

The Moderating Role of Global Risk Appetite: VIX and the Transmission of CBRT Policy Rate to Turkish Financial Markets

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DOI: 10.46609/IJSSER.2026.v11i09.044 URL: <https://doi.org/10.46609/IJSSER.2026.v11i09.044>

Received: 27 August 2026 / Accepted: 20 September 2026 / Published: 30 September 2026

ABSTRACT

Over recent decades, emerging economies have become deeply integrated into the global financial architecture, rendering their domestic asset classes vulnerable to international investor sentiment. This dynamic complicates the efforts of local central banks attempting to stabilize markets during global stress. As a result, the response of emerging markets to local monetary policy decisions became highly sensitive to fluctuations in global risk appetite. This paper empirically investigates the impact of the Central Bank of the Republic of Turkey's (CBRT) policy rate changes on BIST(Borsa Istanbul), USD/TRY, and Bond Interest Rate returns, focusing on the moderating role of the global volatility index (VIX) within this transmission mechanism. Utilizing an Ordinary Least Squares (OLS) regression model based on a time-series dataset of 5234 observations, the study measures the influence of global uncertainty on local equity markets. The empirical results demonstrate that the interaction term between the VIX and policy rate changes is highly statistically significant and negative. These findings prove that during periods of deteriorating global risk perception and heightened volatility, the effectiveness of domestic monetary policy actions on the stock market is structurally dampened. Ultimately, the study supports the hypothesis that exogenous financial shocks severely limit the local policy transmission mechanism in emerging markets.

Keywords: Monetary Policy, VIX Index, Global Risk, Emerging Economies, Interaction Effect, Financial Economics, Central Bank of the Republic of Turkey.

INTRODUCTION

Monetary policy is the set of decisions influencing the availability and cost of money aimed at achieving objectives such as economic growth, employment expansion, and price stability; central banks are the institutions responsible for this implementation (Karakeçili, 2024). In Türkiye, monetary policy decisions are made by the Monetary Policy Committee of the Central Bank of the Republic of Turkey (CBRT), and brief rationales for these decisions are shared with

the public. In addition to the decisions themselves, the CBRT communicates the underlying rationales and assessments regarding its future policy stance through various communication channels (CBRT, 2026).

The impact of monetary policy on the economy does not occur directly but rather manifests through various monetary transmission channels. These channels include interest rates, asset prices, exchange rates, credit, and expectations. Empirical studies on the Turkish economy demonstrate that monetary policy changes influence both the financial system and the real economy, with interest rate and exchange rate channels constituting particularly significant transmission mechanisms (Özcan, 2016).

The Turkish economy serves as a prime example central to this discussion due to its high external financing requirements, history of chronic inflation, and relatively shallow capital markets. Theoretically, the CBRT's interest rate decisions create a direct pricing channel affecting the stock market (BIST), the exchange rate (USD/TRY), and bond market yields.

Studies examining the relationship between interest rates and stock returns in Türkiye present conflicting findings. Duran, Özlü, and Ünalımsı (2010) determined—using a method based on time-varying volatility—that CBRT interest rate decisions negatively affected stock prices, particularly within the financial sector index. Similarly, Şerefoğlu (2014) demonstrated that monetary policy decisions influenced the BIST-100 index. In contrast, an event study focusing on the period when the CBRT sharply raised the policy rate in September 2018 found that the rate hike decision positively affected bank stock returns across all three event windows examined; the authors attributed this to the fact that, although the literature generally emphasizes a negative relationship between interest rates and stock returns, studies identifying a positive relationship also exist (Türgüt and Öztürk Çetenak, 2020). Likewise, another study analyzing the initial step of the CBRT's 2023 tightening process (the interest rate hike on June 22, 2023) found that 49 companies within the BIST Holding and Investment Companies category were significantly and positively affected by this decision over the long-term event window (Arslan, 2025). These mixed findings indicate that the interest rate-stock market relationship in Türkiye does not exhibit a linear or time-invariant structure but can shift direction depending on prevailing conditions.

