JPX IR Day 2018

Response to Global CCP Regulations

Your Exchange of Choice

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Global Development of Post-crisis Regulatory Reform on CCPs

Collapse of Lehman Brothers (LB) (2008)

◎ Cleared Transactions in CCP
(Exchange and some OTC transactions)

- LB positions were identified and LB losses were estimated timely.
- LB positions were promptly liquidated according to rules without disruption.
- Losses were absorbed by only the collateral deposited by LB. (No losses incurred by other participants)

× Uncleared Transactions
(OTC transactions)

- Losses from LB collapse were difficult to estimate.
- Credit crunch as a result of ambiguity in the default management process
- Chaos and confusion in the process for liquidating LB positions

- One reason behind the financial crisis was the insufficient risk management infrastructure relative to the market size (notional principal: USD 600 tril.)
- 2009 G20 Pittsburgh Summit ⇒ **"All standardized OTC derivative contracts should be ... cleared through central counterparties by end-2012 at the latest."**

Global regulatory reform for mandatory clearing of OTC derivatives

Further concentration of credit risk at CCPs ⇒ Even more important role by CCP as an infrastructure

Strengthening of CCP's risk management function

From 2012, global regulators(*) established international standards for CCPs and other market infrastructures. **(PFMI)**

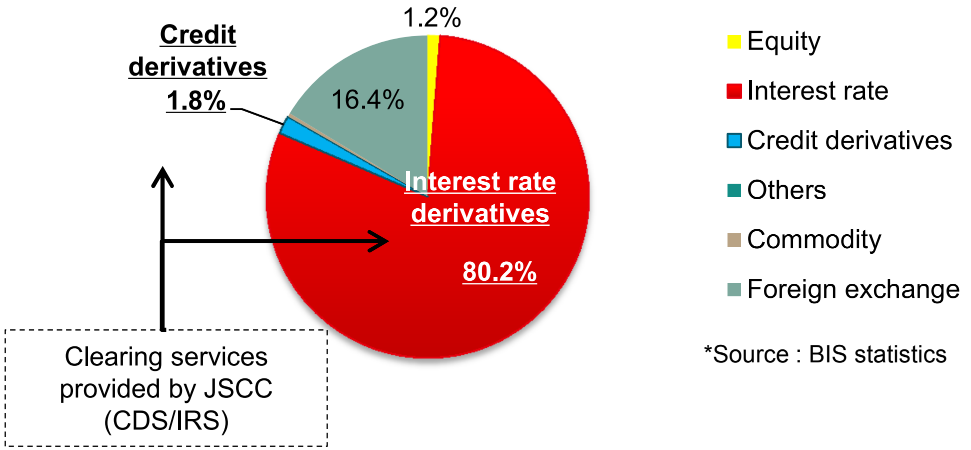
(*) CPMI-IOSCO (Committee on Payments and Market Infrastructures / International Organization of Securities Commissions): The CPMI is a committee under BIS, an international body of central banks, that promotes the efficiency and safety of settlement for financial stability, and monitors and analyses developments in arrangements both within and across jurisdictions. IOSCO is the international body that brings together the world's securities regulators. The two international bodies jointly develop standards and policies for clearing and settlement that covers financial market infrastructures.

Expansion of Clearing in CCPs(1/2)

Mandatory Clearing of OTC Derivatives in each Jurisdiction

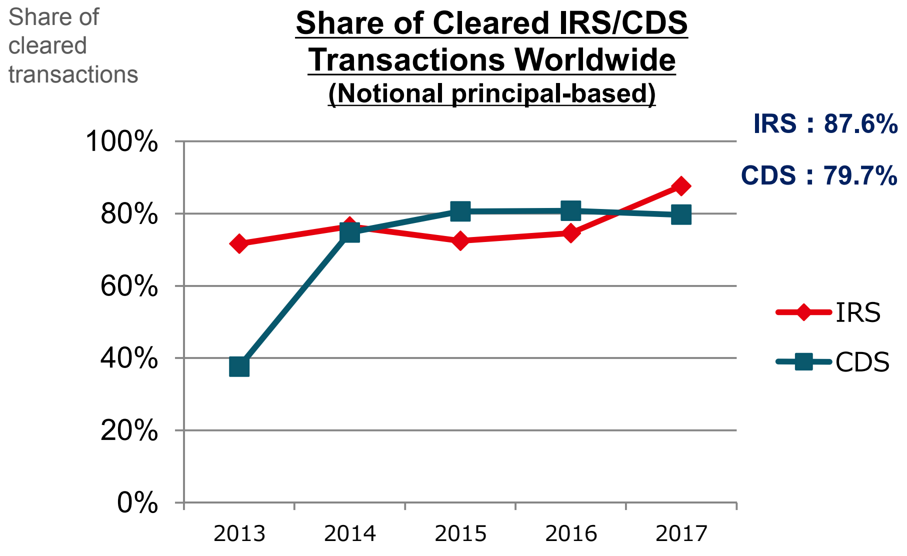
- In response to the 2009 G20 Statement, clearing was mandated for IRS, CDS, and other OTC derivatives first in Japan (2012) and the US (2013), followed by in the EU, Australia, and Hong Kong. (As one of the global currency, clearing for IRS denominated in JPY has been introduced in these countries and regions.)

