



Takasbank
Liquidity Risk Stress Tests
For CCP Markets
Central Counterparty Department



Agenda

- Introduction
- Takasbank- CCP Stress Tests
- Takasbank Default Management Resources
- Regulation on Stress Testing
 - Local Legislation
 - International Principles
 - CPMI-IOSCO
- Takasbank Stress Testing Model
- Takasbank- CCP Liquidity Stress Tests
- Takasbank- CCP Liquidity Stress Testing Results

Introduction

- Stress Testing, is defined as all the methods employed to evaluate the fragility of a portfolio, financial institution or the financial system under shocks and extraordinary market conditions.
- Stress tests reflect the change in market price, the shifts in the yield curve and the sudden changes that may occur in the yield and shape of this curve; the conditions whereby the assumptions made in order to measure the risk lose their validity; the extreme movements experienced in the past, the effects of the crisis likely to prevail in the past and in the future and also the analysis to be made includes all financial tools and portfolios.

Takasbank- CCP Liquidity Stress Tests

- ❑ The stress tests, in the CCP services, are used to test the adequacy of the financial resources comprising of collaterals, guarantee fund contributions and other financial resources **under extreme market conditions**.
- ❑ Stress tests are used predominantly in analyzing fragilities against credit and liquidity risks exposure.
- ❑ Credit risk-related stress testing focuses on whether the losses incurred after the default of a clearing member could be covered by with default management resources,
- ❑ Liquidity risk stress tests focus on the adequacy of only the liquid part of default management resources
- ❑ The qualification criterion used by the Takasbank (at the basis scenario) is whether “qualified default management resources” along with capital allocated and committed, if liquid, cover fund requirement stemming from the default of the member having the highest risk.
- ❑ Liquidity stress testing also takes into consideration the use of the resource needs arising under the historical credit risk stress scenarios, the changes taking place in the situations of liquidity providers and the possible swift changes in the liquidity preference in the market.

Takasbank Default Management Resources

- In case of any default in the markets to which the CCP service is provided, the resources are as follows:

1	• Initial margin of member in default
2	• Default fund contribution of the member in default
3	• Dedicated capital of Takasbank for covered risks in accordance with Article No:39
4	• Default fund contributions of non-defaulting members
5	• Commitment from remaining capital of Takasbank
6	• Additional default fund contributions of non-defaulting members

- The resources in the first 5 lines are classified as the **funded** resources which will be used immediately in case of any default and it is aimed to meet the margin requirement firstly with these resources in case of default of the largest two members with the highest exposure.
- The additional guarantee fund contribution to be requested from non-defaulted members constitute the **non-funded** default management resources.

Local Regulation on Stress Testing

- Pursuant to **Article 40** of the Central Counterparty Regulation, Takasbank is obliged to;
 - Confirm the adequacy of the collaterals in the markets to which the CCP service is provided, the guarantee fund contributions and the resources it allocates and commits from its capital through stress tests,
 - Report the stress testing results quarterly to the Board of Directors and to the Capital Markets Board.

International Regulation on Stress Testing

- In the CPMI-IOSCO's document of Principles for Financial Infrastructure Institutions,
 - Pursuant to the Principle No. 4.4, Central Counterparties,
 - Are obliged to demonstrate whether they can meet or not the possible losses with its **financial resources** in case that the **two members with the largest exposure** have defaulted **under rare but possible extraordinary stress conditions**.
 - Pursuant to the Principle No. 7.4,
 - A central counterparty is obliged to have adequate **liquid resources** to meet payment obligations with a high confidence level in case of default of a participant who will impose the CCP to **the highest amount of total payment obligations under various stress scenarios**.

Takasbank Stress Testing Model 1/5

- Stress testing is based on the **uncovered risk** amounts to which the members are exposed under extreme market conditions.
- Theoretically, in identification of extreme market conditions, *statistical time series based historical scenarios* which represent the market movements that may occur under a higher confidence level than the one employed in calculation of the initial margin and *historical event scenarios* which are based on the past crisis experience are utilized.

