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ORIGINAL ARTICLE

Effects of Fiscal and Monetary Policy Shocks on the Performance of the Lima Stock Exchange

Efectos de los choques de política fiscal y monetaria en el desempeño de la bolsa de valores de Lima

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Abstract
The behavior of the stock market is widely regarded in many economies as an indicator of overall economic activity. In this context, and in light of past crises, it is important to assess whether economic policies were appropriate for maintaining stability and economic dynamism. This study examines the effects of fiscal and monetary policy shocks on the performance of the Lima Stock Exchange over the period 2003–2023, as well as during the financial pre-crisis and post-crisis subperiods. The research adopts a quantitative approach, with an explanatory scope and a non-experimental longitudinal design. Monthly data were employed to analyze public expenditure, taxes, the policy interest rate, the yield on Peruvian government bonds, and the General Index of the Lima Stock Exchange. A vector error correction model (VECM) was used, with emphasis on generalized impulse–response functions (GIRF). The results show that, over the full sample period, increases in public expenditure (which later turn positive), taxes, the policy interest rate, and the yield on government bonds all generated negative impacts on the Lima Stock Exchange. The effects across subperiods are heterogeneous. During the pre-crisis period, the stock market responded positively to increases in the policy interest rate and government bond yields, and negatively to rises in public expenditure and taxes. By contrast, the post-crisis period exhibited a pattern similar to that observed across the full sample.

Keywords: *Fiscal policy, Monetary policy, Stock market, VECM.*

Resumen
El comportamiento del mercado bursátil es considerado en muchas economías como un indicador de la actividad económica. En este contexto, y debido a las crisis enfrentadas en el pasado, resulta importante evaluar si las políticas económicas fueron las adecuadas para mantener la estabilidad y dinamismo económico. En esta investigación se analizaron los efectos de choques de la política fiscal y monetaria sobre el desempeño de la Bolsa de Valores de Lima durante el período 2003–2023, así como en los subperíodos de precrisis y postcrisis financiera. La investigación fue de tipo cuantitativo, con un alcance explicativo y un diseño no experimental longitudinal. Se emplearon datos de frecuencia mensual y se analizaron las variables de gasto público, impuestos, tasa de referencia, rendimiento del bono del gobierno peruano e índice general de la Bolsa de Valores de Lima. Se utilizó un modelo de vectores de corrección de errores (VECM), con énfasis en las funciones de impulso–respuesta generalizadas (GIRF). Los resultados revelan que, durante el período completo, se observó un impacto negativo en la Bolsa de Valores de Lima ante un aumento del gasto público (que posteriormente se vuelve positivo) y de los impuestos, así como frente al incremento de la tasa

de referencia y del rendimiento del bono del gobierno. En los subperíodos, los efectos son heterogéneos. Durante la precrisis, el mercado bursátil mostró una respuesta positiva frente a la subida de la tasa de referencia y del rendimiento del bono del gobierno peruano, y una respuesta negativa ante el aumento del gasto público y de los impuestos. Por otro lado, el período de postcrisis se comportó de manera similar al período completo.

Palabras clave: *Bolsa de valores, Política fiscal, Política monetaria, VECM.*

1. Introduction

Stock market performance is a key indicator monitored by investors, most of whom associate it with overall economic health. According to Rahman and Mustafa (2017), "a well-functioning stock market enhances economic efficiency, private investment, and growth. In turn, it triggers positive influences on stock market returns." In this vein, Tong (2013) highlights the importance and role of the stock exchange within the financial system, as it facilitates the flow of funds between deficit and surplus agents through direct intermediation.

In Peru, the Lima Stock Exchange (BVL) is the entity responsible for the trading of registered securities. Furthermore, it provides information regarding stock market operations, security quotes, and the financial status of issuing entities. According to the classification by Morgan Stanley Capital International (2024), the Peruvian market is considered an emerging market due to its trading volume.

Recent global economic and financial crises have demonstrated that governments employ robust fiscal stimuli to boost economic activity; these range from measures aimed at increasing demand to interventions designed to preserve financial stability. Nonetheless, recent developments in economic and financial markets have been characterized by a significant decline in equity prices and a consequent reduction in wealth. In the case of emerging economies, the use of fiscal policy raises greater concern, as these economies are typically characterized by high levels of indebtedness, unsustainable fiscal deficits, inflation, and substantial default risk. These factors are associated with a low degree of financial development and high levels of dollarization. In Latin America, where emerging economies predominate, it is crucial to acknowledge associated vulnerabilities, such as external dependence and sensitivity to fluctuations in macroeconomic variables. The effects of these vulnerabilities can impact economic performance and, indirectly, asset prices.

The linkages between fiscal policy and the stock market were established in the works of Tobin (1969) and Blanchard (1981). In elaborating on this relationship, it is evident that the economic impacts of fiscal policy depend on the theoretical perspective adopted: Keynesian, Classical, or Ricardian. According to Chatziantoniou et al. (2013), fiscal policy under the Keynesian approach suggests that an increase in government spending boosts aggregate demand, improves economic activity, and may lead to higher stock prices. Conversely, classical theory posits that expansionary fiscal policy generates a crowding-out effect in the market for loanable funds; the increase in government demand for funds exerts upward pressure on interest rates, thereby reducing private investment and consumption. This mechanism tends to counteract the stimulus on real economic activity and negatively affects the stock market by increasing corporate financing costs. Finally, Ricardian theory argues that fiscal policy is neutral, based on the assumption that rational agents save the current stimulus in anticipation of higher future taxes.

