

Understanding The Dynamics: Fiscal Deficit, Macroeconomic Variables, And Crisis Impact On Stock Prices In Pakistan's Equity Market

Abdul Jalil Khan Bangash¹, Habib Ullah Nawab², Ahmed Khan Bangash³

¹M.Phil Scholar, Department of Economics and Finance, Pakistan Institute of Development Economics, Islamabad, Pakistan.

²Assistant Professor of Sociology, Department of Sociology, University of Chitral, Chitral, Khyber Pakhtunkhwa, Pakistan.

³M.Phil Scholar, Department of Development Studies, Pakistan Institute of Development Economics, Islamabad, Pakistan.

Abstract

The objective of this study is to examine the impact of fiscal deficits, macroeconomic variables, and crises on the sensitivity index of stock prices on the Pakistani Stock Exchange. The study examines the correlation between the years 1980 and 2018. The time series model in this study was computed utilising the Auto-Regressive Distributed Lag (ARDL) methodology. The study's findings highlight the significant influence of fiscal deficits, money supply, taxation, inflation, foreign direct investment, exchange rates, and crises on the long-term values of stock exchanges. Over an extended period, there exists a tenuous and statistically insignificant link between the unemployment rate and the volatility of stock prices. The study findings suggest that the relationship between the variables remains stable throughout both the short term and the long term. The first results suggest that the unemployment rate does not significantly influence the behaviour of investors in both the short and long term, particularly in the case of the Karachi Stock Exchange, currently referred to as the Pakistan Stock Exchange. The government should enact appropriate strategies to improve the fiscal deficit in accordance with present requirements.

Keywords: fiscal deficit, macroeconomic variables, stock prices, cointegration, budget deficit, crisis impact, Karachi Stock Exchange, unemployment, capital market development, governance stability.

Introduction

The intricate relationship between the stock market and economic development is a matter of great importance, shaping the course of a nation's advancement. According to some researchers (Adjasi, Harvey, and Agyapong, 2008; Hamrita, Abdalla, and Ammou, 2009; Pilinkus, 2009; Quayes, 2010), the stock market plays a crucial role in determining economic progress. The relationship described applies to the equities market in Pakistan, where the deliberate movement of capital, from divestment to reinvestment, plays a crucial role in contributing to economic progress.

Macroscopic variables have a noticeable impact on the stock market, creating a mutually

beneficial relationship. The close relationship between the stock market and macroeconomic issues, such as inflation, exchange rates, money supply, taxes, and unemployment, is demonstrated by the stock market's sensitivity to these aspects (Raza et al., 2016). Attari & Safdar (2013) emphasise the importance of investors and governmental bodies carefully monitoring these macroeconomic aspects while making stock market investments or developing regulations concerning economic variables.

Within the framework of Pakistan's economic environment, the prominent concern of budget deficits assumes a prominent position, attracting significant discussion. The fiscal

deficit, which occurs when a government's overall expenses exceed its receipts, is a crucial independent variable in this discussion. The ramifications of this have a tremendous impact on stock prices and, consequently, on the entire economic status of a country. The known phenomena of the fiscal deficit have significant impacts on investor confidence, probable devaluation of the currency, and subsequent bearish tendencies in the stock market (Roley and Schall, 1988).

Divergent viewpoints regarding the correlation between stock prices and fiscal deficit are present in economic discussions. According to Friedman (1988), there is no apparent link between stock prices and rising real interest rates. However, Hardouvelis (1988) contends that there is an opposite relationship between the two. The complicated interplay of various elements, such as anticipated future tax rates and the enduring impact on income and cash flow, contributes to the intricacy of this connection (Hall and Taylor, 1993).

Comprehending the ramifications of fiscal imbalance goes beyond the scope of financial markets and includes wider economic aspects. Government budget deficits, marked by excessive spending and insufficient income, present difficulties in attracting foreign investments and can lead to higher borrowing costs. Consequently, this sets off a chain reaction in stock prices and adds to the heightened ambiguity in the financial domain (Nkukuu & Aduda, 2012).