Takasbank Liquidity Stress Testing Model 2/5

1. Base Liquidity Scenarios:

- ☐ Base scenario covers stress conditions at 99.90% confidence level in the past 5 years' historical data with holding periods of 3 days for the Derivatives Market, 2 days for the Securities Lending Market, Borsa İstanbul Money Market and Borsa İstanbul Cash Equity.
- ☐ Related parameters are applied via the Historical Simulation Value at Risk Method.
- ☐ Liquidity stress test (base scenario), conducted on daily basis, tests whether **total resource requirement** arising under the conditions of the base credit risk stress scenario of the member with the greatest risk *against* the **qualified default management resources** (resources invested in ON or available and those are eligible for CBRT liquidity facilities)

Takasbank Liquidity Stress Testing Model 3/5



2. Historical Event Scenarios :

- Historical event scenarios are applied for Derivatives Market, Securities Lending Market and Cash Equity and scenarios covers the highest percentage changes occurred in the stock exchange index and TRY/USD exchange between 2001 February and 2008 October.
- The historical event scenarios, different from the base scenario, have been applied only to the positions as of the last days of the months in the analysis period and the **total resource requirement** arising from the default of the **first member** and **first two** with the highest risk exposure is compared with the **default management resources (Cover 1, Cover 2)**.

Takasbank Liquidity Stress Testing Model 4/5

3. Market Liquidity Scenario:

- Scenario used in the basic liquidity stress test is also applicable for this hypothetical scenario .
- **Uncovered risk exposure** is increased by **10% assuming** that liquidity providers would act worse than expected even in stressed conditions.
- It is measured whether qualified liquid assets that are explained under the basic liquidity stress test cover marginal increase in uncovered exposure under Cover 1.

Takasbank Liquidity Stress Testing Model 5/5

4. Cash Collateral Scenarios:

Since MKT members may have set up cash collateral amounts under **different compositions**, the adequacy of the amount of **qualified default management resources** under stress conditions is tested in **3 different scenarios**.

In the **first scenario** showing the current situation, the test is conducted by assuming that the qualified liquid assets are **only the cash TL** amounts that the members invested on the day of analysis.

In the **second scenario**, a test is performed assuming that **only half of the cash TL** in the first scenario is in the collateral accounts of the members.

Finally, if there is a test under the relevant market rules, the scenario in which the member has **only the minimum amount of cash TL** as collateral is performed.



Liquidity Risk Stress Tests Results 2019 Q4



Liquidity Risk Stress Testing Results

1. Base Liquidity Scenario Results: Derivatives Market

Markets (Quarter End) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
FOM (Largest Member)	267,509,934	623,769,077	191,418,210	57,264,000	121,022,000	993,473,287	371%
FOM (Largest 2 Members)	405,469,847	1,096,660,996	191,418,210	57,264,000	121,022,000	1,466,365,206	362%
Markets (During Quarter) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
FOM (Largest Member)	242,749,022	532,326,810	270,156,425	57,264,000	121,022,000	980,769,235	404%
FOM (Largest 2 Members)	326,271,735	670,247,492	270,156,425	57,264,000	121,022,000	1,118,689,917	343%

Liquidity Risk Stress Testing Results

1. Base Liquidity Scenario Results: Cash Equity Market

Markets (Quarter End) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
Equity (Largest Member)	26,143,264	17,433,721	34,524,989	12,526,000	26,474,000	90,958,710	348%
Equity (Largest 2 Members)	40,764,396	29,174,783	34,524,989	12,526,000	26,474,000	102,699,772	252%

Markets (During Quarter) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
Equity (Largest Member)	21,010,624	20,086,839	42,073,520	12,526,000	26,474,000	101,160,360	481%
Equity (Largest 2 Members)	34,152,605	38,700,872	42,073,520	12,526,000	26,474,000	119,774,392	351%

Liquidity Risk Stress Testing Results

1. Base Liquidity Scenario Results: Securities Lending

Markets (Quarter End) Base Scenario	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Securities Lending (Largest Member)	60,039,143	59,140,471	8,054,725	1,789,000	3,782,000	72,766,196	121%
Securities Lending (Largest 2 Members)	76,350,035	96,274,107	8,054,725	1,789,000	3,782,000	109,899,832	144%
Markets (During Quarter) Base Scenario	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Securities Lending (Largest Member)	43,352,691	42,820,500	7,710,071	1,789,000	3,782,000	56,101,572	129%
Securities Lending (Largest 2 Members)	60,940,862	61,757,729	7,710,071	1,789,000	3,782,000	75,038,800	123%

