refers to the collection of taxes and making expenditures to control the economy. There are two instruments of government fiscal policy: taxes and government spending. With the help of these two tools,

fiscal policy can affect the allocation of resources, aggregate demand, and business activity in a country, and it also plays a vital role in defining the country's stock prices.

Fiscal policy directly and indirectly influences the financial market. In direct effect, the government affects the bond market by issuing public debt. For example, an increase in taxes decreases government debt. When the government does not need to issue bonds to finance its borrowing, bond returns will also decrease. So, a reduction in returns would discourage investors from buying stocks. Fiscal policy indirectly affects the economy. When the government imposes higher taxes, there is no incentive for investors to invest in business. So, investors' discouragement affects the business cycle by reducing consumption and investment. This reduction in consumption and investment affects the country's economic growth. Consequently, the fundamental aim of this research is to examine the role of FP on stock *price* ($STP\ hereafter$)

Literature Review

Dickinson (2000) investigates the issue that the global equity markets are expanding due to an increase in international relations. Data for the years 1980-95 are used in this study. Econometric techniques for co-integration and causality are applied to evaluate the connection between global equity markets. The research indicates excellent uniformity across equity markets, and capital market integration enhances good relations in both the stock and bond markets. This study also finds that inflation, output, and interest rates are significant determinants of the stock index. Hussain and Mehmood (2001) studied the association between STP and economic variables using data from 1959 to 1999. Co-integration and error correction econometric techniques are used in this analysis. Consumption expenditure, investment spending, and GDP were used as explanatory variables, and stock prices were the response variable. GDP is employed as a proxy for business fluctuations. Findings show a long-term correlation between STP and selected variables. ECM detected one-way causality between selected variables and stock prices in Pakistan. Unidirectional causality implies that variations in factors trigger shifts in equity values in Pakistan. Results also indicate that the Pakistani stock market is not a reliable gauge of business activity.

Tavares and Valkanov (2001) investigate the impact of government revenue and government expenditures on the STP. The study uses data from 1960 to 2000. The Vector Autoregressive technique is employed to estimate the model. Tax receipts, government spending, interest rate, and inflation rate are employed as explanatory variables. Stock returns are used as the dependent variable, which is a proxy for stock prices. Results reveal that government taxes negatively affect stock returns, while government spending has a significant impact on STP. The inflation rate and the interest rate are inversely related to STP. The study recommends that fiscal policy also affects stock returns, which is why it is as important as monetary policy. Nishat and Shaheen (2004) investigate the association between economic variables and the KSE index, using data from 1973 to 2004 by employing VECM and the Cointegration test. The study uses the variables interest rate, industrial production, inflation, and stock returns. They used proxies of economic activity, industrial production, and STP are proxies for stock prices, respectively. Study reveals that the chosen variables exhibit cointegration and long-term equilibrium. This research finds that, in Pakistan, the industrial production index and inflation serve as the most influential positive and negative predictors of equity values, respectively. Research also indicates that the industrial production index positively affects stock prices, whereas inflation and interest rates negatively affect them in Pakistan. They also investigated the correlation between the equity market and the economy.

Laopodis (2009) investigated the effect of inflation ($INF\ hereafter$) and MP on the stock market returns. Time series data for the years 1970-2004 and econometric techniques, such as Vector Auto Regressive, are used to study the relationship. The federal funds rate is used as a proxy for MP. His findings indicated an inverse correlation between the federal funds rate, inflation, and equity returns. The study proposes that it is difficult

to determine the constant dynamic correlation between *MP* and the stock exchange due to the stock exchange's dynamic nature over time. Akmal (2007) explores the association between stock exchange prices and inflation using time series data for 1971-2006. He used Co-integration and ARDL for analysis. Results of the study show that *STP* are not hedges against inflation in the short term, but they converge in the long term. It also shows that the black economy always drives stock prices higher in both the time period (short and long term). The study's purpose is to determine whether the government should legalize the black economy's share through equity markets.

