

# **Guide for Central Clearing in Inter-bank Market**

Version 1.0

Note: If any inconsistency arises between the English and Chinese versions of the Guidelines, the Chinese version will prevail.

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## Foreword

Shanghai Clearing House (hereinafter referred to as SHCH) has integrated concepts, flows and specific operations associated with central clearing businesses such as Bonds, Foreign Exchange, Interest Rate Derivatives and FX Derivatives, to help market participants understand and participate in central clearing business developed by SHCH in Inter-bank market, streamline operation procedures, increase clearing efficiency and prevent operational risks. All this information comes together in *Guidelines on Central Clearing in Inter-bank Market* (hereinafter referred to as "*Guidelines*" or "*Business Guidelines*").

These *Business Guidelines* are applicable to all Inter-bank market central clearing business conducted by SHCH, including Bond Netting, Interest Rate Swap, Foreign Exchange Bilateral, Standard Bond Forward, Foreign Exchange Anonymous etc. If new central clearing businesses in Inter-bank markets are added, SHCH shall include corresponding content into these *Business Guidelines*.

Central clearing is relatively new in Inter-bank market, and the process is still being understood, familiarized and optimized. If you have any advice or suggestions, please contact SHCH any time by sending an email to [member@shclearing.com](mailto:member@shclearing.com).

## **I. Basic Concepts**

### **1.1 Clearing and Settlement**

Clearing and settlement are two major steps that are processed after financial market transactions.

#### **1.1.1 Clearing**

There are broad and narrow definitions for clearing. Broadly speaking, clearing means post-transaction processing, namely, transaction matching and confirmation, calculation on payment and delivery rights/obligations, etc., sending of settlement instructions, account settlement for claims and debts and arrival confirmation. On the other hand, a narrow definition of clearing only refers to the process for calculating claims and debts of two parties of the transaction. Clearing or clearing business mentioned in these *Guidelines* refers to the broad sense. Based on calculating methods, clearing may be divided into three types, i.e., Gross Clearing, Bilateral Netting Clearing and Multilateral Netting Clearing

#### **1.1.2 Settlement**

Settlement is the process to settle claims and debts between two parties in the transaction and confirm that payment has been received.

#### **1.1.3 Gross Clearing**

Gross Clearing means two clearing participants confirm mutual payables and receivables obligations according to trading results, and financial assets are transferred and paid in full amount based on each transaction.

#### **1.1.4 Bilateral Netting Clearing**

Bilateral Netting Clearing refers to offset debts between two clearing participants based on netting arrangement, which reduces amount and number of payments required for a series of transactions and settlements, and financial assets are transferred and paid in netting amount based on netting.

#### **1.1.5 Multilateral Netting Clearing**

Multilateral Netting Clearing refers to offset debts among multiple clearing participants based on netting arrangement, which reduces amount and number of payments required for a series of transactions and settlements, and financial assets are transferred and paid based on netting amount based on netting.

#### **1.1.6 Central Clearing**

Central Clearing refers to that clearing participants submit their transactions to SHCH, who shall be responsible for matching and confirming transaction, calculating clearing



participants' debts and claims, sending settlement instructions, and conducting account settlement for debts and claims.

For all clearing business with SHCH as a central counterparty (hereinafter referred to as "CCP"), SHCH has established risk control mechanisms such as clearing membership system and margin system, and shall be liable for performance guarantee.

For all clearing business such as the RMB Interest Rate Swap, in which SHCH explicitly acts as a central counterparty, central clearing in particular refers to central counterparty clearing.

### **1.1.7 Central Counterparty**

Central Counterparty refers to an institution who steps in two trading parties in one or more markets, acts as a seller to every buyer and a buyer to every seller, and undertakes to performance all exposed contracts.

### **1.1.8 Novation**

Novation refers to the establishment of two new contracts by CCP acting as a seller to every buyer and a buyer to every seller, and pays off initial debts of seller and buyer.

### **1.1.9 Clearing Membership System and Clearing Participants**

SHCH's CCP clearing business is conducted based on a layered clearing mechanism, which is also called Clearing Membership. The participants of CCP can be divided into clearing members (hereinafter referred to as CMs) and non-clearing members (also referred to as "clients").

CMs are categorized into direct clearing members (hereinafter referred to as DCM), general clearing members (hereinafter referred to as GCM) and special clearing members (hereinafter referred to as SCM). DCMs only conduct central clearing for proprietary transactions while GCMs conduct both proprietary transactions and client transactions. SCMs are other clearing members approved by SHCH to participate in central clearing. CMs need to sign *CCP Clearing Agreement* (hereinafter referred to as "*Clearing Agreement*") with SHCH.

Non-clearing members do not have qualification of CMs, and need to participant in CCP clearing through GCMs, sign *Client Clearing Agreement* with GCMs, and register records to SHCH.

### **1.1.10 Agreements and Rules**

*Clearing Agreements* are legal documents signed between SHCH and their CMs, to specify CMs' qualifications and obligations, and rights of two parties with regard to one or more CCP clearing business. Market participants should sign *Clearing Agreements* when applying for CMs. If member's name changes, market participants shall sign a new

*Clearing Agreements*, or notify SHCH of the change in a manner recognized by SHCH, and continue to perform all rights and obligations under all signed agreements.

*Client Clearing Agreement* refers to a legal document signed between GCM and its client, to specify rights and obligations of two parties when GCM's client participates in CCP clearing business. The *Agreement* shall contain all essential terms and conditions drawn up by SHCH. Before GCM's client participates in the CCP clearing business, GCM shall file *Client Clearing Agreement* signed with its client with SHCH.

Business rules are documents developed according to national laws and regulations and department rules and regulations, approved by competent authorities, and observed by all central clearing participants, to standardize the central clearing business in SHCH, control clearing risks, improve clearing efficiency, protect legal rights of participants, and ensure stability of OTC derivatives market.

## **1.2 Risk Management**

The risk management framework of SHCH consists of Risk Management Committee, layered clearing member system, margin, default fund, mark-to-market, back testing and stress testing, risk reserve and default management, etc. It provides an effective system guarantee to measure, monitor and manage potential risks, to ensure that risk reserve resources are sufficient under normal and extreme market conditions to maintain a sound and stable OTC market.

### **1.2.1 Risk Management Committee**

Risk Management Committee comprises professionals from SHCH and experts from competent authorities, academic community and market institutions. The committee is responsible for reviewing and approving all significant rules and mythologies regarding risk management.

### **1.2.2 Margin Fund**

Margin refers to cash or deliverable securities paid by CMs to SHCH, used to compensate losses incurred by SHCH due to default and violation of rules by such members. There are three types of margins - initial margin, variation margin and special margin.

**Initial margin** is collateral provided by clearing members in advance, based on SHCH's requirements.

**Collaterals** are deliverable securities that may be used to meet initial margin requirement, subject to SHCH's regulations.

**Variation margin** refers to cash collateral provided by clearing members based on SHCH's requirements, and is determined according to risk monitoring results.

**Mark-to-market profits and losses** are profits or losses calculated based on daily mark-to-market valuation of portfolios among clearing participants.

**Special margin** refers to SHCH's additional margin required during special circumstances such as abnormal fluctuations of intra-day market prices and long-holiday adjustment. This is used to offset risks that are not covered by initial margin and variation margin.

**Margin requirement** refers to the amount of margin that clearing members must pay when participating in central clearing. CMs should furnish it with margin in a full and timely manner according to SHCH's requirement. GCMs should require their clients to pay margins in a full and timely manner. Margin requirement established by GCMs for their clients shall not be lower than that established by SHCH for GCMs.

### **1.2.3 Clearing Limit**

Clearing Limit acts as a risk parameter to measure a clearing participant's risk exposure limit, margin requirement and default fund. CMs should calculate their own limits and apply to SHCH for registration or adjustment. SHCH has the right to adjust clearing limits for CMs based on actual circumstances.

For GCMs, clearing limits for proprietary transactions and client transactions are calculated and used separately. GCMs should report clients' clearing limits to SHCH.

### **1.2.4 Risk Exposure**

Given certain loss distribution assumptions, risk exposure is the largest potential loss that can result from clearing participants' position portfolio under a certain confidence level, calculated in both historical and reserved scenarios within certain liquidation period.

### **1.2.5 Tolerance**

Tolerance refers to maximum amount or ratio tolerated by SHCH for real-time margin shortfall from CMs. Margin shortfall equals to Margin Requirement minus Effective Margin Balance. There are different tolerance levels for proprietary transactions and client transactions.

### **1.2.6 Default Fund**

Default fund is a cash asset provided by clearing members when participating in CCP clearing. It is an important component of risk reserve used to cover loss resulting from margin asset deficiency of defaulting CMs during a default management process under extreme but plausible scenarios.

The total amount of default fund collected by SHCH is determined by the stress testing, which calculates the largest uncovered loss generated by the default of two CMs at the same time under different stress scenarios. For each stress scenario, such uncovered loss

is equal to the difference between total stress loss of the two largest CMs and the total margin balance of these two. The stress testing result is the largest uncovered loss calculated under different scenarios. Total default fund is allocated to all CMs based on daily risk exposure scale or each CM's clearing limit.

SHCH pays default fund interest to each CM based on fixed deposit benchmark interest rate issued by People's Bank of China on a quarterly basis.

### **1.2.7 Risk Reserve Fund**

Risk reserve is special fund withdrew by SHCH from its main business revenue based on a certain ratio. It is used to cover losses incurred due to CM default as well as losses related to clearing activities conducted by SHCH.

## **1.3 Account Management**

### **1.3.1 Settlement Account**

Cash Settlement Accounts are RMB cash settlement accounts and FX cash settlement accounts designated or established by CMs in order to participate in central clearing and used to conduct cash settlements involved in central clearing. When applying for participation in central clearing, CMs shall authorize SHCH to conduct direct debit or credit via the designated cash settlement accounts.

RMB cash settlement account could be either a clearing account opened at PBC's High Value Payment System (hereinafter referred to as HVPS), or a cash settlement account opened in SHCH. CMs may designate one RMB cash settlement account for several central clearing business.

CMs shall conduct cash settlement on foreign currency through FX settlement banks designated by SHCH. Both SHCH and CMs should establish FX cash settlement accounts in FX settlement banks.

### **1.3.2 Bond Account**

Bond settlement and offsetting margin with bonds among clearing participants associated with central clearing business, are conducted through real-name bond accounts of participants. Specifically, bond settlements and offsetting margin with bonds for proprietary transactions shall be directly conducted through corresponding CM's bond account, and bond settlements and offsetting margin with bonds conducted by GCM on behalf of its clients are conducted via clients' own bond account.

### **1.3.3 Margin Account**

This account is used to manage and settle margins deposited by CMs for proprietary transactions or client transactions. SHCH shall establish one house clearing margin account for each CM, and additionally, one client margin account for the same business

for each GCM. This helps ensure house clearing margin and client clearing margin separately managed.

#### **1.3.4 Client's Margin Ledger**

This refers to client's margin details for client margin account of GCMs recorded by SHCH (hereinafter referred to as "margin ledger"). The client owns the margin which is provided for GCM, and only used to fulfill liabilities and defaults generated from central clearing. GCMs should separate margin submitted by clients from their own assets, and shall not use client's margin for other purposes.

## **II. Management of Clearing Participants**

The central clearing business of SHCH adopts a clearing membership system. Central clearing participants include Direct Clearing Members (DCM), General Clearing Members (GCM), Special Clearing Members (SCM) and Non-Clearing Members (or clients). This Chapter deals with application and modification procedures related to clearing membership and business type. In order to participate in the central clearing service as a clearing member, steps are detailed as below: applying for SHCH clearing membership; signing *Clearing Agreement*; submitting copies of *Client Clearing Agreement* to SHCH for filing (applicable to GCMs); designating or opening relevant accounts; applying for clearing limit; depositing initial margin and default funds for both proprietary transactions and client transactions in full; paying clearing membership fees; receiving training and obtaining related training certificates for staff members engaged in proprietary and client transactions.

### **2.1 Application for Direct Clearing Membership and Central clearing Participation**

#### **2.1.1 First-time Application for Direct Clearing Membership and Central Clearing Participation**

First-time applicants who meet the requirements of SHCH may apply for Direct Clearing Membership of SHCH, and apply for one or several central clearing services. To meet basic criteria, an applicant must:

- (1) be a legally registered legal entity or other entity;
- (2) meet the standards set by SHCH with respect to net assets (net capital for securities companies) over the last two financial years;
- (3) meet internal rating standards set by SHCH for clearing service participation;
- (4) possess relevant rules and regulations on business management and risk management and technical systems to support clearing (proprietary transactions) operations;
- (5) obtain relevant business operation qualifications;
- (6) have at least three staffs engaged in proprietary clearing who have obtained training certificates issued by SHCH;
- (7) comply with relevant rules stipulated by regulators, without any record of violation of laws or regulations for two years prior to application, and without any record of major default with respect to risk management;
- (8) Have fairly sustainable operation capability, without any record of close-down, custody, take-over, reorganization, or other events that may affect sustainable operation capability by administrative, judicial or regulatory agencies.

An applicant shall submit the following documents:

- A. *Application Letter for Direct Clearing Membership of Shanghai Clearing House*;
- B. *Basic Information Form for Clearing Member of Shanghai Clearing House*;
- C. copies of *Business License of Enterprise Legal Person* after latest renewal (applicable to domestic institutions);
- D. copies of *Organization Code Certificate* (applicable to domestic institutions);
- E. copies of *Institution Legal Person Certificate* (applicable to domestic institutions);
- F. documents for proof of institution legal person status (applicable to foreign institutions);
- G. copies of documents approving relevant business operations;
- H. audited financial statements for the most recent two financial years;
- I. *Application Form for Central Clearing Service of Shanghai Clearing House*;
- J. Signature card for central clearing service in SHCH;
- K. *Clearing Agreement* signed by applicant (in quadruplicate);
- L. *Letter of Authorization by Legal Representative* and documents for proof of authorized person's identity;
- M. Other supplementary documents required by SHCH.

All the above-mentioned documents shall be affixed with official seal or signed by authorized person, and *Clearing Agreement* shall be affixed with legal person's seal. SHCH may notify the applicant to provide further information when it is necessary. After receiving complete application documents, SHCH shall review and reply in a timely manner.

### **2.1.2 Application for Additional Services by Direct Clearing Members**

DCMs may directly apply to SHCH for participating in new central clearing services. Documents to be submitted include:

- A. *Application Form for Central Clearing Service of Shanghai Clearing House*;
- B. Signature card (where applicable);
- C. *Letter of Authorization by Legal Representative* and documents for proof of authorized person's identity;
- D. Other supplementary documents required by SHCH.

All the above-mentioned documents shall be affixed with official seal or signed by authorized person. After receiving complete application documents, SHCH shall review and reply within 30 business days.

As a result of new clearing service participation, if the status of a DCM changes, SHCH shall notify the clearing member of adjusting membership and membership fee.

## **2.2 Application for General Clearing Membership and Central Clearing Participation**

### **2.2.1 Application for Product-based General Clearing Membership and Central Clearing Participation**

CMs meeting the requirements of SHCH may apply for product-based General Clearing Membership of one or multiple clearing services. To meet basic criteria, an applicant must:

- (1) be an A-class DCM of SHCH prior to the application;
- (2) Have a minimum net assets (net capital for securities companies) of RMB 10 billion for the last two financial years ;in cases where net assets (or net capital) requirement is not met but guarantees satisfying certain conditions are provided by the applicant, it shall be deemed as that the net assets (net capital for securities companies) requirement is met (where applicable);
- (3) be high-ranking in terms of scale for applied business;
- (4) meet internal rating standards set by SHCH for product-based General Clearing Membership;
- (5) establish relevant rules and regulations of business management and risk management, and technical systems to support clearing of client transactions;
- (6) Obtain relevant business operation qualifications
- (7) Have an independent team for clearing of client transactions with at least four client clearing staff members with training certificates issued by SHCH;

First-time applicants for product-based General Clearing Membership shall submit the following documents:

*A.Application Letter for Product-based General Clearing Membership of Shanghai Clearing House;*

*B.Copies of documents approving relevant business operations, affixed with official seal or signed by authorized person;*

*C.Application Form for Client Central Clearing Service of Shanghai Clearing House;*



- D. Signature card for client clearing services of the General Clearing Members;
- E. *Clearing Agreement* signed by the applicant (in quadruplicate);
- F. *Letter of Authorization by Legal Representative* and documents for proof of authorized person's identity;
- G. Other supplementary documents required by SHCH.

SHCH may notify the applicant to provide further information when it is necessary. When applying for another client clearing service, a product-based GCM is required to submit the same documents as mentioned above, except for *Clearing Agreement*.

### **2.2.2 Application for SHCH General Clearing Membership and Central Clearing Participation**

Clearing members who satisfy the requirements of SHCH may apply for SHCH General Clearing Membership. Applicants for General Clearing Membership must:

- (1) be a product-based GCM prior to the application;
- (2) have a minimum net assets of RMB 20 billion for the last two financial years for banking institutions; have minimum net assets of RMB 10 billion for the last two financial years for non-banking financial institutions;
- (3) Meet internal rating standards set by SHCH for General Clearing Membership.
- (4) Other conditions required by SHCH.

For more information about materials required for SHCH General Clearing Member application, please contact Member Services Department of SHCH via email (member@shclearing.com).

When applying for new client clearing services, GCMs are required to submit the same documents as first-time product-based General Clearing applicants, except *Clearing Agreement* and *Application Letter for General Clearing Membership of Shanghai Clearing House*.

### **2.3 Application for Service Participation by Clients**

Clients can appoint GCMs to act as their clearing agents. GCMs shall sign *Client Clearing Agreement* with a client, and submit the above agreement and *Client Information Form for Client Central Clearing Service* to SHCH for filing before the client conducts corresponding businesses. If the client is engaged in unincorporated products, the GCM shall sign *Client Clearing Agreement* with the administrator of such

unincorporated products<sup>1</sup>, attached with a catalog stating specific products. When new products are added, updated catalog shall be submitted to SHCH for filing.

Clients may participate in central clearing service by choosing one or more GCMs and signing *Client Clearing Agreement* with each of these GCMs. After submitting transactions for central clearing, clients may log in to the client-terminal to choose one GCM who has passed compliance checks for each transaction. If a client chooses multiple GCMs, the client must define one default GCM. If transactions are not allocated to a GCM intra-day, the clearing system shall take the default GCM as the agent for settling all unallocated transactions. After a client chooses multiple GCMs, clients may modify default GCM on client-terminal in daytime. When applying for one-to-multiple relationship for the first time, clients are required to submit *Filing Form of Information (Change) about Non-clearing Member's client-terminal Administrator*.

The list of GCMs is available on SHCH official website via the following path: homepage>> member services>> clearing members>> name list of clearing members.

## **2.4 Information Changes of Central Clearing Participants**

### **2.4.1 Information Changes of Clearing Members**

In cases where changes of the CMs (including DCMs and GCMs) take place in terms of qualifications such as reorganization, restructuring, spin-off and merger, or in terms of basic information such as institution name, legal representative, shareholders, registered capital and business staff members, or where events happen that may affect the CCP clearing services in which CMs participate, such as legal disputes, commercial cases and administrative penalties, the CM shall, within 5 business days after the above-mentioned changes or events take place, complete *Registration Form for Shanghai Clearing House Clearing Member Information Change*, affix effective seal<sup>2</sup>, and submit a scanned copy to SHCH Member Services Department for filing.

In cases where basic information of clearing business is changed, the CM shall complete *Registration Form for Shanghai Clearing House Clearing Member Information Change* before official change, and state effective date of such change. When a new product is included into clearing business by the CM, SHCH shall review application within 20 business days and notify the CM in written form.

In cases where information of Client Administrator is changed, the CM shall complete *Registration Form for Shanghai Clearing House Clearing Member Information Change*,

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<sup>1</sup> Unincorporated products include but are not limited to trust, fund, corporate pension funds, wealth management products of banks, asset management plans of securities companies, specific client asset management plans of mutual funds and their subsidiaries, asset management products of insurance asset management companies.

<sup>2</sup> Effective seal refers to seal left with SHCH by clearing participants or official seal of the legal person.

affix effective seal before official change, and submit a scanned copy to SHCH Member Services Department.

In cases where clearing limit is changed, the CM shall complete *Registration Form for Shanghai Clearing House Clearing Member Information Change*, affix effective seal before official change and submit a scanned copy to SHCH Member Services Department.

In cases where signature card is changed, the CM shall complete *Signature Card for Central Clearing of Shanghai Clearing House* (applicable to DCMs) or *Signature Card for Client Clearing Service of Shanghai Clearing House* (applicable to GCMs), affix effective seal and submit a scanned copy to SHCH Member Services Department.

Forms related to CM information change are available on SHCH official website via the following path: homepage>>member services>>clearing members>>guidelines on application for clearing membership>>related forms, or accessible via email to SHCH Member Services Department (member@shclearing.com).

## **2.4.2 Changes in Client Information**

In cases where changes of the client take place in terms of qualifications such as reorganization, restructuring, spin-off and merger, or in terms of basic information such as institution name, legal representative, shareholders, registered capital and business staff members, or in terms of information related to clearing business, the client shall apply for information change to its GCM who acts as its clearing agent. If the GCM accepts such application made by this client, the GCM shall then fill in *Registration (Filing) Form for Client Information (Change)* and submit it to SHCH Member Services Department.

A client can change its GCM at its own discretion. If the client changes its GCM, it shall settle liabilities and claims with its former GCM. In this case, the former GCM shall submit *Registration (Filing) Form for Client Information (Change)* to SHCH 3 business days prior to effective date of client clearing termination. The newly-chosen GCM shall submit *Client Clearing Agreement* signed with the client and *Registration (Filing) Form for Client Information (Change)* to SHCH before effective date of new relationship, and ensure SHCH receives initial margin deposited by the client. SHCH shall complete client clearing relationship change for clients after receiving relevant materials.

## **2.5 Termination of Central Clearing Service Membership**

### **2.5.1 Termination of Clearing Member Service and Membership**

#### **2.5.1.1 Termination of Clearing Member Service**

CMs may apply for resigning one or more clearing services voluntarily. In the event of applying for resigning clearing service, the CM shall submit *Application Form for*

*Resigning Clearing Service of Shanghai Clearing House* to SHCH, and ensure that there are no liabilities and claims related to this service with SHCH. After receiving *Application Form* and confirming that all claims and debts with the CM have been settled and cleared, SHCH shall approve the resigning application and complete relevant procedures. If the CM does not settle all of its debts, SHCH is entitled to recover losses from such CM, pursuant to relevant terms and conditions made and signed between both parties.

In cases where the CM applies for terminating clearing service qualification, total default fund payable for such service (including default fund payable and replenished default fund payable, where the latter is not higher than the former) provided by the CM shall remain the same from the 10<sup>th</sup> business day after SHCH receives written *Application Form* till qualification termination date.

Clearing service qualification of the CM shall be invalid since the termination date. CM may apply to SHCH for returning margin balance and remaining default fund (including accrued interest) pursuant to relevant provisions in *SHCH Administration Principles on Margin* and *Administration Principles of SHCH on Default Fund and Risk Reserve*.

For a CM, the termination of one service qualification shall not affect the validity of its other existing qualifications. SHCH shall adjust the type of clearing membership based on *SHCH Administration Principles on Clearing Membership*.

#### **2.5.1.2 Termination of Clearing Membership**

If a CM applies for resigning all central clearing services, it shall apply for termination of clearing membership. For this, the CM shall submit *Application Letter for Clearing Membership Termination* with official seal or signed by authorized person to SHCH. SHCH shall complete clearing membership termination procedures and publish a public notice based on *SHCH Administration Principles on Clearing Membership*.

Clearing membership shall become invalid from the date of termination.

#### **2.5.2 Termination of Client Clearing Service**

A client is entitled to apply to its agent, which is a GCM of SHCH, for resigning clearing service. After approving the resigning application and confirming that all liabilities associated with relevant clearing service are settled with SHCH, the GCM shall submit *Registration (Filing) Form for Client Information (Change)* to SHCH.

The GCM, as an agent, is entitled to terminate service qualification of its clients, and needs to file the termination with SHCH.

### **2.6 Termination of Qualifications by SHCH due to Violation of Rules**

In the event of any rating downgrade, close-down, rectification, take-over, dissolution, liquidation and bankruptcy of CMs, or CMs major violation of *SHCH Administration*

*Principles on Clearing Membership* and relevant rules (including but not limited to business rules, business guidance, operation procedures, measures, notices, announcements and guidance, etc.), SHCH is entitled to restrict, suspend or cancel members' qualification for participating in relevant clearing services. In some serious circumstances, SHCH can directly terminate clearing membership. In cases where SHCH decides to terminate clearing membership, SHCH shall complete termination procedures and claim unsettled liabilities and related unpaid fees.

Clearing membership shall become invalid from the date of termination.

## **2.7 Business Preparation**

### **2.7.1 Signing of Clearing Agreement**

| Market Participant Type | Direct Clearing Member    | General Clearing Member   | Client   |
|-------------------------|---------------------------|---------------------------|--|
| Name of Agreement       | <i>Clearing Agreement</i> | <i>Clearing Agreement</i> | Signing <i>Client Clearing Agreement</i> with GCM and the GCM shall file such <i>Client Clearing Agreement</i> with SHCH |

### **2.7.2 Designating or Opening Account**

#### **2.7.2.1 Cash Settlement Account**

A CM shall designate or open a RMB settlement account to settle RMB for central clearing business, and conduct FX settlement through FX settlement banks designated by SHCH.

#### **2.7.2.2 Margin Account**

Margin account is used for the management and calculation of margin deposited by CMs for proprietary transactions or client transactions. After account-opening, SHCH shall notify the CMs of Margin Account Opening within one business day.