Investors who are coping with the uncertainties brought on by budget deficits are seeking information regarding the possible impact of these shortfalls on changes in the stock market. Ensuring that budget deficits and stock market prices are correlated is crucial when making strategic investment choices. Grobys (2013) highlights the importance of understanding the heightened uncertainty associated with a continuously expanding fiscal budget. Moreover, higher government borrowing

results from a bigger budget deficit, which pressures nominal interest rates and lowers stock values.

Fiscal imbalance has an impact on financial markets, but it also has an impact on domestic product demand abroad. The global demand for domestically produced commodities is heavily influenced by the interaction of interest rates, exchange rates, and fiscal deficits (Ball and Mankiw, 2005). Studies carried out throughout multiple regions, including Africa, have demonstrated that the limitations of the banking industry have led to the growing significance of capital markets (Ndako, 2013). Fiscal deficits have many different and intricate repercussions.

Samsul (2006) found that the following seven factors affect stock price volatility: GDP, interest rates, current accounts, fiscal deficit, inflation, unemployment rate, and exchange rates. This demonstrates the intricate web of factors influencing the behaviour of the stock market. A larger money supply is typically associated with more economic activity, and these factors, combined with the GDP, offer a complete picture of economic activity.

There is a divergence of opinion among economists regarding the correlation between the money supply and stock prices. Sellin (2001) examines the contrasting perspectives of real-activity and Keynesian economists. Economists specialising in real activity propose a positive correlation between the money supply and equities prices, in contrast to the viewpoint of Keynesian economists who advocate for a negative link.

Kwon and Shin's (1999) study looks at the complex linkages that exist in the Korean equities market between money supply, oil prices, dividend yields, exchange rates, and equity market prices. Amidst these complex relationships, there is still much debate over the importance of the budget deficit. Feldstein (1986) contends that changes in government

fiscal balance have little bearing on future interest rates, contrary to Bohn's (1995) assertion that shifts in tax or spending-related revenue have an equivalent bearing on a nation's economic trajectory and, consequently, its stock market.

The "Fed Model" suggests links between Treasury bond returns, inflation, and stock rates, which gives this intricate story another level of complexity. The "Fed Model" has been shown by Asness (2000; 2003) analysis to be a useful tool for explaining observed fluctuations in stock valuation. The model demonstrated a substantial association between rising stock returns and prices and decreasing inflation, which made its significance especially clear in the 1970s and early 1980s.

Beyond the realms of finance, the connection between foreign direct investment (FDI) and economic development becomes clear. Foreign investors' capital influx not only drives economic advancement but also has a crucial impact on the movement and growth of stock markets (Errunza, 1983). Singh (1997), explains the wider influence of economic development on financial markets and the complex connection between the two.

Economic growth and stock market development are interconnected, with an important correlation between foreign direct investment and economic growth. Policymakers should consider the impact of fiscal deficits on the stock market, considering macroeconomic factors like money supply, tax revenue, inflation, exchange rate, unemployment, and foreign direct investment, to ensure sustained economic success.

Research Methodology

The data for the variables in the article spans from 1980 to 2018 and has been sourced from the website of the State Bank of Pakistan. Some of the variables' data is expressed in units, while others are represented as percentages. The data represents the sensitivity index of stock prices,

measured in units. The independent variables considered are the money supply and exchange rate, both measured in unit form. The independent variables comprising the data in percentage form include the primary independent variable fiscal deficit, as well as other factors such as FDI, taxes, unemployment, and the inflation rate. An artificial simulation of a crisis is implemented to analyse the impact of financial and economic crises on the behaviour of the stock exchange. The relevant data is collected and measured in standardised units. This study employed the general specification model to empirically examine the impact of fiscal deficits and other basic macroeconomic issues on the stock market. $PSX_t = \alpha_0 + \alpha_1 FD + \alpha_3 MS + \alpha_4 TXR + \alpha_5 INF + \alpha_6 ER + \alpha_7 FDI + \alpha_8 UMP + \alpha_9 Crisis + \mu_t$