Ratanapakorn and Sharam (2007) used the data from 1975 to 19999 to investigate the nexus of the US stock exchange and other core variables such as money supply (MS hereafter), INF, interest rates, and the industrial production index. Co-integration techniques are employed to estimate the study model. The study observed that the interest rate negatively affects stock prices. Nevertheless, alternative macroeconomic factors, including the MS, industrial production index, and inflation, demonstrate a positive correlation with STP. The results of the study depicted that STP and core economic variables are uncorrelated in the short term, though they establish a connection over the long term; these variables affect STP. Mohammad et al. (2009) examined the association between economic variables and STP in Pakistan. They used the ARIMA technique and an annual dataset for the period of 23 years from 1986 to 2008. Macroeconomic variables, MS, INT, estimated rate, and INF are used in this study. The results indicate that the money supply and the interest rate have a significant but negative relationship with share prices. The industrial production index serves as a substitute for inflation. The industrial production index does not have a significant impact on share prices in Pakistan. Findings also recommend that current and past knowledge of the economic variables is very helpful for predicting share prices.

Gregoriou et al. (2009) investigated the effect of INT on STP in the UK, employing annual data from 1999 to 2009. The econometric model is estimated using time-series and panel regression analysis. Findings show that monetary changes exert a substantial influence on equity yields. Research examines the structural break in explaining the stock market response, and this break occurred because of changes in monetary policy. Before the crisis, interest rates negatively affected stock returns, but during the crisis, they became positive. The study also concludes that high expansionary monetary policy does not change the negative trend in *STP*. Afonso and Sousa (2011) exemplify the association between SP and the asset market over 37 years (1970-2009). A vector autoregressive approach is used to estimate the model. The study includes government revenues, government expenditure, the STP index, and the index of house pricing variables. The study demonstrates that housing prices and gross domestic product are positively related to government spending, whereas stock prices are negatively related to it. In contrast, government revenues have a positive relation with stock prices. Government revenues also negatively affect the gross domestic product and housing prices. Furthermore, studies show that unexpected changes in fiscal policy increase equity market volatility.

Nasir et al. (2010) examine the coordination between stabilization measures in Pakistan, utilizing data spanning 1975 to 2006. The study employs the Vector Autoregressive technique to estimate the econometric model. They analyzed inflation, interest rates, and the government surplus rate. The findings indicate weak coordination between FP and MP, as well as among policymakers. The study recommends that both *MP* and *FP* be developed in a coordinated manner to improve economic stabilization. The interest rate has remained away from its initial level for about 24 years, and the fiscal surplus has deviated from its equilibrium point for about 21 years. Neither policy shows effective coordination to restore variables to their original levels. The interest rate, surplus rate, and inflation show minimal coordination among policies. Additionally, these variables tend to move toward equilibrium over time, confirming the very weak response of policymakers to one another's policies. Similarly, Shahbaz et al. (2008) use data from 1971 to 2006 to assess the relationship

between Pakistan's economic development and stock market advancement. This analysis uses market capitalization and actual per capita income as variables. The study's model is estimated using J-J cointegration, *ARDL*, and Engle-Granger causality approaches. The research determines that the expansion of the equities market and economic development are related in the short term. The results also show that, in the near term, there is only one-way correlation between equity capital market expansion and national output increases in Pakistan, whereas in the long run, there is two-way causality between these two factors. Furthermore, the factors influencing stock prices in the Indian market between 2000 and 2009 are examined by Nirmala et al. (2011). Three sectors make up the panel data: the public, health care, and automotive industries. Unit root tests are implemented to validate data stationarity. Dividend yields, price-to-earnings ratios, profit margins, and financial leverage represent the primary determinants of stock market prices, according to the research using the ordinary least squares methodology. Share prices are positively impacted by dividends, price-earnings ratios, and profitability, but negatively by leverage. The study also shows that the share prices of all three of the chosen sectors are impacted by determinant dividends, price earnings, and leverage ratios.