Liquidity Risk Stress Testing Results

1. Base Liquidity Scenario Results: Fixed Income Market

Markets (Quarter End) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Fixed Income (Largest Member)	3,252,581,443	2,352,210,605	1,015,380,915	68,001,000	143,714,000	3,579,306,520	110%
Fixed Income (Largest 2 Members)	5,123,064,745	3,803,584,831	1,015,380,915	68,001,000	143,714,000	5,030,680,746	98%

Markets (During Quarter) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Fixed Income (Largest Member)	2,905,939,317	2,304,724,030	968,363,350	68,001,000	143,714,000	3,484,802,380	120%
Fixed Income (Largest 2 Members)	4,538,065,417	3,764,140,796	968,363,350	68,001,000	143,714,000	4,944,219,146	109%

Liquidity Risk Stress Testing Results

1. Base Liquidity Scenario Results: Swap Market

Markets (Quarter End) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Fixed Income (Largest Member)	1,394,728,100	1,459,771,544	989,950,498	38,564,000	81,501,000	2,569,787,042	184%
Fixed Income (Largest 2 Members)	1,980,936,226	2,131,074,946	989,950,498	38,564,000	81,501,000	3,241,090,444	164%

Markets (During Quarter) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Fixed Income (Largest Member)	1,762,565,377	1,351,008,932	979,073,408	38,564,000	81,501,000	2,450,147,341	139%
Fixed Income (Largest 2 Members)	2,668,831,897	2,032,743,975	979,073,408	38,564,000	81,501,000	3,131,882,383	117%

Liquidity Risk Stress Testing Results

2. Historical Liquidity Scenario Results-2001 Crisis

Derivatives:

Markets (Quarter End) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
FOM (Largest Member)	311,232,389	623,769,077	191,418,210	57,264,000	121,022,000	993,473,287	319%
FOM (Largest 2 Members)	468,718,721	1,096,660,996	191,418,210	57,264,000	121,022,000	1,466,365,206	313%

Cash Equity:

Markets (Quarter End) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Equity (Largest Member)	29,966,471	17,433,721	34,524,989	12,526,000	26,474,000	90,958,710	304%
Equity (Largest 2 Members)	46,456,045	29,174,783	34,524,989	12,526,000	26,474,000	102,699,772	221%

Liquidity Risk Stress Testing Results

2. Historical Liquidity Scenario Results-2001 Crisis

Swap Market

Markets (Quarter End) Base Scenario	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Fixed Income (Largest Member)	1,401,907,005	1,459,771,544	989,950,498	38,564,000	81,501,000	2,569,787,042	183%
Fixed Income (Largest 2 Members)	1,991,132,445	2,131,074,946	989,950,498	38,564,000	81,501,000	3,241,090,444	163%

Securities Lending:

Markets (Quarter End) Base Scenario	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Securities Lending (Largest Member)	61,610,163	59,140,471	8,054,725	1,789,000	3,782,000	72,766,196	118%
Securities Lending (Largest 2 Members)	78,347,464	96,274,107	8,054,725	1,789,000	3,782,000	109,899,832	140%

Liquidity Risk Stress Testing Results

2. Historical Liquidity Scenario Results-2008 Crisis

Derivatives:

Markets (Quarter End) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recourse Requirement)
FOM (Largest Member)	272,869,795	623,769,077	191,418,210	57,264,000	121,022,000	993,473,287	364%
FOM (Largest 2 Members)	410,944,318	1,096,660,996	191,418,210	57,264,000	121,022,000	1,466,365,206	357%

Cash Equity:

Markets (Quarter End) Base Scenario	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recourse Requirement)
Equity (Largest Member)	27,227,840	17,433,721	34,524,989	12,526,000	26,474,000	90,958,710	334%
Equity (Largest 2 Members)	42,210,435	29,174,783	34,524,989	12,526,000	26,474,000	102,699,772	243%