The variables in question are as follows: PSX: the sensitivity index of the Pakistan stock market; FD: the fiscal deficit expressed as a percentage of GDP. MS: The broad money supply TXR: the tax revenue expressed as a percentage of GDP INF: the inflation rate ER: the exchange rate FDI: foreign direct investment expressed as a percentage of GDP UMP: the level of unemployment CRISIS: Financial Crisis The time series data in this study is subjected to the Unit Root Test, a technique introduced by Philips and Perron (1988), to assess its stationarity. The second test employed is the auto-regressive Regressive Distributed Lag (ARDL), which is used to examine the long-term relationship. Also, to determine the interaction between the sensitivity index of equity prices at the Karachi Stock Exchange and the macroeconomic variables.

Similarly, a model suggested by Perasan et al. (2001) i.e., Auto Regressive Distributed Lag (ARDL) is used to figure out the model. Moreover, researchers used the Error Correction Model to look at the behaviour and get short-term values by looking at both the long-term estimates and the error correction

model. Likewise, macroeconomic variables that are money supply, the exchange rate, the budget deficit, the unemployment rate, foreign direct investment, and the sensitivity index, are analysed with descriptive statistics.

Analysis and Results

A comprehensive analysis of the data from the years 1980 to 2018 is given in the analysis and results section. There is a complex relationship between macroeconomic factors, fiscal deficit and stock prices in Pakistan's equities market.

1. Testing for stationarity

Table 1 Unit root testing for stationarity

Variables	At Level	At First Difference	Results
Fiscal deficit	-2.674131	-7.968853 (1%)	Stationary (1 st difference)
Money Supply	-1.979134	-4.463401 (1%)	Stationary (1 st difference)
Inflation	-2.996041	-7.523883(1%)	Stationary (1 st difference)
Taxes	-3.251354 (10%)	-----	Stationary (Level)
Exchange rate	-1.163678	-7.301344 (1%)	Stationary (1 st difference)
Unemployment	-1.840181	-5.739791(1%)	Stationary (1 st difference)
Foreign Direct Investment	-1.902073	-3.895895(5%)	Stationary (1 st difference)

Source: Bangash (2016).

2. ARDL Bound Test

Table 2 provides strong evidence that there is a long-term cointegrating link between the sensitivity index and other macroeconomic factors. The F statistics obtained from the Bound test exceed the critical values at significance levels of 1%, 2.5%, 5%, and 10%,

The paper elaborated that the variables maintain their degree of stability despite experiencing differentiation, and the order of integration is I(1) as depicted. This implies a correlation between the durability throughout time and other factors. The study employs regression analysis to reveal temporal relationships among variables. The study employs several tests, including Granger causality, normalcy, stability, and serial correlation, to thoroughly analyse the data dynamics and investigate the causal relationships between the variables.

indicating the rejection of the null hypothesis that there is no cointegration. The strong statistical evidence suggests a consistent connection between the variables for a significant duration, which strengthens the conclusion of a long-term cointegrating relationship.

Table 2 ARDL bound testing to find cointegration among variables

F-Bounds Test	Value	Signif.	Null Hypothesis: No levels of relationship	
			I(0)	I(1)
Asymptotic: n=1000				
F-statistic	5.139527	10%	1.85	2.85
K	8	5%	2.11	3.15
		2.5%	2.33	3.42
		1%	2.62	3.77

Source: Bangash (2016).

The study utilises a range of statistical tests and models to examine the long-term and short-term patterns of the data. Phillips-Perron unit root tests are performed to evaluate the stationarity of variables, which is essential for accurate calculations. ARDL-bound testing and an error correction model are subsequently utilised for regression analysis.