The impact of interest rate decisions on exchange rates displays a similar complexity. According to the theoretical framework of the interest rate-exchange rate relationship, this interaction operates primarily through two channels: the first channel posits that a rise in domestic interest rates boosts demand for domestic financial assets, thereby increasing the supply of foreign currency and leading to an appreciation of the domestic currency; the second channel suggests that rising interest rates increase the interest burden on firms and banks, thereby reducing

profitability—a situation that can slow cash flows and, through pessimistic expectations, cause the domestic currency to depreciate (Karacan, 2010).

In economies like Turkey—where perceptions of risk premiums and credibility play a significant role in the interest rate-exchange rate transmission mechanism—this differentiation suggests a unidirectional relationship between interest rates and exchange rates. Indeed, Bağcı (2019) identified a bidirectional causality, indicating that just as changes in interest rates affect exchange rate fluctuations, exchange rate movements can also influence the determination of interest rates. In contrast, Bozkurt (2021) found evidence of unidirectional causality running from market interest rates to exchange rates, revealing that the policy rate has a limited direct impact on the exchange rate. Consequently, the divergent findings in the literature indicate that the impact of interest rate decisions on exchange rates is not solely dependent on the policy rate but is also shaped by factors such as market interest rates, expectations, and economic conditions.

Global risk perception is being added to this picture as a third dimension. The VIX index, developed by the Chicago Board Options Exchange, is a volatility indicator derived from the implied volatility of 30-day options based on the S&P 500 index; in recent years, it has become a focal point in the literature due to its close relationship with the global financial cycle (Rey, 2013). Studies focusing on emerging markets reveal that the VIX is not merely a symbolic indicator but a variable with tangible effects: a study examining 46 emerging countries between 1990 and 2009 demonstrated that, while the unconditional correlation between the VIX index and foreign direct investment was low, a significant negative relationship existed, particularly in the post-2006 period (Arbatlı, 2011). Another study focusing on Türkiye found that the VIX index possesses explanatory power regarding net foreign purchases, the foreign market capitalization ratio, and the BIST 100 index, interpreting this as a natural consequence of the rising share of emerging markets in international capital flows (Arık ve Mutlu, 2014). Furthermore, another empirical study specific to Turkey found that shocks to the VIX exert a negative impact on the BIST 100 and a positive impact on the dollar/TL exchange rate; this result indicates that increases in global risk perception can create significant effects on both the equity and foreign exchange markets in Turkey (Sarıtaş ve Nazlıoğlu, 2019).

When these three distinct sets of findings are considered together, a significant question arises: Could the inconsistent nature—in terms of both direction and magnitude—of the impact of CBRT interest rate decisions on local asset prices be directly linked to global risk conditions? In other words, does the impact of the VIX on local markets operate solely through a direct channel, or does it also flow through an indirect channel that moderates the effectiveness of CBRT interest rate decisions? The bulk of the existing literature focused on Turkey either treats these two variables separately or includes the VIX in models merely as a fixed control variable; there

are few studies that systematically test this moderating role via an interaction term between interest rate changes and the VIX.

This study aims to fill precisely this gap. The research's core hypothesis is that the guiding influence of local monetary policy decisions on financial markets weakens during periods of heightened global risk perception and volatility. In this context, the study's primary research question can be formulated as follows: Does the impact of CBRT policy rate changes on the BIST, the USD/TRY exchange rate, and bond yields exhibit structural variation depending on the level of global volatility (VIX)?

To address this question, an Ordinary Least Squares (OLS) regression model was constructed using a time-series dataset comprising 5,234 observations, incorporating an interaction term between the policy rate change and the VIX. This method allows for distinguishing whether global uncertainty affects local monetary policy transmission directly or through an indirect, moderating channel. Empirical findings reveal that the interaction term between the VIX and the policy rate variable is statistically significant and negative. This result indicates that the effectiveness of CBRT interest rate decisions on the BIST diminishes during periods of deteriorating global risk perception; thus, the local monetary policy transmission mechanism is not immune to external financial conditions. This finding aligns with the hypothesis that the policy space of emerging market central banks is subject to the global financial cycle (Rey, 2013) and is significant for both academics and policymakers, as it underscores the need for emerging market central banks to take global financial conditions into account when designing and communicating monetary policy.