Methodology

Typically, in time series analysis, the behavior of the data is examined. Data can be analyzed annually, quarterly, or monthly. Ensuring the stationarity of variables is crucial for achieving accurate results because nonstationary time series data can produce invalid and misleading outcomes. It is also crucial to recognize the relationship and integration order of the variables before developing the model. The study's methodology includes unit root tests, the Johansen co-integration approach, and the ECM. Figure 1 shows the estimation flowchart.

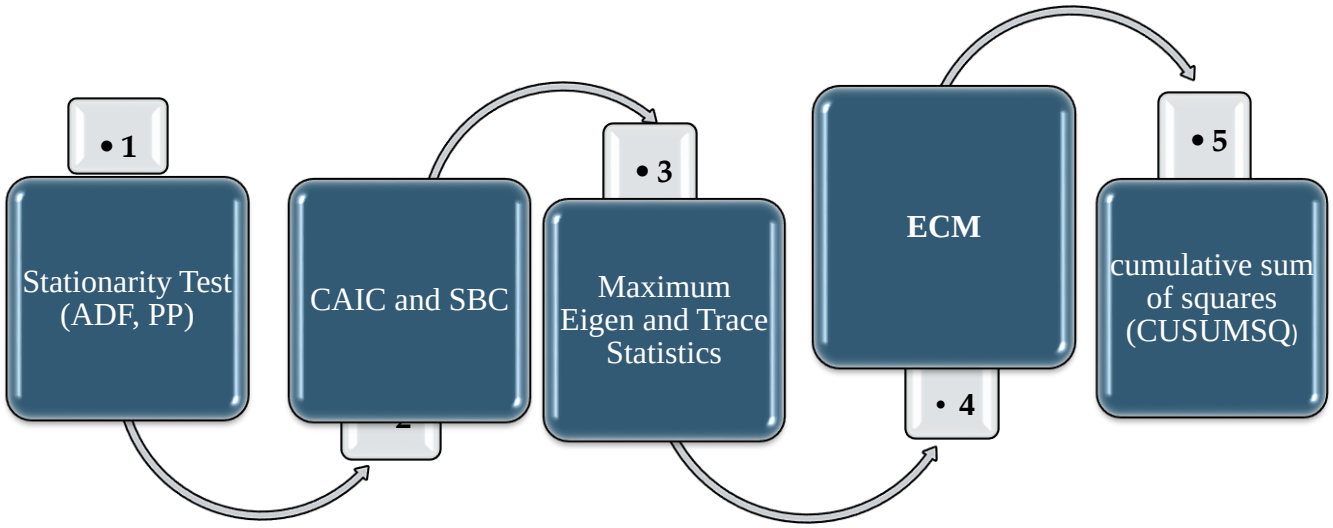

Figure1. Estimation Flow Chart.

Empirical Model

The following model explains the effect of FP on STP in Pakistan.

$$LSTP = \alpha_0 + \alpha_1 LGT + \alpha_2 LGE + \alpha_3 GDP + \alpha_4 INF + \alpha_5 INT + \mu_i \quad \text{Eq.1}$$

$LSTP = Log\ of\ Stock\ Prices$

$LGT = Log\ of\ Government\ Taxes$

$LGE = Log\ of\ Government\ Expenditures$

$GDP = GDP\ Growth\ rate$

$INF = Inflation$

$INT = Interest\ Rate$

Description of Variables and Source of Data

The following Table 1 shows the list of variables, their expected signs, and data sources.

Table 1. Description of variables.

Type of Variables	Expected Signs	Sources
Stock Prices(STP)	+	IFS
Government Taxes (GT)	-	WDI
Government Expenditures (GE)	+	WDI
Gross Domestic Product (GDP)	+	WDI
Inflation Rate (INF)	-	WDI
Real Interest Rate(INT)	-	WDI

Results and Discussion

Diagnostic Test

Before estimating the model and concluding the role of economic variables, it is crucial to check whether the incorporated regressors are integrated of order zero. There are two tests used for stationarity: the ADF and PP tests. Below (Table 2 and Table 3), the order of integration and stationarity level is presented.

Table 2. ADF Unit Root Results.