Upon confirming the presence of a long-term cointegrating relationship among the variables, the study presents the findings in Table 3. The correlation between the budget deficit and the sensitivity index of stock prices on the Karachi Stock Exchange is noteworthy, showing a substantial and adverse link. This suggests that a reduction in the budget deficit results in a rise in stock prices, and vice versa. The study differs from the investigations carried out by "Van et al. (2003) and Udegbumam et al. (2012), but it is consistent with prior research by Quayes (2008; 2010) and Geske et al. (1983), Laopodis (2006, 2009), Asaolu et al. (2011) and Saleem et al. (2012).

Furthermore, according to Homa et al. (1971), there is a strong and statistically significant correlation between a stable money supply and the stock market. The relationship between inflation coefficients and the stock market is negative, consistent with the predictions of Feldstein (1986) and Asness (2000; 2003) but contrasting with the findings of Kessel (1956) and Ioannidis et al. (2004).

Studies conducted by Maysami and Koh (2000), as well as Kwon and Shin (1999), have demonstrated a strong and statistically significant correlation between the exchange rate and the stock exchange. However, these findings contradict the conclusions reached by Roley and Schall (1988).

Foreign direct investment (FDI) exhibits a favourable and substantial correlation with the stock exchange, in line with the findings of Quayes et al. (2012) research. According to Boyd et al. (2005), there is a weak and non-significant correlation between the sensitivity index and the unemployment rate, which could be due to the economic downturn.

The tax coefficients demonstrate a strong and adverse correlation with the stock index, suggesting that increased taxes diminish anticipated profits. Consequently, investors tend to shift towards less risky alternatives. Maryam and Zahid (2015) also report similar findings.

The investigation uncovers a substantial and adverse correlation between the financial crisis and the financial market. Kurt et al. (2012), also recognise the influence of crises on fiscal deficits, resulting in a decline in stock prices. This can be linked to the exacerbation of deficit situations, the rise in interest rates, and the increase in capital costs, all of which have led to a reduction in profitability.

The results of the Error Correction Model reveal that there are negative and substantial correlations between the budget deficit, inflation rate, taxes, financial crisis, and unemployment rate. The short-term impact of the unemployment rate is negligible, suggesting that investors may not take it into account while making stock market selections. The stock market demonstrates favourable correlations with money supply, exchange rate, and foreign direct investment in both the short and long term. The error correction term indicates a rapid adjustment rate towards long-term equilibrium, implying a notable influence on the short-term adjustments of stock prices.

Table 3 ARDL test for long-run relationship

Variables	Coefficients	T value	P value
Fiscal Deficit	-0.368(1%)	-4.210	0.010
Money Supply	1.544(1%)	19.004	0.000
Exchange rate	0.277	7.534	0.001
Inflation	-1.653	-7.854	0.001
Tax	-0.453	5.382	0.005
FDI	0.123	5.024	0.007
Financial Crisis	-4.108	6.023	0.019
Unemployment	-0.500	-0.577	0.594

Source: Bangash (2016).

Table 4 Error correction model to find short-run dynamics

Variables	Coefficients	T- Statistics	Prob
D(FISCAL DEFICIT)	-0.093939	-5.381201	0.0058
D(MONEY SUPPLY)	0.290033	8.096187	0.0013
D(EXCHANGE_RATE)	0.314253	10.39695	0.0005
D(INFLATION RATE)	-0.994368	-7.336169	0.0018
D(TAXES)	-0.036858	-2.278817	0.0849
D(FOREIGN DIRECT INVESTMENT)	0.043598	7.871180	0.0014
D(CRISIS)	-1.792523	-7.276228	0.0019
D(UNEMPLOYMENT)	-0.022292	-0.074486	0.9442
ECM	-0.571359	-11.04810	0.0004

Source: Bangash (2016).