Outstanding OTC Derivatives Transactions Worldwide (by product)
(As of the end of 2017)



*Source : BIS statistics

Share of Cleared IRS/CDS Transactions Worldwide
(Notional principal-based)



*Source : ISDA "Swaps Info Full Year 2017 and Fourth Quarter - 2017 Review", etc.

Uncleared Margin Rules for OTC Derivatives

- Mandatory exchange of margin for uncleared OTC derivatives, requiring the receipt/delivery of margin between counterparties, are being introduced in phases in various jurisdictions including Japan, the US, and the EU from 2016 to 2020 based on the international rules of CPMI-IOSCO.

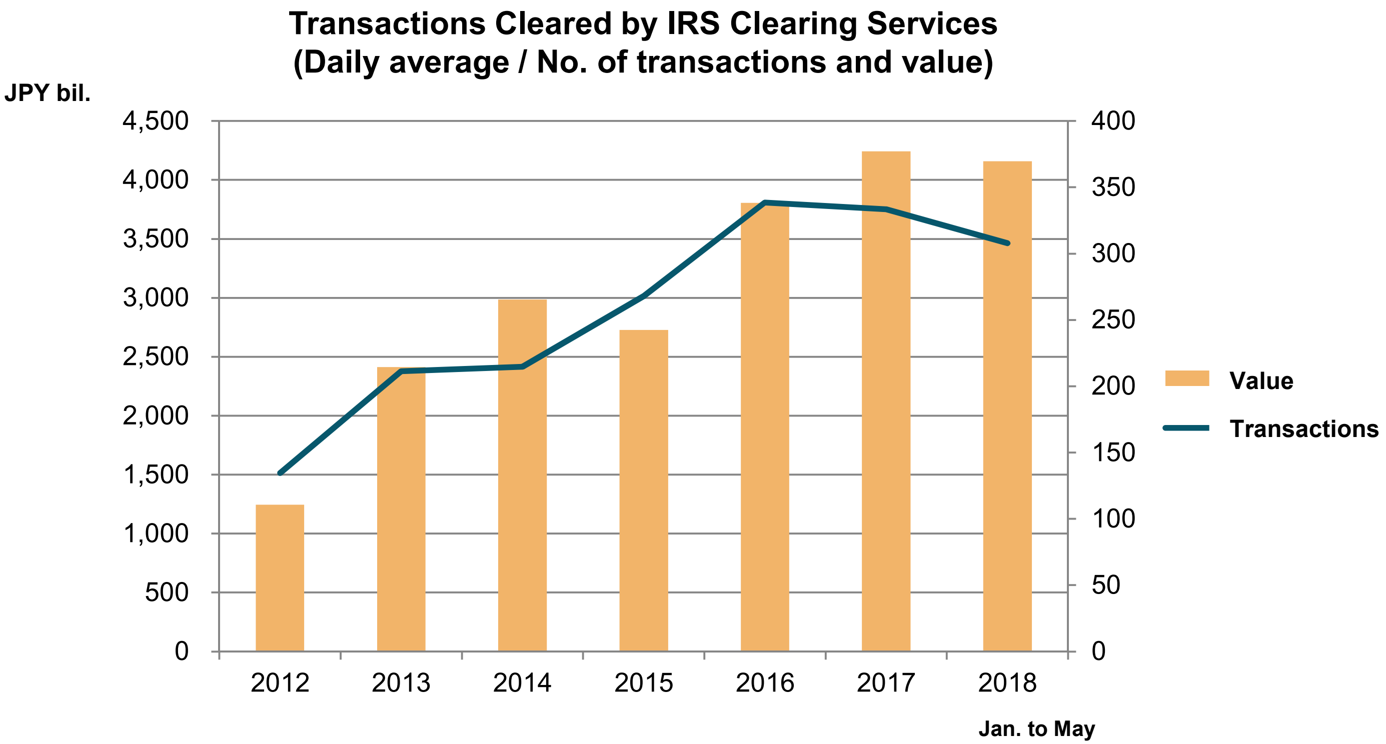
Expansion of Clearing in CCPs(2/2)

