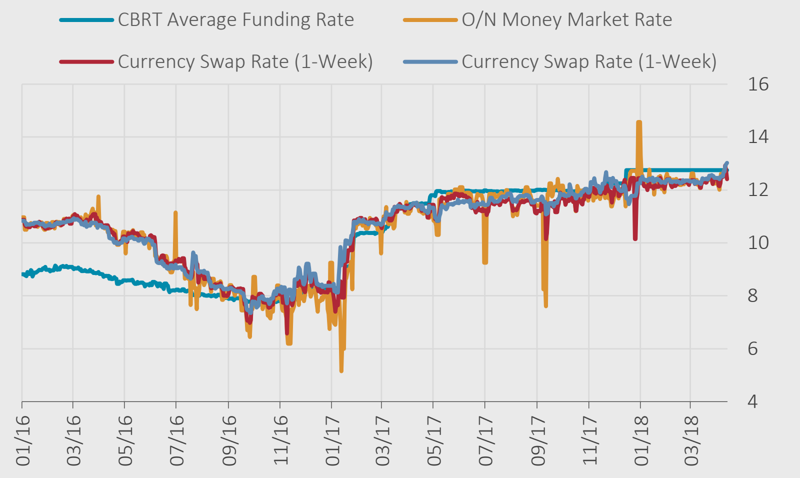
Box 5.1

The Effects of the CBRT's Foreign Exchange Deposits against Turkish Lira Deposits Auctions

On 17 January 2017, the CBRT announced the opening of the foreign exchange deposits against Turkish lira deposits auctions and held the first auction on 18 January 2017. The aim of these auctions is to help banks improve their Turkish lira and FX liquidity management and inject FX liquidity without any permanent loss of reserves. Another objective is to contribute to a well-functioning foreign swap markets by providing a reference rate for currency swaps. Put differently, these auctions are a target-oriented policy instrument that facilitates banks' liquidity management and provides a benchmark for Turkish lira interest rates at swap markets abroad. This box analyzes how these auctions perform as a reference for USD/TL rates at foreign swap markets and how much support they provide for banks' FX liquidity management.

In the pre-auction period, foreign short-term USD/TL swap rates were particularly volatile due to supply and demand conditions (Chart 1). As a result, USD/TL swap rates deviated from the CBRT's short-term interest rates and FX market volatility increased. Regarding the impact of auctions, short-term swap rates have become substantially less volatile following the initiation of the auctions (Table 1).

Chart 1: CBRT Average Funding Rate and Currency Swap Rates (%)



Kaynak: Bloomberg, CBRT.

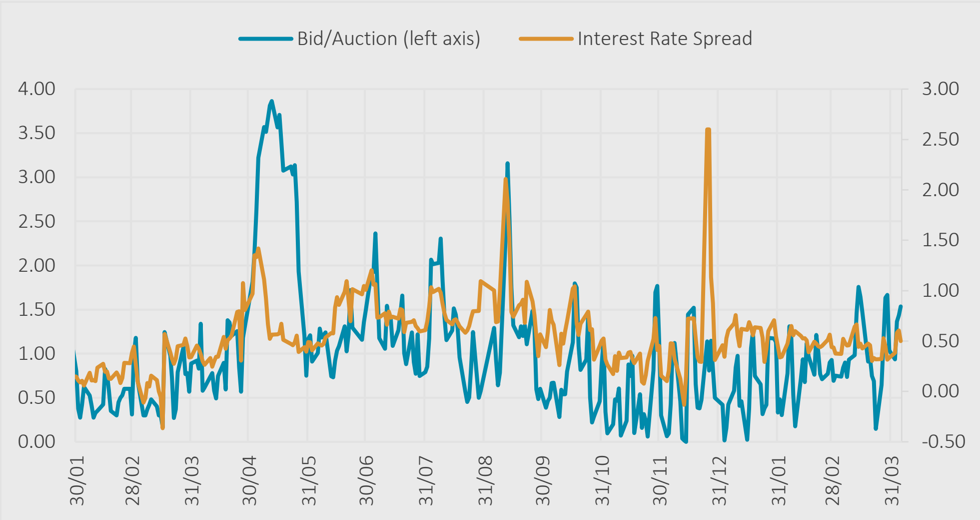
Table 1: Volatility in Currency Swap Rates

	O/N	1-Week	1-Month
Volatility (September 2015-December 2016)	1.39	1.26	1.15
Volatility (January 2017-April2018)	0.77	0.58	0.57

* Volatilities are computed by standard deviations.

A threshold model[1] is estimated to analyze the transmission of the impact of foreign exchange deposits against Turkish lira deposits auctions on foreign currency swap rates. In the model, the demand for auctions is defined as "the total bid to auction amount ratio"[2] (Chart 2) and this variable is explained by the spread between the Turkish lira interest rate for foreign exchange deposits against Turkish lira deposits and the foreign weekly swap rate (interest rate spread) and by exchange rate volatility. Estimation results show higher demand as the interest rate spread passes the threshold (45.4 basis points) (Table 2). Higher demand for auctions increases the funding requirement of the system by as much as the amount of TL deposits in the auctions, which creates a TL demand at foreign swap markets and keeps TL interest rates from tumbling, thus helping to limit volatilities.

Chart 2: Total Bid to Auction Amount Ratio and Interest Rate Spread (%)



Source: CBRT.

As mentioned above, another objective of these auctions is to improve banks' FX liquidity management and enhance its effectiveness. In order to test the performance of auctions with regards to this objective, the bank demand for auctions is analyzed in times of increased FX market stress. In the model, the 1-week implied volatility of USD/TL rate is used as the FX market stress indicator. The findings indicate higher demand for auctions in times of increased implied exchange rate volatility. This impact is much stronger when the interest rate spread is above 45.4 basis points.

Table 2: Determinants of the Total Bid to Auction Amount Ratio at TL-settled Forward FX Sale Auctions

	Interest Rate Spread < 0.454	Interest Rate Spread ≥ 0.454
Interest Rate Spread	0.271 (0.248)	0.372** (0.003)
Implied Volatility (t-1)	0.015* (0.067)	0.033** (0.003)
Bid/Auction (t-1)	0.596** (0.001)	0.827** (0.001)
R^2	0.80	0.80
Number of observations	123	183

*, ** denote statistical significance at 10 percent and 1 percent, respectively, and values in parenthesis denote p values.

[1] Based on the equation: Bid/Auction = $\alpha + \beta_1(\text{Spread}_t) + \beta_2(\text{Volatility}_{t-1}) + \beta_2(\text{Bid/Auction}_{t-1}) + \varepsilon_t$, where ε_t represents the error term.

[2] The bidding limit imposed on foreign exchange deposits against Turkish lira deposits auctions on 15 May 2017 is adjusted by applying it to bank-level bids on previous dates.

In sum, the results obtained from 15-month data following the introduction of auctions reveal that the auctions are aligned with their objectives. The level of the auction rate has become a benchmark for the foreign currency swap market and the volatility of short-term interest rates has thus declined. Moreover, FX injections through auctions remain a supplemental tool for banks' FX liquidity management.