Serial Correlation Test & Heteroskedascity Test

model do not exhibit serial correlation, and there is no presence of heteroscedasticity in the variables utilised for this investigation.

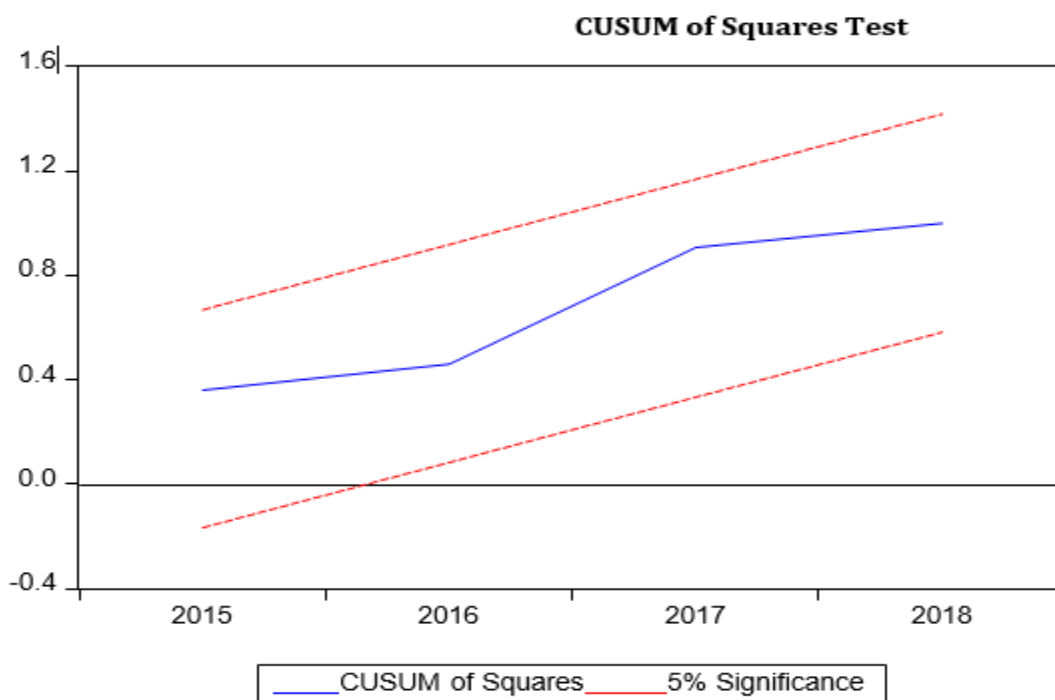
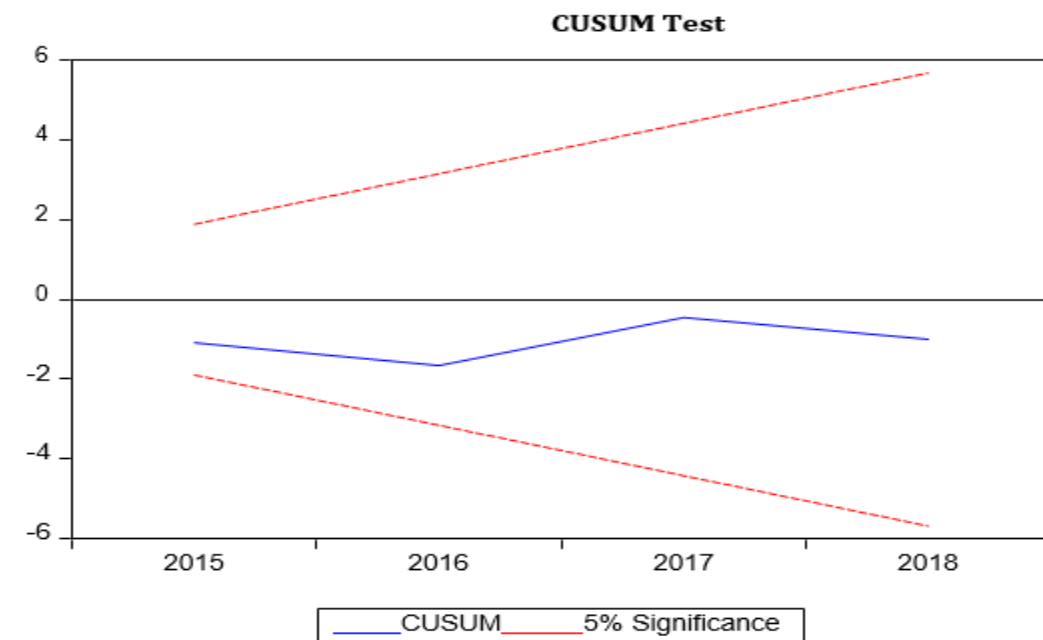
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Table.4. Serial correlation and Heteroskedasticity test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	2.322796	Prob. F(3,1)	0.4414
Obs*R-squared	31.48215	Prob. Chi-Square(3)	0.0000
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.359883	Prob. F(31,4)	0.9559
Obs*R-squared	26.49905	Prob. Chi-Square(31)	0.6971
Scaled explained SS	0.594763	Prob. Chi-Square(31)	1.0000