Variables	**I(0)**			I(I)		
	Without trend	With trend	None	Without trend	With trend	None
LSTP	-1.771	-2.061	0.558	-4.867*	-4.794*	-4.648*
LGE	-1.731	-2.166	-0.289	-4.327*	-4.262*	-4.359*
LGT	-0.526	-1.860	-0.680	-5.450*	-5.823*	-5.485*
GDP	-0.518	-2.913	-1.222	-5.605*	-5.358*	-7.456*
INF	-2.071	-3.220**	-1.738	-5.548*	-6.199*	-5.689*
INT	-2.216	-3.297**	-3.242**	-6.172*	-6.912*	-6.279*

*implies that the coefficient is significant at a 1 percent probability level; **implies that the coefficients are significant at a 0.05 percent probability level; Critical values of MacKinnon at 1% and 5% are -3.63 and -2.94, respectively.

Statistics in Table 2 indicate that the STP is under its 1% critical value, indicating no unit root in the first difference. So, the STP is stationary at I(I) in the ADF test. The GT, GE, GDP, INF, and INT are stationary at I(I) of order one, as they become stationary in first differences but are non-stationary at levels.

Phillips-Perron (PP) results are presented in Table 3, which also shows that the value of the STP is less than its 1% critical value, indicating that the stock price variable is stationary in first difference. Therefore, stock

prices are integrated of order one in the PP test. Similarly, all other variables—such as stock price, government taxes, government revenue, GDP, INF, and INT are also stationary at I(1) according to Phillips-Perron (PP) tests.

Table 3. PP Unit Root Results.

Variables	I(0)			I(I)		
	Without trend	With trend	None	Without trend	With trend	None
LSTP	-1.584	-2.105	-0.407	-6.188*	-6.069*	-6.140*
LGE	-1.722	-1.824	-0.628	-4.577*	-4.499*	-4.876*
LGT	-0.854	-1.813	-0.933	-7.348*	-8.022*	-7.511*
GDP	-1.465	-2.657	-1.226	-5.440	-5.179*	-9.259*
INF	-2.236	-3.325**	-0.604	-7.410*	-7.993*	-7.506*
INT	-1.609	-3.263**	-3.477**	-9.101*	-10.166*	-9.173*

* indicates statistical significance at the 10% level of probability; **implies that the coefficients are significant at a 0.05 percent probability level; The critical values for MacKinnon at 1% and 5% are -3.63 and -2.94, respectively.

Results of Johansen and Juselius Co-integration Test

Lag Length Selection Criterion

In the Johansen and Juselius (JJ) technique, the first step is to select the VAR order. AIC and SBC are employed to choose the order of the VAR and the optimal lag length. AIC is suitable for small samples but does not yield the best results for large samples, whereas SBC provides the best results for large samples. In general, the model's results improve with a large sample.

Table 4. Lag Length of VAR.

Order	AIC	SBC
0	-141.799	-146.29
1	-19.278	-12.158
2	-17.206	-41.149
3	-31.120	-54.181

Table 4 depicts the lag length of the VAR order. VAR one is used to estimate the model. Both criteria give different orders of VAR. The BIC criterion is preferred over the AIC, as mentioned above, because SBC is suitable for large sample sizes and models provide better results in large samples.

Co-integration Vector

Once the VAR order is determined, it is necessary to test for long-term association and find the cointegration level among variables. The Johansen method consists of computing the Maximum value of the Eigen and Trace Statistics to identify the frequency of cointegrating relationships. The results for the Maximum Eigen and Trace values are provided below the Table 5. It also indicated the of Maximum Eigen Statistics that shows the long run relation and accept the alternative hypothesis. At the 5 % and 10 % level of significance, values of the Eigen Statistics exceed their critical values. Similarly, the results of Trace Statistics. It accepts the alternative

hypothesis of co-integration, which ensures the existence of a long-term impact of the variables. The values of Trace Statistics exceed the 5 % and 10 % critical values.

Table 5. Results of Maximal Eigen and Trace Statistics.