From Uncleared to Cleared under the Basel Capital Regulation

- Under Basel capital rules, capital costs for transactions between financial institutions and qualifying CCPs are lower than those for bilateral transactions.

Global Shift Toward Clearing particularly in OTC Derivatives

- JSCC launched clearing services for CDS in 2011 and IRS in 2012.
- As of the end of May 2018, JSCC had 23 IRS Clearing Participants and 10 CDS Clearing Participants.



Tighter CCP Regulations

Further Guidance on PFMI

- In 2017, CPMI-IOSCO issued further guidance on the PFMI in areas such as governance, risk management, and recovery plans for a CCP's financial resources, as a result of the assessments of implementation monitoring at regulatory authorities(*).

  * In 2014, CPMI-IOSCO assessed that Japan had introduced regulations and other measures consistent with the PFMI.

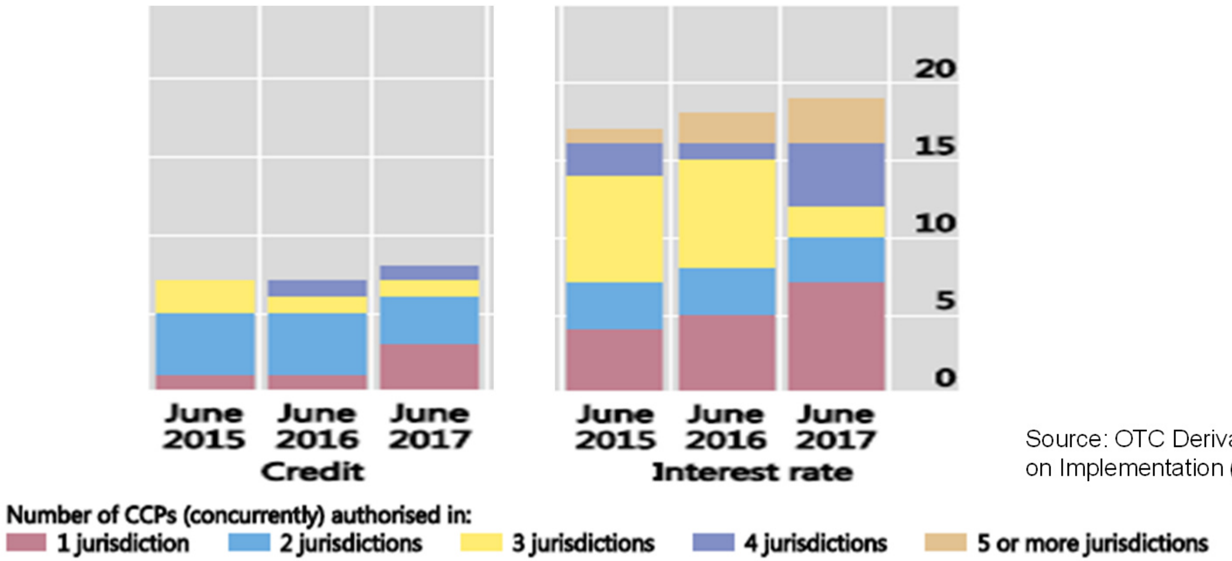
More Jurisdictions Require Foreign CCPs to Obtain Licenses in accordance with Laws and Regulations

- The majority of OTC derivatives transactions are cross-border, and involve many overseas entities as a counterparty.

  * Interest rate derivatives transactions in 2016: 66.7% for cross-border transactions (Source: BIS Statistics Explorer)

⇒ For OTC clearing services, it is crucial to make the service available for cross-border transactions.