The study employed CUSUM (cumulative sum) and CUSUMSQ (cumulative sum of squares) tests to assess the stability of parameters in both the short-term and long-term. The CUSUM and CUSUMSQ graphs remain inside the crucial boundaries at a significance level of 5%, indicating that the parameters exhibit stability in both the short

term and the long term. The stability of these features is crucial for understanding their impact on the stock market index in Pakistan. The visual representations of the CUSUM and CUSUMSQ tests, as shown in Figures 1 and 2, demonstrate the models' consistency during the specified period from 2015 to 2018.



Conclusion

The unit root tests confirm that none of the variables in the study are integrated into order I (2). The bound test verifies the presence of co-integration between the series and the calculated equation. The ARDL results indicate a persistent long-term inverse association and a substantial correlation between equity prices and the fiscal deficit, which also extends to the near term. The results indicate that a government deficit harms stock prices, reducing investor confidence and impeding enterprises from obtaining attractive capital conditions in both the short and long run. The rise in the fiscal deficit results in greater future taxes, a decrease in the value of the dollar, and elevated interest rates, leading to fewer business profits due to lower domestic and export revenues. Reduced net sales lead to decreased net earnings, which in turn result in a decline in equity market values. The sensitivity index of stock prices is negatively and significantly affected by fiscal deficits, taxation, inflation, and crises. Although the unemployment rate shows a weak and inconsequential correlation in both the long and short term, there are strong and meaningful associations between the sensitivity index and the money supply of Pakistan, foreign direct investment, and exchange rates. The CUSUM and CUSUMSQ tests suggest that policy adjustments related to explanatory factors in the stock price equation have minimal impact on distortions in Pakistan.

Policy Recommendations

The results of this study have important policy effects. The clear adverse effect of the budget deficit on stock prices in Pakistan highlights the need for the government to promptly adopt actions aimed at enhancing and decreasing the fiscal deficit. Creating a reliable governance framework with uniform regulations is essential for attracting both local and international investors, thus promoting economic engagement in Pakistan. It is crucial to tackle these variables to foster the expansion of the capital market, hence facilitating the general

advancement of the country's financial sector.