Since the works of Fama and French (1989) and Jensen and Johnson (1995), a bidirectional relationship between monetary policy and the stock market has also been observed. In this context, the stock market serves as a source of information for monetary authorities by reflecting private sector expectations. In turn, monetary policy influences the stock market through various channels. First, the interest rate impacts the cost of capital and, therefore, the present value of future cash flows. Second, credit availability affects corporate investment; higher liquidity stimulates business expansion, raising expected flows and stock values. The wealth effect also plays a significant role, as changes in interest rates alter financial asset prices. Likewise, the exchange rate responds to interest rate movements: an increase in the rate tends to appreciate the domestic currency, reduce exports, and negatively affect the revenues of exporting firms. Finally, Tobin's Q suggests that higher interest rates decrease stock values, incentivizing a shift of funds toward the bond market (Isola Lawal et al., 2018).

In emerging economies such as Peru's, dollarization and dependence on commodities are prevalent features. Consequently, monetary policy focuses not only on inflation but also necessitates the maintenance of exchange rate stability. Calvo and Reinhart (2002) posit that emerging economies exhibit a "fear of floating"; as a result, central banks frequently intervene to mitigate exchange rate volatility, driven by structural vulnerabilities such as financial dollarization or export competitiveness. Thus, the exchange rate channel becomes crucial for analyzing how monetary policy affects the stock market. Furthermore, Clavellina (2012) notes that traditional monetary policy tools (such as the interest rate) in emerging economies must be complemented by the use of macroprudential measures.

Empirical evidence highlights sensitivity to external shocks. García et al. (2009) analyze how commodity price shocks affect inflation dynamics in Chile, finding that the impact of fiscal policy depends on the government's response: whether it spends or saves the windfall revenues generated by a boom. Meanwhile, the effectiveness of monetary policy relies on the Central Bank's credibility. Along these lines, Medina and Soto (2016) note that a credible and transparent counter-cyclical fiscal rule is the most effective tool for insulating the economy from commodity price shocks. Specifically for Peru, Ganiko and Jiménez (2023) demonstrate a strong external dependence, finding that external factors explain nearly 60% of the variance in domestic variables, highlighting external demand shocks (China) and export prices (minerals) as key determinants.

The interaction between both policies is significant. Isola Lawal et al. (2018) argue that this occurs through: (i) the impact of the intertemporal budget constraint, where an unsustainable fiscal policy can compromise the efficiency of monetary policy and lead to inflationary pressures; and (ii) the effect of fiscal policy on monetary variables such as inflation and the exchange rate. Sargent and Wallace (1981) note that monetary effectiveness depends on the fiscal stance: if the public sector maintains persistent debt-financed deficits, fiscal dominance may emerge, forcing the Central Bank to monetize the deficit and generating inflation. Peruvian economic history offers empirical evidence regarding the dangers of subordinating monetary policy to fiscal needs; as Morón and Winkelried (2022) document in their analysis of the hyperinflation period, monetary financing of the fiscal deficit, under a price control scheme, not only destroys the price mechanism but also generates extreme volatility that wipes out the value of real financial assets.

Various studies examine the relationship between fiscal policy and asset markets. In the case of the U.S., authors such as Montasser et al. (2020), Mumtaz and Theodoridis (2020), and Marfatia et al. (2020) concur that fiscal shocks lead to a decline in stock returns. Similarly, Tavares and Valkano (2003) demonstrate that tax shocks negatively impact expected returns. In the Eurozone, Afonso and Sousa (2011) and André et al. (2023) observe adverse effects of government spending on stock prices. Specifically, Afonso and Sousa (2011) found that a shock to government revenues initially contracts economic activity but generates a positive—albeit temporary—effect on stock prices.

These results are consistent with the findings of Bui et al. (2017), who note that stock prices respond negatively to increases in government spending but positively to increases in fiscal revenues. In turn, Agnello and Sousa (2013) conclude that positive and unexpected variations in the fiscal deficit lead to a generalized decline in asset prices

On the monetary front, Chatziantoniou et al. (2013) suggest that monetary policy affects the stock market directly (in the United Kingdom) and indirectly (in the U.S. and Germany). Likewise, Isola Lawal et al. (2018) find that in the Nigerian stock market—an economy comparable to Peru's—monetary policy has a direct impact via the interest rate, and an indirect impact through the credit and wealth effect channels. Recently, Cobbinah et al. (2024) determined that in Ghana, expansionary fiscal policies generate a positive effect on returns, whereas interest rates have a negative impact, further revealing significant conditional volatility dynamics.