### **2.7.3 Application for Clearing Limit**

#### **2.7.3.1 Application for and Adjustment of Clearing Member's Clearing Limit**

CMs shall calculate clearing limit for proprietary transactions or client transactions and apply to SHCH. When applying for clearing limit for such two clearing services, i.e., proprietary clearing business and client clearing business, the CM shall submit *Application Form for Central Clearing Service of Shanghai Clearing House* or *Application Form for Client Central Clearing Service of Shanghai Clearing House* to SHCH, specifying details of clearing limit, which include but is not limited to, basic status of relevant business conducted by the CM, basis for such clearing limit, etc.

After receiving clearing limit application from the CM, SHCH shall review and determine the clearing limit by assessing the business scale, financial and credit conditions of the CM, and reply with the assessment result in a timely manner. The clearing limit once approved shall become effective from the next business day.

CM may apply for increasing or decreasing clearing limit based on its own business conditions. In this case, the CM shall submit written application to SHCH and state relevant information about such adjustment. After receiving application for adjusting clearing limit, SHCH shall reply with evaluated result in a timely manner. The adjusted clearing limit once approved shall become effective from the next business day.

SHCH is entitled to adjust clearing limit of any CM on a regular or irregular basis according to actual business conditions. In this case, SHCH shall send notice to the CM 5 business days prior to official adjustment.

#### **2.7.3.2 Application for and Adjustment of Clients' Clearing Limit**

GCMs shall submit *Information Form for Client Clearing Business* to SHCH, to register clearing limit of their clients with SHCH. Registration shall be valid if application documents of the client for certain clearing business are complete, and preparations for such business are finished. Effective registered clearing limit shall take effect from either the next business day of registration or the effective date of institution registration, whichever comes later.

In cases where a client's clearing limit is to be adjusted, the GCM shall submit *Registration (Filing) Form of Client Information (Change)* to register the limit adjustment. Registration shall be valid if all necessary contents in the Form are complete and the new clearing limit complies with risk control requirements. Effective registered clearing limit shall become effective from either the next business day of registration or effective date of institution registration, whichever comes later.

SHCH is entitled to adjust clearing limit of any client on a regular or irregular basis according to actual business conditions. In this case, SHCH shall send notice to the corresponding GCMs.

#### **2.7.4 Depositing Margin Fund and Default Fund**

Before commencing central clearing service, CMs shall deposit margin and default fund in full and promptly according to the rules of SHCH. GCMs shall require their clients to deposit margin in full and promptly. The margins provided by the clients to GCMs belong to the clients, and shall only be used to settle claims and debts as well as defaults generated from central clearing businesses. GCMs shall segregate margin paid by clients from their own assets, and shall not use clients' margin for other purposes.

CMs shall directly transfer default fund in full to Default Fund Account designated by SHCH within 10 business days after receiving notice on default fund payment or adjustment. Upon receiving the fund, SHCH shall send receipt notice to the CM.

During the period that SHCH handles any CM's default, SHCH shall not adjust total default fund payable (including default fund payable and replenished default fund payable) and proportion of default fund payable for non-defaulting CM. Total default fund payable and proportion of default fund payable for non-defaulting CMs shall be determined based on the standard 1 business day before the default of the first defaulting CM. Within 90 calendar days (including 90 calendar days), the upper limit of replenished default fund for certain business shall be the total payable default fund for such business, determined in accordance with the above standard.

#### **2.7.5 Training**

CMs shall arrange relevant clearing staff members to attend business training organized by SHCH in a timely manner. Only clearing staff members and relevant business staff who have received business training and obtained training certificates issued by SHCH shall be allowed to conduct relevant businesses.

### III. Central Clearing Procedures

To help clearing participants understand CCP clearing, SHCH has summarized some of the regulations and key operation points of various central clearing services into tables (refer to appendix).

#### 3.1 Main Business Procedures

##### 3.1.1 Receiving Transaction Data

SHCH's clearing system receives transaction data from China Foreign Exchange Trade System and National Inter-bank Funding Center (hereinafter referred to as CFETS) or other reliable data sources approved by SHCH in a real time manner or in batches. Transaction data for netting or central clearing shall be sent to SHCH.

##### 3.1.2 Intraday Clearing Process

Intraday clearing process includes: element compliance check, client clearing confirmation, risk management compliance check and risk monitoring, etc.

**Element compliance check.** SHCH conducts real-time elements compliance check on transaction data submitted for central clearing: The first check item is whether both trading parties have clearing participant qualifications; the second check item is whether transaction data comply with requirements of central clearing products. After passing above checks, transaction data shall enter subsequent process. In dealing with data which failed to pass element compliance check, specific reason for such failure shall be indicated in the remark column of transaction data through SHCH client-terminal for CMs' inquiry.

**Client clearing confirmation.** This means GCM shall confirm if it will offer clearing service for its client's transaction. GCM will be liable for performance and guarantee for transactions which have passed client clearing confirmation. If both parties for one transaction are the clients of the same GCM, then the GCM shall confirm both parties for the same transaction to client clearing confirmation.

**Risk management compliance check.** This step evaluates if transactions to-be-checked lead to exceeding clearing limit, tolerance or other risk conditions of CMs or clients. Based on check results, SHCH's clearing system will take corresponding subsequent action.

**Clearing status.** CMs may query clearing status of transaction data through SHCH client-terminal in a real time manner. Clearing statuses are mainly categorized as below:

(1) Transactions under check: Clearing system has received transaction data and compliance check has not been completed.



(2) Transactions entering into netting: Transactions have passed both element compliance check and risk management compliance check.

(3) Transactions check failed: Transaction data have not passed compliance check until the service cut-off time point.

After the transaction has passed both element compliance check and risk management compliance check, and after GCM has completed client clearing confirmation, SHCH shall step in as the CCP and assume obligations and rights of cash clearing/settlement for both transaction parties, and *Clearing Agreement* shall be applied to this case. This transaction will then become irrevocable and unchangeable, and transaction data will be netted.

**Risk monitoring.** SHCH shall continuously monitor risks of clearing data which are enrolled into central clearing and within duration. Monitoring range will include clearing participants' position, mark-to-market profit and loss and concentration level, etc. SHCH has the right to take measures such as risk warning and margin call on clearing participants as per real-time monitoring conditions and specific business requirements.

### 3.1.3 End-day Clearing Process

Day-end clearing process includes: netting and generation of clearing reports, such as margin reports and settlement reports.

**Margin reports.** Margin reports include day-end margin reports and intraday margin reports which are effective certificates for SHCH and clearing participants to deposit and withdraw margins and can be downloaded in PDF or EXCEL formats. Day-end margin report is generated once on every working day. Clearing participants should deposit and withdraw margins within stipulated time. If intraday market price fluctuates abnormally or in the case of consecutive holidays, SHCH has the right to recalculate special margin in a real time manner and send intraday margin reports to clearing participants. Intraday margin reports can be generated many times within one day. Clearing participants should deposit required margins before stipulated time.

**Settlement reports.** SHCH calculates cash and bond payable and receivable, and bonds collateralizable/releasable of each CM, and generates settlement reports according to netting results. Settlement reports are effective certificates for SHCH and CMs to complete principal settlements.

### 3.1.4 Settlement Process

Settlement process includes margin settlement process, cash settlement process and bond settlement process.

SHCH generates margin report at day-end and according to margin call amount shown on the margin report, shall check if margin account balance for proprietary transactions and

client transactions are sufficient at stipulated time, and if margin call is completed accordingly. Clearing participants who have not completed margin settlement before stipulated time will default on margin settlement, and will be handled according to default management procedures.

SHCH generates the cash settlement report at day-end. According to cash netting results shown on the report, CMs shall complete cash settlements based on the cash settlement path and mode of proprietary transactions and client transactions before stipulated time. A clearing participant who has not completed cash settlement before stipulated time will default on cash settlement and will be handled according to default management procedures.

SHCH generates the bond settlement report at day-end. According to bond netting results shown on the report, CMs shall complete bond settlement from bond custodian accounts opened by themselves and client before stipulated time. Clearing participants who have not finished bond settlement within stipulated time will default on bond settlement and will be handled according to default management procedures.

For central clearing service involving unincorporated products, upon receiving day-end data or day-end settlement reports from SHCH, GCMs shall send or export data related to such unincorporated product to custodian banks of unincorporated products. The custodian bank shall value the product based on mark-to-market of contract held for such unincorporated product, and at the same time, generate money transfer instruction for the next day according to cash settlement and margin settlement data, and send this instruction to the unincorporated product's administrator for confirmation. After the custodian bank receives confirmation, it shall transfer required cash and margin to GCMs with the unincorporated product as a unit.

### **3.2 Daily Operations**

**Margin withdrawal.** CMs who withdraw margin on their own shall submit the margin withdrawal application through SHCH client-terminal. After confirming that the margin account is sufficient, SHCH shall deduct the balance of CMs' margin account, and conduct subsequent process depending on different cash settlement paths. In cases where cash settlement is made through HVPS clearing account, SHCH shall transfer corresponding cash to the clearing account of CMs opened in HVPS. In cases where the cash settlement account is opened in SHCH, SHCH shall directly credit the balance of CMs' cash settlement account. CMs may withdraw corresponding cash from the cash settlement account, unless otherwise stipulated.

**Margin's interest:** Interest from initial margin and variation margin are determined by SHCH based on RMB deposit benchmark interest rate issued by PBC.

**Deposit of settlement cash:** CMs conduct cash settlement through the clearing account opened in HVPS and the cash in their clearing accounts can be directly used as settlement

cash. CMs conduct cash settlement through the settlement account opened in SHCH, who transfers cash into the cash settlement account designated by SHCH through its deposit bank. After receiving the funds, SHCH shall credit funds balance of the CM.

Following points should be considered when conducting remittance: (1) Remittance time: Remittance should be conducted when HVPS is open; (2) Settlement method: Remittance should be conducted using the urgent remittance method in HVPS, no matter what the amount is; (3) Payee's information must be correct. Payee's name and account number should be filled out respectively using the account name and account number of the cash settlement account opened by CMs in SHCH, while name and bank code of payee's deposit bank are filled out respectively as SHCH and 909290000007.

For example: Suppose the cash settlement account name and account number opened by XXX Co., Ltd. in SHCH are: XXX Co., Ltd. cash settlement account, 100000072XXXX, then payee's information shall be filled in as below: Payee's name: XXX Co., Ltd. cash settlement account; Payee's account number: 100000072XXXX; Name of payee's deposit bank: SHCH; Bank code of payee's deposit bank: 909290000007.

**Withdrawal of settlement cash:** CMs conduct cash settlement through the cash settlement account opened in SHCH, who submit cash withdrawal instruction via client-terminal when drawing cash from the cash settlement account. Cash system shall debit settlement cash balance after confirming CMs have sufficient cash, and transfer required cash into deposit account designated by CMs through HVPS.

**Settlement cash' interest:** Regarding about CM's cash in its own cash settlement account, SHCH shall pay accrued interest to the CM at RMB demand deposit benchmark interest rate issued by PBC, or other interest rate agreed by both parties. The rule of interest accrual: Interest is calculated daily and settled quarterly. During the accrual period, interest shall be calculated in separate time segments in the case of rate adjustment. Settlement days shall be the 20<sup>th</sup> day of the last month for each quarter. Interest accrual method: The accumulated interest method. Interest payment day: The first working day after interest settlement day. CM's interest receivable will be directly credited to its special cash settlement account opened in SHCH.

**Collateral management:** CM and its client can choose bonds satisfying certain standards, as collateral to offset initial margin. Total offset amount shall not exceed 50% of initial margin requirement. The offset face amount for each security shall not exceed RMB 100 million. Submitting security collateral's conversion application by the CM is regarded that the CM authorizes SHCH to use such securities based on relevant rules on default managements when the CM defaults, to compensate for default loss. Collaterals submitted by different CMs shall be completely separated from each other and used independently.

Standards for qualified collaterals: Rating of the issuer should be AA or above; Maturity of the security should be no shorter than 2 months; Maturity of the accepted security collateral should be no shorter than 1 month; Total face amount of an individual security issued should be not less than RMB 300 million.

Security collateral value=security collateral face value\*mortgage rate of such security

For securities whose issuer have AAA rating, the mortgage rate should not exceed 90%, and for securities whose issuer have AA+ or AA rating, the mortgage rate should not exceed 85%. SHCH shall conduct mark-to-market for the securities every day. When mark-to-market valuation of security collateral is less than 90% of its face value, SHCH shall exclude such security from the qualified security collateral list. Based on the above standards, SHCH shall produce the qualified security collateral list, and publish this list on the second Wednesday of each month.

Clearing participants may transfer security collateral in or out through SHCH client-terminal every working day. In cases where security collateral transfer-in/out application is submitted before 12:00 am, SHCH shall complete transfer-in/out by the end of next working day. The application for security collateral transfer-in/out by the client can be conducted by the GCM. However, the client shall submit *Confirmation of Pledging/Releasing Security Collateral by Client* to SHCH by fax. The GCM shall inform the client of the application result.

After receiving the application information, SHCH may process such application based on standard of risk management compliance check and actual security registration and custody conditions of the participant. The standard of risk management compliance check means that real-time effective margin balance (i.e., effective balance of the security collateral plus cash balance of the margin account) before and after transfer-in/out application which becomes effective should be not less than total margin requirement. In cases where the application fails to pass risk management compliance check, SHCH shall refuse corresponding application.

If the qualified security collateral list is updated, CMs and clients shall apply for transferring invalid pledged securities out.

**Direct connection interface.** In cases where a CM needs to open direct connection interface between its own internal system and SHCH System, the CM should submit written *Application Form for Direct Connection Interface on Central Clearing of Shanghai Clearing House*, to SHCH, and then use appropriate direct connection interface technical solution, specification instructions and API provided by SHCH to develop direct connection interface. After CMs' completion of direct connection interface development, it shall pass the check of SHCH before putting into use.

**Holidays' process:**

### 1) RMB/FX Spot Bilateral Transaction

After confirming information about holidays, settlement days, etc., SHCH shall issue the holiday information about various currencies of the next year at the end of each year, on its official website.

Settlement days for RMB/FX Spot transaction are affected by holidays in the following ways:

- (1) The settlement day for each trading currency is calculated separately, and settlement days of all currencies are delayed to the next working day if T+2 is a holiday. If trading currencies have different settlement days which are carried out respectively from the above calculation method, then actual settlement day shall be delayed to first working day on which all trading currencies could be settled.
- (2) The settlement days of RMB/USD transactions are not affected if T+1 is a USD holiday. The settlement days for RMB/EUR, RMB/GBP, RMB/HKD, RMB/JPY and RMB/AUD are delayed to the next working day if T+1 is any currency's holiday.
- (3) If T+2 is a USD holiday, the settlement days of RMB/FX Spot transactions shall be delayed to the next working day.
- (4) Saturdays and Sundays adjusted as working days due to national regulations are still regarded as RMB holidays.
- (5) Transactions in different trading days but in the same settlement day shall be netted for clearing.

### 2) RMB/FX Forward and Swap Bilateral Transaction

SHCH shall issue the holiday information about all currencies in Inter-bank market for the next year, at the end of each year, and shall adjust settlement days of RMB/FX Forward and Swap transactions that are not regularly cleared due to holidays. In other words, if the settlement day for FX Swap/Forward transaction is a newly published holiday of any currency for the transaction, then the settlement day is delayed to the first working day that comes after the holiday. Except for the settlement day, other elements for clearing are not changed. Modification and amendment of rules on settlement days related to RMB/FX Forward/Swap transactions are published by SHCH.

### 3) RMB/FX Option Bilateral Transaction

SHCH adjusts settlement days of RMB/FX Option transactions that are not cleared normally due to holidays, based on the following rules.

- (1) Payment day of option premium: If T+1 is a USD holiday, then the payment of the option premium is not affected; if T+1 is a RMB holiday, then the payment day of the option premium is adjusted based on the principle of "Next working Day". If T+2 is

either a USD or RMB holiday, the payment day of the option premium is adjusted based on the principle of "Next working Day".

(2) Option settlement day: The principle of "Next working Day" is applicable for option contracts whose standard period is shorter than 1M, while the principle of "Adjusted Next working Day" and "Month-end" are used for other options.

(3) Exercise day: The principle of "Previous Working Day" is applicable if S-1 or S-2 is a RMB holiday. The exercise day is not affected if S-1 or S-2 is a USD holiday.

#### 4) Intra-year Temporary Holiday Adjustments

SHCH issues the intra-year temporary holiday adjustments information for countries or regions whose currencies are involved in Inter-bank FX market clearing. Adjustments for settlement days are conducted according to relevant rules applicable to year-end adjustments for settlement days.

### **3.3 Default Punishment**

#### **3.3.1 Default Definition**

In cases where one or more of the following events take place with regards to any CM, then such CM shall be considered as a central clearing defaulter in Inter-bank market:

Cash settlement default: In cases where a CM fails to transfer sufficient cash into appointed cash settlement account before required cut-off time point, which leads to cash settlement failure, or fails to fulfill settlement obligations before required time on value date, then such CM shall be considered cash settlement defaulter.

Bond settlement default: In cases where clearing participant fails to prepare sufficient deliverable bonds in bond account before cut-off time point for bonds payment, which leads to bonds settlement failure, then such clearing participant shall be considered bond settlement defaulter.

Margin settlement default: In cases where a CM fails to satisfy any margin call within a required period after SHCH sends margin call notice, then such CM shall be considered margin settlement defaulter.

Default fund or fee default: If CM fails to pay default fund or fee before required time, then such CM shall be considered default fund or fee defaulter.

Other defaults defined by SHCH: When CM faces (1) dissolution (except dissolution for merger or restructuring purposes); (2) supervisory authorities have started resolution actions such as suspension for rectification, custody, take-over, institution restructuring, administrative restructuring and cancellation among others; (3) application for restructuring, settlement or bankruptcy to People's Court by the members or its creditors; (4) passing of resolution on suspension, liquidation or bankruptcy application; and (5)

default in other trading, clearing or settlement institutions, and if SHCH has the right to deem such case as default, then SHCH shall regard it as default.

### **3.3.2 Default Punishment Procedures**

#### **3.3.2.1 Operational Default**

If a CM fails to perform its obligations temporarily due to operational error, system fault or liquidity shortage, then period after such CM is determined as defaulter and before default management critical time point (each business has its own default management critical time point), is called operational default phase.

If a CM is deemed as an operational defaulter, SHCH has the right to take following actions:

- (1) Suspend subsequent clearing services for such CM in the defaulting clearing business.
- (2) Freeze margin account and default fund account of such CM.
- (3) Freeze all receivable assets related to default clearing business during default management period<sup>3</sup>.
- (4) Based on actual default condition, commence liquidity support mechanism utilizing financing bonds and funds to fulfill payable settlement obligations within default management period.
- (5) SHCH shall send Default Notice (including overdue amount) through SHCH clearing system or send scanned Default Notice to the defaulting member, and the operational defaulter shall deliver default funds, default penalty (Each business is subject to default penalty, which shall be proportional to payable/face value. Default penalty is calculated from first default day on a daily basis. Where the time period is less than a day, it is regarded as one full day nevertheless) and margin to SHCH before the required time.

#### **3.3.2.2 Default Termination**

If defaulter delivers the payable assets, margin and default penalty in full before default management critical time point, SHCH has the right to take the following actions:

- (1) Recover clearing service for such CM in the defaulting business, unfreeze margin and default fund account, and cite this operational default in the CM's credit record.
- (2) Transfer frozen assets receivable (if any) of such defaulting CM to corresponding accounts of such member, and pay back corresponding liquidity support institution.

#### **3.3.2.3 Permanent Default**

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<sup>3</sup>Default management period means the period from when SHCH has defined such CM as defaulter, to the date on which such default is completely processed.

If a defaulting member fails to pay default cash, margin and default penalty in full before default management critical time point, or in other default conditions defined by SHCH, SHCH has the right to designate such CM as a permanent defaulter.

In cases where any CM is designated as a permanent defaulter, SHCH has the right to take following actions:

- (1) Cancel membership of such member in the defaulting clearing business, and stop subsequent clearing service for such CM in the defaulting clearing business.
- (2) Freeze cash settlement account and margin account for such business, and default fund account opened by such member in SHCH.
- (3) Other default management measures applicable to specific business.
- (4) After default management is settled, if frozen assets of such default CM can cover any losses and expenses induced by position closing and default penalty, then SHCH shall return remaining assets to such default CM if frozen assets are unable to cover the loss and fee, SHCH shall follow the procedures listed in *SHCH Administration Principles on Default Fund and Risk Reserve*, and shall use other available risk resources to compensate part of the losses that are caused due to forced liquidation and cannot be covered by defaulter's frozen assets.
- (5) After default management process is completed, SHCH shall claim compensation and/or reimbursement from such defaulting CM.

### **3.3.3 Proprietary/Client Transaction Default**

CM default is categorized into proprietary transaction default and client transaction default. If a client fails to perform its obligations and causes a default towards GCM, which does not lead to default towards SHCH by such GCM, then the case shall not be deemed as client transaction default, and shall be directly handled by GCM<sup>4</sup>.

#### **3.3.3.1 Proprietary Transaction Default**

In cases where a GCM fails to perform obligations for its proprietary transaction and is deemed as permanent defaulter, SHCH shall permit client of such GCM to take protective measures such as porting.

#### **3.3.3.2 Client Transaction Default**

In cases where a client defaults towards its agent, i.e., corresponding GCM, which therefore causes such GCM to be unable to fulfill its obligations towards SHCH, such

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<sup>4</sup> General clearing member may take following measures to handle such default, including but not limited to: freeze margin provided by defaulting client for default business, suspend paying receivable funds (if any) to such client; suspend default position of client through negotiation, hedge the risk, close the position by auction, or submit such default to SHCH for assistance, etc.



GCM shall report client default and actions taken towards such default to SHCH. SHCH is obliged to assist GCM in handling client's default. If GCM is deemed as permanent defaulter, SHCH shall permit other non-defaulting clients of such GCM to take protective measures such as porting.

#### **3.3.4 Compensation for Default Loss**

(1) Defaulting CM shall pay default penalty, credit charges and all expenses and costs generated from hedging, auction, portfolio allocation and multilateral netting, and disposal of frozen assets, all of which are summed up as default loss.

(2) SHCH shall use relevant reserve resources to compensate for default loss, in accordance with relevant regulations such as *SHCH Administration Principles on Margin* and *Administration Principles of SHCH on Default Fund and Risk Reserve*.

#### **3.3.5 Use of Risk Reserve Resources**

SHCH shall use risk resources in the following order to compensate for default loss:

- (1) Margin posted by defaulting CM and defaulting client;
- (2) Default fund of the defaulting CM in the default business.
- (3) Certain ratio of risk reserve held by SHCH and default funds of non-defaulting CMs in the defaulting business.
- (4) Default funds replenishment in the defaulting business provided by non-defaulting CMs according to SHCH regulations.
- (5) Remaining risk reserve held by SHCH.

#### **3.3.6 Default Management Group (DMG)**

(1) Default Management Group is Risk Management Committee's advisory team. SHCH may establish one or more Default Management Groups as required or based on CCP clearing business requirements.

(2) DMG is mainly responsible for providing default management advice and assisting SHCH in handling defaults. The acceptance of such advice is determined by Risk Management Committee at its sole discretion.

(3) DMG is composed of following members:

- i. Leader, i.e., chairman of SHCH Risk Management Committee's chairman or other the person authorized by the same;
- ii. Representatives from CMs in associated market of such defaulting business market;
- iii. SHCH's Risk Management Committee Members;

iv. Other such persons deemed appropriate by Risk Management Committee.

(4) Risk Management Committee shall organize and manage CMs participating in DMG based on CCP clearing business rules, and makes adjustments periodically, as required.

### **3.3.7 Punishment**

(1) In the case of operational default, SHCH may take different punitive measures against defaulting CMs as deemed appropriate for the respective case, including oral warning, written warning, interview, demanding explanations within a certain period, rectification by order, demand training (or tests) or changing relevant staff members, circulating a notice of criticism, openly denounce and impose default penalty.

(2) In the case of permanent default, besides above punitive measures, SHCH may also reassess defaulting CM's qualification, and take other actions such as limiting, suspending or canceling its participation and membership in CCP clearing business.

(3) SHCH shall conduct comprehensive investigation on default event during and upon default management completion, and report default management results and investigation conclusion to respective supervisory authority.

## **3.4 Business Contingency Operation**

Contingency Operation refers to the circumstance under which central clearing participants (including GCMs, DCMs and clients, and hereinafter referred to as "clearing participants") are unable to submit relevant operation instructions through SHCH client-terminal system in a timely manner due to failure of network and system or other issues, and therefore send instructions to SHCH by fax, and request SHCH to conduct relevant business.

### **3.4.1 Applicable Range**

**Proprietary transactions conducted by CM:** 1) unable to transfer cash; 2) unable to download documents; 3) unable to conduct inquiries; 4) unable to conduct auxiliary operations such as changing clearing method, submitting clearing objections and bond bookkeeping; and 5) other operations that cannot be completed before end of the working day or cut-off time point.

**Client transactions conducted by GCM:** 1) unable to confirm or review transaction data; 2) unable to maintain margin ledger of client; 3) other operations that cannot be completed before end of the working day or cut-off time point.

### **3.4.2 Procedures**

To ensure that central clearing is normally conducted, in cases where a clearing participant is unable to conduct central clearing due to client-terminal abnormality, the clearing participant shall first notify SHCH by telephone, and initiate contingency

operations based on procedures. Contingency operation for client transaction shall be initiated by GCM, who guarantees that it is conducting contingency operations based on actual intent of its client.