CCPs Licensed in Multiple Jurisdictions (Credit/Interest Rate Derivatives)



Source: OTC Derivative Market Reforms, Twelfth Progress Report on Implementation (June 29, 2017, FSB)

JSCC's Initiatives

Disclosure in accordance with International Standards

- Qualitative and quantitative disclosure based on the PFMI

Secure Financial Resources based on Further Guidance on PFMI

- In the event of losses in financial resources (including CCP capital) necessary for risk management, prompt replenishment is required. JSCC will secure approx. JPY 80 bil. expected to be required for current operations (At present, there is an approx. JPY 25 bil. shortfall, and JSCC will allocate future profits to cover this shortfall.)

Further Develop Risk Management and Governance based on Further Guidance on PFMI

- JSCC has established a Risk Committee and developed and published its Risk Appetite Statement and Governance Guidelines.

Obtain Licenses in Home Jurisdictions of Clearing Participants

- Overseas clearing participants can comply with the mandatory clearing for OTC derivatives in their home jurisdictions through clearing at JSCC.
  JSCC has obtained status as a qualifying CCP in accordance with banking regulations in such jurisdictions.
  (Overseas clearing participants can use JSCC's clearing services at a low capital cost.)

Clearing Service	Total No. of Clearing Participants	Home Jurisdictions of Overseas Clearing Participants
Listed Product	115	US, EU, and HK
CDS	10	EU
IRS	23	EU, Switzerland, and HK
OTC JGB	41	EU

Regulators Jurisdictions	Overseas Licenses	Relevant Clearing Service in JSCC
CFTC (US)	DCO Exemption	IRS / CDS
ESMA (EU)	Third-country CCP	All Clearing Services
SFC (HK)	ATS/Designated CCP	IRS
ASIC/RBA (Australia)	Prescribed CCP	IRS
FINMA (Switzerland)	Foreign CCP	IRS
UK	(In progress)	All Clearing Services

As of June 25, 2018

Supplementary Information

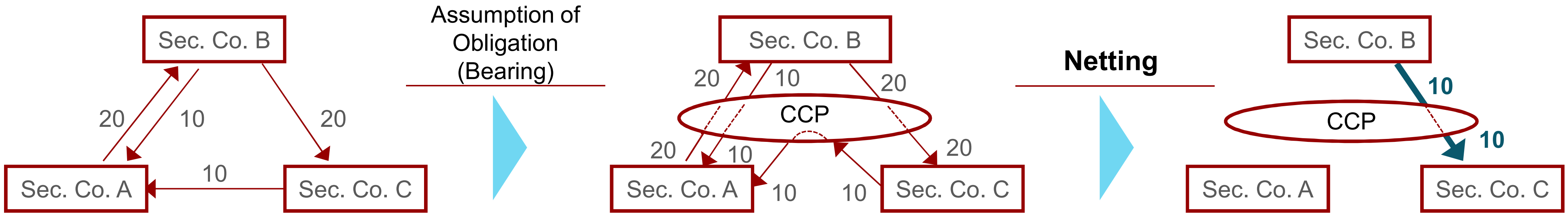
Roles of JSCC (1/2)

Clearing of Transactions

A Central Counterparty(CCP) **acts as a counterparty to the seller and the buyer of a transaction**.