It is crucial to recognize that standard macroeconomic theories face serious limitations when applied to an emerging economy. The Ricardian equivalence hypothesis assumes agents operate within perfect capital markets, an assumption that is incompatible with the reality of high informality and inequality in Peru. The prevalence of "spenders" facing severe liquidity constraints (Mankiw, 2000) implies that, in practice, fiscal stimuli generate real and immediate effects on demand. Furthermore, following Sánchez-Bayón (2025) and the premise of the non-neutrality of money, it is posited that liquidity injections alter relative prices and the capital structure. In the Peruvian case, this implies that monetary shocks directly influence the real valuation of stock market assets, extending beyond their inflationary impact.

Regarding the domestic context, Peru has established itself as one of the most stable economies in the region. According to data from the Central Reserve Bank of Peru (BCRP), GDP experienced sustained growth of 4.4% from 2003 to 2023, with an average inflation rate of 3.24%. During this period, the Lima Stock Exchange General Index grew by an average of 21.7%, rising from a market capitalization of 55,000 million in 2003 to 657,000 million in 2023 (expressed in Soles), reflecting the country's economic development. Concurrently, public spending increased by an average of 6.2%, with peaks reaching 18.0% in 2009 and 11.5% in 2021, while tax revenues grew by an average of 6.7%, with a peak of 20.7% during the commodity boom.

Within this framework, the objective of this research is to analyze the effects of fiscal and monetary policy shocks on the performance of the Lima Stock Exchange (BVL). The study employs government spending and taxes as fiscal variables, and the BCRP reference rate as the monetary variable. To achieve this objective, a quantitative approach is adopted using a vector error correction model (VECM). The findings will contribute relevant insights for decision-making by investors and economic policymakers.

2. Materials and methods

The research adopts a quantitative approach, as it is sequential and probative, grounded in the analysis of measurements obtained through statistical methods. It possesses an explanatory scope, seeking not merely to identify correlations between variables but to determine the causes of the observed relationships. Furthermore, it employs a non-experimental longitudinal design, given the analysis of variables over time (Hernández et al., 2014)

According to Cortés and Iglesias (2004), the sample is non-probabilistic and spans a monthly period from 2003M01 to 2023M12. Furthermore, to assess temporal heterogeneity, the analysis extends to two sub-periods: pre-crisis (2003M01 to 2008M09) and post-crisis (2008M10 to 2023M12).

The population comprises historical time series data at a monthly frequency, including the S&P/BVL Lima General Index (SM), government spending (G), taxes (T), the reference rate (r), the multilateral real exchange rate (TCRM), the Peruvian government bond yield (b), the core price index (IPCS), gross domestic product (PBI), economic expectations (EE), and terms of trade (TI).

The research utilizes data sourced from the Central Reserve Bank of Peru (2024) and estimates a vector error correction model (VECM), with a specific emphasis on generalized impulse response functions (GIRFs) to interpret the impact of fiscal and monetary policy shocks on the performance of the Lima Stock Exchange.

2.1 Econometric methodology

Stationarity test: To assess variable stationarity, the necessary unit root tests are the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (1988) test. Both tests posit a null hypothesis H_0 that a series possesses a unit root (is non-stationary) and an alternative hypothesis H_1 that the series is stationary (Hamilton, 1994; Nelson & Plosser, 1982).

Variable adjustment: Variables are transformed into natural logarithms to stabilize variance and approximate non-linear relationships to a more linear form. Where seasonality is present, the X-13ARIMA-SEATS filter is employed (Census Bureau, 2024); this method extracts seasonal components, adjusting the variables to prevent such patterns from distorting the econometric analysis (Hamilton, 1994).

Table 1. Operationalization of variable

Variables	Dimension	Indicator	Notation
Stock market	Stock market performance	Growth rate of the S&P/BVL General Index (Base 12/31/91 = 100)	SM
Fiscal policy	Government spending	Current expenditure (wages, goods, and services) + Capital expenditure (gross capital formation)	G
	Taxes	Central government tax revenues	T
Monetary policy	Reference rate	Monetary policy reference rate	r
Real exchange rate	Real exchange rate index	Real exchange rate index (Base 2009 = 100) – Multilateral	TCRM
Sovereign bond	Peruvian sovereign bond yield	Interest rates of Peruvian government bonds – Yield on 10-year Peruvian government bond (in S/)	b
Price level	Price level	Lima Metropolitan Price Index (Base 2009 = 100) – Core CPI	IPCS
Economic growth	Economic activity	Gross Domestic Product and domestic demand (Index 2007 = 100) – GDP	PBI
Expectations	Economic expectations	3-month economic expectations index	EE
Exogenous variable	Terms of trade	Foreign trade terms of trade index (Index 2007 = 100)	TI

Source: Prepared by the authors.

Granger causality test: This test examines the utility of certain variables in predicting others, an econometric concept employed to determine whether a time series variable x_t can assist in forecasting another variable y_t (Hamilton, 1994).

VAR estimation model: To examine the dynamic relationship between fiscal and monetary policy and the performance of the Lima Stock Exchange, a vector autoregressive (VAR) model is employed. This constitutes a statistical framework describing the dynamic relationships among multiple time series, assuming that each endogenous variable within the system is a linear function of its own lags and the lags of all other variables in the system (Lütkepohl ,2005).