### **1) Send contingency instructions**

Clearing participant shall fill contingency instructions affixed with effective seal and send it to SHCH by fax, and communicate with SHCH by telephone.

**Seal requirement:** Contingency instructions should be affixed with effective seal (Official Seal or seal left with SHCH), and in cases where instructions has more than one page, the seal should be affixed across all pages. In the event of contingency operation on client transaction clearing, the instructions shall be affixed with effective seal of GCM for client clearing, and faxed to SHCH by GCM.

**Cut-off time point requirement:** To guarantee smooth progress of contingency business, contingency business should be completed before cut-off time point stipulated by relevant operation for each central clearing service.

### **2) Confirm instruction by telephone**

After receiving contingency instructions, SHCH shall verify the seal and call the instruction sender in order to confirm instruction information. The confirmed information shall include but not limited to: elements for contingency operation and abnormal events in seal verification. To ensure information security and accuracy, SHCH shall record the contents of the telephone confirmation.

If a clearing participant has not received confirmation call from SHCH 20 minutes after sending contingency instructions, it may take the initiative to contact SHCH for inquiry.

### **3) Notify processing result by telephone**

After completing contingency business, SHCH shall notify operation result, whether it is a success or a failure, to the clearing participant by telephone. The clearing participant may also inquire SHCH of the process conditions or inquire after client-terminal recovers.

### **3.4.3 Attentions**

1) In the case of contingency, if the content of contingency business cannot be confirmed due to systematic failure, the clearing participant can fill in information inquiry column on contingency instruction and send it to SHCH within 30 minutes to 1 hour prior to the cut-off time point of corresponding business by fax, and notify SHCH by telephone. After successfully verifying the seal, SHCH shall provide relevant information for clearing participant, who shall then fill in contingency instructions and fax it to SHCH, and notify SHCH by telephone.

2) A CM who participates in Standard Bond Forward and Interest Rate Swap Central Clearing service should open Contingency Account (it is recommended to open such account as soon as the business is started.). In cases where the contingency account is not opened, corresponding CM can only conduct inquiry-type contingency operations. Contingency account should be equipped with corresponding authorization for business operations and reviews, and changing initial password is not required. Furthermore, contingency account for Interest Rate Swap cannot be linked to certificate. Contingency account for Standard Bond Forward should be linked to the certificate marked with SHCH. Detailed account settings are as follows:

#### Interest Rate Swap:

| Position name                                  | Position code          | User name                  |
|--|------------------------|----------------------------|
| XX <sup>5</sup> contingency business operation | xx <sup>6</sup> yjwczg | shch01@AAAAAA <sup>7</sup> |
| XX contingency business review                 | xyjywfhg               | shch02@AAAAAA              |

#### Standard Bond Forward:

| User name                         | User ID | Membership No.    |
|-----------------------------------|---------|-------------------|
| XX contingency business operation | yj1     | AAAA <sup>8</sup> |
| XX contingency business review    | yj2     | AAAA              |

3) For other cases that cannot be completed before the end of working day or cut-off time point, the CM shall call SHCH to inform of related abnormality in a timely manner during working day, and SHCH shall take appropriate actions according to actual circumstances.

#### 3.4.4 Contact Information

Fax: 021-63326661

Contingency operation telephone: 021-23198787

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<sup>5</sup>XX is the abbreviation for institution name.

<sup>6</sup>xx is the Pinyin abbreviation for institution name

<sup>7</sup>AAAAAA is CM's holder account in SHCH.

<sup>8</sup>AAAA is the 4-digit membership number generated automatically and internally by SHCH system.

## IV. Bond Netting Clearing

### 4.1 Bond Transactions Eligible for Netting Clearing

In bond netting clearing service, cash bond trading, pledged repo and outright repo will be netted together. Bond transactions satisfying the following conditions can be incorporated into netting clearing:

- i. Both parties should be clearing participants;
- ii. Collaterals are eligible bonds;
- iii. The value of pledged bonds in pledged repo should cover the repurchase price. And;
- iv. Transactions should be submitted before cut-off time point. .

SHCH shall update the list of eligible bonds for netting clearing on the official website and client-terminal.

### 4.2 Intra-day Clearing

Table 1.Business Hours for Bond Netting Clearing

| Date    | Time (UTC+8) | Issue   |
|---------|--------------|---|
| Day T   | 09:00        | Opening   |
|         | 09:00-16:55  | Intra-day data receiving<br>Intra-day clearing  |
|         | 15:30        | Cut-off time point for receipt of T+0 netting clearing transaction data<br>Cut-off time point for receipt of gross-to-netting switch order<br>End-of-day clearing |
|         | 15:45-16:15  | CMs make payments and deliveries  |
|         | 16:15        | Cut-off time point for making payments and deliveries<br>Bond& Cash settlement default determining  |
|         | 16:15-16:45  | Members receive payments and deliveries   |
|         | 16:55        | Cut-off time point for receipt of netting-to-gross switch order<br>Cut-off time point for receipt of T+1 netting clearing transaction data                        |
| Day T+1 | 10:00        | Due time for fulfilling margin call<br>Margin call default determining  |

SHCH commences to receive transaction data and conducts day-time clearing from 09:00 (UTC+8). T+0 transaction data are processed the same day. T+1 transaction data are temporarily stored in system and will be processed in the next working day. 15:30(UTC+8) is netting clearing cut-off time point. After 15:30, clearing system stops receiving T+0 , but continues receiving T+1 transaction data for netting until the cut-off time point of gross settlement.

#### **4.2.1 Selection of Clearing Methods**

For transaction data enrolled into gross clearing, if either side of the transaction does not set parameters for clearing method selection, such transaction data shall be processed in the manner of real-time gross clearing and settlement case by case. If both parties set parameters for clearing method selection, SHCH shall provide clearing method options for such transaction data. If both parties select netting clearing before netting cut-off time point, the transaction shall be processed according to netting procedures; otherwise, it shall be processed according to gross procedures.

After receiving gross transaction data and evaluating that such data satisfy the following conditions, SHCH shall provide clearing options:

- i. Both parties are eligible for netting clearing;
- ii. In the case of pledged repo, pledged bonds are eligible and pledge value is sufficient.

Participants eligible for netting clearing including GCMs, DCM and clients, are able to set clearing method parameters on membership parameter configuration interface, according to following instructions:

- (1) For "all switched to netting clearing": Transaction data that satisfy above conditions will be cleared by netting in default mode.
- (2) For "all are reserved for gross clearing": Transaction data that satisfy above conditions will be gross-cleared in default mode, according to the real-time and case-by-case gross clearing and settlement rules.
- (3) For "clearing method selection case-by-case": Transaction data that satisfy above conditions will be cleared in the clearing method selected case by case.

If both parties set parameters as (1) or (3), and choose netting clearing under (3), such transaction is confirmed to be cleared by netting, and comes into netting clearing check. If either party does not set parameters, sets it as (2), or sets it as (3) but does not choose netting clearing for such transaction data by the end of netting cut-off time point, corresponding transaction comes into gross-clearing in default mode.

#### **4.2.2 Clearing Checks**

Upon receiving netting clearing transaction data, clearing system will conduct real-time clearing check on all transaction data concluded that day, while risk control system only conduct real-time clearing check and intra-day risk monitoring on transaction data which are settled in the same day (including T+0 transaction data received on the same day and T+1 transaction data received in previous working day).

##### **4.2.2.1 Clearing Check by Clearing System**

Check items mainly include whether two parties and the objective bonds are eligible for netting clearing. In the case of pledged repo, elements checked includes whether collaterals are eligible for netting clearing, and whether the value of collaterals for pledged repo is sufficient to cover the repurchase price.

#### **4.2.2.2 Agent-Confirmation-Model Check**

Transaction data submitted by a client have to be confirmed by the agent. In this case, system conducts Agent-Confirmation-Model check on data that pass clearing check. T+0 transaction data have to be checked and confirmed the same day as received, while T+1 transaction data are checked and confirmed on the next working day.

SHCH provides three agent confirmation models for GCMs, i.e., case-by-case confirmation model, excess margin confirmation model, and default confirmation model. The model chosen by a GCM is applicable to all of its clients. Case by case model means the GCM needs to confirm each of transactions initiated by its clients. Over-limit model means the GCM only have to confirm such transactions initiated by its clients that exceed predetermined limit. Transactions within limits are confirmed by default model. Default model means a GCM confirms all transactions initiated by its clients by default. Confirmation method is determined by a GCM based on its own needs.

Under the case-by-case model, the GCM confirms each netting transaction data initiated by its clients. Confirmed data will come into risk control system for clearing check; Rejected data will not be further processed (displayed status is "invalid"), however, the client and its counterparty may also switch clearing method to gross-clearing, in clearing method switch interface instantaneously. Data unconfirmed by the end of netting cut-off time point will not be processed, the client and its counterparty may also switch clearing method to gross-clearing, in clearing method switch interface after netting cut-off time point. Under excess margin and default models, data will directly enter risk control system for clearing check.

#### **4.2.2.3 Clearing Check by Risk Control System**

##### **1) Clearing Limit Check**

Clearing limit means limit of netted cash in netting transaction, and can be set based on historical transactions and future investment strategies of CM. It is used to compare with trial value after funds netting. There are three types of clearing limits, i.e., clearing limit for spot transaction, clearing limit for forward transaction and pledged repo reference value.

In cases where one party of the transaction is a CM, and if spot transaction/forward transaction trial value exceeds spot/forward transaction's "clearing limit+ tolerance" for its proprietary clearing, SHCH may send intraday full amount margin call to control risk related to this transaction.

In cases where one party of the transaction is a client, if and only if under excess margin confirmation model, when trial value exceeds its "clearing limit", then the transaction shall be confirmed by GCM serving as the agent in the client-terminal. If the GCM does not confirm the transaction by cut-off time point, the clearing system shall mark such transactions as "invalid". However, client and its counterparty may also switch clearing method of such transaction to gross-clearing in clearing method switch interface after netting cut-off time point. GCMs should try their best to complete client confirmation before clearing cut-off time point, to ensure valid transaction and take proper risk control measures. If total trial value of all clients of one GCM exceeds this GCM's "clearing limit+ tolerance", then SHCH will require this GCM to provide excess margin, to control risk.

## 2) Clearing Status Check

CM may query real-time status of its transaction data through the client-terminal. Specific check statuses are described as follows:

- (1) New transaction: transaction data is to be checked.
- (2) Under check: transaction data is under clearing check.
- (3) Passed: Transaction has passed all items in clearing check.
- (4) Failed: Transaction has failed one or more of items in clearing check.

CM may query real-time clearing check status of every transaction through the client-terminal. Transactions that have failed the check will be marked with specific reasons in remark column.

### 4.2.3 Real-time Netting

For transaction that have passed clearing checking, SHCH will replace the original contract by the way of novation, thus assume the contractual obligations and rights between original counterparties, including collecting/ paying money and bonds, as well as pledging/ releasing collaterals. Novated transaction data are irrevocable and unconditional, and shall be netted instantaneously. CM may check instantaneous cash and bond netting amount in the netting-result-checking interface of the client-terminal.

Upon receiving a transaction, the clearing system will update the cash and bond netting results, according to the amount of cash receivable/payable for CMs, the amount of bond receivable/ payable and releasing/ pledging for clearing participant (based on bond account for unit calculating)

### 4.2.4 Intraday Risk Monitoring



Risk control system monitors real-time bond net trading concentration ratio, price deviation degree, spot transaction and forward transaction clearing limit for proprietary and client transactions, and mark-to-market profit & loss.

Net trading concentration ratio is the risk indication when net transaction volume for an individual bond by CM or client exceeds corresponding net trading concentration standard. Net trading concentration ratio = net trading concentration ratio threshold × bond issuance.

Price deviation degree is used to alert risk for Cash Bonds and Outright Repos when purchase price of a certain bond by CMs and clients is higher than such bond's price deviation standard. Price deviation degree =  $\pm$  (day-end contract price of bond on previous business day × price deviation parameter). Different risk grades are used to mark different risk levels.

SHCH has the right to take various measures towards CMs, such as risk indication and appending margin, etc., as required by real-time risk monitoring. CMs may check current transaction's real-time risk indication and margin increment amount through the client-terminal.

#### **4.2.5 Data unconfirmed by Agent or Failed Clearing Check is Switched to Gross-Clearing**

In clearing method switch interface, netting clearing data that comply with any of the following conditions is displayed and can be processed by "gross settlement" (i.e., original netting clearing order becomes invalid and is switched to gross-clearing order) or "netting settlement" (i.e., the original netting clearing data's invalid status is maintained, and such data is not further processed):

- (1) Transaction unconfirmed by GCM before netting cut-off time point.
- (2) Transaction rejected by GCM.
- (3) Transaction having failed compliance check.

Of these, data rejected by GCM can be switched to gross-clearing method during day-time in a real time manner, and displayed in clearing method switch interface in a real time manner. Transactions unconfirmed by agent or having failed clearing check can be switched to gross-clearing after netting cut-off time point, and is displayed in clearing method switch interface in a real time manner. Any selection for switching netting clearing to gross clearing should be submitted before gross clearing cut-off time point on settlement date (16:55 (UTC+8)). After netting data is successfully switched to gross-data, and newly generated gross data is confirmed by two parties bilaterally according to original gross clearing procedures, then such data will enter subsequent gross settlement processing.

Above-mentioned data for switching and corresponding historical switch records can be found in clearing method switch interface.

### **4.3 End-day Clearing Processing**

After netting clearing cut-off time point (15:30 (UTC+8)), T+0 netting clearing data received that day and T+1 netting clearing data received the previous business day will enter day-end netting, to calculate each CM's day-end amount of cash and bond receivable/payable, and amount of bond that should be pledged or released. Clearing system shall conduct cash netting based on such attributes, i.e., CM eligible for bond netting, settlement date, proprietary or client transaction, to generate cash netting result for clearing of proprietary and client transactions. Furthermore, clearing system will conduct bonds netting based on such attributes, i.e., bond account, settlement date, bond type and account title (pledged repo's bond netting is calculated based on amount of bond receivable/payable and amount of bond that should be pledged/released, respectively). In cases where GCM has cash receivable for both proprietary and client transactions in the same day, cash netting results for the two will be generated separately. GCM, DCM and client shall generate respective bond netting result, with the principle of the same settlement date, the same bond type and the same accounting title.

CMs may check their own cash and bond settlement orders and cash and bond clearing reports through client-terminal, and prepare cash and bond payable, based on clearing reports.

### **4.4 Settlement Processing**

#### **4.4.1 Margin Fund Settlement Processing**

Variation margin calls can be sent during day-time and at day-end. SHCH shall send variation margin call to a CM, based on real-time risk monitoring result, if one of the following intraday events occurs:

- (1) Mark-to-market margin requirement for proprietary or client transaction of a CM is over RMB 100,000;
- (2) Spot transaction's/forward transaction's netted cash (absolute value) of a CM's proprietary transaction is over the "clearing limit+ tolerance" for corresponding business.
- (3) Total netted cash result (absolute value) of all clients for a GCM is higher than total "clearing limit+ tolerance" for such GCM as an agent.

SHCH shall send variation margin call to a CM if one of the following end-of-day events occurs:

- (1) Mark-to-market margin requirement for proprietary or client transactions of a CM is over RMB 100,000, mainly applicable to outstanding pledged repo and outright repo

(2) Spot transaction's/forward transaction's netted cash (absolute value) for a CM's proprietary clearing is over "clearing limit" for corresponding business.

(3) Total netted cash (absolute value) of all clients for a GCM is higher than total clearing limit for such GCM as an agent.

After intraday or day-end variation margin call is generated, system will automatically send corresponding margin call to the CM through client-terminal. At the same time, SHCH will freeze corresponding appended amount from margin account for proprietary or client transactions of such CM. If available balance of such margin account is insufficient, after sending margin call, system shall directly deduct cash equal to such appended amount for margin from clearing account of the CM in HVPS, to its margin account. If such CM's margin account is linked to cash settlement account, then required variation margin shall be directly transferred to its margin account from cash settlement account. Margin account's frozen balance after successful payment shall be equal to or higher than margin requirement at the time of margin call.

Within 60 minutes after receiving intraday variation margin call or before 10:00 (UTC+8) of the next business day after receiving day-end variation margin call, the CM shall pay such required margin to margin account for proprietary or client transactions. Failing to pay such margin within required time after receiving margin call is considered as margin default, and shall be subject to margin default procedures.

#### **4.4.2 Bond Settlement Processing**

After 15:45 (UTC+8), clearing system shall send bond settlement order to custody system based on day-end bond netting results, thereby checking and locking all bonds payable in bond custody accounts for CMs and clients. If bonds payment is under process, settlement order status is "in delivery"; if bonds are successfully delivered, settlement order status is "successfully completed"; if delivery is not finished by settlement cut-off time point, settlement order status is "default".

Cut-off time point for settlement is 16:15 (UTC+8), and if CMs and clients have successfully delivered bonds and paid cash before such time point, Clearing System shall send transfer order to custody system, in order to transfer bonds receivable and bonds that should be pledged into "available title"/"net to-be-repurchased title" of corresponding holders' accounts. If CM's or client's bonds payable are insufficient to pay previously mentioned bonds at that time point, such CM or GCM acting as client's agent shall be considered as bond settlement defaulter. Clearing system shall generate Default Notice and send it to defaulting CM's client-terminal. Hence, CMs and clients should ensure that sufficient bonds payable are available in holders' accounts before 16:15 (UTC+8).

CMs and clients can check bond settlement status through client-terminal.

#### **4.4.3 Fund Settlement Processing**

After 15:45 (UTC+8), based on day-end cash netting results and different cash settlement paths for CMs, clearing system shall send common remittance message to HVPS or send cash transfer order to SHCH's cash system. This enables the clearing system to transfer respectively cash payable of CMs to chartered clearing account opened by SHCH in HVPS, or the clearing account of the counterparty opened in SHCH's cash system. For the purpose of transferring settlement cash for proprietary transaction and client transaction, different message or transfer orders will be generated.

Settlement cut-off time point is 16:15 (UTC+8). If cash transfer is successful and no bond settlement default exists before this cut-off time point, according to specific cash settlement path for CM, the clearing system will send common remittance message to HVPS or send cash transfer order to SHCH's cash system. . This enables the clearing system to transfer cash receivable of that day to such CM's account. By this cut-off time point, if cash transfer is unsuccessful due to shortfall of balance in cash settlement account, then corresponding CM is considered to be cash settlement defaulter. In this case, clearing system will generate Default Notice and send it to defaulting CM's client-terminal. Hence, CMs should ensure that their own cash settlement accounts (clearing account in HVPS or cash settlement account) have sufficient cash payable before 16:15 (UTC+8).

CM can check end-of-day cash settlement status through client-terminal.

Cash transfer order for bond netting business should be submitted before 16:55 (UTC+8).

#### **4.4.4 Management of Pledged Bonds**

In bond netting business, value of pledged bonds for each pledged repo should be higher than or equal to repurchase price. .

Value of pledged bonds= $\sum$ face value of bonds $\times$  contract price of bonds $\times$  discount rate/100

SHCH client-terminal offers an independent function for trial value of pledged bonds in pledge bond value checking interface, to help clearing participants evaluate if the value of pledged bonds for repurchase intended for netting clearing is sufficient. This trial function can be realized through manual calculation (choose bonds manually on the interface) and bond priority method. In the latter method, system will choose bonds from the lowest to the highest discount rate, from the highest to the lowest day-end contract price, and from the largest to the smallest bond code, until trial amount $\geq$  repurchase price. This function supports adding new bonds manually.

SHCH calculates discount rates of pledged bonds based on credit rating of bond issuers, historical price fluctuations and market liquidity, and will publish and have the same take effect along with newest effective list of eligible pledged bonds. Bonds whose issuer credit rating is AAA shall have a discount rate of not higher than 85% and those whose

issuer credit rating is AA+ or AA shall have a discount rate of not higher than 80% and those whose issuer credit rating is lower than AA shall have a discount rate of not higher than 70%. Initial discount rate of bonds without issuer credit rating is generally not higher than 70%.

SHCH may adjust discount rates of eligible bonds based on changes of eligible pledged bond issuer's credit rating, bond ratings and issuer's solvency, and publish adjusted rates to the market. Bond netting participants should pay close attention to relevant information published by SHCH and respond timely.

Replacement of pledged-bonds. If pledged repo transaction that has been enrolled into bond netting process fails purchase settlement, CM can apply to SHCH for replacing such pledged bonds by submitting *Shanghai Clearing House Application for Replacing Pledged Bonds*. SHCH will then complete required procedures in its system. If pledged repo whose purchase settlement is completed but does not complete the repurchase settlement, the CM can apply for replacing such pledged bonds through client-terminal. If a client needs to replace pledged bonds, an application can be submitted by a GCM acting as its agent. Replacement of pledged bonds is only applicable to individual pledged repo transaction. CM submits types and quantity of qualified bonds to SHCH, and replaces original bonds with sufficient new bonds.

#### **4.4.5 Clearing Fund Operation**

Required default fund amount is calculated and collected based on clearing limit, credit-rating factor and default fund ratio for each CM. The amount shall be adjusted correspondingly on the next business day after CM changes the clearing limit. In cases where required default fund amount turns lower, SHCH will transfer reduced balance to the predetermined cash settlement account provided by CM (cash settlement account opened in SHCH, or clearing account opened in HVPS, or designated deposit account).

#### **4.4.6 Relevant Rules on Default Punishment**

1) Cash settlement default: When CM defaults on cash settlement, SHCH will not deliver bonds receivable to such CM, and guarantee cash settlement through bank credit committing. SHCH will impose default penalty at the rate of 0.1% of overdue amount, on a daily basis from the defaulting day; in cases where calculation period is less than one day, it shall be considered as one day. If defaulting member transfers default cash and default penalty before 14:00 (UTC+8) of the next business day after settlement date, SHCH will deliver bonds receivable to such member and repay earlier utilized bank credit. Relevant fees and losses due to default management shall be assumed by defaulting CM.

2) Bonds settlement default: When CM defaults on bonds settlement, SHCH will not pay cash receivable (if any) and other bonds receivable (if any) for that day. If defaulting day is interest registration date, then such defaulting member should also supplement payable

interest on default bonds. SHCH will impose default penalty based on 0.1% of face value of such default bonds from defaulting day, on a daily basis, and in cases where calculation period is less than one day, it shall be considered as one day. GCM shall deposit bond default penalty on behalf of its client. Before 14:00 (UTC+8) of the next business day after settlement date, if bonds payable in defaulting member's account are sufficient and defaulting member has paid default penalty in full amount, SHCH will transfer bonds, repay bonds or loan fees to lenders, and return bonds (if any) and cash receivable to defaulting member. If defaulting member pays a part of the default bonds and full amount default penalty, SHCH will determine value of bonds or cash that should not be delivered to such member, based on a certain ratio (no less than 100%) of shortfall of bonds payable (valuation), and return remaining bonds or cash. If defaulting member does not supplement bonds payable in full amount, SHCH will use bonds receivable (if any) and cash of such member to purchase bonds from the market to repay lenders, and to pay for fees caused by bond borrowing. Defaulting member shall be liable for relevant fees and losses so caused.

3) Margin default: SHCH will calculate and impose default penalty on such defaulting member based on 0.1% of default cash, on a daily basis.

4) Settlement of bonds receivable for non-defaulting members: (1) Bond lending mechanism shall be initiated to pay non-defaulting members; (2) If bond lending mechanism is unable to cover settlement, delay delivery mechanism shall be initiated. SHCH will determine parties that should delay receiving bonds, from the most to the least net bonds receivable for an individual bond. SHCH will return bonds to such parties and compensate them, based on 0.05% of delayed face value (on a daily basis); (3) If by 16:00 (UTC+8) of the next business day after settlement date, such bonds receivable are not fully delivered, SHCH will use cash settlement to replace undelivered bonds. Cash to be paid is calculated based on: volume-weighted transaction price of the same bond for S day  $\times$  undelivered quantity  $\times$  (1+0.05%).

5) Management of client default: In cases where a client is considered as a defaulter toward a GCM, such default scenario shall be handled by this GCM. GCM should report such client default and management process to SHCH who is obliged to assist the GCM in client default management.

## **4.5 Relevant Formulas for Bonds Netting**

### **4.5.1 Minimum Margin**

Initial margin requirement = Clearing limit for spot transactions  $\times$  Margin rate for spot transactions + Clearing limit for forward transactions  $\times$  Margin rate for forward transactions + Reference amount for Pledged Repo transactions  $\times$  Margin rate for Pledged Repo transactions)  $\times$  credit rating factor of CM.

CM applies for clearing limit for spot transaction, clearing limit for forward transaction and netting reference value for pledged repo to SHCH and these parameters are denominated in RMB. Margin rate for spot transaction, margin rate for forward transaction and margin rate for pledged repo transaction are determined by SHCH based on historical price fluctuation of bonds and financing interest rate. SHCH also determines CM's credit rating factor, based on credit level of such CM.

#### 4.5.2 Changing Margin

Variation margin=excess margin+ mark-to-market margin.

##### (1) Excess Margin

In proprietary clearing, for CM:

Excess margin requirement=Max(|net positions of cash bond transactions+ net positions of outright repo's spot transactions|-Proprietary Clearing limit for spot transactions,0)×Margin rate for spot transactions× Over-limit variation factor× credit factor for clearing member+ Max(|net positions of outright repo's second leg transactions|-Proprietary Clearing limit for forward transactions,0)×Margin rate for forward transactions\*Over-limit variation factor× credit rating factor for clearing member.