Netting

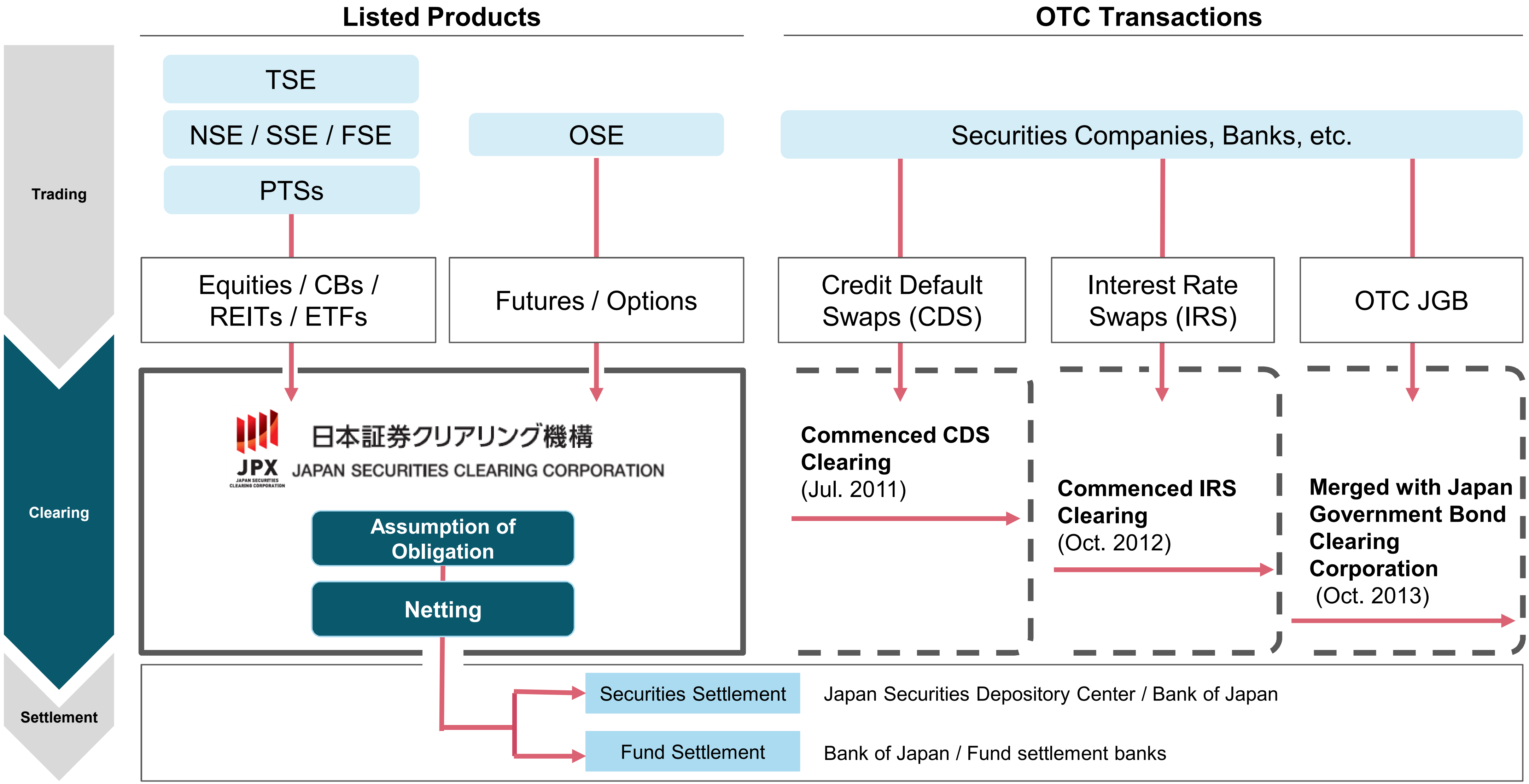
Netting allows for **reduced settlement amount** by offsetting the amounts to be paid and received to arrive at a single amount for each counterparty.



Benefits of CCP Clearing		
	Reduced Credit Risk	Removes concerns over a transaction counterparty's credit risk
	Reduced Systemic Risk	Reduces the possibility of a spillover of systemic risk from a participant default to other participants
	Improved Efficiency	Allows efficient use of securities/funds through netting Streamlines settlement operations
	Reliability in Participant Default Management	Reliable management for a participant default based on clear processes (Reliability demonstrated in handling of the past participant default)

Roles of JSCC (2/2)

- Started operations in 2003. Consolidated clearing of cash transactions for all domestic securities exchanges, which used to be conducted separately by the individual exchanges.
- In recent years, **clearing services have expanded into OTC transactions** in response to increasing awareness of the need to reduce counterparty risk resulting from financial crisis and tighter regulations.



Loss Compensation Framework

- In the event of a Clearing Participant default, JSCC will use financial resources in a predetermined order to compensate losses at JSCC. JSCC checks the sufficiency of its financial resources for loss compensation by stress testing each Clearing Participant's position daily.