The representation of the VAR model of order p takes the following general form:

$$Y_t = C + \prod Y_{t-i} + BX_t + u_t \qquad ; \qquad u_t \sim \text{iid}(0, \Sigma) \tag{1}$$

Where Y_t is a vector of endogenous variables at time t, C is a vector of constant terms, $\prod$ is the matrix of coefficients capturing the relationship between endogenous variables and their lags of order i, B is a matrix of exogenous impact coefficients, X_t is a vector of exogenous variables, and u_t is a vector of uncorrelated error terms with zero mean and a positive, time-invariant covariance matrix $(0, \Sigma)$.

Incorporating the study variables, the following models are established: Equation (2) corresponds to the main model, and Equation (3) corresponds to the robustness model.

$$\begin{bmatrix} PBI_t \\ IPCS_t \\ TCRM_t \\ r_t \\ G_t \\ SM_t \end{bmatrix} = C + \prod \begin{bmatrix} PBI_{t-i} \\ IPCS_{t-i} \\ TCRM_{t-i} \\ r_{t-i} \\ G_{t-i} \\ SM_{t-i} \end{bmatrix} + B \begin{bmatrix} TI_t \\ D_t \end{bmatrix} + u_t \tag{2}$$

$$\begin{bmatrix} EE_t \\ IPCS_t \\ TCRM_t \\ b_t \\ T_t \\ SM_t \end{bmatrix} = C + \prod \begin{bmatrix} EE_{t-i} \\ IPCS_{t-i} \\ TCRM_{t-i} \\ b_{t-i} \\ T_{t-i} \\ SM_{t-i} \end{bmatrix} + B \begin{bmatrix} TI_t \\ D_t \end{bmatrix} + u_t \tag{3}$$

Optimal lag selection: The determination of the lag order p is conducted using the likelihood ratio (LR) statistic, which measures the magnitude of the likelihood loss when moving from the unrestricted model to the restricted model.

$$\lambda_{LR} = n \left[\ln \left| \tilde{\Sigma}_u^r \right| - \ln \left| \tilde{\Sigma}_u \right| \right] \quad ; \quad \lambda_{LR} \xrightarrow{d} \chi^2(N) \tag{4}$$

The optimal number of lags p is selected using the Akaike Information Criterion (AIC), the Hannan-Quinn Criterion (HQ), and the Schwarz Criterion (SC).

Johansen cointegration test: This test is employed to examine the presence of long-run relationships among the selected economic and financial variables. Proposed by Johansen and Juselius (1990), the method is based on maximum likelihood estimators of a vector autoregressive (VAR) process. The trace statistic and the maximum eigenvalue statistic are the two likelihood ratio tests used to determine the number of cointegrating vectors, and they are expressed as follows:

$$\lambda_{trace}(r) = -T \sum_{j=r+1}^{k} \ln(1 - \hat{\lambda}_j) \tag{5}$$

$$\lambda_{max}(r, r+1) = -T \ln(1 - \hat{\lambda}_{r+1}) \tag{6}$$

In the event of a conflict between the results of the trace statistic (λ_{trace}) and the maximum eigenvalue statistic (λ_{max}), the number of cointegrating vectors is determined based on the maximum eigenvalue statistic (Lütkepohl, 2005).

If cointegration is absent, a vector autoregressive (VAR) model in differences is utilized; otherwise, a vector error correction model (VECM) is employed.

Vector error correction model (VECM): When the variables included in the VAR model are non-stationary but cointegrated, a vector error correction model (VECM) can be utilized. This model captures both short-run and long-run dynamics and is expressed as follows:

$$\Delta Y_t = \prod Y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta Y_{t-i} + C + \varepsilon_t \tag{7}$$

Where ΔY_t represents the first differences of the endogenous variables, $\prod$ the error correction matrix (long-run), and Γ_i are matrices capturing the short-run relationships among the variables.

Model stability: Stability is assessed by verifying that all roots of the characteristic polynomial lie inside the unit circle. Therefore, the process is considered stable if the following condition is met (Hamilton, 1994):

$$\det\left(I_k - A_1 z - A_2 z^2 - \cdots - A_p z^p\right) \neq 0 \text{ para } |z| \leq 1 \tag{8}$$

Autocorrelation test: The Portmanteau test and the Lagrange Multiplier (LM) test are performed to verify the presence of autocorrelation. The null hypothesis H_0 posits no autocorrelation, while the alternative hypothesis H_1 indicates the presence of autocorrelation (Lütkepohl, 2005).

Impulse response functions (IRFs): The impulse response function (IRF) is utilized to identify the consequences of a shock on the dependent variable. Hamilton (1994) begins with a VAR model in its infinite moving average MA(∞) representation, written as follows:

$$y_t = \mu + \varepsilon_t + \Psi_1 \varepsilon_{t-1} + \Psi_2 \varepsilon_{t-2} + \cdots \tag{9}$$

Where the matrix Ψ_s reflects the dynamic transmission of shocks. Thus, the effect of an impulse in the j-th innovation on the i-th variable after s periods is:

$$\frac{\partial y_{t+s}}{\partial \varepsilon_t'} = \Psi_s \tag{10}$$

This describes how a current shock to the j-th variable affects the future trajectory of the i-th variable, holding the remaining innovations constant.