		Maximal Eigen			Trace Statistics		
Ho	H1	Max-Eigen value	5 % Level of significance	10% Level of significance	Trace value	5 % Level of significance	10% Level of significance
R≤ 0	R=1	41.885	39.830	36.840	129.474	95.870	91.400
R≤ 1	R=2	40.687	33.640	31.020	87.589	70.490	66.230
R≤2	R=3	22.005	27.420	24.990	46.901	48.880	49.700
R≤3	R=4	13.822	21.120	19.020	24.896	31.540	28.780
R≤4	R=5	10.886	14.880	12.980	11.073	17.860	15.750
R≤5	R=6	.1868	8.070	6.500	0.1867	8.070	6.500

Long Run Results

Maximum eigenvalues and Trace statistics verify the existence of co-integration among the variables. The results of normalized cointegrating vectors are presented in Table 6.

Findings demonstrate a meaningful inverse correlation between GT and STP. It suggests that a decrease in taxes reduces the company's cost of capital, fosters capital deepening, and increases the value of earnings for shareholders, raising stock prices. The findings imply that taxes affect the cost of production and investors' earnings. The statistics presented a 1% increase in taxes, decreasing STP by 2.35%. These findings are in line with those of Tavares and Valkanov (2001).

Government expenditure displays a direct but statistically negligible association with STP. Expansionary fiscal policy increases consumption expenditure and asset demand, resulting in higher corporate sector earnings and stock prices. Results reveal that expenditures are not significantly related to stock prices. It suggests that the stock market may not have adequately captured the effect of FP due to the 2008 market crisis. The results of the study are similar to those of Tavares and Valkanov (2001).

INT and INF are inversely related to STP. The investor will invest less in stocks due to rising interest rates and the resulting decline in stock prices. The second reason is that an increase in INT surges the prospective cost of holding money, which can alter portfolio diversification between stocks and interest-bearing securities, resulting in a fall in STP.

An increase in INF reduces stock returns because higher INF decreases the present value of future expected stock prices. A higher discount rate and inflation would not balance the rise in cash flows. Nishat and Shaheen (2004) also show that interest rates and inflation negatively affect stock prices. Impact of GDP on STP shows a significant and positive correlation, indicating that investors are willing to invest more in a stronger economic situation. The statistics show a 1% increase in GDP, which surges STP by 0.46%. Our results are in line with Eita (2011), Husing (2011), and Nishat and Shaheen (2004), who also found that country-level economic growth positively affects stock prices. The Durbin-Watson statistic of 2.074 indicates no serial correlation in the model.

Table 6. Long Run Results.

Variables	Coefficients	t-values	Prob-values
constant	-3.883	-1.452	0.157
LGT	- 2.350	- 2.665	0.012
LGE	0.326	0.272	0.788
GDP	0.461	5.231	0.000
INF	-0.047	-1.855	0.073
INT	-0.066	-2.542	0.016
R-Squared	0.629	Adjusted R-Squared	0.535
F-stat	7.590(0.000)	DW. Statistics	2.074

Error Correction Model (ECM) Result

Finding the short-run relationship among the variables is also important for estimating the long-run relationship among the same variables. Table 7 presents the ECM results. The error-correction term shows how long variables take to move towards equilibrium. ECM has a small negative value, indicating the speed of adjustment towards equilibrium.

Table 7. Error Correction Model.

Variables	Coefficients	t-values	Prob-values
Constant	0.064	0.438	0.665
ΔLGT	-0.408	-0.465	0.646
ΔLGE	0.744	0.734	0.469
ΔGDP	-0.194	-0.159	0.875
ΔINF	0.056	2.064	0.048
ΔINT	0.043	1.725	0.096
ECM (-1)	-0.534	-3.367	0.002
R-Squared	0.447	Adjusted R-Squared	0.367
F-stat	2.480(0.047)	DW. Statistics	1.924

These results show that no short-term connection exists. Results also show that the value of the error correction term is negative and significant, indicating that 53.4 percent of the discrepancy is corrected each year. Our results are consistent with Akmal (2007), Sohail and Hussain (2009).