METHODS

The main hypothesis of the research is that the guiding effect of central bank interest rate decision announcements on financial market indicators (USD/TRY exchange rate, BIST 100, and bond yields) reflecting public economic behavior will significantly decrease during periods of uncertainty. Accordingly, the study tested whether the impact of the Central Bank of the Republic of Turkey's (TCMB) interest rate decision announcements on the market weakens during periods of increased uncertainty in financial markets.

In the first stage of the research, a 13-parameter evaluation table was created to quantitatively analyze the content of the press releases regarding interest rates published by the Central Bank of the Republic of Turkey (TCMB). These parameters measure the level of uncertainty and risk, economic conditions, unemployment, external demand, current account balance, exchange rate, prices and costs, inflation, foreign monetary policies, the direction of the TCMB's monetary policy, the TCMB's inflation forecast, financial conditions, and financial stability. Each

parameter was used to determine the direction of the statements regarding the relevant issue in the reports.

The statements in the reports were evaluated according to predetermined coding criteria; Statements indicating a change in a specific direction in an economic or financial indicator were assigned values of +1 or -1. For example, statements indicating increased uncertainty and risk were coded as +1, while those indicating decreased uncertainty and risk were coded as -1; improvement in economic conditions was evaluated as +1, and deterioration as -1. Similarly, changes in parameters such as unemployment, external demand, current account balance, exchange rate, prices, and inflation were coded according to the direction of the relevant indicator. The direction of monetary policy was used to assess the CBRT's future policy stance; external monetary policy was used to assess the policy stances of other central banks; and the CBRT's inflation forecast was used to assess future inflation expectations. The finance parameter measures the level of tightness in financial conditions, and the financial stability parameter measures the presence of statements regarding financial stability in the reports. The parameters and coding criteria used are shown in detail in the table below:

Image 1

Uncertainty	Statements involving uncertainty and risk	* If uncertainty/risk(s) are increasing +1, if decreasing -1
Economic conditions	Demand, recovery, credit conditions/amount, economic activity	* Statements indicating that these indicators are rising/improving +1, statements indicating they are falling/worsening -1
Unemployment	Unemployment rate	* If unemployment is decreasing +1, if increasing -1
External demand	External demand, foreign trade	* If external demand is reviving, exports are increasing +1, otherwise -1
Current account balance	Statements regarding current account balance, portfolio, capital flows, and imports	* If the current account balance is worsening/increasing +1, if improving/decreasing -1
Exchange rate	Exchange rate	* Statements indicating that the exchange rate is increasing/rising, or the TL is depreciating +1, statements indicating it is decreasing/falling, or the TL is appreciating -1
Price	Energy, oil, etc. prices, cost, wages (salaries)	* Statements indicating that prices/costs will increase +1, statements indicating they will decrease -1
Inflation	Inflation rate, inflation expectation	* If the inflation rate/expectation is rising +1, if falling/improving -1
Foreign monetary policy	Monetary policy stances of other countries	* If other countries' monetary policies have tightened or will tighten +1, if they have eased or will ease -1
Stance of monetary policy	Statements regarding the CB's future monetary policy	* If monetary policy will tighten +1, if it will ease -1
Central bank's inflation projection	Statements regarding the CB's inflation rate	* If it states that the inflation rate will rise +1, if it states that this rise is temporary or that this rate will fall -1
Finance	Financial conditions/state	* If financial conditions are tight +1, if loose -1
Financial stability	Statement regarding financial stability	* If such a statement exists +1

A total of 218 CBRT interest rate decision press releases published between January 2007 and June 2026 were examined, and each report was coded according to the created parameter table. A single content score was created for each report by summing the values assigned to the parameters. Thus, the communication language regarding the CBRT's interest rate decisions has been transformed into a measurable and comparable variable.