In client clearing, for GCM:

Excess margin requirement=Max( $\sum_{client}$  |net positions of cash bond transactions+ net positions of outright repo's purchase transaction|-Client clearing limit for spot transactions,0)×Margin rate for spot transactions× Over-limit variation factor× risk control multiplier× credit rating factor of clearing member+ Max( $\sum_{client}$  |net positions of outright repo's repurchase transaction|-Client clearing limit for forward transactions,0)×Margin rate for forward transactions\*Over-limit variation factor× risk control multiplier× credit rating factor of clearing member.

##### (2) Mark-to-Market Margin

Mark-to-market margin requirement=Max(Mark-to-market Margin for cash bond transactions+ Mark-to-market Margin for pledged repo transactions+ Mark-to-market Margin for outright repo transactions,0)

In which:

Mark-to-market margin requirement for cash bond transactions= $\sum$  (contract price of the bond- the spot valuation of the bond) × nominal value of the bond/100×sign. (Where sign= +1 means buy side, sign= -1 means sell side);

Mark-to-market margin requirement for pledged repo= $\sum_{sell-repo}$  Max (contract price of the bond for the repurchase -the forward valuation of the bond, 0) ×discount factor.

Mark-to-market Margin for Outright Repo Transactions=  $\sum$  [(contract price of the bond for the purchase - the spot valuation of the bond) ×nominal value of the bond/100×sign+ (contract price of the bond for the purchase - the forward valuation of the bond)\*nominal

value of the bond/100×discount factor× sign] (where sign=+1 for the sell-repo and -1 for the anti-repo)

Mark-to-market margin requirement for client clearing business conducted by GCM should be sum of mark-to-market margin requirements for all its clients. GCM can check mark-to-market profit& loss of all its clients through SHCH.

Over-limit variation factor, full/net price valuation of bonds, full price valuation of bonds for the repurchase transaction and discount factor are determined by SHCH, based on market risk, bond valuation and valuation of return rate, and adjusted appropriately.

#### **4.5.3 Calculation of Fund Netting and Bond Netting**

In which,

is the cash netting for proprietary clearing of clearing member Q; cash netting for client clearing of clearing member Q (only applicable to GCMs);, bonds netting for bond type  $k$  under receivable/ payable title of CM or client Q (based on bonds account) ; bond netting for bond type  $k$  under pledge title of CM or client Q.



## V. Central Clearing for RMB Interest Rate Swap

### 5.1 Elements of IRS Eligible for Central Clearing

Table 2: Elements of Interest Rate Swap Eligible for Central Clearing

| Basic Elements                   |  |                                      |                                     |   |
|----------------------------------|--|--------------------------------------|-------------------------------------|---|
| Fixed rate payer                 | Clearing participants (clearing or non-clearing members, the same hereinafter)   |                                      | Floating rate payer                 | Clearing participants   |
| Trade date                       | Not limited  |                                      | Nominal principal (RMB10,000)       | Both minimum trading volume and minimum change unit are RMB100, 000.  |
| Value date                       | Not limited  |                                      | Initial value date                  | Equal to value date   |
| Maturity date                    | Not limited  |                                      | Time to maturity                    | Period: 5 days to 5 years. (longest remaining period for Shibor_O/N is 3 years) and should be an integral multiple of payment cycle |
| Business day convention          | Adjusted next business day. This means that if payment date is not a business day, then payment date is postponed to next business day; however, if next business day falls in the next month, then payment date is advanced to previous business day. |                                      | Adjustment of interest accrual days | Actual days. This means that if payment date is adjusted, interest accrual days are adjusted accordingly.                           |
| Fixed rate payment details       |  |                                      |                                     |   |
| Fixed rate payment cycle         |  | Same as floating rate payment cycle. |                                     |   |
| Fixed rate accrual mode          |  | Simple interest                      | Fixed rate accrual basis            | A/365   |
| Floating rate payment details(1) |  |                                      |                                     |   |
| Reference rate                   | Fixing period  | Payment cycle                        | Interest accrual mode               | Interest accrual basis  |
| SHIBOR_O/N                       | Day  | Quarterly, maturity                  | Compound interest                   | A/360   |
| FR007                            | Week   | Quarterly, maturity                  | Compound interest                   | A/365   |
| SHIBOR_3M                        | Quarter  | Quarterly                            | Simple interest                     | A/360   |
| Floating rate payment details(2) |  |                                      |                                     |   |

| Reference rate | Rule of fixing date   | Rate determination date   | Reference rate value  | Negative rate handling  |
|----------------|---|---|---|---|
| SHIBOR_O/<br>N | During each payment cycle, the first fixing date is the first date for this payment cycle. Other fixing dates are | The fixing date. If there is no reference rate for that day, reference rate of previous business day is adopted.                | Shanghai Inter-bank lending interest rate released by National Inter-bank Funding Center on www.shibor.org at 09:30 (UTC+8) on interest rate determination date, authorized by People's Bank of China | Negative rate method: payable amount of floating-rate paying party is zero, payable amount of fixed rate paying party plus absolute value of payable floating amount. |
| FR007          | similarly used according to fixing periods. It is permitted to have residual in the last payment cycle.           | The day before fixing date. If there is no reference rate for that day, reference rate of the previous business day is adopted. | R007 released by National Inter-bank Funding Center on www.chinamoney.com.cn at 11:30 (UTC+8) on interest rate determination date, authorized by People's Bank of China                               |   |
| SHIBOR_3M      |   |   | Shanghai Inter-bank lending interest rate released by National Inter-bank Funding Center on www.shibor.org at 09:30 (UTC+8) on interest rate determination date, authorized by People's Bank of China |   |

Note: For above rules, each trading element means the same as it does in *China's Inter-bank Market Interest Rate Derivative Transactions Definitions Document* (2012).

## 5.2 Intraday Clearing Processing

Table 3: Business Hours for RMB Interest Rate Swap Central Clearing

| Date  | Time (UTC+8) | Issue   |
|-------|--------------|---|
| T day | 09:00        | Opening   |
|       | 09:00-16:30  | Receive intraday data<br>Intraday clearing procedures |
|       | 16:30        | Closing<br>Cash withdrawing cut-off time point        |
|       | 09:00-17:00  | Agent confirmation for client clearing                |
|       | 17:00        | Day-end clearing procedures                           |

| Date    | Time (UTC+8) | Issue  |
|---------|--------------|--|
| T+1 day | 10:00        | Margin deduction   |
|         | 11:00        | Margin settlement cut-off time point<br>Margin default judgment  |
|         | 13:00        | Payable cash settlement  |
|         | 15:00        | Cut-off time point for clearing member to make payment<br>Starting point for clearing member to receive cash<br>Cash settlement default judgment |

From 09:00-16:30 (UTC+8), clearing system receives transaction data and applications for exit from clearing or early termination. Application for terminating transactions or exiting from clearing can be submitted through CFETS client-terminal or clearing system client-terminal. Application submitted through clearing system client-terminal is initiated by one party and confirmed by original counterparty. Clearing system will make element compliance check and risk management compliance check on Interest Rate Swap transactions submitted for central clearing, or early termination or exit from clearing, in a real time manner. These applications will become effective immediately after passing such checks.

For clients<sup>9</sup> transactions that pass compliance check, SHCH may conduct batch agent confirmation in predetermined intraday time slots in clearing system, based on margin adequacy ratio provided by GCMs. Transactions that fail batch agent confirmation shall be immediately submitted to respective GCMs for confirmation. GCM shall assume performance guarantee for confirmed IRS transactions. Transactions that fail agent confirmation will not be enrolled into central clearing procedures. Cut-off time point for GCM to conduct agent confirmation is 30 minutes after market closing (16:30 (UTC+8)). SHCH accepts no agent clearing confirmation submitted after this cut-off time point. In other words, any transaction that is not confirmed by agent at this time point (30 minutes after market closing) shall be enrolled into next business day's central clearing, by SHCH. In this case, margin adequacy ratio required for SHCH to complete automatic agent confirmation for GCMs is minimum "effective margin balance/margin requirement" ratio. In cases where GCMs conduct clearing for client transactions, they should set margin adequacy ratio information for their clients.

In Interest Rate Swap, clearing limit refers to risk exposure limit. SHCH shall calculate and monitor real risk exposure of clearing member/client every day, and calculate monthly/quarterly average risk exposure of clearing member. Risk exposure limit for clearing member/client shall not be lower than monthly/quarterly average risk exposure × risk exposure adjustment factor. Risk exposure adjustment factor is promulgated

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<sup>9</sup>Interest rate swap business supports one-to-many agency relationship. Clients applying for one-to-many agency relationship for first time shall submit *Registration Form for Registration (Change) of Information about Client Terminal Administrators for Non-clearing Members* to Shanghai Clearing House.

separately by SHCH. If risk exposure limit applied by a CM is lower than above index, SHCH shall adjust risk exposure limit of such CM or client, based on above index. In cases where client's risk exposure limit is to be adjusted, GCM has to submit *Registration (Filing) Form for Information of Non-clearing Member* to SHCH.

Risk compliance check shall be used to confirm if margin requirement caused by actual risk exposure of clearing participant is higher than its margin balance, as shown below:

Table 4: Risk Control Compliance Check Procedures for Interest Rate Swap Central Clearing

| Step | Risk control index  | Processing method   |
|------|---|---|
| 1    | For both counterparties, margin requirement caused by portfolio risk exposure $\leq$ margin balance.  | Clearing System shall make novation for this transaction with SHCH as the CCP.  |
| 2    | For both counterparties, margin requirement caused by portfolio risk exposure $\leq$ margin balance + tolerance <sup>10</sup> .                   | Clearing System shall make novation for this transaction with SHCH as the CCP. SHCH will provide credit line for excess margin requirement.         |
| 3    | For either counterparty or both counterparties, margin requirement caused by portfolio risk exposure $>$ margin balance + tolerance <sup>11</sup> | SHCH will enroll such transaction into subsequent batch's risk compliance check, and is entitled to reject clearing of this transaction by day-end. |

Tolerance is set by SHCH according to clearing member's credit status.

After Interest Rate Swap transactions are submitted for central clearing, IRS transactions that have failed SHCH's risk management compliance check or are not confirmed by GCMs will not be enrolled into that day's central clearing. In this case, relevant market participants do not need to re-submit such transactions through National Inter-bank Funding Center, as SHCH will again conduct risk compliance check on such transactions the next business day. Transactions that have not passed risk management compliance check after maximum waiting time shall not be enrolled into subsequent central clearing procedures.

According to above description, there are several clearing statuses for transactions: (1) transaction is confirmed but not incorporated for netting; (2) transaction is under netting process; (3) transaction is invalid; (4) transaction has exited from clearing; (5) transaction is terminated early; (6) transaction is terminated forcibly; and (7) transaction has expired.

<sup>10</sup>For clients, sum of margin shortfalls of GCM's all clients =  $\sum \max(\text{each client's margin requirement} - \text{each client's margin balance}, 0)$  is lower than the tolerance for GCM's client clearing business.

<sup>11</sup>For clients, sum of margin differences from all clients for its GCMs =  $\sum \max(\text{single client's margin requirement} - \text{single client's margin balance}, 0)$  is higher than or equal to tolerance of general clearing member's client clearing business.

After novation, clearing system shall monitor risk of contract portfolio and its mark-to-market profits and losses for such CMs, based on novation result.

### **5.3 End-Day Clearing Processing**

Clearing system conducts day-end processing after 17:00 (UTC+8), which includes:

Calculating margin requirement of proprietary clearing for each CM and of client clearing for each GCM, and generating margin settlement reports;

Calculating net interest receivable/payable, early termination net amount, net profits & losses of mark-to-market, and net interest adjustment for mark-to-market profits/losses in the next business day, of each CM's proprietary clearing and each GCM's client clearing, and generating cash settlement reports;

If forced early termination occurs that day, SHCH will first complete settlement of such early termination and then conduct regular cash netting settlement.

Regular cash net amount = interest net amount + early termination net amount + settlement amount for mark-to-market profit & loss + interest adjustment amount for mark-to-market profit & loss.

After 19:00(UTC+8), CM may check clearing notices and cash settlement reports through SHCH client-terminal, and prepare cash payable based on cash settlement reports.

### **5.4 Settlement Processing**

#### **5.4.1 Margin Settlement Processing**

1) Daily margin settlement. At 10:00 (UTC+8), clearing system shall check if margin account balance for proprietary clearing or client clearing is sufficient, based on day-end margin report generated in previous business day. If balance is inadequate, clearing system shall send cash transfer order to HVPS or SHCH's cash system, depending on cash settlement path for proprietary clearing or client clearing of one CM, to transfer required margin from settlement account to margin account of such CM. If cash transfer is not completed by the end of 11:00(UTC+8) of that day, such CM shall be considered as margin defaulter.

2) Intraday margin settlement. Clearing system will send instant transfer message to HVPS or cash transfer order to SHCH's cash system while generating intraday margin call, to transfer required margin from settlement account of CM to margin account of such CM. Successful transfer shall guarantee that margin balance is higher than or equal to margin requirement. In cases where cash transfer is not completed within 60 minutes and margin account shortfall still exists, such CM shall be considered as a margin defaulter, and shall be subject to margin default procedures.

3) Maintenance of client's margin ledger. If a GCM actively deposits margin to margin account for its client clearing, such GCM should maintain margin deposit ledger through client-terminal. If GCM withdraws client's margin successfully, it should make a record in margin drawing ledger through client-terminal. GCM should ensure sum of accounting data on client's margin ledger is equal to balance of client clearing margin account of its client clearing. In cases where SHCH deducts client clearing margin from GCM, SHCH shall concurrently maintain client margin ledger record. At 16:00(UTC+8) of each business day, clearing system shall check margin account balance for GCM's client transactions and client margin ledger data, and send maintenance notice to remind GCM of maintenance schedule. At 16:30 (UTC+8) of each business day, clearing system shall compare margin account balance for GCM's client clearing with client margin ledger data. In the case of inconsistency, clearing system will send imbalance warning to corresponding GCM. If such GCM does not promptly correct the ledger, SHCH is entitled to impose punishment.

#### 5.4.2 Fund Settlement Processing

From 13:00 (UTC+8), the clearing system will send instant transfer message to HVPS, or cash transfer order to SHCH's cash system depending on predetermined cash settlement path, based on cash netting result of last business day, to transfer cash payable for proprietary clearing or client clearing of that day, to chartered clearing account opened by SHCH in HVPS, or default cash account opened in its own cash system.

The cut-off time point for CM to make payment and starting time for CM to receive payment is 15:00(UTC+8). If settlement account does not have sufficient money or cash transfer is not completed by 15:00(UTC+8), corresponding member shall be considered as a cash settlement defaulter. CM should ensure settlement account for proprietary and client transactions has sufficient money before 15:00(UTC+8). CM can check cash settlement status through SHCH's client-terminal.

GCM should receive all clients' cash payable before making settlement with SHCH, and may pay clients' cash receivable after making settlement with SHCH.

Cash withdrawing order for IRS business should be submitted before 16:30(UTC+8).

#### 5.4.3 Default Fund Operation

Default fund=risk exposure limit of one member for proprietary or client transactions × default fund ratio.

Default fund ratio=stress test result÷ sum of risk exposure limits for all CMs.

Stress test result refers to extra loss uncovered by their margins assuming two largest CMs default simultaneously under stress scenarios.

SHCH conducts stress test every day, and calculates and adjusts default fund ratio and amount of each CM on a monthly/quarterly basis based on stress test results. During quarterly calculation and adjustment period, to prevent sharp risk increase due to abrupt increase of stress test result, SHCH shall calculate the default fund for the CM at the beginning of each month, based on market data for previous three months. For example, if estimated default fund is over 125% of the total default fund amount in effect, it shall make interim adjustment for required default fund amount of the whole market.

If default fund is lowered after such adjustment, SHCH shall release reduced amount of default fund to corresponding CM on the next business day. If CM does not set automatic default fund transfer function, it can withdraw such part of default fund through comprehensive business system. For CM who has set automatic default fund transfer function, amount that can be withdrawn shall be automatically transferred to RMB IRS margin account by end of transfer-date, and CM can withdraw such amount through IRS client-terminal.

Interest accrual rule, interest accrual method and interest payment date are the same as that for cash settlement.

Default fund account's interest amount shall be accrued into default fund account. Once interest amount is accrued into default fund account, it also falls into the scope of automatic default fund transfer function.

#### 5.4.4 Relevant Rules on Default Management

##### 1) Management of Cash and Margin Settlement Default

If a CM fails to prepare enough cash in designated settlement account before 15:00 (UTC+8), and therefore causes cash settlement failure, or fails to prepare enough cash in designated settlement account before 11:00 (UTC+8) the next business day after SHCH sends day-end margin call or within 60 minutes after SHCH sends intraday margin call and therefore causes margin settlement failure, SHCH will handle such default according to following procedures:

- (1) Suspend accepting novation, clearing exit and early termination applied by defaulting CM for subsequent Interest Rate Swap business.
- (2) Freeze margin account and default fund account of defaulting CM for such business.
- (3) Suspend paying cash receivable (if any) to defaulting CM, and such retained cash shall not bear interest.
- (4) In the case of cash settlement default, invoke bank credit committing mechanism to top up overdue amount, in order to complete cash settlement for non-defaulting CMs.
- (5) SHCH shall impose default penalty from default date to actual payment date of overdue amount on defaulting CM on a daily basis at the rate of 0.1% of difference (zero

at minimum) between overdue amount and the retained cash receivable of defaulting CM. If calculation period is less than one day, it shall be considered as one day.

(6) If defaulting CM pays overdue amount, default penalty, bank credit committing fee and other payables in full amount within agreed period, SHCH shall resume accepting subsequent novation, clearing exit and early termination applications from such CM for Interest Rate Swap business, unfreeze its margin account and default fund account, release suspended cash receivable (if any) of such CM during default processing period to such CM's account, repay financed cash towards the invoked bank credit and pay bank credit committing fee, and record one operational default for such CM .

(7) If defaulting CM does not pay overdue amount, default penalty, bank credit committing fee and other payables in full amount within agreed period, SHCH shall adopt following procedures:

- i. Commence immediate liquidation procedure of defaulting CM's non-cash collateral.
- ii. Convene Default Management Group to help SHCH process such default.
- iii. Transfer positions of non-defaulting clients that satisfy certain requirements.
- iv. Conduct forced liquidation on relevant positions of defaulting CMs. Forced liquidation can be done through auction and multilateral netting termination of contracts. The former is preferred; however, if auction is not successful, the latter can be used.
- v. Transfer cash and non-cash collateral and positions based on forced liquidation result. After successful auction, SHCH shall transfer auctioned contract to CM who has bought such contract, to change contract counterparty while making cash settlement with such buyer. If buyer does not complete cash settlement with SHCH within required time, such buyer shall be considered as a defaulter and shall be subject to corresponding default management procedures.
- vi. During multilateral netting termination, SHCH shall complete netting settlement with parties whose contracts are terminated on cash settlement date, and terminate all relevant contracts.
- vii. Based on loss allocation procedures, SHCH shall use risk reserve resources in a certain order to compensate losses caused by forced liquidation on defaulting CMs.
- viii. SHCH may adopt measures such as closing relevant accounts of defaulting CMs in SHCH, or terminating clearing membership, as the case may be.
- ix. After default management procedures are completed, SHCH shall claim compensation and/or reimbursement from defaulting CMs in order to repay previously financed cash and relevant fees, and funds that had to be used to compensate losses during default management procedures, i.e., SHCH's risk reserve, default funds from non-defaulting CMs and supplementary default funds provided by non-defaulting members.



- x. SHCH shall report default and management of the defaulting CMs to regulator.
- xi. SHCH has right to disclose defaults of certain CMs and results from its management procedures to the market.

## 2) Handling of Other Default Occasions Defined by SHCH

When a CM is bankrupt, taken-over, or has default in other clearing institutions or exchanges, SHCH is entitled to determine such CM as a defaulter, and handle the same according to default management procedures.

## 2) Handling of Defaults Made by Clients

Default made by clients to GCMs shall be handled by respective GCMs. The GCMs should report client default and default management progress to SHCH who is obliged to assist in client default management.

## 5.5 Relevant Formulas for Interest Rate Swap Clearing

### 5.5.1 Margin Calculation

Initial margin requirement=risk exposure limit of clearing participant (house/client clearing) ×member credit factor

Here, member credit factor for client is its GCM's credit factor. SHCH may adjust risk exposure limit and member credit factor as appropriate. When adjusting CM's risk exposure limit, SHCH should send *Notice of Risk Exposure Limit Adjustment* to corresponding CM.

Variation margin=excess margin+ special margin

Excess margin requirement=Max (clearing participant's total risk exposure of its portfolio of IRS contracts–clearing participant's risk exposure limit, 0) × member credit factor× variation multiple.

Here, member credit factor for client is its GCM's credit factor. Variation multiple is equal to or greater than 1.

When intraday mark-to-market loss of clearing participant is too large, SHCH is entitled to issue intraday mark-to-market margin call to clearing participant.

Calculation of day-end margin: SHCH shall calculate day-end margin requirement for each participants' portfolio of Interest Rate Swap contracts. Such margin requirement=initial margin requirement+ variation margin requirement. Clearing system shall adjust margin amount that can be withdrawn by participant, based on margin requirement.

In cases where balance in house clearing margin account or in client clearing margin account is lower than margin requirement, SHCH system shall trigger margin call mechanism and thereby send margin report to such CM through SHCH client-terminal.

Intraday margin calculation: In the event of intraday market abnormality or portfolio abnormality, SHCH has the right to re-calculate real-time risk exposure and corresponding margin requirement, and adjust withdrawable and required amount in the margin account for each CM. When accumulated required margin is higher than a certain level, SHCH is entitled to commence intraday margin call mechanism, and automatically send intraday margin call to CM or GCM acting as agent through SHCH client-terminal.

#### 5.5.2 Calculation of Netted Cash Settlement Amount

##### 1) Interest Calculation

After determining reference rate, SHCH shall calculate each contract's fixed interest amount to-be-settled and floating interest amount to-be-settled, for all Interest Rate Swap contracts held by each clearing participant, and then by netting, obtain net interest to be settled in each settlement date for such clearing participant. If clearing participant is interest payer, interest amount is negative; if clearing participant is interest payee, interest amount is positive, the same hereinafter. Calculation formula is as follows:

##### (1) Fixed Interest Amount

Fixed interest amount = nominal principal × fixed interest rate × interest accrual basis

##### (2) Floating Interest Amount

###### i. Simple interest

In this case, interest amount for each interest accrual cycle is equal to sum of interest amount for each fixing period:

$$\text{Floating interest amount} = \text{nominal principal} \times \left\{ \sum_{i=1}^n \left( \text{reference interest rate} + \frac{\text{rate spread}}{10000} \right) \times \frac{d_i}{N} \right\}$$

Here,  $i = 1, 2, \dots, n$ , represents the  $i$ th fixing period from last cycle's payment date to this cycle's payment date;  $n$  refers to number of fixing periods in such interest accrual cycle;  $d_i$  means actual days for  $i$ th fixing period;  $N$  represents number of days in a year based on corresponding interest accrual basis.

###### ii. Compound interest

In this case, floating interest amount for each interest accrual cycle is compound result of interest for each fixing period:

$$\text{Floating interest amount} = \text{nominal principal} \times \left\{ \prod_{i=1}^n \left[ 1 + \left( \text{reference rate} + \frac{\text{rate spread}}{10000} \right) \times \frac{d_i}{N} \right] - 1 \right\}$$

Here:  $i = 1, 2, \dots, n$ , represents the  $i$ th fixing period from last cycle's payment date to this cycle's payment date;  $n$  refers to number of fixing periods in such interest accrual cycle;  $d_i$  means actual days for  $i$ th fixing period;  $N$  represents number of days in a year based on corresponding interest accrual basis.

## 2) Calculation of Mark-to-Market Settlement Amount

SHCH shall calculate mark-to-market settlement amount based on day-end clearing contract's mark-to-market value and interest netting calculated in the last business day.

Settlement amount of mark-to-market profit& loss in day T for one clearing participant =  $(\sum \text{day-end mark-to-market profits or losses of all contracts for one clearing participant in day T-1} - \text{interest netting of day T}) - (\sum \text{day-end mark-to-market profits or losses of all contracts for one clearing participant in day T-2} - \text{interest netting of day T-1})$ <sup>12</sup>

Day T-2, day T-1 and day T refer to business days in the clearing system, the same hereinafter.

Calculation of settlement amount for mark-to-market profit& loss is conducted with SHCH as starting point. If such settlement amount is negative, it means CM shall receive mark-to-market profit& loss settlement amount; if settlement amount is positive, it means CM shall pay such amount.

## 3) Calculation of Interest Adjustment for Mark-to-Market Profit & Loss Settlement

SHCH shall calculate interest adjustment amount for mark-to-market profit & loss settlement based on mark-to-market profit& loss value, where:

Interest adjustment amount for mark-to-market profit & loss in day T for clearing member =  $-\sum^{13} [\text{day-end mark-to-market profit \& loss of each outstanding contract for CM in day T-2} - \text{interest netting of such contract in day T-1}] \times \text{SHIBOR\_O/N in day T-1} \times (\text{calendar days between day T and day T-1}) / 360]$

If interest adjustment amount for mark-to-market profit& loss is negative, clearing participant shall receive such adjustment amount; otherwise, clearing participant shall pay such amount.

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<sup>12</sup> As mark-to-market profit & loss and interest netting for CM are settled at the same time the next business day, when calculating mark-to-market profit & loss, clearing system shall exclude interest netting of the next business day.

<sup>13</sup> Here, it refers to calculating day-end adjustment amount of mark-to-market profit& loss for an individual outstanding contract for clearing on day T-2, and then adding results for all contracts for one clearing participant.