Stability Tests of the Model

The CUSUM and CUSUMSQ diagnostic procedures were first presented by Brown et al. in 1975. These tests are used to evaluate parameters and variables stability and to confirm that the long run association among variables remains consistent. While the CUSUM approach is based on the cumulative sum of recursive residuals, the CUSUMSQ procedure utilizes their squared values and uses all of the observations of the cumulative sum of recursive residuals. If the CUSUM and CUSUMSQ graphs stay inside the 5% critical boundaries, suggesting that all coefficients are constant over time, the alternative hypothesis is accepted. On

the other hand, if the plots exceed the critical boundaries, the null hypothesis is rejected at the five percent significance level. The model's stability is shown in Figures 2 and 3.

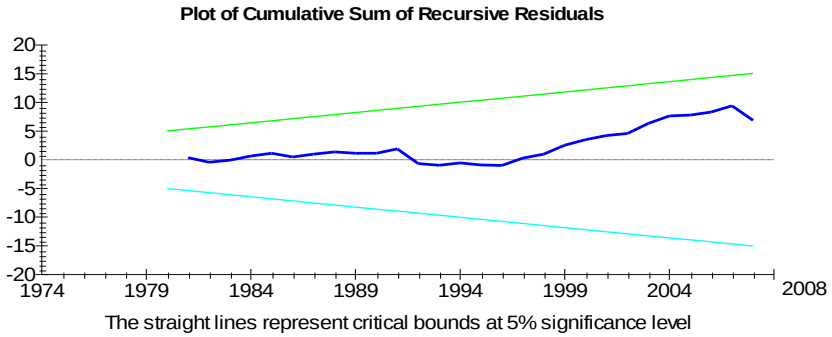

Figure 2. Cumulative Sum of Recursive Residual (CUSUM).

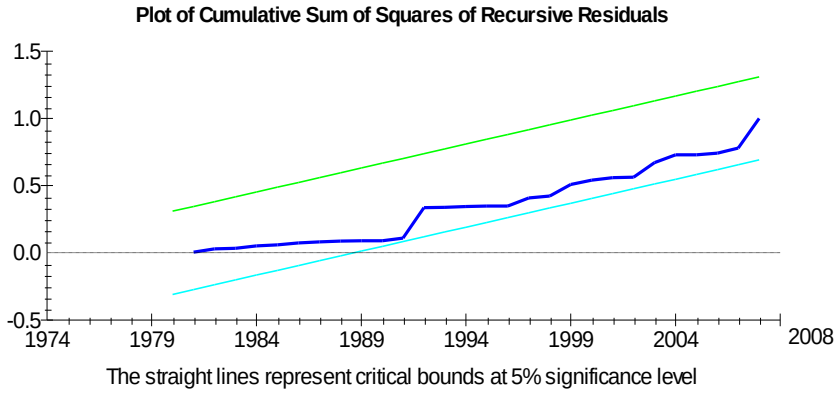

Figure 3. Cumulative Sum of Square Recursive Residual (CUSUMSQ).

Conclusions and Recommendations

This study investigated the impacts of FP on stock returns in Pakistan by employing a dataset of 36 years from 1973 to 2008. The model comprises variables such as stock returns, government expenditure, government taxes, GDP, interest rates, and inflation to explore the impact of FP on stock returns in Pakistan. The purpose of the ADF and PP unit root tests is to assess the stationarity of the data, and all variables are stationary in first differences. The Johansen and Juselius (JJ) cointegration technique is employed to estimate the model. Findings show that GT has a inverse but significant relationship with STP. The analysis exemplifies a positive but insignificant relationship between government expenditure and STP. INT and INF negatively affect stock prices, while GDP positively affects them. The short-term results illustrate that coefficient of ECM is significant and negative, indicating convergence towards the long-run equilibrium.