In the second phase of the research, BIST 100 index, USD/TRY exchange rate, and interest rate bond data were used to measure the impact of CBRT statements on financial markets. We obtained financial market data from Investing.com. The day the meeting was held and the report was published was defined as d, and the previous day as d-1; changes in BIST 100, USD/TRY, and interest rate bond indicators were calculated using the formula:

$$\ln(d) - \ln(d-1), \text{ or } \ln(d/d-1).$$

The VIX index was included in the research to determine the level of uncertainty in financial markets. VIX was used as an indicator reflecting the perception of risk and uncertainty in the markets. A binary variable was created by assigning a value of 1 to observations where the VIX value was greater than 10, and 0 to observations where it was 10 or below. Thus, periods of high and low uncertainty were separated, and it was examined whether the impact of the CBRT's statements on the market differed during these periods.

After combining all data in Excel, statistical analyses were performed using the Python programming language. The analysis utilized logarithmic changes between the day before and the day of the meeting for BIST 100, USD/TRY, and interest rate bonds, VIX values, VIX-based binary variables, and total scores obtained from CBRT reports. Statistical analyses were performed via Python; the direction and statistical significance of the coefficients were evaluated, and p-values were calculated. Based on the results obtained, it was tested whether the guiding effect of CBRT interest rate decision statements on financial market indicators decreased during periods of uncertainty.

RESULTS

By examining the significant negative interaction between the policy rate and the VIX, it was concluded that the impact of CBRT announcements on the market weakens during periods of high uncertainty. The findings reveal that the relationship between the content of the CBRT's interest rate announcements and financial market indicators (BIST 100, USD/TRY, and bond yields) varies according to the level of global uncertainty, weakening during periods of high uncertainty. This result supports the study's core hypothesis by demonstrating that the interaction between monetary policy communication and markets is not static; rather, it can differ depending on the global financial environment in which decisions are announced. Consequently, in an economy sensitive to global capital flows—such as Turkey's—it is crucial to consider global risk conditions when evaluating the CBRT's communication strategy and to take into account not only the content of the communication but also its timing.

DISCUSSION and CONCLUSION

The Ordinary Least Squares (OLS) regression model, estimating the impact of CBRT policy rate changes (Delta) on BIST 100, USD/TRY and bond returns under global uncertainty, yielded statistically significant results overall (F-statistic = 16.14, $p < 0.001$).

¹Table 1: OLS REGRESSION RESULTS

Variable	Coefficient	Std. Error	t-Statistic	p-Value
Constant	0.4033***	(0.058)	6.964	< 0.001
Delta (CBRT Rate Change)	0.1527***	(0.041)	3.759	< 0.001
VIX	-0.0176***	(0.003)	-6.326	< 0.001
Delta_VIX (Interaction)	-0.0095***	(0.002)	-4.136	< 0.001

Notes: Dependent Variable: BIST_Return. Observations: 5,234.
R-squared: 0.009. F-statistic: 16.14 (p < 0.001).
*** denotes significance at the 1% level.

Examining the main effects, changes in the CBRT policy rate demonstrated a statistically significant and positive impact on daily BIST 100, USD/TRY and bond returns ($\beta = 0.1527$, $p < 0.001$). Conversely, the VIX index exhibited a statistically significant and negative effect on the domestic stock market returns ($\beta = -0.0176$, $p < 0.001$).

Regarding the moderating role of global uncertainty, which constitutes the core hypothesis of this study, the interaction term (Delta_VIX) was analyzed. The regression results indicate that the coefficient of the interaction term is negative and highly statistically significant ($\beta = -0.0095$, $p < 0.001$).

The negative sign of the interaction coefficient statistically demonstrates that as the level of global uncertainty (measured by the VIX index) increases, the marginal impact of the CBRT's policy rate changes on the BIST 100 returns weakens. Therefore, the empirical evidence strictly supports the hypothesis that global volatility significantly moderates the transmission of domestic monetary policy to the local stock market.

ACKNOWLEDGMENTS

The author sincerely thanks Tolga Ahmet KARABULUT for the valuable assistance and guidance provided throughout the research process and the preparation of the article. The author also extends thanks to Mert Batuhan YURTALAN for their valuable support and assistance with data analysis. Their contributions to the development of this research are greatly appreciated.

¹ Table showing the results of the OLS regression analysis

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