Liquidity Risk Stress Testing Results

2. Historical Liquidity Scenario Results-2008 Crisis

Swap Market

Markets (Quarter End) Base Scenario	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Fixed Income (Largest Member)	1,107,410,677	1,459,771,544	989,950,498	38,564,000	81,501,000	2,569,787,042	232%
Fixed Income (Largest 2 Members)	1,572,858,485	2,131,074,946	989,950,498	38,564,000	81,501,000	3,241,090,444	206%

Securities Lending:

Markets (Quarter End) Base Scenario	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Securities Lending (Largest Member)	56,310,685	59,140,471	8,054,725	1,789,000	3,782,000	72,766,196	129%
Securities Lending (Largest 2 Members)	71,608,305	96,274,107	8,054,725	1,789,000	3,782,000	109,899,832	153%

Liquidity Risk Stress Testing Results

3. Market Liquidity Scenario Results

Derivatives Market

Markets (Quarter End)	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recourse Requirement)
FOM (Largest Member)	269,210,543	623,769,077	191,418,210	57,264,000	121,022,000	993,473,287	369%
FOM (Largest 2 Members)	408,290,732	1,096,660,996	191,418,210	57,264,000	121,022,000	1,466,365,206	359%

Cash Equity

Markets (Quarter End)	Recourse Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recourse Requirement)
Equity (Largest Member)	26,259,937	17,433,721	34,524,989	12,526,000	26,474,000	90,958,710	346%
Equity (Largest 2 Members)	40,968,805	29,174,783	34,524,989	12,526,000	26,474,000	102,699,772	251%

Liquidity Risk Stress Testing Results

3. Market Liquidity Scenario Results

Securities Lending Market

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
Securities Lending (Largest Member)	60,090,761	59,140,471	8,054,725	1,789,000	3,782,000	72,766,196	121%
Securities Lending (Largest 2 Members)	76,415,715	96,274,107	8,054,725	1,789,000	3,782,000	109,899,832	144%

Swap Market

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
Fixed Income (Largest Member)	1,430,887,717	1,459,771,544	989,950,498	38,564,000	81,501,000	2,569,787,042	180%
Fixed Income (Largest 2 Members)	2,032,293,832	2,131,074,946	989,950,498	38,564,000	81,501,000	3,241,090,444	159%

Fixed Income Market

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
Fixed Income (Largest Member)	3,270,026,304	2,352,210,605	1,015,380,915	68,001,000	143,714,000	3,579,306,520	109%
Fixed Income (Largest 2 Members)	5,150,542,912	3,803,584,831	1,015,380,915	68,001,000	143,714,000	5,030,680,746	98%

Liquidity Risk Stress Testing Results

4. Cash Collateral Liquidity Scenario Results: Derivatives Market

Only Cash

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
FOM (Largest Member)	267,509,934	623,769,077	191,418,210	57,264,000	121,022,000	993,473,287	371%
FOM (Largest 2 Members)	405,469,847	1,096,660,996	191,418,210	57,264,000	121,022,000	1,466,365,206	362%

Cash/2

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
FOM (Largest Member)	267,509,934	313,105,507	191,418,210	57,264,000	121,022,000	682,809,718	255%
FOM (Largest 2 Members)	405,469,847	559,805,118	191,418,210	57,264,000	121,022,000	929,509,328	229%

Minimum Cash:

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
FOM (Largest Member)	267,509,934	127,693,859	191,418,210	57,264,000	121,022,000	497,398,070	186%
FOM (Largest 2 Members)	405,469,847	211,579,738	191,418,210	57,264,000	121,022,000	581,283,948	143%

Liquidity Risk Stress Testing Results

4. Cash Collateral Liquidity Scenario Results: Equity Market

Only Cash

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
Equity (Largest Member)	26,143,264	17,433,721	34,524,989	12,526,000	26,474,000	90,958,710	348%
Equity (Largest 2 Members)	40,764,396	29,174,783	34,524,989	12,526,000	26,474,000	102,699,772	252%

Cash/2

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
Equity (Largest Member)	26,143,264	8,716,861	34,524,989	12,526,000	26,474,000	82,241,849	315%
Equity (Largest 2 Members)	40,764,396	18,114,444	34,524,989	12,526,000	26,474,000	91,639,432	225%