## VI. CCP Clearing for RMB Foreign Exchange Inquiy Bilateral Transaction

SHCH commenced netting for RMB/FX Bilateral Transaction in April, 2013, including Foreign Exchange Spot Transaction, Foreign Exchange Forward Transaction and Foreign Exchange Swap Transaction within a month tenor. In November 2014, SHCH commenced CCP clearing for RMB/FX Bilateral Transaction. Based on netting for FX Bilateral Transaction and according to *Principles for Financial Market Infrastructures*, clearing period for Forward and Swap Transactions was extended from 1 month to 1 year, while element requirement, intraday and day-end clearing procedures remain the same. Clearing participants of FX Bilateral Transaction that were not updated to CCP clearing members had their rights and obligations unchanged, and used corresponding business procedures given in these *Guidelines*. In June 2016, SHCH incorporated all RMB/FX option transactions meeting certain requirements, into CCP clearing.

### 6.1 Elements of Foreign Exchange Bilateral Transaction Eligible for CCP Clearing

CCP clearing products for RMB/FX Bilateral Transaction include RMB/FX Spot Bilateral Transaction, RMB/FX Swap Bilateral Transaction, RMB/FX Forward Bilateral Transaction and RMB/FX Option Bilateral Transaction.

**RMB/FX Spot Bilateral Transaction:** Both parties exchange RMB and FX at contracted currencies, amount and exchange rate, and settle on the second business day (T+2 day) after trading day (T day).

**RMB/FX Swap Bilateral Transaction:** Both parties agree on two RMB/FX transactions with different value dates and in opposite direction. In earlier trading (near leg), one party buys RMB with foreign exchange at a specific rate (or buys foreign exchange with RMB); in the latter trading (far leg), such party buys foreign exchange with RMB at another specific rate (or buys RMB with foreign exchange).

**RMB/FX Forward Bilateral Transaction:** Both parties settle an FX/RMB trade in an agreed forward date, with agreed currency, amount and rate.

**RMB/FX Option Bilateral Transaction:** This refers to the right to buy a certain volume of FX assets at an agreed exchange rate on a given trading day in the future. Option buyer acquires such right by paying an option premium; option seller collects option premium and performs its obligation when buyer chooses to exercise its right.

Currently, SHCH accepts following clearing products (in which, T day means trading date and the same hereinafter). If new products, currencies and period ranges are added as required based on business development, SHCH shall publish the said new information separately.

Table 5. Clearing Products

| Product type                               |                      | Currency pair   | Near leg settlement date | Far leg settlement date |
|--|----------------------|---|--------------------------|-------------------------|
| Spot Bilateral Transaction                 | Spot                 | USD/CNY,<br>EUR/CNY,<br>JPY/CNY,<br>GBP/CNY,<br>HKD/CNY,<br>AUD/CNY | T+2                      | None                    |
| Swap Bilateral Transaction                 | Spot-Forward         | USD/CNY   | T+2                      | T+F<br>(F≤1Y+2)         |
|  | Forward 1 -Forward 2 |   | T+F1                     | T+F2(F2≤1Y+2)           |
| Forward Bilateral Transaction              | Forward              |   | None                     | T+F<br>(F≤1Y+2)         |
| Option Bilateral Transaction <sup>14</sup> | Option               | USD/CNY   | T+2                      | T+F<br>(F≤1Y+2)         |

Table 6. Clearing Product's Elements

| Basic Elements                              |   |   |   |
|---|---|---|---|
| Counterparty                                | Clearing participants   | Trading type                                  | Spot, Forward, Swap, Option                                   |
| Trading date                                | Not limited   | Trading time                                  | Not limited   |
| Near(far)leg value date                     | Not limited   | Option expiration date                        | Not limited   |
| Near(far)leg trading currency pair          | Spot:<br>USD/CNY,EUR/CNY,JPY/CNY,GBP/CNY,HKD/CNY,AUD/CNY<br>Forward, swap, options: USD/CNY |   |   |
| Near(far)leg base currency                  | USD,EUR,100JPY,<br>GBP,HKD,AUD  | Near(far) leg trading rate                    | Exchange rate is accurate to 0.0001 (for HKD, it is 0.00001). |
| Near(far)leg foreign currency buying volume | Not limited   | Near(far) leg foreign currency selling volume | Not limited   |
| Near(far) leg RMB buying volume             | Not limited   | Near(far) leg RMB selling volume              | Not limited   |
| Option premium                              | Only applicable   | Settlement date of                            | T+2   |

<sup>14</sup>Option Bilateral Transaction has been incorporated into CCP clearing for RMB/FX Bilateral Transaction from June, 2016.

|  |                |                       |  |
|--|----------------|-----------------------|--|
|  | for FX Options | <b>option premium</b> |  |
|--|----------------|-----------------------|--|

## 6.2 Intraday Clearing Processing

Table 7: Foreign Exchange Bilateral Clearing Hours

| Date                                       | Time (UTC+8) | Issues   |
|--|--------------|--|
| <b>T+1</b>                                 | 09:30        | Receive transaction concluded in the previous day  |
|  | 09:30-11:00  | Risk management compliance check   |
|  | 09:30-10:30  | Confirmation of client clearing  |
| <b>T+1 to S-1 (report generation date)</b> | 11:00        | Generate intraday margin report  |
|  | 11:30        | Intraday margin payment cut-off time point   |
|  | 15:00        | Mark-to-market profit & loss cut-off time point  |
|  | 16:00        | RMB variation margin cut-off time point<br>Margin default judgment<br>GCMs complete margin allocation  |
|  | 16:45        | Cut-off time point for RMB margin drawing and agent margin drawing   |
|  | 19:00        | Generate day-end margin report   |
| <b>S-1</b>                                 | 11:30        | Generate settlement report   |
|  | Before 12:00 | SHCH sends all foreign currencies' cash settlement details in S day to foreign exchange settlement banks   |
|  | Before 14:30 | JPY and AUD: CMs send cash in notices to foreign exchange settlement banks (MT210)<br>Note: CMs who transfer foreign principal in S day  |
|  | Before 16:00 | 1. USD, EUR, GBP and HKD: CMs send cash in notices to foreign exchange settlement banks (MT210)<br>Note: CMs who transfer foreign principal in day S-1.<br>2. <b>JPY and AUD</b> : Cut-off time point for foreign exchange cash out (MT202)  |
| <b>S (Settlement date)</b>                 | Before 11:00 | 1. <b>JPY and AUD</b> : CM sends cash out order through correspondent banks (MT202)<br>2. <b>JPY and AUD</b> : CM sends cash out orders to foreign exchange settlement bank (MT202) or foreign exchange settlement bank will deduct cash actively, and notify SHCH regarding real-time receipt information of CM (MT910) |
|  | Before 11:30 | <b>JPY and AUD</b> : SHCH sends cash out orders (MT202) to foreign exchange settlement banks based on MT910, to pay principal receivable to such CM  |
|  | Before 12:00 | <b>USD, EUR, GBP and HKD</b> : CM sends cash in notice (MT210) to foreign exchange settlement bank<br>Note: CMs who transfer foreign principal in S day  |

| Date       | Time (UTC+8) | Issues   |
|------------|--------------|--|
|            | 14:30        | <b>USD, EUR, GBP and HKD:</b> CM sends cash out order to foreign exchange settlement bank (MT202)<br>Note: CM has chosen to send MT202 to foreign exchange settlement bank   |
|            | 9:00-15:00   | <b>USD, EUR, GBP and HKD:</b> Foreign exchange settlement bank actively collects cash from CM's account<br>Note: CM has not chosen to send MT202 to foreign exchange settlement bank   |
|            | Before 15:00 | 1. cut-off time point for <b>RMB</b> cash payment<br>2. <b>USD, EUR, GBP and HKD:</b> Foreign exchange settlement bank notifies receipt information (MT910) to SHCH<br>3. <b>HKD:</b> Cash out notice (MT202) cut-off time point |
|            | 15:30        | 1. <b>USD, EUR, GBP and HKD:</b> Only after receiving all cash payable from one CM, shall SHCH notify foreign exchange settlement bank through MT202 before 15:30 of day S<br>2. CM receives RMB and foreign exchange cash       |
|            | 16:00        | cash out notice (MT202) for <b>USD, EUR and GBP</b> cut-off time point   |
| <b>S+1</b> | 10:00        | <b>All foreign currencies:</b> Cut-off time point for sending MT950 (cash balance statement) by foreign exchange settlement bank   |

SHCH's clearing system receives transaction data concluded the previous business day from CFETS at 09:30 (UTC+8) of each day, and conducts subsequent processing. Two parties of one transaction may also submit concluded transaction data to SHCH for central clearing through SHCH client-terminal or by other accepted methods.

On T+1 day, after 09:30 (UTC+8), SHCH's clearing system shall conduct risk management compliance check on transaction data of T day.

In FX Bilateral Transaction, clearing limit refers to risk exposure limit. Risk management compliance check aims to verify whether transaction to-be-checked will cause the portfolio risk exposure of clients or clearing participants to exceed maximum tolerance threshold or maximum tolerance limit. Based on check result, SHCH's clearing system shall take further appropriate action on transactions that have passed client clearing confirmation or do not require client clearing confirmation. Details of risk management compliance check are as follows:

Table 8. Results of Risk Management Compliance Check and Corresponding Processing

| Check result   | Action to be taken  |
|--|---|
| Portfolio risk exposures of clients and clearing participants (including GCMs acting as agent for clients) corresponding to two parties of a | Clearing system shall enroll such transaction into subsequent CCP clearing process. |

| Check result  |   | Action to be taken  |
|---|---|---|
| transaction do not exceed their risk exposure limits.   |   |   |
| Portfolio risk exposure of clients and clearing participants (including GCMs acting as agent for clients) corresponding to two parties of a transaction do not exceed their maximum tolerance threshold/limit | Portfolio risk exposure of clearing participant for proprietary transactions has exceeded risk exposure limit | Clearing system shall enroll such transaction into subsequent CCP clearing process, calculate excess margin and require the same from clearing participant for proprietary transactions whose portfolio risk exposure has exceeded risk exposure limit.         |
|   | Client's portfolio risk exposure has exceeded risk exposure threshold.  | Clearing system shall enroll such transaction into subsequent CCP clearing process, and calculate excess margin of client whose combined risk exposure has exceeded risk exposure threshold, and required payment of such excess margin from corresponding GCM. |
| Combined risk exposure of either the client or clearing participant (including GCMs acting as agent for clients) has exceeded maximum tolerance threshold/limit.  |   | Such transaction shall be kept in a queue.  |

If portfolio risk exposure that has exceeded tolerance changes before transaction acceptance cut-off time point, transactions in queue shall be reactivated for risk exposure threshold check and risk management compliance check.

For client clearing, GCM may choose either case-by-case or default models, to conduct client clearing confirmation, and shall complete client clearing confirmation for all client transactions after 09:45 (UTC+8) on day T+1 through client- terminal.

**Case-by-case confirmation** means a GCM has to confirm each transaction from its clients. Any transaction unconfirmed by agent within required time shall not be allowed to be processed further for clearing. **Default model** means the GCM does not need to confirm any transaction from its clients; all these transactions will be automatically confirmed.

GCMs needs to complete comparison before 10:30 (UTC+8) and submit client clearing confirmation order through client-terminal. If GCM rejects confirming client transaction, such transaction will not enter subsequent clearing process. If two parties of a transaction have the same GCM as their agents, this GCM needs to confirm both parties separately, to complete client clearing confirmation for such transaction. GCM does not need to reconfirm any confirmed transaction,

Clearing participants may check clearing data after 09:45 (UTC+8) on day T+1 through client-terminal, including all transactions done in day T and pending for netting, advance



settlement amount and corresponding transaction details. All these data can be exported into Excel and XML formats.

Based on above conditions, transaction status can be:

a. Confirmed; b. Under risk management check; c. Invalid; d. Pending for netting; e. Netting completed.

Buyer/seller status for proprietary transaction can be:

a. Clearing confirmed; b. Risk management check failed; c. Risk management check-passed.

Buyer/seller status for client transaction can be:

a. Unconfirmed; b. Under confirmation; c. Confirmed by agent; d. Rejected by agent.

Remarks for buyer/seller status indicate details of buyer/seller status, such as, ‘not checked’, ‘excess the limit’, etc.

Before cut-off time point (11:30 (UTC+8)) on day T+1, SHCH shall complete clearing and netting for all transactions that have passed risk management check, and shall generate novation report and settlement report. After such time point (11:30 (UTC+8)), transaction data having not passed risk management check will not be included into CCP clearing.

After 11:30 (UTC+8) on day T+1, clearing participants may check day T’s transaction data for which SHCH has completed novation, through newly added CCP clearing transaction data of day T+1. Furthermore, clearing participants may also check transaction data for which SHCH has completed novation and which has come into netting on that day, based on settlement report, and check transaction data for which SHCH has completed novation but has not come into netting in that day, through client-terminal.

### **6.3 End-day Clearing Processing**

Settlement statements include newly added CCP clearing transaction data, settlement reports and advance settlement data for the same day.

Newly added CCP clearing transaction data refer to day T’s transaction data for which SHCH has completed novation and has incorporated into CCP clearing. Transaction data reports will be separately generated for Foreign Exchange Option, whereas Foreign Exchange Spot, Forward and Swap transactions will be combined together for generating data reports. All of these data reports can be downloaded in Excel and XML formats.

Settlement reports: SHCH shall generate settlement reports based on corresponding netting results, of which, option premium and RMB cash flow created by netting delivery in Foreign Exchange Options are combined for netting, and therefore generate settlement

report for Foreign Exchange Option Transaction; Spot trades generated by full amount delivery in Foreign Exchange Options, and Foreign Exchange Spot, Forward and Swap transactions are combined for netting, and therefore generate settlement report for Foreign Bilateral Transaction(not including options). All settlement reports are provided in English and Chinese, however, the Chinese version shall prevail.

Settlement report for Foreign Exchange Option trade contains settlement funds netting on settlement day (hereinafter referred to as S day), and its corresponding option trade data and cash-flow data for netting delivery; settlement report for Foreign Exchange Bilateral Trade (not including options) contains settlement funds netting on settlement day (hereinafter referred to as S day) and its corresponding Spot, Forward and Swap trade data, and Foreign Exchange Spot Trade data generated by full amount delivery, etc. Settlement reports can be downloaded in PDF, Excel and XML formats.

Advance settlement data: To-be-settled netted funds generated by SHCH's clearing system, which has not been included into settlement report, and its corresponding trade data. Such data can be downloaded in Excel format.

SHCH shall generate and publish settlement report on report generation date.

On report generation date, after 09:45 (UTC+8), CM may query advance settlement amount through client-terminal. On report generation date, after 11:30 (UTC+8), CM can download or print CCP clearing trade data newly added on this day, and corresponding settlement reports.

GCM can choose to have its proprietary transactions and client transactions netted separately or combined. If such two are netted separately, their settlement reports shall also be generated separately, and GCM's house clearing operator can check reports related to proprietary transactions, and client clearing operator can check reports related to client transactions. If the two are combined for netting, their settlement reports will be combined as well, and can be downloaded by GCM's house clearing operator.

## **6.4 Settlement Processing**

### **6.4.1 Margin Settlement Processing**

#### **1) Day-end Margin Deposit**

SHCH shall calculate day-end margin for each clearing participant in each business day, and clearing participant can download such margin report through client-terminal at 19:00 (UTC+8). Based on received day-end margin report, clearing participant can determine appended amount and released/frozen amount for each kind of margin, and settled amount for mark-to-market profit& loss; GCM can determine appended amount and released/frozen amount for client's margin, and settled amount for mark-to-market profit& loss based on client's margin requirement queried on client-terminal.

Cut-off time point for payment of appended RMB margin is 16:00 (UTC+8) the next business day. In cases where settlement cash for mark-to-market profit& loss has to be paid, it shall be paid before 15:00 (UTC+8) the next business day. Cut-off time point for payment of appended USD margin is next day-end. Clearing participant who has not successfully paid margin before required time point shall be considered as margin defaulter and shall be subject to margin default procedures.

GCM shall allocate margin before 16:00 (UTC+8) the next day through client-terminal, provided that it has received margin payment. If client margin shortfall occurs due to late allocation, such GCM shall be considered as margin defaulter.

Clearing participant may deposit RMB margin in the following ways: (1) Pay on their own: Transfer margin to margin account designated by SHCH before cut-off time through RMB HVPS; (2) Direct debit: Clearing participant may authorize SHCH to directly debit RMB variation margin. System shall send real-time transfer message to HVPS while generating variation margin call, to deduct corresponding cash from clearing account opened by clearing participant in HVPS; (3) If it is impossible to pay margin through the above two methods due to force majeure, clearing participant may transfer required margin to margin account designated by SHCH in any feasible way.

Clearing participant should transfer required USD margin to margin account designated by SHCH before required time.

#### 1) Deposit of Intraday Margin

After SHCH triggers intraday variation margin call, clearing system shall send real-time intraday variation margin reminder to clearing participant through client-terminal, and issue intraday margin report. Clearing participant may submit payment information and transfer required cash to margin account designated by SHCH, or authorize SHCH to directly debit margin within 30 minutes after receiving intraday margin report, based on margin requirement on intraday margin report and available balance on margin account. Frozen margin balance after successful payment must be equal to or higher than margin requirement when margin call is triggered. Clearing participant who fails to pay required margin before required time point shall be considered as margin defaulter. Rules on intraday margin payment for GCMs are same as rules on day-end margin payment.

#### 1) Margin Interest Accrual

Clearing participants' margin interest is directly transferred to their variation margin accounts.

#### 2) Drawing Margin

Drawing RMB margin: (1) Drawing on their own: Clearing participant can draw cash before 16:45 (UTC+8) through client-terminal; (2) Return by SHCH: For RMB variation

margin, SHCH shall return all available balance to clearing participant's clearing account in HVPS the same day.

Drawing USD margin: Clearing participant shall submit USD margin drawing application through client-terminal before required time point and SHCH shall transfer required margin to account designated by such clearing participant.

GCM shall finish drawing margins on behalf of clients before 16:45 (UTC+8) of the same day.

#### 5) Maintenance of Client's Margin Ledger

In cases where SHCH actively collects or returns clients' margins to GCMs acting as such clients' agent, the newest actual margin requirement for clients calculated by SHCH shall apply.

In cases where GCM pays margin for its client, it shall first pay required margin to its client margin account through client-terminal and then record it into client's ledger. The paid margin amount shall be consistent with client margin requirement.

In cases where GCM draws margin from its client margin account, it shall first make record in client's margin ledger through client-terminal and then transfer available balance in its client margin account to another designated account.

#### 6.4.2 Cash Settlement Processing

SHCH completes principal settlements of various currencies with CMs based on settlement reports. Where GCM chooses to combine cash settlement for proprietary and client transactions into same report, and if cash for settlement are insufficient, client transactions shall be first satisfied.

##### 1) RMB Clearing Procedures

(1) CM shall transfer RMB cash payable to SHCH's RMB clearing account through HVPS before 15:00 (UTC+8) on S day.

(2) In cases where CM authorizes SHCH to directly debit, SHCH shall automatically deduct required cash from clearing account opened in HVPS by such member from 15:00 (UTC+8) on S day.

(3) After receiving all cash payable transferred by one CM, SHCH shall transfer corresponding cash into RMB clearing account of such CM before 15:30 (UTC+8) on S day, through HVPS.

##### 2) USD Clearing Procedures

(1) Before 12:00(UTC+8) on S-1 day, SHCH shall notify cash settlement details of S day to foreign exchange settlement bank, and based on such report, the foreign exchange settlement bank will know SHCH's cash receivable and payable.

(2) CMs who transfer principal through MT202 on S-1 day shall send cash in notices, to foreign exchange settlement bank before 16:00 (UTC+8) of S-1 day (MT210).

(3) CMs who transfer principal through MT202 on S day shall send cash in notice (MT210) to foreign exchange settlement bank before 12:00 (UTC+8) of S day, and foreign exchange settlement bank shall monitor foreign exchange cash transferred in the same day, to ensure it is received on S day.

(4) CM shall pay USD principal to SHCH through foreign exchange settlement bank, using the following two methods:

i. CM directly sends MT202 to foreign exchange settlement bank.

CM shall send cash out order (MT202) to foreign exchange settlement bank before 14:30 (UTC+8) of S day. After receiving such order, foreign exchange settlement bank shall check balance (sum of credit invoked from bank and actual position) of CM's account: If balance is sufficient, then foreign exchange settlement bank shall transfer CM's foreign exchange cash to foreign exchange settlement account opened by SHCH in such foreign exchange settlement bank, and send MT910 to SHCH at the same time. However, if balance is insufficient, foreign exchange settlement bank shall reject transferring and notify both SHCH and such CM via email and telephone.

ii. CM does not send MT202 but authorizes foreign exchange settlement bank to collect cash from CM's account, based on settlement details.

From 09:00 to 15:00 (UTC+8) on S day, foreign exchange settlement bank shall check balance of CM's account (sum of credit invoked from bank and actual position). If balance is sufficient, foreign exchange settlement bank shall transfer required cash from account of CM who needs to make payment, based on details sent by SHCH, and transfer such cash to account opened by SHCH in foreign exchange settlement bank, and notify SHCH through MT910. If balance is insufficient by 15:00 (UTC+8), foreign exchange settlement bank shall notify both SHCH and CM via email and telephone that such transaction cannot be conducted.

(5) Only when SHCH receives cash of all currencies required to be transferred from an individual CM, shall it notify foreign exchange settlement bank before 15:30 (UTC+8) of S day, to transfer all corresponding cash to such CM's accounts for various currencies.

(6) When CMs require to withdraw cash, they shall send cash out order (MT202) to foreign exchange settlement bank before 16:00 (UTC+8) on S day, based on forecast position amount and cut-off time point given by foreign exchange settlement bank.

(7) Before 10:00 (UTC+8) on S+1 day, foreign exchange settlement bank shall send statement (MT950) to SHCH and corresponding CM.

### 3) Clearing Procedures for EUR, GBP and HKD.

(1) Before 12:00 (UTC+8) on S-1 day, SHCH shall notify cash settlement details of S day to foreign exchange settlement bank before 12:00 (UTC+8) on S-1 day. Based on these details, foreign exchange settlement bank will know cash amount that SHCH should receive and pay the next day.

(2) CM who has transferred cash through MT202 on S-1 day, shall send cash in notice (MT210) to foreign exchange settlement bank before 16:00 (UTC+8) on S-1 day. Following this, foreign exchange settlement bank shall monitor transferred cash and arrange such cash to value from S-1 day.

(3) CM who has transferred cash through MT202 on S day shall send cash in notice (MT210) to foreign exchange settlement bank before 12:00 on S day. Following this, foreign exchange settlement bank shall monitor foreign exchange cash transferred in the same day, to ensure it is received on S day.

(4) CM has following two choices for paying foreign exchange cash to SHCH through foreign exchange settlement bank:

i. CM directly sends MT202 to foreign exchange settlement bank.

CM shall send cash out order (MT202) to foreign exchange settlement bank before 14:30 (UTC+8) of S day. After receiving such order, foreign exchange settlement bank shall check CM account's balance (sum of credit invoked from bank and actual position). If balance is sufficient, then foreign exchange settlement bank shall transfer CM's foreign exchange cash to foreign exchange settlement account opened by SHCH in such foreign exchange settlement bank. If balance is insufficient, foreign exchange settlement bank shall reject transferring and notify both SHCH and such CM via email and telephone in a real time manner.

ii. CM does not send MT202 but authorizes foreign exchange settlement bank to collect required cash from CM's account, based on settlement details.

On S day, foreign exchange settlement bank shall check CM's account balance (sum of credit invoked from bank and actual position). If balance is sufficient, foreign exchange settlement bank shall collect required cash from account of CM who needs to make payment, based on details sent by SHCH, in order to transfer such cash to account opened by SHCH in foreign exchange settlement bank, and shall notify SHCH through MT910 in a real time manner. If balance is insufficient by 15:00 (UTC+8), foreign exchange settlement bank shall notify both SHCH and CM via email and telephone that such transaction cannot be conducted.

(5) Only when SHCH receives cash of various currencies that should be transferred by one CM, shall it notify foreign exchange settlement bank through MT202 before 15:30 (UTC+8) on day S, to transfer corresponding cash to such CM's various currency accounts.

(6) In cases where CM intends to transfer foreign exchange cash out of its account on S day, it shall send cash out order (MT202) to foreign exchange settlement bank before 15:00 (UTC+8) for HKD and before 16:00 (UTC+8) for EUR and GBP. Transferred foreign exchange cash's value date is S day.

(7) Before 10:00 (UTC+8) on S+1 day, foreign exchange settlement bank shall send MT950 statement to SHCH and CM.

#### 4) Clearing Procedures for JPY and AUD

(1) On S-1 day, before 12:00 (UTC+8), SHCH shall notify foreign exchange settlement bank of cash details settled on S day.

(2) CMs who have transferred cash on S day shall send cash in notice (MT210) to foreign exchange settlement bank before 14:30 (UTC+8) of S-1 day.

(3) CM shall send cash out order (MT202) through correspondent bank before 11:00 (UTC+8) of S day to transfer required foreign exchange cash to foreign exchange settlement bank account opened in foreign exchange settlement bank. Foreign exchange settlement bank shall monitor foreign exchange cash transferred on S day to ensure it is received on S day.

(4) CM can pay foreign exchange cash to SHCH through foreign exchange settlement bank by the following two methods:

i. CM does not send MT202 but authorizes foreign exchange settlement bank to collect required funds from CM's account, based on settlement details.