Recommendations

1. The government should reduce expenditure to avoid the fiscal deficit because the fiscal deficit leads to an increase in borrowing and interest rates.
2. There should be coordination between MP and FP to achieve objectives and economic stabilization.
3. The government can enhance the stock market performance by developing both domestic and foreign investors' confidence and reducing the interest rate.
4. Monetary authorities should adopt the appropriate measures to control inflation.

5. The possibility of further research is to evaluate the interdependency between MP and FP in the financial market.

References

Afonso, A., & Sousa, R. M. (2011). What are the effects of fiscal policy on asset markets?. Economic Modelling, 28(4), 1871-1890.

Agnello, L., & Sousa, R. M. (2013). Fiscal policy and asset prices. Bulletin of Economic Research, 65(2), 154–177.

Akmal, M. S. (2007). Stock returns and inflation: An ARDL econometric investigation utilizing Pakistani data. Pakistan Economic and Social Review, 89–105.

Brown, R. L., J. Dubin, & J. M. Evans (1975). Techniques for Testing the Constancy of Regression Relationships Over Time", Journal of the Royal Statistical Society, Series B (37), 149–192.

Dickinson, D. G. (2000). Stock Market Integration and Macroeconomic Fundamentals: An Empirical Analysis, 1980-95. Journal of Applied Financial Economics, 10(3), 261–276.

Effiong, C., Igbeng, E., & Tapang, T. (2012). The Accounting Implications of Fiscal and Monetary Policies on the Development of the Nigerian Stock Market. Journal of Economics and Sustainable Development, 3(11), 83–98.

Eita, J. H. (2011). Determinants of stock market prices in Namibia. Working paper, University of Southern Africa.

Gregoriou, A., Kontonikas, A., Macdonald, R., Montagnoli, A. (2009). Monetary Policy Shocks and Stock Returns: Evidence from the British Market. Financial Market and Portfolio Management, 23(4), 401–410.

Husing, Y. (2011). The Stock Market and Macroeconomic Variables in a BRICS Country and Policy Implications. International Journal of Economics and Financial Issues, 1(1), 12–18.

Hussain, F., & Mahmood, T. (2001). The stock market and the economy in Pakistan. The Pakistan Development Review, 107–114.

Laopodis, N. T. (2009). Fiscal Policy and Stock Market Efficiency: Evidence for the United States. Quarterly Review of Economics and Finance, 49(2), 633-650.

Mohammad, S. D., Hussain, A., Jalil, M. A., Ali, A. (2009). Impact of Macroeconomics Variables on Stock prices: empirical evidence in case of Karachi stock exchange. European Journal of Scientific Research, 38(1), 96-103.

Nasir, M., Ahmad, A., Ali, A., & Rehman, F. (2010). Fiscal and monetary policy coordination: Evidence from Pakistan. International Research Journal of Finance and Economics, 35, 202-213.

Nirmala, P. S., Sanju, P. S., & Ramachandran, M. (2011). Determinants of share prices in India. Journal of emerging trends in economics and management sciences, 2(2), 124-130.

Nishat, M., and Shaheen, R. (2004). Macro Economic Factors and Pakistani Equity Market. Pakistan Development Review, 43(4), 619-637.

Ratanapakorn, O., and Sharma, S. C. (2007). Dynamic Analysis between US Stock Returns and the Macroeconomic Variables. Journal of Applied Financial Economics, 17(5), 369-377.

Shahbaz, M., Ahmad, K., & Chaudhary, A. R. (2008). Economic growth and its determinants in Pakistan. The Pakistan Development Review, 471-486.

Sohail, N., and Hussain, Z. (2009). Long Run and Short Run Relationship between Macroeconomic Variables and Stock Prices in Pakistan: A Case of Lahore Stock Exchange. Pakistan Economic and Social Review, 47(2), 183-198.

Tavares, J., & Valkanov, R. I. (2001). The neglected effect of fiscal policy on stock and bond returns. In EFA 2003 annual conference paper (No. 201).UCLA, Anderson School of Management Working Paper, FEUNL Working Paper No. 413, Available at: http://dx.doi.org/10.2139/ssrn.291670