

## **The Stress Test Implementation Framework That Takasbank Applies in Markets Where It Provides CCP (Central Counterparty) Service**

Apart from financial institutions, stress tests, which are also used extensively by central banks and supervisory authorities, are defined in the literature as a set of techniques used to assess the fragility of the financial institution or financial system under shocks and unusual market conditions.

Eliminating the weakness of risk models in describing extreme market conditions, especially after the year 2008, the use of stress tests, the benefit of which is once again understood, from the legal point of view of banks and organizations providing CCP services has become an obligation. In the regulations, it is predicted that organizations providing central counterparty services will use the total amount of their financial resources to test its adequacy in extreme but plausible market conditions.

It is seen that stress tests are used to analyze the fragility resulting from exposure to credit and liquidity risks, mainly in the framework of the best practices. In this context, credit risk stress tests focus on whether the loss resulting from the default of financial institutions can be covered by default management resources. On the other hand, liquidity risk stress tests analyze the adequacy of only the liquid part of the default management resources.

Article 40 of Istanbul Settlement and Custody Bank Inc. Central Counterparty Regulation, which was published in the Official Gazette on 14.08.2013, states that Takasbank is to analyze the collaterals, guarantee fund contributions and capital adequacy through stress tests and to report the results of the 3-month periods to the Board of Directors and reporting to the Capital Markets Board.

Takasbank's Central Counterparty (CCP) legislation and business model has been established by taking into account the basic principles of CPMI-IOSCO (Committee on Payment and Market Infrastructures- International Organization of Securities Commission) and the European Union's (EU) EMIR (European Market Infrastructures Regulation) document (EU) numbered 648/2012 and technical standards (RTS) numbered 152/2013 and 153/2013 with respect to EMIR.

In this regard, the 29th article of the (EU) 153/2013 enforces Central Counterparty organizations to create a domestic policy framework to identify the extreme but plausible market conditions that may expose itself to the maksimum risk, in order to establish the default management resources and to test the adequacy of these resources, in case of a possible default.

The Stress Test Implementation Framework with the extreme but plausible market conditions which Takasbank will apply at a minimum to establish the default management resources and to test the adequacy of these resources is stated below.

1. A minimum confidence interval of 99.50%, 5-year historical data and holding period of 2 business days for Cash Equity, Fixed Income, Futures and Options, SWAP, Securities Lending and BİAŞ Money markets and 5 business days for OTC Derivatives market should be used in order to estimate the risk that is the source of the analysis by statistical methods.

2. In the base scenario of credit risk stress tests applied to test the adequacy of default management resources, a scenario involving the possibility of default the two market participants with the highest uncovered risks, as well as their subsidiaries and/or parent companies, should be implemented.
3. The adequacy criteria accepted in the tests, under the statistical historical base scenario, as a result of the default of the two members with the highest risk as well as their subsidiaries and/or parent companies, collateral and guarantee fund contributions deposited in advance by the members, and the capital amount allocated by our Bank, together with the in the relevant market, be at a level to meet the fund needs that will arise.
4. In describing the extreme market conditions used in the base scenario, historical scenarios based on statistical time series representing market movements that may occur under a confidence level higher than the confidence level subject to the initial margin calculation, historical event scenarios based on past crises, or hypothetical scenarios should be used.
5. Risk and the collateral should be calculated on a daily basis. This practice should be observed every end of month and every end of quarter as independent studies from each other.
6. Base scenario analyses should be supported with historical event scenarios based on the crises experienced in the past and the two market participants with the highest uncovered risks.
7. Sensitivity analysis, which examines the level of coverage of the total risk amount arising from unit change in extreme but reasonable market conditions with default management resources, should be applied.
8. Credit risk reverse stress tests should be applied under the historical base scenario and historical event scenarios regarding the extent to which the initial margin parameter should be scaled in order to meet the resource needs arising from the default of how many CCP members and to meet the default amount that will occur in case of simultaneous default of the two largest members in the market with default management resources.
9. Credit risk stress tests should be supported with liquidity stress tests that focus on the adequacy of only the liquid part of the accepted default management resources. The adequacy criteria in liquidity stress tests under the base scenario, the liquid part (the portion of CCP default management resources utilized in demand or cash placements with O/N maturity or securities accepted as collateral by the CBRT) of the collateral and guarantee fund contributions deposited in advance by the two market participants with the highest uncovered risk and the amount of capital allocated and committed by our Bank that meets the liquidity requirement should be at a level to meet the fund needs that will arise as a result of the default of two members as well as their subsidiaries or parent companies with the highest risk,
10. Base analysis of the liquidity risk stress test should be diversified also in consideration of the use of resource need that arises under historical credit risk stress scenarios, changes in the status of liquidity providers and changes likely to occur in the liquidity preference of the market.
11. The analysis performed under the liquidity risk scenario, which assumes that its members and affiliates are in default together, should also be tested on the scenario that includes the probability of default with the two member market participants with the highest uncovered risk, as well as their subsidiaries and/or parent companies.

12. In case the transaction volumes regarding the settlements made in foreign currency reach significant amounts, liquidity stress test studies should be carried out to monitor the adequacy of foreign currency assets.
13. Liquidity stress test studies performed by Takasbank in the markets where it provides Central Counterparty service should also be carried out on a daily basis and submitted to the senior management on a monthly and quarterly basis.