Before 11:00 (UTC+8) on S day, foreign exchange settlement bank shall check CM's account balance (sum of credit invoked from bank and actual position, the same hereinafter). If balance is sufficient, foreign exchange settlement bank shall collect required cash from account of CM who needs to make payment, based on details sent by SHCH, in order to transfer such cash to account opened by SHCH in foreign exchange settlement bank, and shall notify SHCH via MT910 in a real time manner. If balance is insufficient at 11:00 (UTC+8), foreign exchange settlement bank shall notify both SHCH and CM via email and telephone that such transaction cannot be conducted.

ii. Clearing member directly sends MT202 to foreign exchange settlement bank.

CM shall send cash out order (MT202) to foreign exchange settlement bank before 11:00 (UTC+8) of S day. After receiving such order, foreign exchange settlement bank shall check CM account's balance (sum of credit invoked from bank and actual position). If

balance is sufficient, then foreign exchange settlement bank shall transfer CM's foreign exchange cash to foreign exchange settlement account opened by SHCH in such foreign exchange settlement bank, and shall notify SHCH through MT910. However, if balance is insufficient, foreign exchange settlement bank shall reject transfer and notify both SHCH and such CM via email and telephone.

(5) On day S after 11:00 (UTC+8), foreign exchange settlement bank shall continue checking CM's account balance (sum of credit invoked from bank and actual position). If such balance is sufficient, foreign exchange settlement bank shall directly collect required cash from such account or execute cash out order (MT202) sent by CM, in order to transfer foreign exchange cash into account opened by SHCH in foreign exchange settlement bank, and shall notify arrival information(MT910) to SHCH in a real time manner.

(6) If CM intends to transfer foreign exchange cash out of its foreign exchange settlement account whose value date is S day, such CM shall send cash out order (MT202) to foreign exchange settlement bank before 16:00 (UTC+8) on S-1 day. Such CM shall also pay all cash payable in all currencies to SHCH's account before 10:30 (UTC+8) on S day. According to MT910 notice, SHCH shall send cash out order (MT202) before 11:30 (UTC+8) to pay foreign exchange cash which such CM shall receive. Foreign exchange settlement bank shall check balance of such CM's account and if there is sufficient cash in account by 11:30 (UTC+8), foreign exchange settlement bank shall transfer foreign exchange cash to account designated by such CM, with S day as value date. If balance is insufficient, then foreign exchange settlement bank shall reject such transaction, and notify CM via email and telephone in a real time manner.

(7) Foreign exchange settlement bank shall send statements (MT950) to SHCH and CM before 10:00 (UTC+8) of S+1 day.

#### 6.4.3 Default Fund Operations

Default fund = daily average risk exposure for clearing member's proprietary and client transactions × default fund ratio

Default fund ratio = stress test result ÷ sum of daily average risk exposure of all members

Stress test result refers to additional loss that could not be covered by margins of two largest CMs who default simultaneously.

Daily average risk exposure of member is equal to arithmetic mean of daily day-end risk exposures of the previous three months.

SHCH conducts stress tests every day, and calculates and adjusts default fund ratio and amount of each CM on a quarterly basis, based on stress test results. During quarterly calculation and adjustment period, in order to prevent sharp risk increase due to abrupt increase in stress test result for that quarter, if default fund thus estimated is over 125% of



total paid default fund, it shall make interim adjustment for required default fund amount for the entire market.

SHCH is responsible for daily management of default funds, and shall settle default fund of each CM individually. SHCH manages default funds based on *Administrative Principles of SHCH on Default Fund and Risk Reserve*.

#### 6.4.4 Relevant Rules on Default Management

In the case of default, SHCH shall notify defaulting members and inquire about reasons for the default. Based on specific default conditions, SHCH shall freeze all cash or assets receivable with respect to this clearing business conducted by such defaulting CM, impose default penalty, and complete cash settlement through bank credit. If defaulting party does not pay RMB cash within required time, a default penalty at 0.1% of overdue amount calculated on a daily basis shall be imposed. If defaulting party does not pay foreign exchange cash within required time, default penalty at a rate equal to sum of overdraft interest rate issued by foreign exchange settlement bank plus 3% (annualized rate) shall be imposed.

Default management shall be performed in accordance with relevant rules provided in Chapter 3.3 of these *Guidelines*, with following special instructions:

1) **Restrictions on business:** SHCH has the right to lower maximum tolerance threshold/limit to the level of risk exposure limit, in order to restrict defaulting clients/members from participating in the business.

2) **Judgment of permanent default:** Defaulting CM shall promptly pay overdue amount. If defaulting CM does not pay full settlement cash default mark-to-market margin, default penalty, default fund and relevant fees, or margin defaulting CM commits second consecutive margin default, or has other defaults as deemed by SHCH, SHCH has the right to consider such member as a permanent defaulter.

#### 3) **Management of client clearing:**

(1) GCMs shall adopt pay-after-receiving system for clients and pay-before-receiving system for SHCH, and shall perform their obligation as guarantors for their clients. In the case of client default, GCM shall freeze assets receivable of such client. After SHCH accepts relevant evidences proving such default submitted by GCM, such GCM is entitled to suspend or stop offering clearing service to its defaulting client.

(2) In cases where GCM faces defaulting client, they shall assist SHCH in default investigation, by providing evidences proving default fact and overdue amount of such client, and other records pertaining to such client default required by SHCH. GCM shall not embezzle any assets that have been received but not transferred to defaulting client. SHCH is entitled to restrict or suspend defaulting client from participating in this business.

(3) If SHCH is unable to confirm that the client has committed a default, then it shall be deemed that such client has fulfilled its obligations.

(4) Defaulting GCM is obliged to help SHCH in notifying client the requirement to supplement such margin as required by SHCH.

(5) After a GCM is deemed as a permanent defaulter, such defaulting CM shall transfer assets it has received but not paid and appended margin provided by defaulting client, to SHCH. SHCH shall assist the GCM in completing payment and settlement for non-defaulting clients' cleared positions.

(6) If SHCH has judged that a GCM has made permanent default, SHCH shall then transfer uncleared positions of non-defaulting clients who have provided required margins before cut-off time point, while positions that have been cleared but not settled are not transferred. Before position-transfer becomes effective, SHCH shall impose special margin call to clients through defaulting CMs or CMs who have received such positions, based on cleared but not settled positions.

(7) SHCH shall conduct forced liquidation against defaulting clients or clients who have not paid required margin before cut-off time point. Non-defaulting clients are obliged to find members for receiving positions within time required by SHCH. Otherwise, SHCH has the right to conduct forced liquidation against clients, and losses caused by such position closing shall be added into cost of this CM's default management.

(8) After relevant positions have been transferred, if clients have not completed cash payment for untransferred positions before cut-off time point, such clients are deemed to be defaulters. In this case, SHCH has the right to sell assets receivable of defaulting members with respect to its client transactions, and those of defaulting clients as required, and related losses shall be incorporated into cost of this member's default management.

**4) Options Exercising:** If defaulting party is an option buyer, SHCH has the right to either exercise or not exercise such trade.

## **6.5 Relevant Formulas for Foreign Exchange Bilateral Clearing**

### **6.5.1 Minimum Margin**

Initial margin is calculated, based on the following formula:

Initial margin requirement= $L \times C$

In which:

L is risk exposure limit;

C is member's credit factor. In the case of client clearing, C refers to GCM's credit factor. SHCH shall adjust credit factors of different members appropriately.

If initial margin requirement is adjusted, SHCH shall send notice on adjustment of initial margin, based on which, clearing participant shall pay or withdraw margin.

#### 6.5.2 Changing Margin

Variation margin is divided into excess margin, mark-to-market margin and special margin.

##### (1) Excess Margin

$$\text{Excess margin} = \text{Max}(\text{Max}(\text{VaR}_1, \text{VaR}_2, \text{VaR}_3) \times C - L \times C, 0)$$

Where: VaR<sub>1</sub> is risk exposure, excluding positions settled on T+2 day and T+1 day, as well as overdue positions;

VaR<sub>2</sub> is risk exposure, excluding positions settled on T+1 day and overdue positions;

VaR<sub>3</sub> is risk exposure of all outstanding positions;

Max (VaR<sub>1</sub>, VaR<sub>2</sub>, and VaR<sub>3</sub>) represents one member's risk exposure;

L is risk exposure limit;

C is member's credit factor.

##### (2) Settlement of Mark-to-Market Profit & Loss

SHCH shall settle mark-to-market profit & loss at day-end.

Mark-to-market profit & loss is settled in RMB. Mark-to-market is only applied to Forward, Swap, Option, or Spot trades generated by exercising of option or cash flows generated by netting delivery of option, but not to common Spot trades.

Mark-to-market settlement amount is calculated from clearing participants' perspective. If such settlement amount is positive, it is reflected in receivable amount for mark-to-market on margin report, and clearing participant receives such settlement amount. If such settlement amount is negative, it is reflected in payable amount for mark-to-market on margin report, and CM pays such settlement amount.

Mark-to-market profit & loss is calculated according to following procedures:

1) Calculate mark-to-market value for Spot transaction or cash-flow generated by exercising of option, or Forward or one leg of Swap transaction, with day T+i as value date.

$$P_{T+i} = (\text{net RMB amount on day } T+i + \text{net foreign currency amount on day } T+i \times F_{T+i}) \times DF_i$$

Positive net amount indicates such CM has receivable amount, otherwise, such member has payable amount.

i refers to calendar days from value date of option premium to current date and  $i > 1$ .

$DF_{i,T}$  is discount rate calculated according to internal RMB Spot Interest Rate curve, generated by SHCH at day-end of current date.

$F_{T+i}$  refers to forward exchange rate calculated from current day-end Spot Exchange Rate and Foreign Exchange Swap curve.

## 2) Calculation of Mark-to-Market Value of Outstanding Options

First, internal value of outstanding options settled on day  $T+i$  are calculated using Garman-Kohlhagen model;

$$P_{T+i} = a \times M \times DF_{i,T} \times \omega \times [F_{T+i}N(\omega d_1) - KN(\omega d_2)]$$

$$d_1 = \frac{\frac{\ln(\frac{F_{T+i}}{K}) + \frac{\sigma_{T_{ep}-T,K}^2 \times (T_{ep} - T)}{730}}{\sigma_{T_{ep}-T,K} \times \sqrt{\frac{T_{ep} - T}{730}}}$$

$$d_2 = \frac{\frac{\ln(\frac{F_{T+i}}{K}) - \frac{\sigma_{T_{ep}-T,K}^2 \times (T_{ep} - T)}{730}}{\sigma_{T_{ep}-T,K} \times \sqrt{\frac{T_{ep} - T}{730}}}$$

i represents calendar days from option settlement date to current date, and  $i > 1$ ;

$T_{ep}$  is option's expiry date;

M is nominal principal;

K is exercise price;

a: buyer is +1 and seller is -1;

$\omega$ : CALL is +1 and PUT is -1.

$\sigma_{T_{ep}-T,K}$  refers to the implied volatility corresponding to maturity date  $T_{ep}$ , and exercise price K on volatility surface generated by SHCH at current day-end.

## 3) Calculation of Option Premium Adjustment

When and only when value date of option premium is later than next business day, shall it be required to adjust mark-to-market value based on premium; adjustment value  $\Delta P_{T+i}$  is calculated based on following formula:

$$\Delta P_{T+i} = -a \times M \times DF_{i,T} \times Pre$$

i refers to calendar days from value date of option premium to current date, and  $i > 1$ ;

Pre is option premium.

#### 4) Calculation of Mark-to-Market Value of Outstanding Positions

$$V_T = \sum_{i=1} (P_{T+i} + \Delta P_{T+i})$$

This means that sum of above 1), 2) and 3) is mark-to-market value of outstanding positions held by CM on day T.

#### 5) Calculation of Mark-to-Market Profit & Loss

Settled amount for mark-to-market profit & loss on day T =  $V_T - \exp\left(\frac{\text{ONrate} \times \text{day}}{\text{Basis}}\right) \times V_{T-1}$

Day is equal to calendar days from current day to next business day;

ONrate is RMB overnight rate on day T;

Basis is interest accrual basis and equal to 360;

$V_{T-1}$  is mark-to-market value calculated in previous calculation day.

Settled amount for mark-to-market profit & loss is received and paid the next business day.

#### (3) Special Margin

Three kinds of events can trigger special margin, i.e., exceptional fluctuation of foreign exchange rate, consecutive holidays and default made by CMs. In the case of any of these events, SHCH may require clearing participants to pay special margins.

Trigger event 1: exceptional fluctuation of foreign exchange rate

SHCH monitors the fluctuation of RMB/FX rates every day. In the case of exceptional fluctuation, SHCH has the right to require clearing participants to pay special margins based on specific circumstances.

Special margin requirement =  $\text{Max}(\text{VaR}_1, \text{VaR}_2, \text{VaR}_3) \times \text{special margin factor}_{\text{ex-rate}} \times C$

Here, special margin factor<sub>ex-rate</sub> is determined by SHCH based on foreign exchange fluctuations.

Trigger event 2: consecutive holidays

In the case of consecutive holidays, SHCH may require clearing participants to pay special margins on the previous business day of such holidays.

Special margin requirement =  $\text{Max}(\text{VaR}_1, \text{VaR}_2, \text{VaR}_3) \times \text{special margin factor}_{\text{holidays}} \times C$

Here, special margin factor<sub>holidays</sub> is estimated by SHCH based on holiday duration.

Trigger event 3: member default

In cases where GCM defaults and it is required to conduct position-transfer, SHCH has the right to collect special margins for cleared but not settled positions from clients, through defaulting members or members who have received such positions.

Special margin requirement= risk exposure of cleared but not settled position ×special margin factor<sub>position cleared but not settled</sub>×C

In which, special margin factor<sub>position cleared but not settled</sub> is determined by SHCH based on variable factor of near leg exchange rate.

If multiple trigger events occur simultaneously, the total margin requirement is the sum of individual special margin requirement caused by each trigger event.

## VII. Central Clearing of Standard Bond Forward Transactions in Inter-bank Market

### 7.1 Elements of Standard Bond Forward Eligible for Central Clearing

Standard Interest Rate derivatives are Interest Rate Forwards, Interest Rate Swaps or Options contracts whose elements such as maturity date and range are standardized. Standard Bond Forward is one of these derivatives, a kind of Bond Forward contract with transaction object and settlement date being standardized in Inter-bank market. SHCH offers central clearing for following Standard Bond Forward contracts, e.g., 3-year, 5-year and 10-year virtual bonds issued by China Development Bank(CDB) at a coupon rate of 3% .

Table 9. Elements of Standard Bond Forward Eligible for Central Clearing

|                                   |   |
|-----------------------------------|---|
| Contract Type                     | 3-year, 5-year and 10-year Standard Bond Forward issued by CDB  |
| Contract Code                     | CDB3_1503,etc; CBD5_1503, etc.; CBD10_1503,etc  |
| Object                            | 3-year, 5-year and 10-year virtual CDB bonds at a coupon rate of 3%   |
| Maturity Month                    | The four nearest quarter months   |
| Maturity Settlement Date ( D Day) | 3 <sup>rd</sup> Wednesday in maturity month; if it is not a business day, then it is adjusted to next business day.   |
| Last Trading Date                 | Business day prior to settlement date (day D-1), and closes at 12:00 (UTC+8)  |
| Opening Date for New Contract     | Old contract settlement date  |
| Quote Method                      | RMB100, Net price   |
| Trading Hours                     | Monday to Friday, 9:00-12:00, 13:30-16:30 (UTC+8), except holidays  |
| Minimum Price Change Unit         | RMB0.001  |
| Unit Quote Volume                 | RMB 10,000,000  |
| Net Change in Price               | Price change for each day is expressed as $\pm$ daily price% of settlement price for last trading date (parameterized design), net change rate for first opening day of one contract is $\pm$ contract % of listed benchmark price. |
| Clearing Method                   | Central Clearing  |
| Settlement Method                 | Cash settlement is used at present; physical settlement is conducted when conditions are appropriate.   |
| Deliverable Bonds                 | A basket of bonds, determined or adjusted by SHCH, and issued on business day prior to opening date or after adjustment.  |
| Conversion Factor                 | Net price to maturity for one unit marketable bond is calculated  |

|             |   |
|-------------|---|
|             | <p>with coupon rate of virtual bonds, corresponding to an agreed yield rate to maturity, using following formula:</p> $CF = \left\{ \sum_{i=1}^k \frac{c/f}{\left(1 + \frac{y}{f}\right)^{\frac{d}{TS} + i - 1}} + \frac{100}{\left(1 + \frac{y}{f}\right)^{\frac{d}{TS} + k - 1}} - \frac{c}{f} * \left(1 - \frac{d}{TS}\right) \right\} \div 100$ <p>In which,<br/> c: coupon rate of deliverable bonds<br/> f: interest payment frequency for deliverable bonds<br/> y: coupon rate of object:<br/> d: actual days from maturity date to next interest payment date<br/> TS: actual days for current interest payment cycle of deliverable bonds<br/> K: remaining interest payment times of deliverable bonds</p> |
| Margin Rate | <p>Individual contract's margin rate is estimated and issued by SHCH at regular intervals. At the beginning, margin rate for 3-year, 5-year and 10-year standard CBD bond forwards are temporarily opened at 1.17%, 1.80% and 3.74%, respectively. SHCH may adjust such references as appropriate and publish adjusted parameters.</p>  |

Based on business requirements, types of Standard Bond Forward incorporated into central clearing can be increased or adjusted.

## 7.2 Intraday Clearing Processing

Table 10. Operation Hours for Standard Bond Forwards

| Date                    | Time (UTC+8) | Issues  |
|-------------------------|--------------|---|
| <b>T</b>                | 09:00        | Market opening  |
|                         | 09:00-16:30  | Receive intraday data<br>Process intraday clearing              |
|                         | 16:30        | Market closing  |
|                         | 16:30-19:00  | Process day-end clearing  |
| <b>T+1</b>              | 11:00        | Margin settlement cut-off time point<br>Margin default judgment |
|                         | 11:00-16:30  | Margin drawing  |
| <b>Last trading day</b> | 12:00        | Closing time for matured contracts                              |
| <b>Settlement date</b>  | 11:00        | Cash settlement   |

For Standard Bond Forward transactions concluded by two parties within position limit required by SHCH and are selected for central clearing, SHCH accepts such transactions in a real time manner and completes novation. *Clearing Agreement* is applicable to such transactions.



Clearing system shall check if elements and risk aspects of such closed transaction data are in compliance with relevant rules, in a real time manner.

Client transaction under this business is confirmed automatically.

From 09:00 to 12:00 and from 13:30 to 16:30 (UTC+8), For Standard Bond Forward transactions concluded by two parties within position limit required by SHCH and are selected for central clearing, SHCH accepts such transactions in a real time manner and complete novation.

Clearing system conducts position maintenance, risk monitoring and charging management by calculating real-time net positions held by each participant and conducting intraday risk monitoring.

SHCH monitors contract risks for CMs' combined contracts and corresponding mark-to-market profits & losses, and also monitors market risk elements, credit risks of CMs, and market liquidity risks using methods including regression test, stress test assessment of members' credit statuses and market liquidity assessment.

### **7.3 End-day Clearing Processing**

At 16:30 (UTC+8), clearing system shall stop receiving transaction data. From 16:30 to 19:00 (UTC+8), clearing system calculates position, position limit and mark-to-market profit & loss as well as margin requirement for each clearing participant, and thereby generates and publishes clearing reports through client-terminal.

### **7.4 Settlement Processing**

#### **7.4.1 Margin Settlement Processing**

##### **1) Payment of Variation Margin at the End of Business Day**

On next business day at 11:00 (UTC+8), the clearing system shall finish netting settlement of margin requirement and mark-to-market profit & loss. Clearing system shall calculate the sum of margin requirement and mark-to-market profit & loss of the previous business day for each CM, and compare the aforesaid sum with total amount in margin account (i.e., the difference between the two is available balance in margin account).

Clearing system shall compare margin requirement with margin balance of each CM. Clearing system shall complete settlement of profit & loss between CCP and CMs whose available balance is greater than zero. If such available balance is less than zero, clearing system shall send instant transfer message to HVPS or transfer order to SHCH's cash system, depending on cash settlement path of such CM. This will transfer required additional cash for house or client transactions from cash settlement account to margin account, and complete settlement for margin and profit & loss.

Clearing system shall calculate total margin requirement for all clients served by the same GCM, and compare it with margin balance in its margin account for client clearing.

A DCM or GCM making proprietary transaction that has completed cash transfer will obtain margin settlement report for day T in the client-terminal, which shall display received and paid cash for the CM's margin account. GCM will obtain margin settlement details of its clients for day T from client -terminal. In cases where CM does not finish cash transfer, such member will be deemed defaulting on margin settlement.

## 2) Payment of Intraday Variation Margin

SHCH monitors real-time whole market trading, positions held by clearing participants and mark-to-market profit & loss, and may send variation margin call to CMs in daytime. If margin account balance of a CM is insufficient for such variation margin, the clearing system shall send immediate transfer message to HVPS or cash transfer order to SHCH's cash system, thereby transferring required variation margin from CM's settlement account to its margin account. After payment, margin account balance should not be less than margin requirement. In the case of failure of transferring required margin within required time due to cash shortfall in cash settlement account, then such CM will be deemed defaulting on variation margin.

SHCH monitors clients' positions and mark-to-market profits & losses through GCMs' client margin accounts. SHCH shall send variation margin call to GCM's margin account for client transaction when necessary. If enough cash is not transferred to margin account within required time due to shortfall in cash settlement account held by a GCM, such CM shall be considered defaulting on variation margin.

## 2) Adjusting Initial Margin

Depending on changes of clearing limit, individual clearing participant's initial margin requirement shall be adjusted accordingly. In cases where initial margin requirement is lowered, SHCH shall automatically release corresponding margin on effective date, and increase available balance in such clearing participant's margin account. In cases where initial margin requirement is increased, and available balance in a clearing participant's margin account is insufficient, SHCH shall send adjusted initial margin requirement (contained in day-end clearing report) to such CM on the business day prior to effective date.

## 2) Margin Drawing

Based on amount permitted to be withdrawn on day-end clearing report, CM may submit margin drawing application through SHCH client-terminal. Client is unable to draw margin, but may authorize its GCM to submit margin drawing application through client-terminal.

Margin drawing order should be submitted after 11:00 and before 16:30 (UTC+8) each business day.

After confirming available balance in margin account is positive, SHCH shall debit such available balance, and undertake subsequent actions depending on specific cash settlement path: (1) in cases where cash settlement account is opened in HVPS, the clearing system generates instant transfer message, to transfer corresponding cash to such CM's HVPS clearing account; (2) in cases where cash settlement account is opened in SHCH, SHCH shall directly credit such account, and CM may transfer corresponding cash from such account to its previously offered settlement account. A separate client settlement account is required to be opened for any GCM's client transactions.

#### 7.4.2 Default Fund Operation

Default fund is required and collected based on clearing limit and default fund ratio. Default fund shall be adjusted accordingly the next business day after clearing limit is adjusted.

Default fund = sum of clearing limits for proprietary and client transactions × default fund ratio.

Default fund ratio = stress test result ÷ sum of clearing limits for all CMs

#### 7.4.3 Settlement Mechanism

At present, Standard Bond Forward is settled in cash based on the following procedures:

12:00 (UTC+8) of the last trading day is the cut-off time point for trading matured contracts. By the end of that day, SHCH shall calculate and publish cash settlement report.

On settlement date at 11:00 (UTC+8), SHCH shall complete cash settlement.

If CM fails to prepare sufficient cash in designated account before cash settlement cut-off time point (11:00 (UTC+8) on T+1 day), thereby leading to a cash settlement failure, such CM shall be deemed as settlement defaulter. In this case, SHCH shall take appropriate actions as per settlement default procedures.

#### 7.4.4 Rules on Default Management

In the case of default, SHCH shall notify defaulting member, to inquire about such default. SHCH may take one or more of following actions of default management process depending on specific condition: 1) Suspend defaulting CM's qualification for Standard Bond Forward; 2) In the case of client default, GCM shall promptly report client default and relevant information to SHCH. After reviewing such report, SHCH may transfer position held by non-defaulting clients. 3) Freeze margin account and default fund account opened by defaulting CM in SHCH, and freeze cash receivable of defaulting CM

during default management. 4) initiate the bank credit mechanism, to complete the cash settlement between SHCH and non-defaulting members 5) Impose default penalty at a rate of 0.1% of overdue amount on a daily basis, and in cases where calculation date is less than one day, it shall be deemed as one day; 6) Execute forced liquidation and forced settlement on positions held by defaulting CM and defaulting client; 7) Other actions that SHCH deems necessary.

If defaulting CM completes margin settlement before required cut-off time point and pays overdue amount and default penalty in full amount, SHCH shall restore Standard Bond Forward qualification of defaulting CM and defaulting client, and unfreeze corresponding margin account and default fund. In cases where there is bank credit, SHCH shall pay corresponding cash to such bank along with credit committing fee, and send *Default Interest Notice* to defaulting CM.

If such CM fails to pay all required cash before cut-off time point, SHCH may commence forced liquidation and forced settlement procedures on defaulting client or defaulting CM, and has the right to cancel CM's business qualification.

**Forced liquidation:** SHCH can forcibly sell positions held by defaulting CM based on relevant rules to cover default loss. In cases where defaulting clearing participant does not pay overdue amount and default penalty within required time, SHCH shall conduct forced liquidation on Standard Bond Forward contracts held by such defaulting participant.

**Forced settlement:** SHCH forcibly settles position held by counterparty of such contract when forced liquidation cannot be conducted, in order to prevent risks.

## **7.5 Calculations about Clearing**

### **7.5.1 Positions and Position Limit Calculation**

#### **1) Positions Calculation**

Positions held by one clearing participant is aggregate of absolute value of its net positions for all individual contracts multiplied by transformation coefficient; different contracts are not allowed to be netted together. Positions held by different clients hiring the same GCM are not allowed to be netted together.