Generalized impulse response functions (GIRFs): Given that model innovations are typically correlated, traditional decomposition via Cholesky necessitates imposing a specific variable ordering to achieve error orthogonalization. However, this research employs the generalized impulse response functions (GIRFs) proposed by Pesaran and Shin (1998), which offer two significant advantages: (i) they do not require error orthogonalization, and (ii) they are invariant to the order in which variables are placed in the model, thereby avoiding the bias associated with such ordering.

$$\mathrm{GIRF}_i(j, \delta_k) = \frac{e_i' \Psi_j \Sigma e_k}{\sqrt{\sigma_{kk}}} \tag{11}$$

Where Ψ_j is the impulse response coefficient matrix after j periods, Σ is the error covariance matrix, e_k is an indicator vector with a value of 1 in the k position, and σ_{kk} is the error variance of the k-th variable.

3. Results

To proceed with the estimation and address the proposed objectives, it is first necessary to establish the stationarity of the variables and subsequently apply the adjustments and tests outlined in the methodology.

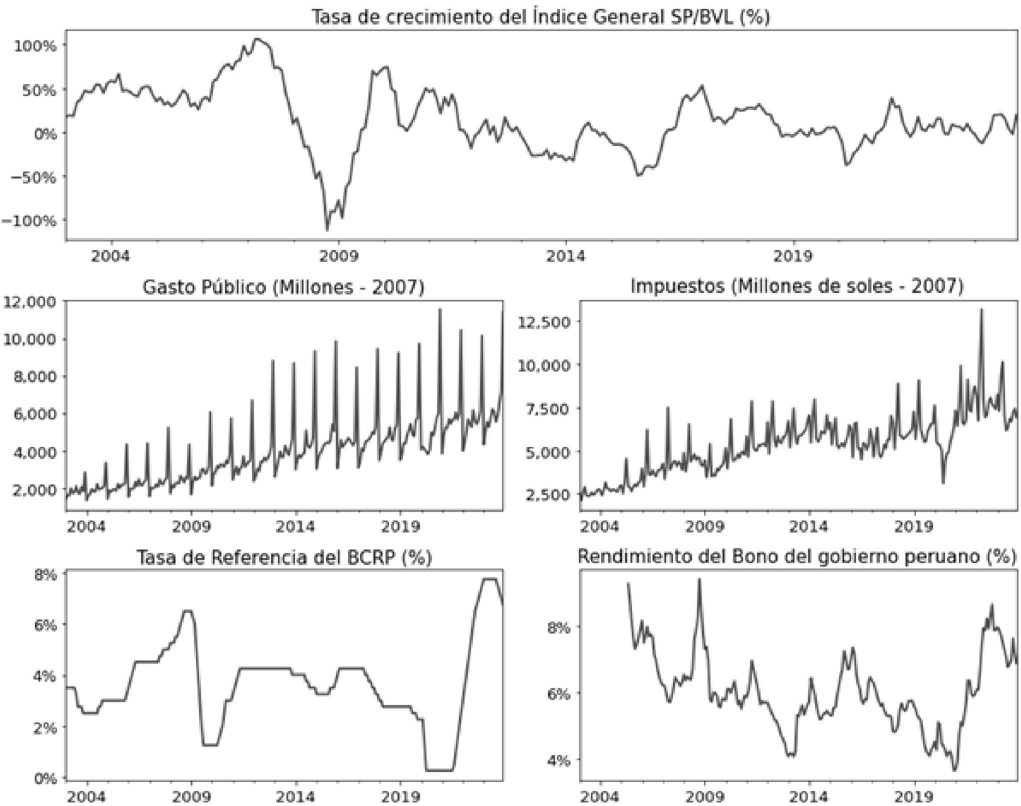
Figure 1 illustrates the behavior of the variables: the growth rate of the S&P/BVL General Index, government spending, taxes, the reference rate, and the Peruvian government bond yield. It is important to highlight the seasonality exhibited by government spending and taxes; these series were corrected (seasonally adjusted) for the estimation. Additionally, logarithms were applied to all series to stabilize variance, with the exception of those expressed in percentages.

Table 2 presents the t-statistic values for the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. Based on the results, the variables are non-stationary in levels, with the exception of economic expectations. However, upon calculating the first differences, stationarity is achieved; thus, the series are integrated of order one, I (1).

For the estimation of the VAR models (Equations 2 and 3), the optimal number of lags was determined using the AIC, HQ, and SC information criteria. For the first model, the HQ and SC results suggest that the appropriate number of lags is two, whereas the AIC suggests three. In the second model, the AIC and HQ criteria indicate that the optimal number is two; conversely, the SC suggests it is one.

Subsequently, the Johansen cointegration test was performed. In the first model, the results indicate the existence of a long-run relationship among the variables. Both the trace and maximum eigenvalue statistics reject the null hypothesis for $r = 0$ and $r = 1$ at the 5% significance level; however, for $r = 2$, the hypothesis is not rejected. Therefore, a cointegration rank of 2 is selected, validating the estimation via a vector error correction model (VECM).