References

1. Adjasi, C.K.D.; Harvey, S.K.; Agyapong, D. Effect of exchange rate volatility on the Ghana stock exchange. *Afr. J. Account. Econ. Finance. Bank. Res.* 2008, 3, 28–47.
2. Asaolu, T.O.; Ogunmuyiwa, M.S. An Econometric Analysis of the Impact of Macroeconomic Variables on Stock Market Movements in Nigeria. *Asian J. Bus. Manag.* 2011, 3, 72–78.
3. Asness, C. S. (2000, March). Stocks versus Bonds: Explaining the Equity Risk Premium. *Financial Analysts Journal*, 56(2), 96–113.
<https://doi.org/10.2469/faj.v56.n2.2347>
4. Asness, C. S. (2003, October 31). Fight the Fed Model. *The Journal of Portfolio Management*, 30(1), 11–24.
<https://doi.org/10.3905/jpm.2003.319916>
5. Attari, J., Irfan, M., & Safdar, L. (2013). The Relationship between Macroeconomic Volatility and the Stock Market Volatility: Empirical Evidence from Pakistan. *Pakistan Journal of Commerce & Social Sciences*, 7(2), 309-320.
6. Ball, L., and Mankiw, N. G., (2005). "What do Budget deficit do?". Paper prepared for the Federal Reserve Bank for the Kansas City symposium Budget deficits and debts, Jackson Hole, August 31-September 2. 2005.
7. Bangash, A. J. K. (2016). Fiscal deficit and its impact on stock price variation: A case study of Pakistan (Unpublished MPhil thesis). Pakistan Institute of Development Economics, Islamabad.
8. Bohn, H. (1995, February). The Sustainability of Budget Deficits in a Stochastic Economy. *Journal of Money, Credit and Banking*, 27(1), 257.
<https://doi.org/10.2307/2077862>
9. Boyd, J. H., Hu, J., & Jagannathan, R. (2005). The stock market's reaction to unemployment news: Why bad news is usually good for stocks. *The Journal of Finance*, 60(2), 649-672.

10. Errunza, V.R., 1983. "Emerging Markets - A New Opportunity for Improving Global Portfolio Performance", *Financial Analysts Journal*, Vol. 39 (5), 51-58.
11. Feldstein, M. *The Budget Deficit and the Dollar*; Working Paper No. 1898, National Bureau of Economic Research; MIT Press, Cambridge, MA, USA, 1986.
12. Friedman, M. An Economist's Growing Garden of Fallacies. *Hum. Events* 1988, 48, 16.
13. Geske, R.; Roll, R. The Fiscal and Monetary Linkages between Stock Returns and Inflation. *J. Financ.* 1983, 38, 1-33.
14. Grobys, K. (2013, June). An empirical analysis of changes of the impact of federal budget deficits on stock market returns: evidence from the US economy. *Applied Economics Letters*, 20(9), 921-924. <https://doi.org/10.1080/13504851.2013.765534>
15. Hall, R.E.; Taylor, J.B. *Macroeconomics: Theory, Performance and Policy*, 4th ed.; W.W. Norton, New York, NY, USA, 1993.
16. Hamrita, M.; Abdallah, N.; Ammou, S. The Multi-Scale Interaction between Interest Rate, Exchange Rate and Stock Price; MPRA Paper No. 18424; 2009. Available online: <http://mpra.ub.uni-muenchen.de/id/eprint/18424> (accessed on 22 August 2015).
17. Hardouvelis, G.A. Macroeconomic Information and Stock Prices. *J. Econ. Bus.* 1988, 39, 131-140.
18. Hardouvelis, G.A. The predictive power of the term structure during recent monetary regimes. *J. Financ.* 1988, 43, 339-356.
19. Homa, K.E.; Jaffee, D.M. The Supply of Money and Common Stock Prices. *J. Financ.* 1971, 26, 128-141, 1056-1066 *Int. Rev. Econ. Fin.* 9(1): 79-96.
20. Ioannidis, D.; Katrakilidis, K.; Lake, A.E. *Inflation, Uncertainty and Stock Market Returns Evidence Using Greek Data*; Department of Economics, University of Macedonia, Thessaloniki, Greece, 2004.
21. Kessel, R. A. (1956). *Inflation-Caused Wealth Redistribution: A Test of a Hypothesis*. *The American Economic Review*, 46(1), 128-141. <http://www.jstor.org/stable/1816503>
22. Kurt, S. Gunes, C. and Davasligdl, V. (2012), "The Effect of Global Financial Crisis on Budget Deficits in European Countries: Panel Data Analysis." *Istanbul University Econometrics & Statistics e-Journal*, Vol. 17, pp. 1-12.
23. Kwon CS, Shin TS (1999). Co-integration and causality between macroeconomic indicators and stock exchange prices. *Global Fin. J.* 10(1): 71-81.
24. Laopodis, N. (2009). Fiscal policy and stock market efficiency: evidence for the United States.
25. Laopodis, N.T. Dynamic Interactions among the Stock Market, Federal Funds Rate, Inflation, and Economic Activity. *Financ. Rev.* 2006, 41, 520-525. *Manag.* 2009, 14, 884-891.
26. Maysami R, Koh TS (2000). A vector error correction model of the Singapore Stock Exchange.
27. Ndako, U. B. (2013). Dynamics of Stock Prices and Exchange Rates Relationship: Evidence From Five Sub-Saharan African Financial Markets. *Journal of African Business*, 14(1), 47-57, 2013
28. Nkukuu, ELIZABETH NAILANTEI, and JOSIAH ADUDA. "Relationship between government budget balance and stock market return for companies listed on the Nairobi Securities Exchange." Unpublished MBA Project, University of Nairobi(2012).
29. Pesaran, M. H., Shin, Y., & Smith, R. J. (2001, May). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289-326. <https://doi.org/10.1002/jae.616>
30. Phillips, P. C. B., & Perron, P. (1988). Testing for a unit root in time series regression. *Biometrika*, 75(2), 335-346. <https://doi.org/10.1093/biomet/75.2.335>
31. Pilinkus, D. *Stock Market and Macroeconomic Variables: Evidence from Lithuania*. *Econ.*