Since different margin rates may be set for different contracts, SHCH shall appoint one contract as reference in advance and transform all other contracts into reference contract through transformation coefficients.

Total positions held by one clearing participant=|net positions for contract 1|\*transformation coefficient 1+|net positions for contract 2|\*transformation coefficient 2+...+|net positions for contract N|\*transformation coefficient N= $\sum [|net positions for contract i|*transformation coefficient i]$

Here, transformation coefficient  $i = \text{margin rate of contract} / \text{margin rate of reference contract}$ .

SHCH shall estimate and issue margin rate for individual contract regularly.

## 2) Position Limit

Total positions held by a clearing participant shall not exceed its position limit, which is equal to  $\max(\text{clearing limit, position at the end of last business day}) + (\text{tolerance} / \text{margin rate of reference contract})$ . CM may apply for and adjust clearing limit as required based on its own business needs. SHCH has the right to adjust CM's clearing limit as deemed necessary and applicable.

Tolerance for both proprietary and client transactions are determined by SHCH based on credit and historical trading positions of an individual CM. GCM shall apply tolerance for its each client but aggregate of such tolerance shall not exceed tolerance for its client clearing business. GCM may also apply to SHCH for adjusting its client's tolerance, and adjusted tolerance shall become effective after SHCH reviews and approves it.

### 7.5.2 Price

#### 1) Daily Settlement Price

Based on trading time, price and volume, daily settlement price shall be generated using the following method:

- (1) Volume-weighted trading price during last two hours of that day.
- (2) If number of transactions done during last two hours of that day are less than 5, then volume-weighted trading price for last 5 transactions if that day shall be used.
- (3) If total transactions done on that day is less than 5, then CFETS shall organize quote group for quotation. CFETS and SHCH shall determine and publish quote group and specific quote methods.

#### 2) Delivery Price

Delivery price is calculated based on a basket of bonds selected previously and price calculation formula published previously. If the basket of bonds does not have a trading price that day, then SHCH shall organize a quote group. CFETS and SHCH shall determine and publish quote group and specific quote methods.

### 7.5.3 Mark-to-Market Profit & Loss Calculation

#### 1) Intraday Mark-to-Market Profit & Loss

Intraday mark-to-market profit & loss is used for intraday risk monitoring. In cases where relatively large mark-to-market loss for a clearing participant occurs, SHCH has the right

to demand such CM (or GCM acting on behalf of its client) to deposit intraday mark-to-market margin.

Intraday mark-to-market profit & loss =  $\sum_{\text{contract } i} \sum_{\text{trading } j} [\text{intraday trading nominal principal that day} \times (\text{intraday mark-to-market price } i - \text{trading price } j) / 100 \times \text{transaction direction coefficient}] + \sum_{\text{contract } i} [|\text{day-end net positions on the previous business day}| \times \text{intraday mark-to-market price } i - \text{previous business day's trading price } i] / 100 \times \text{position direction coefficient}]$

In this case, intraday mark-to-market price for contract  $i$  is the average weighted price for last 5 transactions of that day. If less than 5 transactions are done that day, then average weighted price of all transactions done that day; if no transaction is done that day, then take previous business day's settlement price as intraday mark-to-market price.

For transaction direction coefficient, buyer coefficient is +1 and seller coefficient is -1; for position direction coefficient, buyer is +1 and seller is -1. If so calculated intraday mark-to-market profit & loss is negative, it means there is mark-to-market loss.

#### 1) Day-end Mark-to-Market Profit & Loss

Day-end mark-to-market profit & loss is used to settle daily profit & loss between SHCH and each CM. Clearing report issued by SHCH at each day-end contains profit & loss of each clearing participant on that day. Based on such report, CM shall complete day-end mark-to-market profit & loss settlement in margin account before required time point on the next business day.

Day-end mark-to-market profit & loss =  $\sum_{\text{contract } i} \sum_{\text{trading } j} [\text{intraday trading nominal principal that day} \times (\text{settlement price that day } i - \text{trading price } j) / 100 \times \text{transaction direction coefficient}] + \sum_{\text{contract } i} [|\text{day-end net position on previous business day}| \times \text{settlement price that day } i - \text{previous business day's settlement price } i] / 100 \times \text{position direction coefficient}]$   
For transaction direction coefficient, buyer coefficient is +1 and seller coefficient is -1; for position direction coefficient, buyer is +1 and seller is -1.

If day-end mark-to-market profit & loss thus calculated is positive, it means there is mark-to-market profit that day, otherwise, there is mark-to-market loss.

#### 7.5.4 Minimum Margin

Initial margin requirement is calculated based on the following formula:

Initial margin requirement = clearing limit for an individual clearing participant  $\times$  margin rate of reference contract.

#### 7.5.5 Changing Margin

Variation margin consists of mark-to-market margin and excess margin.

Mark-to-market margin is deposited by clearing participant based on SHCH's mark-to-market result and risk monitoring result for Standard Bond Forward contract held by such clearing participant, and is used to compensate mark-to-market loss of such clearing participant's positions.

Mark-to-market margin includes intraday mark-to-market margin and day-end mark-to-market margin.

Intraday mark-to-market margin requirement is triggered manually and shall be equal to intraday mark-to-market profit & loss, and shall return to zero at day-end.

Day-end mark-to-market margin is calculated at day-end by SHCH and shall be settled the next business day.

A clearing participant whose day-end mark-to-market profit & loss is positive does not need to deposit day-end mark-to-market margin. Other participants have to deposit day-end mark-to-market margin equal to day-end mark-to-market loss for that day.

#### 1) Excess Margin

Excess margin is deposited by clearing participant when its actual positions have exceeded clearing limit, and, in the case of CM default, is used to compensate such part of potential loss that cannot be covered by initial margin during default processing conducted by SHCH. Excess margin is calculated based on the following formula:

Excess margin requirement =  $\text{Max} (\text{position of a clearing participant} - \text{clearing limit}, 0) \times \text{margin rate of reference contract} \times \text{risk control multiplier}$

Risk control multiplier is not less than 1 and is generally taken as 1.

#### 7.5.6 Special Margin

Special margin requirement is triggered manually and does not return to zero automatically at day-end.

#### 7.5.7 End-day Margin Requirement Calculation

Day-end margin requirement = initial margin requirement + variation margin requirement + special margin requirement

In cases where CM's day-end mark-to-market profit & loss is positive, then such CM does not need to deposit day-end mark-to-market margin, and its profit is recorded into mark-to-market profit, which shall be netted together with margin requirement on next business day. CM whose day-end mark-to-market profit & loss is negative has to pay day-end mark-to-market margin equal to mark-to-market loss of that day.

Margin requirement for GCM's client clearing is the sum of margin requirements for all its clients, and shall be deposited by such GCM to SHCH.

#### 7.5.8 Cash Settlement Amount

Cash settlement amount  $= \sum_{\text{contract } i} \sum_{\text{trading } j} [\text{trading nominal principal on last trading date} \times (\text{cash settlement price}_i - \text{trading price}_j) / 100 \times \text{transaction direction coefficient}] + \sum_{\text{contract } i} [|\text{day-end net position on previous business day}| \times \text{cash settlement price that day}_i - \text{previous business day's settlement price}_i] / 100 \times \text{position direction coefficient}]$

For transaction direction coefficient, buyer coefficient is +1 and seller coefficient is -1; for position direction coefficient, buyer is +1 and seller is -1.

If calculated cash settlement amount is positive, it means such settlement has profit, otherwise, such settlement generates loss.



## VIII. Clearing for Inter-bank Market Foreign Exchange Spot Competitive Price Transactions

### 8.1 Elements of Foreign Exchange Spot Anonymous Transaction Eligible for Central Clearing

Foreign Exchange Spot Anonymous Clearing products include RMB/FX Spot Anonymous transactions and foreign currency pairs Spot Anonymous transactions.

**RMB/FX Spot Anonymous transactions:** These are FX/RMB transactions for which trading system sequences bid and ask prices for each foreign currency, respectively, and matches transactions under the principles of priority by price and priority by time on T day, and settles such transactions on T+2 day.

**Foreign Currency Pair Spot Anonymous transactions (foreign currency pair):** These are transaction between two kinds of foreign currencies. For this trade, trading system sequences bid and ask prices for each foreign currency pair, respectively, and matches transactions under the principles of priority by price and priority by time on T day, and settles such transactions on T+2 day (transactions involving Canadian Dollars are settled on T+1 day).

FX Spot Anonymous transactions are conducted based on clearing principles of “central, netting and bi-direction”. “Central” means SHCH will assume the rights and obligations of funds clearing and settlement with CMs for RMB/FX Spot Anonymous transactions and foreign currency pair Spot Anonymous transactions done through CFETS by CMs in a real time manner. “Netting” is cash clearing between SHCH and an individual CM is done based on the netting amount of anonymous transactions in the same currency and with same value date. “Bi-direction” means both SHCH and CM conduct cash transfer on value date.

Clearing products under this business presently accepted by SHCH are shown below. SHCH shall make separate announcements when new products or currency pairs are added in future.

Table 11. Clearing Products

| Trading Product       | Currency Pairs   | Settlement Date |
|-----------------------|--|-----------------|
| RMB/FX                | USD/CNY, AUD/CNY, CAD/CNY, CHF/CNY, CNY/MYR, CNY/RUB, EUR/CNY, GBP/CNY, HKD/CNY, JPY/CNY, NZD/CNY, SGD/CNY | T+2             |
| Foreign Currency Pair | EUR/USD, AUD/USD, GBP/USD, USD/CHF, USD/HKD, USD/JPY, EUR/JPY, USD/SGD                                     | T+2             |
|                       | USD/CAD  | T+1             |

Table 12. Elements of Clearing Products Eligible for Central Clearing

| Basic Elements    |  |                    |  |
|-------------------|--|--------------------|--|
| Counterparty      | Clearing participants  | Trading Type       | Spot   |
| Trading Product   | RMB/FX, Foreign Currency Pair  | Trading Date       | Not limited  |
| Trading Time      | Not limited  | Value Date         | Not limited  |
| Currency Pairs    | USD/CNY, AUD/CNY, CAD/CNY, CHF/CNY, CNY/MYR, CNY/RUB, EUR/CNY, GBP/CNY, HKD/CNY, 100JPY/CNY, NZD/CNY, SGD/CNY, EUR/USD, AUD/USD, GBP/USD, USD/CHF, USD/HKD, USD/JPY, EUR/JPY, USD/SGD, USD/CAD | Trading Price      | Exchange rate is accurate to 0.0001 (for HKD/CNY and CNY/MYR, it is 0.00001; for USD/JPY and EUR/JPY, it is accurate to 0.01). |
| RMB/FX buy volume | Not limited  | RMB/FX sell volume | Not limited  |

## 8.2 Intraday Clearing Process

SHCH receives concluded transaction data of previous day from CFETS at 00:25 (UTC+8), and will process such data.

## 8.3 End-day Clearing Process

SHCH generates settlement report for RMB/FX Spot Anonymous transactions and Foreign Currency Pair Spot Anonymous transactions in Inter-bank market, based on netting results, respectively. Each settlement report is provided in both English and Chinese. And the Chinese version shall prevail.

SHCH shall generate and issue settlement report on report generation date.

Clearing participant may download settlement report through SHCH client-terminal, in next business day.

## 8.4 Settlement Process

### 8.4.1 Fund Settlement

#### 1) RMB/FX Spot Anonymous Transaction

If a member netted buys foreign exchange, it shall transfer RMB cash payable on the morning of clearing date, to account designated by SHCH through payment system. Such member's foreign exchange cash receivable shall be transferred to its designated account by SHCH, through overseas correspondent bank on the same day. If a member netted

sells foreign exchange, SHCH shall transfer RMB cash receivable to account designated by such member, through payment system on the morning of clearing date, and on the same day such member shall transfer foreign exchange cash payable into account designated by SHCH, through overseas correspondent bank.

If rural financial institution buys foreign exchange, it shall transfer RMB cash payable to SHCH account before 09:30 (UTC+8) on clearing date, and SHCH shall pay the same to corresponding overseas bank. If rural financial institution sells foreign exchange, it shall transfer foreign exchange cash in full amount to SHCH's overseas account on T+1 day. After receiving such payment on clearing date (T+2 day), SHCH shall pay corresponding RMB cash to such institution.

## 2) Foreign Currency Pair Spot Anonymous Transaction

Such transaction can be cleared through synchronous settlement or pay-after-receiving basis. Synchronous settlement means SHCH and CM transfer respective foreign currency cash to corresponding account designated by the other on value date, while pay-after-receiving means , after receiving cash transferred by CM, SHCH shall transfer corresponding cash to account designated by such CM; hence, two currencies may have different value dates. To prevent and control clearing risks associated with Foreign Currency Pair Spot Anonymous transaction and to guarantee each party's legitimate rights, SHCH shall calculate CM indices with respect to cash adequacy, assets security, profits and liquidity, based on CM's balance sheet and income statement for the last year in each April, and calculate final weighted score on this basis. Based on such total score, SHCH shall determine clearing method for each CM.

For member using synchronous settlement method, SHCH shall transfer foreign exchange payable to account designated by such member on the morning of value date, through deposit bank. On value date, such CM shall transfer foreign exchange payable to account designated by SHCH.

Member using pay-after-receiving method should transfer foreign exchange payable to SHCH's designated account on the morning on value date, through preferable foreign currency clearing system in the same time zone. After receiving such foreign currency before 14:30 (UTC+8), SHCH shall transfer its payable foreign currency to account designated by such member on the same day. If SHCH receives foreign currency cash transferred from CM after 14:30 (UTC+8), it shall transfer foreign currency cash payable to account designated by such member the next business day, with transfer date as value date (JPY is an exception, whose value date is the first business day after transfer date).

### 8.4.2 Relevant Rules on Default Punishment

Regarding about cash transfer between SHCH and member, if cash are overdue, payer shall be responsible for finding causes and defaulting party shall assume corresponding liabilities. In the case of overdue RMB, defaulting party shall pay daily penalty at a rate

of 0.05% based on overdue amount. For overdue foreign currency, defaulting party shall pay a penalty at a rate equal to overdraft interest rate issued by overseas account bank of SHCH plus 3% based on overdue amount.

Member shall pay overdue amount and default penalty within required time, or else, SHCH shall send a warning or notification, and if appropriate, shall request CFETS to suspend such member's transaction qualification.

## **8.5 Relevant Calculations about Clearing**

### **8.5.1 Clearing Limit**

In FX Spot Anonymous clearing, clearing limit refers to the maximum limit for SHCH and an individual clearing participant to conduct cash clearing, expressed in USD. Non-USD currencies shall be converted into USD based on internal conversion rates issued by State Administration of Foreign Exchange. Clearing limit is consistent with trading limit.

## Appendices

### Summary of Relevant Rules and Key Operational Points for Central Clearing

|   |  | <b>Bond Netting</b>  | <b>Interest Rate Swap</b>   | <b>Foreign Exchange<br/>Bilateral</b>   | <b>Standard Bond<br/>Forward</b>  |
|---|--|--|---|---|---|
| 1 | <b>Clearing types</b>                                      | Spot Bond, Pledge Repo<br>And Outright Repo.   | Fixed/floating Interest Rate<br>Swap, floating rate reference<br>are SHIBOR_O/N, FR007<br>and SHIBOR_3M.  | RMB/FX Spot,<br>Forward, Swap and<br>Option Bilateral<br>transactions   | 3-year, 5-year and<br>10-year virtual CDB<br>bonds with coupon<br>rate of 3%. |
| 2 | <b>Business hours</b>                                      | 09:00-17:00 (UTC+8)  | 09:00-17:00 (UTC+8)   | 09:00-17:00 (UTC+8)   | 09:00-16:30<br>(UTC+8)  |
| 3 | <b>Elements for risk<br/>management check</b>              | Net trading concentration<br>ratio, price deviation<br>degree and clearing<br>limit for spot and forward<br>transactions   | Margin requirement<br>corresponding to clearing<br>participant's actual risk<br>exposure.   | Portfolio risk exposure<br>of clearing participants.  | Position limit  |
| 4 | <b>Time for novation</b>                                   | After passing risk<br>management check   | After passing risk<br>management check  | After passing risk<br>management check  | When the transaction<br>is made.  |
| 5 | <b>Process after failing<br/>risk management<br/>check</b> | Data not confirmed by<br>agent or which have not<br>passed risk management<br>check may be changed to<br>gross settlement. | Data not confirmed by agent<br>or which have not passed risk<br>management check shall<br>undergo risk management<br>check the next day, and if it<br>exceeds the longest permitted<br>waiting time, it shall become<br>invalid due to compliance<br>check failure. | Before deadline, it is in<br>waiting queue; after<br>deadline, data which<br>have not passed risk<br>management check<br>shall not enter CCP<br>clearing. | Not applicable  |

|    |  | <b>Bond Netting</b>   | <b>Interest Rate Swap</b>   | <b>Foreign Exchange<br/>Bilateral</b>  | <b>Standard Bond<br/>Forward</b>        |
|----|--|---|---|--|---|
| 6  | <b>List of general clearing members</b>                  | ICBC, BOC, Bank of Communications, SPDB, CIB and CITIC Securities.  | ICBC, Bank of Communications, SPDB, CIB and CITIC Securities.         | ICBC, BOC, CCB, Bank of Communications, CITIC Bank, CMB, SPDB, Ningbo Bank and The Bank of Tokyo-Mitsubishi UFJ. | BOC, Ningbo Bank and CITIC Securities.  |
| 7  | <b>Agency mode</b>                                       | One-to-one  | One-to-many   | One-to-one   | One-to-one                              |
| 8  | <b>Client Clearing confirmation mode</b>                 | Case-by-case, over-limit and default.   | By setting margin adequacy rate. case by case, over-limit and default | Case-by-case and default   | Default                                 |
| 9  | <b>Intraday risk monitoring</b>                          | Net trading concentration ratio, price deviation degree, clearing limit for spot and forward transactions and mark-to-market profit & loss. | Portfolio mark-to-market profit & loss.                               | Portfolio mark-to-market profit & loss.  | Portfolio mark-to-market profit & loss. |
| 10 | <b>Are early termination and clearing exit permitted</b> | Not applicable  | Yes   | Not applicable   | Not applicable                          |
| 11 | <b>Clearing limit</b>                                    | Clearing limit for spot and forward transactions, pledged repo reference  | Risk exposure limit   | Risk exposure limit  | Clearing limit                          |

|    |   | <b>Bond Netting</b>  | <b>Interest Rate Swap</b>                               | <b>Foreign Exchange<br/>Bilateral</b>  | <b>Standard Bond<br/>Forward</b>                  |
|----|---|--|---|--|---|
|    |   | value.   |   |  |   |
| 12 | <b>Margin account</b>                     | Various margins share the same account.  | Various margins share the same account.                 | Each type of margin has its own account.   | Various margins share the same account.           |
| 13 | <b>Initial margin type</b>                | RMB cash   | RMB cash and bond collateral                            | RMB and USD cash   | RMB cash  |
| 14 | <b>Intraday margin</b>                    | Applicable   |   |  |   |
| 15 | <b>Day-end margin settlement</b>          | Settlement account: Paid by clearing member; linked to High Value Payment System; Deducted by Shanghai Clearing House. | Deducted by Shanghai Clearing House.                    | Two choices: Paid by clearing participant or collected by Shanghai Clearing House.                             | Collected by Shanghai Clearing House.             |
| 16 | <b>Margin drawing</b>                     | Withdrawn by clearing participant.   | Withdrawn by clearing participant.                      | Two choices: Withdrawn by clearing participant or returned by Shanghai Clearing House.                         | Withdrawn by clearing participant                 |
| 17 | <b>Time for day-end margin settlement</b> | The next 10:00 (UTC+8) after report generation date.   | The next 10:00-11:00 (UTC+8) after report generation    | RMB: The next 16:00 (UTC+8) after report generation date<br>USD: The next day-end after report generation date | The next 10:00-11:00 after report generation date |
| 18 | <b>Funds settlement account</b>           | High Value Payment System account or   | High Value Payment System account or settlement account | RMB: High Value Payment System   | High Value Payment System account or              |

|    |                                      | <b>Bond Netting</b>  | <b>Interest Rate Swap</b>  | <b>Foreign Exchange<br/>Bilateral</b>  | <b>Standard Bond<br/>Forward</b>                           |
|----|--------------------------------------|--|--|--|--|
|    |                                      | settlement account opened in Shanghai Clearing House.            | opened in Shanghai Clearing House.   | account or settlement account opened in Shanghai Clearing House;<br>Foreign currency:<br>Foreign exchange settlement account opened in foreign exchange settlement bank. | settlement account established in Shanghai Clearing House. |
| 19 | <b>Cash settlement operation</b>     | Collected by Shanghai Clearing House.                            | Collected by Shanghai Clearing House.  | RMB: Paid by clearing participant or collected by Shanghai Clearing House<br>Foreign currency: Paid by clearing participant.   | Collected by Shanghai Clearing House.                      |
| 20 | <b>Time for cash settlement</b>      | The next 15:40-16:15 (UTC+8) after report generation date.       | Receive: Next 13:00-15:00 (UTC+8) after report generation date;<br>Payment: Next 15:00 (UTC+8) after report generation date. | Receive: Next 15:00 (UTC+8) after report generation date;<br>Pay: Next 15:30 (UTC+8) after report generation date.   | Not applicable   |
| 21 | <b>Calculation of initial margin</b> | Initial margin requirement= clearing limit for spot transaction× | Initial margin requirement = risk exposure limit of clearing participant ×credit factor of                                   | Initial margin requirement = risk exposure limit of  | Initial margin requirement=clearing limit of clearing      |



|    |                                     | <b>Bond Netting</b>   | <b>Interest Rate Swap</b>   | <b>Foreign Exchange<br/>Bilateral</b>   | <b>Standard Bond<br/>Forward</b>                      |
|----|-------------------------------------|---|---|---|---|
|    |                                     | margin rate for spot transaction+ clearing limit for forward transaction× margin rate for forward transaction+ netting reference value for pledged repo× margin rate of pledged repo)×credit rating factor of clearing member | clearing member   | clearing participant ×credit factor of clearing member  | participant ×margin rate of reference contract        |
| 22 | <b>Variation margin calculation</b> | Variation margin=excess margin+ mark-to-market margin   | Variation margin=excess margin + special margin   | Variation margin=excess margin+ mark-to-market margin+ special margin   | Variation margin=excess margin+ mark to market margin |
| 23 | <b>Netting funds calculation</b>    | Funds netting=sum of cash receivable for each transaction - sum of cash payable for each transaction  | Cash netting=interest netting+ early termination netting+ settlement amount of mark-to-market profit& loss+ adjusted amount for settled interest of mark-to-market profit& loss | 1. FX Spot, Forward and Swap transactions and Spot transactions generated by full amount delivery in Foreign Exchange Options are combined for netting;<br>2. FX option premium, and RMB cash flow generated by Netting | Not applicable  |

|    |   | <b>Bond Netting</b>  | <b>Interest Rate Swap</b>   | <b>Foreign Exchange<br/>Bilateral</b>                               | <b>Standard Bond<br/>Forward</b>                               |
|----|---|--|---|---|--|
|    |   |  |   | delivery in Foreign<br>Exchange Options are<br>combined for netting |  |
| 24 | <b>Contact department<br/>and email address</b> | Issuance and Custody<br>Department<br>zhangrong@shclearing.co<br>m | Product Development<br>Department<br>jiangchenming@shclearing.co<br>m | Product Development<br>Department<br>wangpaliu@shclearing.<br>com   | Product Development<br>Department<br>caiyue@shclearing.co<br>m |

## *Annexes*

*A-1-1. Application Letter for Direct Clearing Membership of Shanghai Clearing House*

*A-1-2. Basic Information of Clearing Member of Shanghai Clearing House*

*A-2. Application Form for Central Clearing Service of Shanghai Clearing House*

*A-3. Signature Card for Central Clearing Service Shanghai Clearing House*

*A-4. Letter of Authorization by Legal Person*

*B-1 Application Letter for General Clearing Membership of Shanghai Clearing House*

*B-2 Application Form for Client Central Clearing Service of shanghai Clearing House*

*B-3 Signature Card for Client Central Clearing Service of Shanghai Clearing House*

*B-4 Client Information Form for Agent Service of Client Central Clearing Service*

*C-1 Registration Form for Agent Service of Shanghai Clearing House Clearing Member Information Change*

*C-2 Registration (Filing) Form for Agent Service of Client Information (Change)*

*D-1 Application Form for Exiting Clearing Service of Shanghai Clearing House*

*D-2 Application Letter for Clearing Membership Termination*

*E-1. Emergency Instructions on CCP Clearing in Shanghai Clearing House*

*F-1 Application Form for Direct Connection Interface on CCP clearing in Shanghai Clearing House*

*F-2 Confirmation of Pledging/ Releasing Bond Collaterals by Non-Clearing Member*

*F-3 Application for Replacing Pledged Bonds*

*F-4 Filing Form of Information (Change) about Non-clearing Member Client-Terminal Administrator*

A-1-1

## **Application Letter for Direct Clearing Membership of Shanghai Clearing House**

To Shanghai Clearing House,

The applicant hereby applies for Shanghai Clearing House (hereinafter referred to as “SHCH”) clearing membership for ☐Bond ☐Interest Rate Swap ☐FX Bilateral Transactions ☐FX Anonymous Transactions ☐Standard Bond Forward ☐Others ( ) business.

### **1. Applicant’s basic information**

(Brief description of the applicant, including but not limited to registered capital, business scope, company milestones, position in the industry, controlling shareholders, internal control, organizational structure, operations, etc.).