Figure 1. Time Series of the Study Variables



Source: Prepared by the authors based on data from the BCRP.

For the second model, results also demonstrate the existence of a long-run relationship among the variables. Both the trace and maximum eigenvalue statistics reject the null hypothesis for $r = 0$, $r = 1$ and $r = 2$ at the 5% significance level, whereas for r=3, the hypothesis is not rejected. Consequently, the cointegration rank for the VECM estimation is set at 3.

Following the estimation of the VECM models, their stability was assessed by verifying that all roots of the characteristic polynomial lie within the unit circle, confirming that the models are stable. Subsequently, autocorrelation tests were conducted; both the Portmanteau test and the Lagrange Multiplier (LM) test yielded p-values exceeding the 5% significance level. Consequently, the null hypothesis of no autocorrelation is not rejected, indicating that both VECM models adequately capture the dynamic structure of the series and that their residuals behave as white noise.

For the first VECM model, the Block Exogeneity Wald test rejects the null hypothesis of joint non-causality at the 5% significance level, yielding a Chi-square statistic of 19.84 and a p-value of 0.0308. This result indicates that the set of analyzed macroeconomic variables (economic activity, inflation, interest rate, government spending, and real exchange rate) possesses predictive power regarding the dynamics of the stock market index; conversely, in the second model, the results concerning joint causality were less conclusive.

Finally, to avoid the bias derived from variable ordering, generalized impulse response functions (GIRFs) were employed.

Determination of the Effects of Reference Rate and Government Spending Shocks on the

Table 2. Unit root tests of the variables

Variables	Levels		First differences		I()
	ADF	PP	ADF	PP	
SM	-2.682*	-3.185**	-6.889***	-14.815***	1
ln_G	-1.287	-7.015***	-8.404***	-178.653***	1
ln_T	-2.095	-3.975***	-3.813***	-29.473***	1
r	-2.683*	-2.153	-6.144***	-6.178***	1
ln_TCRM	-2.681*	-2.650*	-12.865***	-12.865	1
b	-3.210**	-3.344**	-11.489***	-11.414***	1
ln_IPCS	0.989	2.303	-3.877***	-10.728***	1
ln_PBI	-2.297	-1.749	-6.443***	-35.504***	1
ln_EE	-4.751***	-4.097***	-12.437***	-14.966***	1
ln_TI	-2.156	-2.185	-13.418***	-13.662***	1

*p<0.1, **p<0.05, ***p<0.01
Source: Prepared by the authors.

Performance of the Lima Stock Exchange

Results from the full sample period reveal that the Lima Stock Exchange responds differentially to fiscal and monetary policy shocks. Regarding monetary policy, an increase in the reference rate exerts a negative impact on stock market performance, beginning with an initial decline of 0.42% and reaching a trough of -2.33% in the seventh month (Figure 2, Panel A). Conversely, regarding fiscal policy, an increase in government spending initially triggers a decline of -1.33% in the second period; however, from the third period onwards, the response turns positive (Figure 2, Panel B).

However, the analysis of temporal heterogeneity reveals a structural break in policy transmission. During the pre-crisis sub-period, the stock market exhibited distinctive behavior: an increase in the reference rate generated an increasing positive response, reaching 5.06% (Figure 2, Panel C), while an increase in government spending caused a persistent negative response of up to -3.14% (Figure 2, Panel D). In contrast, during the post-crisis period, the dynamics mirror those of the full sample period: an increase in the reference rate exerts a negative impact of up to 2.12% (Figure 2, Panel E), and an increase in government spending triggers a decline of up to 1.28% in the second period, turning positive from the third period onwards (Figure 2, Panel F).

Determination of the Effects of a Shock to the Peruvian Sovereign Bond Yield and Taxes on the Performance of the Lima Stock Exchange