32. Quayes, S. Does budget deficit lower equity prices in USA. *Econ. Lett.* 2010, 107, 155–157.
33. Quayes, S.; Jamal, A. Does inflation affect stock prices? *Appl. Econ. Lett.* 2008, 15, 767–769.
34. Raza, N., Shahzad, S. J. H., Tiwari, A. K., & Shahbaz, M. (2016). Asymmetric impact of gold, oil prices and their volatilities on stock prices of emerging markets. *Resources Policy*, 49(C), 290-301.
35. Roley, V.V.; Schall, L.D. Federal deficits and the stock market. *Econ. Rev. Federal Reserve Bank Kansas City* 1988, 73, 17–27.
36. Saleem, F.; Yasir, M; Ahmed, K.; Sebrish, S. Budget deficits and stock prices: Evidence from Pakistan and India. *Interdiscip. J. Contemp. Res. Bus.* 2012, 4, 176–185.
37. Samsul, M. (2006) *Pasar Modal dan Manajemen Portofolio*, Erlangga Jakarta
38. Sellin, P. Monetary Policy and the Stock Market: Theory and Empirical Evidence. *J. Econ. Surv.* 2001, 15, 491–541
39. Shafi, M., & Asghar, Z. (2015). Tax Policy and Economic Growth: A Semi-Parametric Approach Using AMT...
40. Singh, A., 1997. 'Financial Liberalisation, Stock Markets, and Economic Development', *The Economic Journal*, 107(May): 771–82. *The quarterly review of economics and finance*, 49 (2009) 633–650
41. Udegbunam, R.I.; Oaikhenan, H.E. Interest Rate Risk of Stock Prices in Nigeria: Empirical Test of the Duration and Convexity Model. *J. Emerg. Mark. Financ.* 2012, 11,93–113
42. Van Aarle, B.; Garretsen, H.; Gobbin, N. Monetary and Fiscal Policy Transmission in Euro-Area: Evidence from a Structural VAR Analysis. *J. Econ. Bus.* 2003, 55, 609–638.