Minimum Cash:

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
Equity (Largest Member)	26,143,264	2,497,653	34,524,989	12,526,000	26,474,000	76,022,642	291%
Equity (Largest 2 Members)	40,764,396	10,926,135	34,524,989	12,526,000	26,474,000	84,451,123	207%

Liquidity Risk Stress Testing Results

4. Cash Collateral Liquidity Scenario Results: Securities Lending Market

Only Cash

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Securities Lending (Largest Member)	60,039,143	59,140,471	8,054,725	1,789,000	3,782,000	72,766,196	121%
Securities Lending (Largest 2 Members)	76,350,035	96,274,107	8,054,725	1,789,000	3,782,000	109,899,832	144%

Cash/2

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Securities Lending (Largest Member)	60,039,143	29,570,236	8,054,725	1,789,000	3,782,000	43,195,960	72%
Securities Lending (Largest 2 Members)	76,350,035	63,932,229	8,054,725	1,789,000	3,782,000	77,557,953	102%

Minimum Cash:

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Securities Lending (Largest Member)	60,039,143	17,856,888	8,054,725	1,789,000	3,782,000	31,482,612	52%
Securities Lending (Largest 2 Members)	76,350,035	54,298,322	8,054,725	1,789,000	3,782,000	67,924,047	89%

Liquidity Risk Stress Testing Results

4. Cash Collateral Liquidity Scenario Results: Fixed Income Market

Only Cash

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Fixed Income (Largest Member)	3,252,581,443	2,352,210,605	1,015,380,915	68,001,000	143,714,000	3,579,306,520	110%
Fixed Income (Largest 2 Members)	5,123,064,745	3,803,584,831	1,015,380,915	68,001,000	143,714,000	5,030,680,746	98%

Cash/2

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Fixed Income (Largest Member)	3,252,581,443	2,352,210,605	1,015,380,915	68,001,000	143,714,000	3,579,306,520	110%
Fixed Income (Largest 2 Members)	5,123,064,745	3,803,584,831	1,015,380,915	68,001,000	143,714,000	5,030,680,746	98%

Minimum Cash:

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Reources	(Qualified Liquid Reources/Recour ce Requirement)
Fixed Income (Largest Member)	3,252,581,443	2,352,210,605	1,015,380,915	68,001,000	143,714,000	3,579,306,520	110%
Fixed Income (Largest 2 Members)	5,123,064,745	3,803,584,831	1,015,380,915	68,001,000	143,714,000	5,030,680,746	98%

Liquidity Risk Stress Testing Results

4. Cash Collateral Liquidity Scenario Results: Swap Market

Only Cash

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
Fixed Income (Largest Member)	1,394,728,100	1,459,771,544	989,950,498	38,564,000	81,501,000	2,569,787,042	184%
Fixed Income (Largest 2 Members)	1,980,936,226	2,131,074,946	989,950,498	38,564,000	81,501,000	3,241,090,444	164%

Cash/2

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
Fixed Income (Largest Member)	1,394,728,100	1,459,771,544	989,950,498	38,564,000	81,501,000	2,569,787,042	184%
Fixed Income (Largest 2 Members)	1,980,936,226	2,131,074,946	989,950,498	38,564,000	81,501,000	3,241,090,444	164%

Minimum Cash:

Markets (Quarter End)	Reource Requirement of Largest (Two) Members Under Stress Conditions	Cash and Qualified Collateral of Largest (Two) Members	Eligible Cash and Qualified Guarantee Fund Size	Allocated Capital in Liquid Assets	Committed Capital in Liquid Assets	Total Qualified Resources	(Qualified Liquid Resources/Recour ce Requirement)
Fixed Income (Largest Member)	1,394,728,100	1,459,771,544	989,950,498	38,564,000	81,501,000	2,569,787,042	184%
Fixed Income (Largest 2 Members)	1,980,936,226	2,131,074,946	989,950,498	38,564,000	81,501,000	3,241,090,444	164%



Thanks



+ (90) 212 315 25 25



mkt@takasbank.com.tr



www.takasbank.com.tr