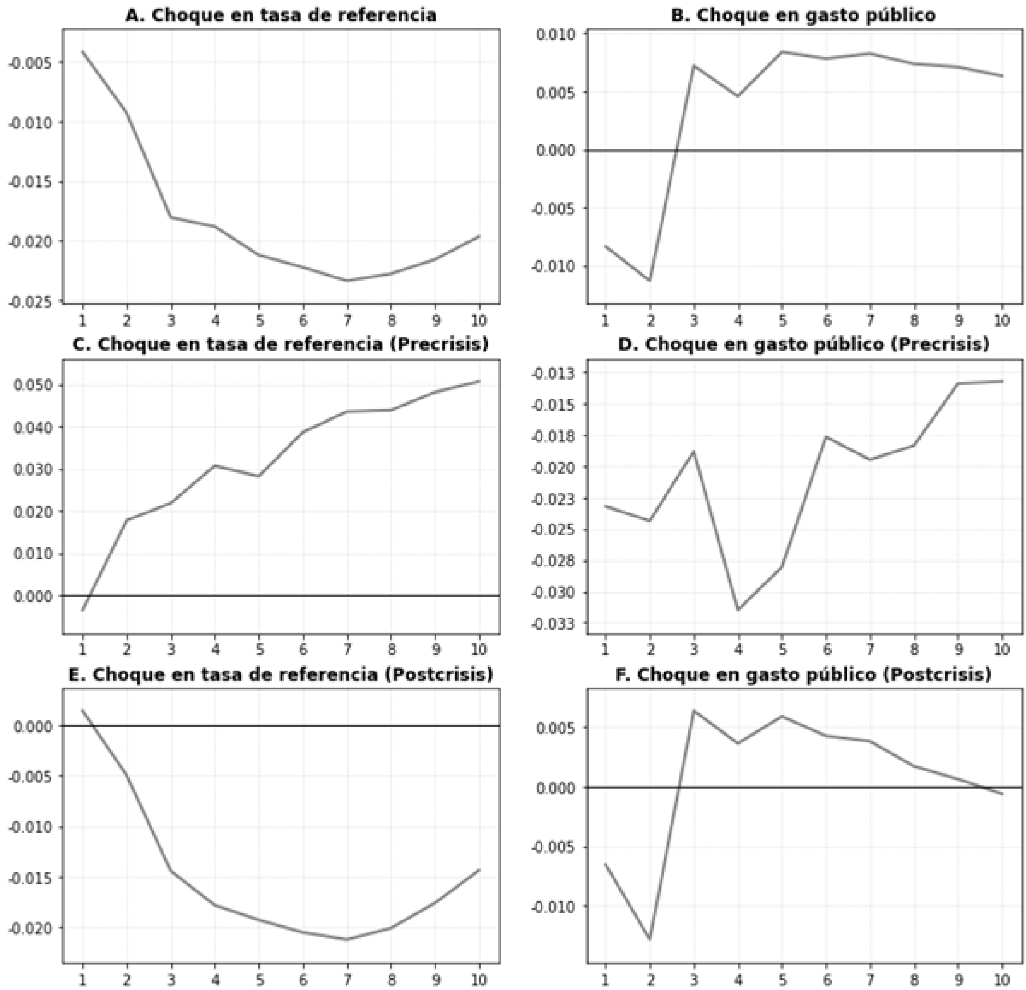
In this second model for the full sample period, results indicate a heightened sensitivity in the Lima Stock Exchange. It is evident that the Peruvian sovereign bond yield exerts a severe negative impact in the short run, reaching up to 3.33% (Figure 3, Panel A). Meanwhile, an increase in taxes generates a progressive and persistent negative impact that reaches 3.14% (Figure 3, Panel B).

Furthermore, consistent with the heterogeneity analysis, this robustness model confirms the structural break. During the pre-crisis sub-period, the stock market exhibited distinctive behavior similar to that of the first model. An increase in the Peruvian sovereign bond yield has a positive impact of 7.42% (Figure 3, Panel C), while an increase in tax revenue begins with a negative impact of up to 1% in the second period, turning positive from the third period onwards, reaching up to 1.72% (Figure 3, Panel D). Conversely, in the post-crisis sub-period, the dynamics mirror those of the full sample period: an increase in the Peruvian sovereign bond yield exerts a negative impact of up to 3.35% in the second period (Figure 3, Panel E), and an increase in tax revenues generates a prolonged decline of up to 3% (Figure 3, Panel F).

3.1 Discussion

Based on the results presented, and with the aim of contrasting them with previously cited studies, attention focuses on the generalized impulse response functions (GIRFs), which enable a clearer

Figure 2. Generalized Impulse Response Functions of the First Model



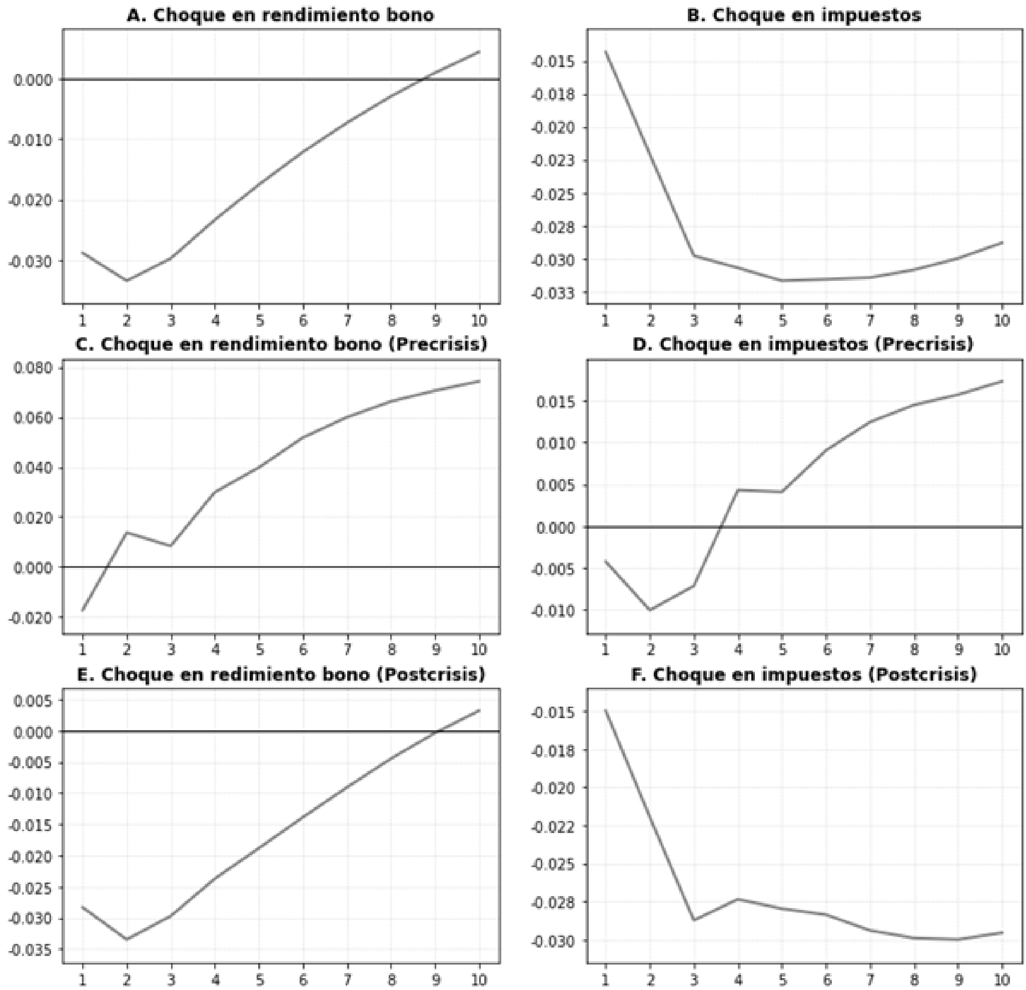
Source: Prepared by the authors.