(e.g.) Loss Compensation Framework for JSCC IRS Clearing Business

Prefunded Financial Resources in CCP

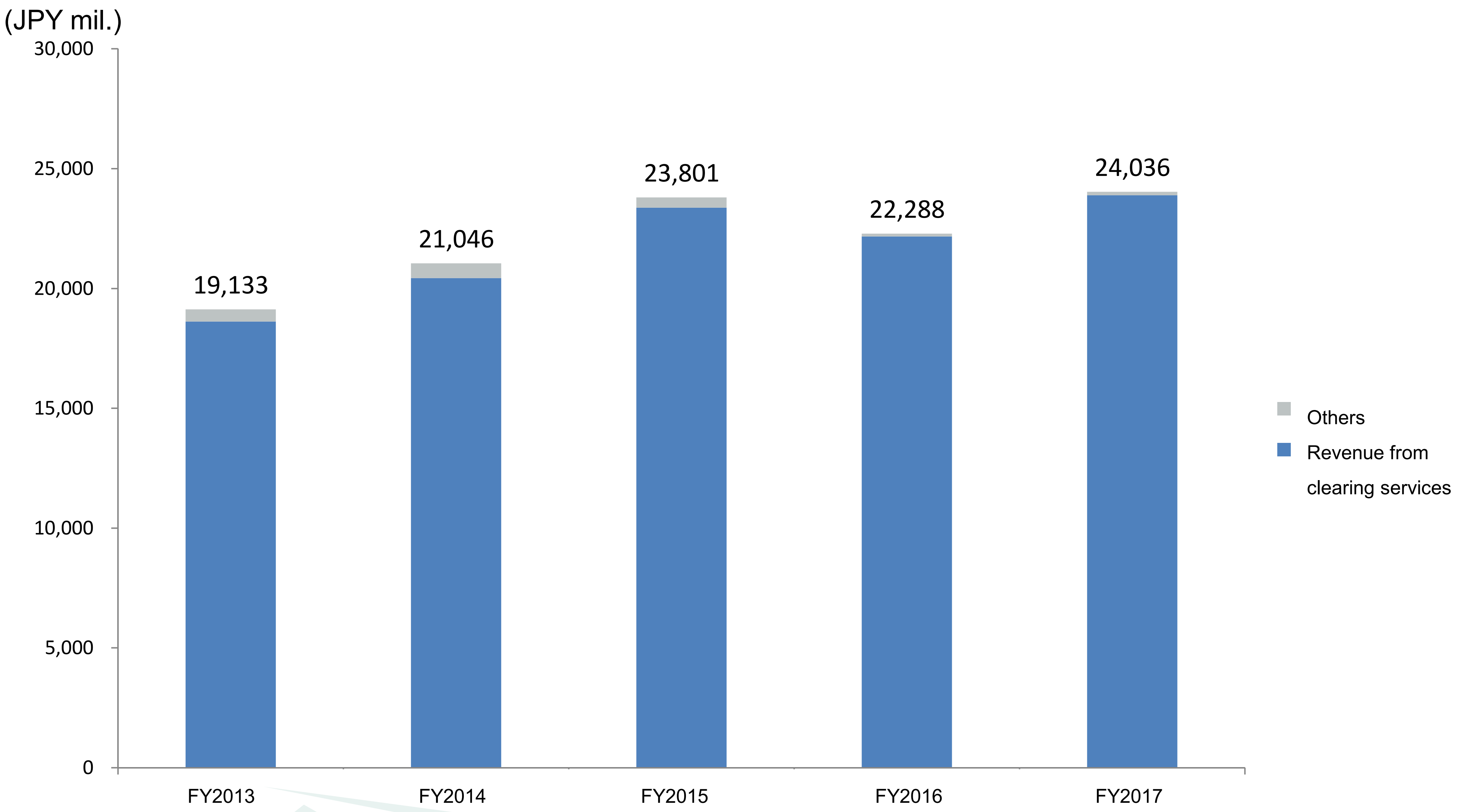
1st Tier (Defaulter Pays)	Margins and Clearing Fund deposited by the defaulting Clearing Participant
2nd Tier (Compensation by CCP)	Compensation by JSCC from its own equity capital (JPY 2 bil.)
3rd Tier (Survivors Pay)	Clearing Fund deposited by non-defaulting Clearing Participants / Compensation by JSCC from its own equity capital (JPY 2 bil.)

Losses will be compensated on a pro rata basis based on Clearing Fund requirements for each Clearing Participant and JSCC's own equity capital (JPY 2 bil.).

Assessment by CCP

4th Tier	**Special Clearing Charges** (Contributions from each of non-defaulting Clearing Participants up to the amount of the required Clearing Fund for each.)
5th Tier	**Compensation by Variation Margin Gain Haircut** (Contributions from Clearing Participants whose position value increased (i.e., Clearing Participants who should receive variation margin) after the Clearing Participant default, up to the amount of such increase in value (amount of variation margin to be received))

Operating Revenue of JSCC



Jul. 2013
Integrated clearing function of Osaka Securities Exchange

Oct. 2013
Merged with Japan Government Bond Clearing Corporation

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