assessment of the effects of the analyzed shocks.

The results obtained for fiscal policy indicate that a positive shock to government spending exerts a negative effect on the performance of the S&P/BVL General Index in the short run. This finding is consistent with studies by Montasser et al. (2020), Mumtaz and Theodoridis (2020), and Marfatia et al. (2020), who, in research focused on the United States, reveal that a fiscal shock leads to a decline in stock returns. Similarly, studies by Afonso and Sousa (2011) and André et al. (2023) observe that a government spending shock in certain Eurozone countries translates into negative effects on stock prices. However, in the third period, government spending generates a positive effect, a result compatible with the study by André et al. (2023), who document varying impacts of a government spending shock during Effective Lower Bound (ELB) periods.

On the other hand, the effects of a tax shock on the performance of the S&P/BVL General Index are also negative. This impact is progressive until the third period, where it stabilizes. This finding is supported by the research of Tavares and Valkanov (2003), who find that a tax shock generates a decline in expected returns for stocks, corporate bonds, and government bonds, which maintain a

Figura 3. Generalized Impulse Response Functions of the Second Model



Note: The second model was estimated using monthly data starting from May 2005, due to the availability of the sovereign bond series.
Source: Prepared by the authors.

relationship with the U.S. stock market. Conversely, Afonso and Sousa (2011) found that a shock to government revenues has a small, positive effect on stock prices that eventually reverses.

The results obtained for monetary policy indicate that a positive shock to the monetary policy reference rate has a negative effect on the performance of the S&P/BVL General Index. This finding aligns with the study by Chatziantoniou et al. (2013), who find evidence that monetary policy affects the stock market both directly and indirectly: in the United Kingdom, the effect is direct, whereas in the United States and Germany, an indirect effect is observed. Likewise, Isola Lawal et al. (2018) find that monetary policy impacts the Nigerian stock market directly through the interest rate and indirectly via the credit and wealth effect channels. More recently, this inverse relationship is corroborated by Cobbinah et al. (2024) in the Ghanaian market, confirming the persistence of the contractionary effect of interest rates on stock returns in emerging economies.

4. Conclusions

The research establishes that restrictive monetary policy exerts an unequivocal negative impact on Peruvian stock market performance. Both an increase in the reference rate and a rise in sovereign bond yields reduce stock prices, thereby validating the predominance of the cost of capital channel. Regarding fiscal dynamics, results show that an expansion of government spending does not generate an immediate stimulus; on the contrary, it triggers an initial decline consistent with the crowding-out hypothesis, an effect that reverses positively only in the medium term. Similarly, an increase in the tax burden generates a persistent contraction, confirming the market's sensitivity to the reduction of corporate liquidity.

Nonetheless, a distinct temporal heterogeneity marked by the 2008 financial crisis is identified. While during the pre-crisis boom period the market reacted positively to rate hikes—interpreting them as signals of economic strength—in the post-crisis period, the relationship normalized toward financial orthodoxy, where investors penalize the tightening of monetary and fiscal conditions. Finally, the significant influence of inflation and the real exchange rate highlights the market's exposure to the structural factors of a dollarized economy, wherein the long-term opportunity cost—reflected in the high sensitivity to the sovereign bond—emerges as the most critical variable for the valuation of domestic assets.

Author's contribution

Gustavo Cosmy Vilca Mamani: Conceptualization, investigation, formal analysis, drafting, revision, and editing

Financing

Self-financing

Conflict of interest

The author declares that he has no conflict of interest.

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