### **2. Business conducted by the applicant in the Inter-bank market**

(Brief introduction of the business that the applicant is involved in the Inter-bank market, as well as the central clearing, registration and custody services offered by SHCH that the applicant is participating in).

### **3. Applicant’s preliminary plan for participating in SHCH central clearing service**

(Brief introduction of the applicant’s plan of business volume and internal risk control after being admitted as a SHCH clearing member)

### **4. Declaration (sample letter)**

After being admitted as a SHCH clearing member, the applicant will strictly comply with SHCH rules and regulations on membership and business activities, abide by SHCH clearing member management requirements, actively cooperate with SHCH, and perform clearing member’s obligations. The applicant shall assume all consequences and legal liabilities for any breach of rules or regulations of clearing membership stipulated by SHCH.

Legal representative or authorized representative’s signature or seal:

Applicant’s official seal:

Date:

A-1-2.

### Basic Information of Clearing Member of Shanghai Clearing House

| Basic Information of the Applicant   |  |                      |  |
|--|--|----------------------|--|
| Full Name of Applicant   | (Chinese)  |                      |  |
|  | (English)  |                      |  |
| Abbreviated Name of Applicant  | (Chinese)  |                      |  |
|  | (English)  |                      |  |
| Clearing Member Account Number   |  |                      |  |
| National Inter-bank Funding Center Membership Code                         |  |                      |  |
| Registered Address   |  |                      |  |
| Registered Capital   | (in thousand RMB)  | Legal Representative |  |
| Business License Number of Enterprise Legal Person                         |  | Post Code            |  |
| Contact Person   |  | Telephone            |  |
| Fax  |  | Email                |  |
| Contact Address  |  |                      |  |
| Website  |  |                      |  |
| Type of Entity   | <input type="checkbox"/> Banking Financial Institutions <input type="checkbox"/> Non-banking Financial Institution<br><input type="checkbox"/> Non-financial Institution<br><input type="checkbox"/> Unincorporated Product  |                      |  |
|  | <input type="checkbox"/> Policy Bank <input type="checkbox"/> State-owned Commercial Bank<br><input type="checkbox"/> Stock-holding Commercial Bank <input type="checkbox"/> City Commercial Bank <input type="checkbox"/> Rural Commercial Bank <input type="checkbox"/> Foreign-funded Bank<br><input type="checkbox"/> Credit Cooperative <input type="checkbox"/> Securities Company <input type="checkbox"/> Fund Company <input type="checkbox"/> Annuity <input type="checkbox"/> Insurance Company <input type="checkbox"/> Finance Company <input type="checkbox"/> Trust Company <input type="checkbox"/> Central Government-led Enterprise <input type="checkbox"/> Other Enterprise <input type="checkbox"/> Overseas Financial Institution <input type="checkbox"/> Overseas Non-financial Institution<br><input type="checkbox"/> Unincorporated Product |                      |  |
| Business License Number of Legal Person                                    |  |                      |  |
| CBRC Financial License Number  |  |                      |  |
| Organization Code Certificate Number (applicable to domestic institutions) |  |                      |  |

| Basic Information of the Applicant   |   |                    |                    |                    |     |       |
|--|---|--------------------|--------------------|--------------------|-----|-------|
| Controlling Shareholders and Shareholding Ratio                                |   |                    |                    |                    |     |       |
| Actual Controller  |   |                    |                    |                    |     |       |
| Information of Applicant's Senior Executives                                   |   |                    |                    |                    |     |       |
| Contact Person   |   | Name               | Telephone          | Mobile Phone       | Fax | Email |
| Executive List   | Chairman or Legal Representative                                      |                    |                    |                    |     |       |
|  | President (General Manager or Managing Director)                      |                    |                    |                    |     |       |
|  | Deputy President (Deputy General Manager or Deputy Managing Director) |                    |                    |                    |     |       |
|  |   |                    |                    |                    |     |       |
| Applicant's Financial Information (over the most recent three financial years) |   |                    |                    |                    |     |       |
| No.  | Indicator   | 20XX<br>(year-end) | 20XX<br>(year-end) | 20XX<br>(year-end) |     |       |
| 1  | Registered Capital (in million RMB)                                   |                    |                    |                    |     |       |
| 2  | Net Assets (in million RMB)   |                    |                    |                    |     |       |
| 3  | Operating Revenue (in thousand RMB)                                   |                    |                    |                    |     |       |
| 4  | Net Profit(in thousand RMB)   |                    |                    |                    |     |       |
| 5  | Capital Adequacy Ratio  |                    |                    |                    |     |       |
| 6  | Core Capital Adequacy Ratio   |                    |                    |                    |     |       |
| 7  | Rate of Capital Accumulation  |                    |                    |                    |     |       |
| 8  | Reserve Ratio   |                    |                    |                    |     |       |

| <b>Applicant's Financial Information (over the most recent three financial years)</b> |   |  |  |  |
|---|---|--|--|--|
| 9   | RMB Excess Reserve Ratio                                      |  |  |  |
| 10  | RMB Asset Liquidity Ratio                                     |  |  |  |
| 11  | Deposit-to-Loan Ratio   |  |  |  |
| 12  | Ratio of Borrowing from Other Banks or Financial Institutions |  |  |  |
| 13  | Non-performing Loan Ratio                                     |  |  |  |
| 14  | Provision Coverage Rate                                       |  |  |  |
| 15  | Loan-to-provision Ratio*                                      |  |  |  |
| 16  | Return on Equity  |  |  |  |
| 17  | Return on Assets  |  |  |  |
| 18  | Cost-to-Income Ratio  |  |  |  |

**Declaration of the applicant:**

The applicant hereby guarantees the authenticity, completeness and accuracy of all information provided herein.

Legal representative or authorized representative's signature or seal:

Applicant's official seal:

Date:

Contact Person:

Telephone:

Date:

Note:

1. Please complete this Form on the computer, and then print it to sign and affix seal.
2. Clearing member account number refers to the holder's account number of the applicant in SHCH system.
3. \*Ratio of provision for impairment of loan=provision for impairment of loan /pre-provision loan balance.
4. First four indicators of the financial information require data of the most recent three financial years, and the rest indicators require data of the most recent one financial year. For ratio indicators, please fill in data by way of percentage, and for amount indicators, the unit is RMB one million and the data should be rounded to 2 decimal places. For any inquiries about these indicators, please contact Mr. Lu Yiming of Risk Management Department of SHCH, via Tel: 021-23198627.

A-2.

### Application Form for Central Clearing Service of Shanghai Clearing House

Full Name of Clearing Member  
(Chinese) \_\_\_\_\_ (English) \_\_\_\_\_

Abbreviated Name of Clearing Member  
(Chinese) \_\_\_\_\_ (English) \_\_\_\_\_

Clearing Member Account Number \_\_\_\_\_

National Inter-bank Funding Center Membership Code \_\_\_\_\_

| 1. Service Applying for   |   |                             |  |              |       |      |
|---|---|-----------------------------|--|--------------|-------|------|
| <input type="checkbox"/> Bond <input type="checkbox"/> Interest Rate Swap <input type="checkbox"/> FX Bilateral Transactions ( <input type="checkbox"/> Spot <input type="checkbox"/> Forward <input type="checkbox"/> Swap<br><input type="checkbox"/> Option)<br><input type="checkbox"/> FX Anonymous Transactions <input type="checkbox"/> Standard Bond Forward <input type="checkbox"/> Others( _____ )   |   |                             |  |              |       |      |
| 2. Applicant's Personnel Information  |   |                             |  |              |       |      |
| Name  | Dept./Title   | Training Certificate Number | Mobile phone   | Fax          | Email | Role |
|   |   |                             |  |              |       |      |
|   |   |                             |  |              |       |      |
|   |   |                             |  |              |       |      |
|   |   |                             |  |              |       |      |
|   |   |                             |  |              |       |      |
| 3. client-terminal Administrators' Information  |   |                             |  |              |       |      |
| Name  | Login Name  | ID Number                   | Training Certificate Number  | Mobile Phone |       |      |
|   |   |                             |  |              |       |      |
|   |   |                             |  |              |       |      |
| CFCA Certificate Serial Number  |   |                             |  |              |       |      |
| Note:<br>1. There must be at least two client-terminal administrators.<br>2. "Login Name": Please fill in English letters or a combination of English letters and numbers (differentiate uppercase and lowercase letters); login name for Interest Rate Swap service should be within 12 characters; login name for Bond Netting Service should be between 4-17 characters.<br>3. "CFCA Certificate Serial Number": Please fill in certificate serial number starting with "041", for example, 041@712345678-x@shchcs@00000001. |   |                             |  |              |       |      |
| 4. Information of the Account Designated or Opened  |   |                             |  |              |       |      |
| RMB Settlement Account (choose either of the two alternatives)  | <input type="checkbox"/> Clearing Account Opened in High Value Payment System |                             | <input type="checkbox"/> Settlement Account Opened with SHCH ( <input type="checkbox"/> Share with current account for ___ Business<br><input type="checkbox"/> New Account) |              |       |      |
| Account Name  |   |                             |  |              |       |      |



| 4. Information of the Account Designated or Opened  |                                 |                |  |  |
|---|---------------------------------|----------------|--|--|
| Bank Code   |                                 |                |  |  |
| Account Number  |                                 |                |  |  |
| <p>Note: If “Clearing Account Opened in High Value Payment System” is selected, please fill in bank code, account number, and account name of the High Value Payment System; if “Settlement Account Opened with SHCH” is selected, please tick the corresponding account with SHCH and fill in bank code, account number and account name of the account opened in a commercial bank for cash settlement. If “New Account” is selected, please fill in “Application Information of Settlement Account” below:</p> |                                 |                |  |  |
| <b>Application Information of Settlement Account</b>  |                                 |                |  |  |
| Fill this section only if “New Account” under “Settlement Account Opened with SHCH” is selected.  |                                 |                |  |  |
| Correspondent Account Number  |                                 |                | Correspondent Account Name   |  |
| Correspondent Bank Code   |                                 |                | Correspondent Bank Name  |  |
| Contact Person  |                                 |                | Contact Address  |  |
| Telephone   |                                 |                | Email  |  |
| <input type="checkbox"/> Legal Representative   | Name                            |                |  |  |
| <input type="checkbox"/> Person in Charge   | Type of ID                      |                | ID Number  |  |
| <b>The following section shall be filled in by SHCH after assessment:</b>   |                                 |                |  |  |
| Settlement Account Number (for ___ business)  |                                 |                | Account Opening Date   |  |
| Settlement Account Name (for ___ business)  |                                 |                |  |  |
| Operator  |                                 |                | Examiner   |  |
| <b>The section below shall be filled by the applicant for FX Bilateral Transactions clearing service</b>  |                                 |                |  |  |
| Principal Settlement Account Information  |                                 |                |  |  |
| Foreign Currency  | SWIFT BIC CODE                  |                |  |  |
| Margin Account Information  |                                 |                |  |  |
| <b>USD Margin</b>   | Deposit Bank                    | Name           |  |  |
|   |                                 | SWIFT BIC CODE |  |  |
|   | Account Number                  |                |  |  |
| <b>RMB Margin</b>   | Options for margin contribution |                | <input type="checkbox"/> Deposited by Clearing Participant<br><input type="checkbox"/> Collected by SHCH automatically |  |
|   |                                 |                |  |  |
| <b>The section below shall be filled by the applicant for FX Anonymous Transactions clearing service</b>  |                                 |                |  |  |

| 4. Information of the Account Designated or Opened   |  |                            |
|--|--|----------------------------|
| <input type="checkbox"/> Clearing Account for RMB/FX Anonymous Transaction <input type="checkbox"/> Clearing Account for Foreign Currency Pair Anonymous Transaction |  |                            |
| SWIFT BIC CODE   |  |                            |
| Type of Trading Entity <sup>15</sup>   | <input type="checkbox"/> Domestic <input type="checkbox"/> Foreign |                            |
| RMB <sup>16</sup>  | Deposit Bank Code  |                            |
|  | Deposit Bank Name  |                            |
|  | Receipt Account Number   |                            |
|  | Receipt Account Name   |                            |
| USD  | Deposit Bank Name  | (Chinese)<br>(English)     |
|  | SWIFT BIC CODE   |                            |
|  | Note   |                            |
|  |  |                            |
| HKD  | Deposit Bank Name  | (Chinese)<br>(English)     |
|  | SWIFT BIC CODE   |                            |
|  | Note   |                            |
|  |  |                            |
| JPY  | Deposit Bank Name  | (Chinese)<br>(English)     |
|  | SWIFT BIC CODE   |                            |
|  | Note   |                            |
|  |  |                            |
| EUR  | Deposit Bank Name  | (Chinese)<br>(English)     |
|  | SWIFT BIC CODE   |                            |
|  | Note   |                            |
|  |  |                            |
| GBP  | Deposit Bank Name  | (Chinese)<br>(English)     |
|  | SWIFT BIC CODE   |                            |
|  | Note   |                            |
|  |  |                            |
| MYR  | Deposit Bank Name  | (Chinese)<br>(English)     |
|  | SWIFT BIC CODE   |                            |
|  | Note   |                            |
|  |  |                            |
| RUB  | Deposit Bank Name  | (Chinese)<br><br>(English) |
|  | SWIFT BIC CODE   |                            |
|  | Note   |                            |
|  |  |                            |
| NZD  | Deposit Bank Name  | (Chinese)                  |

<sup>15</sup>Note: If 'Domestic' is selected, payment should be made in RMB; if 'Foreign' is selected, payment should be made in USD.

<sup>16</sup>RMB payment should only be made via RMB High Value Payment System.

| 4. Information of the Account Designated or Opened   |   |           |
|--|---|-----------|
|  |   | (English) |
|  | SWIFT BIC CODE                                |           |
|  | Note  |           |
| CHF  | Deposit Bank Name                             | (Chinese) |
|  |   | (English) |
|  | SWIFT BIC CODE                                |           |
|  | Note  |           |
| AUD  | Deposit Bank Name                             | (Chinese) |
|  |   | (English) |
|  | SWIFT BIC CODE                                |           |
|  | Note  |           |
| CAD  | Deposit Bank Name                             | (Chinese) |
|  |   | (English) |
|  | SWIFT BIC CODE                                |           |
|  | Note  |           |
| SGD  | Deposit Bank Name                             | (Chinese) |
|  |   | (English) |
|  | SWIFT BIC CODE                                |           |
|  | Note  |           |
| <b>5. Application for Clearing Limit</b><br>Please fill in the information for clearing limit application for relevant business: |   |           |
| Interest Rate Swap   | Risk Exposure Limit                           |           |
| Standard Bond Forward  | Clearing Limit                                |           |
| Bond   | Clearing Limit for Spot Transaction           |           |
|  | Clearing Limit for Forward Transaction        |           |
|  | Reference for Pledged Repo Clearing Limit     |           |
| FX Bilateral Transactions  | Risk Exposure Limit (in USD)                  |           |
| FX Anonymous Transactions  | RMB/FX Clearing Limit(in USD)                 |           |
|  | Foreign Currency Pair Clearing Limit (in USD) |           |
| Others ( )   |   |           |
| Application Statements   |   |           |
| <b>6. Invoice Delivery Information</b>   |   |           |
| Full Name of Institution (Chinese)   |   |           |

| 6. Invoice Delivery Information   |  |           |  |
|---|--|-----------|--|
| Mailing Address and Post Code   |  |           |  |
| Main Contact Person   |  | Telephone |  |
| Email Address   |  |           |  |
| Alternative Contact Person  |  | Telephone |  |
| Email Address   |  |           |  |
| <b>Declaration by Applicant:</b>  |  |           |  |
| <p>1. The applicant guarantees the authenticity, completeness and accuracy of all information provided herein.</p> <p>2. The applicant authorizes Shanghai Clearing House (hereinafter referred to as "SHCH") to debit and credit the above accounts designated or opened by the applicant. That is, SHCH may directly debit or credit the above accounts based on end of day clearing result, and collect payments and fees related to the clearing business (including but not limited to clearing membership fee, clearing service fee, withholding taxes, etc.). The applicant promises to provide sufficient fund for such accounts and confirms that SHCH is fully authorized to debit or credit such accounts.</p> <p>Legal representative or authorized representative's signature or seal:</p> <p>Applicant's official seal:</p> <p>Date:</p> <p>Operator:</p> <p>Telephone:</p> <p>Date:</p>  |  |           |  |
| <p><b>Note:</b></p> <p>1. Please complete this Form on the computer, and then print it to sign and affix seal.</p> <p>2. Clearing member account number refers to the holder's account number of the applicant in SHCH system.</p> <p>3. The applicant is required to provide information of at least five personnel. For the column of "Role" in the above Form, please indicate the role of each personnel, including company executive in charge of relevant department (senior than department head), business supervisor (department head), operation contact person, business contact person and risk control contact person. Among the five personnel, there shall be at least one company executive, one business supervisor, one operation contact person, one business contact person, and one risk control contact person. One person may assume more than one role. Any change in such personnel and his/her duties should be duly reported for filing.</p> |  |           |  |

### Signature Card for Central Clearing Service of Shanghai Clearing House

|   |   |                                |   |
|---|---|--------------------------------|---|
| Full Name of Clearing Member                    |   | Clearing Member Account Number |   |
| Address   |   | Post Code                      |   |
| Contact Person                                  |   | Telephone                      |   |
| Seal:(clear stamp in the center)                |   |                                |   |
| Scope of Usage (multiple choices are permitted) | <input type="checkbox"/> Bond <input type="checkbox"/> Interest Rate Swap<br><input type="checkbox"/> FX Bilateral Transactions( <input type="checkbox"/> Spot <input type="checkbox"/> Forward<br><input type="checkbox"/> Swap <input type="checkbox"/> Option)<br><input type="checkbox"/> FX Anonymous Transactions<br><input type="checkbox"/> Standard Bond Forward<br><input type="checkbox"/> Others (____) |                                | A total of ____ seals, documents affixed with ____ business seals and ____ private seals are valid. |
|   |   |                                | Effective Date:   |

#### Notice on Seal Registration/Replacement

The seal of \_\_\_\_ to be registered/replaced into is shown in the upper part of this Signature Card

New seal shall come into effect from \_\_\_\_ (date), and original seal shall expire on the same day.

|  |                                     |
|--|-------------------------------------|
| Clearing member's official seal<br>Date: | Originally registered seal<br>Date: |
|--|-------------------------------------|

Note:

1. This Signature Card is in quadruplicate, among which three shall be kept by SHCH and one by the clearing member.
2. Seal and clearing member's official seal should be clearly affixed with ink, and should not cover other text.
3. Notice on Seal Registration/Replacement should be affixed with clearing member's official seal for domestic institutions, or signed by authorized person for overseas institutions.
4. Clearing member account number refers to the holder's account number of the applicant in SHCH system.

## **Instructions for Registered Seals of Central Clearing Service of Shanghai Clearing House**

Seals registered on this Signature Card may be used under the following circumstances with respect to central clearing service of SHCH:

**1. Invoice re-application**

After having received invoice, if a clearing member needs to re-apply for the invoice due to special needs, the clearing member shall submit the invoice re-application affixed with the registered seal.

**2. Change of information on client-terminal administrators**

If there is any need to change the information of client-terminal administrators, the clearing member shall fill in the Application Form of Client Terminal Administrator, indicate the user information to be deleted or added by marking “cancellation” or “registration”, and send the Form affixed with the registered seal to SHCH.

**3. Change of account Information**

If the account information of a clearing member needs to be changed, the clearing member shall fill in Clearing Member’s Account Information Form affixed with the seal left with SHCH, and send the Form to SHCH.

**4. Change of information of invoice delivery**

If the invoice delivery information of a clearing member is changed, the clearing member shall fill in the Form of Invoice Delivery Contact Information and send the Form affixed with the seal left with SHCH to SHCH. After receiving the Form, SHCH shall void the original contact information.

**5. Circumstances listed in Procedures Guidance of Contingency Operation:**

- (1) Contingency export of documents is required as statements fail to be downloaded from client-terminal;
- (2) Contingency margin withdrawal is required as margin withdrawal information fails to be submitted via client-terminal;
- (3) Client Clearing fails to be confirmed on client-terminal;
- (4) Client margin information fails to be updated on client-terminal;
- (5) Other circumstances listed in Procedures Guidance of Contingency Operation.

**6. Application for product line and CFCA certificate**

If a clearing member needs to apply for product line and CFCA certificate for SHCH central clearing service as needed, such clearing member shall send relevant application materials affixed with the registered seal to SHCH.

**7. Other circumstances acknowledged by SHCH**

If a clearing member needs to submit other materials related to the central clearing to SHCH, with SHCH’s approval, the materials become effective after being affixed with the seal left with SHCH.

### Letter of Authorization by Legal Person

To Shanghai Clearing House,

The following personnel are authorized to deal with relevant issues with respect to ☐ Bond ☐ Interest Rate Swap ☐ FX Bilateral Transactions ☐ FX Anonymous Transactions ☐ Standard Bond Forward ☐ Others (\_\_\_\_\_) business.

Name of authorized person 1:

ID Number:

Valid period (YY-MM-DD): \_\_\_\_\_ to \_\_\_\_\_

Name of authorized person 2:

ID Number:

Valid period (YY-MM-DD): \_\_\_\_\_ to \_\_\_\_\_

Legal representative or authorized representative's signature:

Official seal:

Date:

(Please attach ID card copies of the authorized personnel)

Attachment: Contact of authorized personnel

| Name | Telephone | Mobile Phone | Fax | Email |
|------|-----------|--------------|-----|-------|
|      |           |              |     |       |
|      |           |              |     |       |

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## **Application Letter for General Clearing Membership of Shanghai Clearing House**

To Shanghai Clearing House,

The applicant hereby applies for Shanghai Clearing House (hereinafter referred to as “SHCH”) General Clearing Membership for ☐Bond ☐Interest Rate Swap ☐FX Bilateral Transactions ☐FX Anonymous Transactions ☐Standard Bond Forward ☐Other ( ) business.

### **1. The applicant’s basic information and business development**

Overview of the business conducted by the applicant (starting time, general business and awards received);

In order to be qualified to conduct the business, relevant departments, personnel, rules and regulations, as well as operation procedures are put in place.

### **2. Applicant’s preliminary plan for participating in SHCH client clearing service**

Description of the current risk management department, positions and staff set by the applicant for client clearing business.

Description of the current rules and regulations, measures and operation procedures formulated by the applicant to control the risks of such business.

An introduction of the applicant’s plan of business volume, client and market development, internal risk control, etc.

In order to be qualified to conduct the business, relevant departments, personnel, rules and regulations, as well as operation procedures are put in place.

### **3. Other relevant information**

The applicant may list any other issues that SHCH should be noted.

### **4. Declaration (sample letter)**

After participating in \_\_\_\_ central clearing for client transactions, the applicant shall strictly comply with SHCH rules and regulations on the business, perform relevant obligations, and actively promote client clearing for the business. The applicant shall assume all consequences and legal liabilities for any breach of rules or regulations on the business stipulated by SHCH.

Legal representative or authorized representative’s signature or seal:

Applicant’s official seal:

Date:



## Application Form for Client Central Clearing Service of Shanghai Clearing House

Full Name of GCM (Chinese) \_\_\_\_\_

(English) \_\_\_\_\_

Abbreviated Name of GCM (Chinese) \_\_\_\_\_

(English) \_\_\_\_\_

GCM Account Number \_\_\_\_\_

National Inter-bank Funding Center Membership Code \_\_\_\_\_

| <b>1. Service Applying For</b>  |   |                             |  |              |       |      |
|---|---|-----------------------------|--|--------------|-------|------|
| <input type="checkbox"/> Bond <input type="checkbox"/> Interest Rate Swap <input type="checkbox"/> FX Bilateral Transactions ( <input type="checkbox"/> Spot <input type="checkbox"/> Forward <input type="checkbox"/> Swap<br><input type="checkbox"/> Option)   |   |                             |  |              |       |      |
| <input type="checkbox"/> Standard Bond Forward <input type="checkbox"/> Others (_____)  |   |                             |  |              |       |      |
| <b>2. Applicant's Personnel Information</b>   |   |                             |  |              |       |      |
| Name  | Dept./Title   | Training Certificate Number | Mobile Phone   | Fax          | Email | Role |
|   |   |                             |  |              |       |      |
|   |   |                             |  |              |       |      |
|   |   |                             |  |              |       |      |
|   |   |                             |  |              |       |      |
|   |   |                             |  |              |       |      |
| <b>3. client-terminal Administrators' Information</b>   |   |                             |  |              |       |      |
| Name  | Login Name  | ID No.                      | Training Certificate Number  | Mobile Phone |       |      |
|   |   |                             |  |              |       |      |
|   |   |                             |  |              |       |      |
| CFCA Certificate Serial Number  |   |                             |  |              |       |      |
| <b>Note:</b><br>1. There must be at least two client-terminal administrators.<br>2. "Login Name": Please fill in English letters or a combination of English letters and numbers (differentiate uppercase and lowercase letters); login name for Interest Rate Swap service should be within 12 characters; login name for Bond service shall be between 4-17 characters.<br>3. "CFCA Certificate Serial Number": please fill in the certificate serial number starting with "041", for example: 041@712345678-x@shchcs@00000001; |   |                             |  |              |       |      |
| <b>4. Information of the Account Designated or Opened</b>   |   |                             |  |              |       |      |
| <b>Client Clearing RMB Settlement Account</b> (choose either of the two   | <input type="checkbox"/> Clearing Account Opened in High Value Payment System |                             | <input type="checkbox"/> Settlement Account Opened with SHCH ( <input type="checkbox"/> Share with current account for ____Business<br><input type="checkbox"/> New Account) |              |       |      |

| 4. Information of the Account Designated or Opened  |                   |                            |           |  |
|---|-------------------|----------------------------|-----------|--|
| alternatives)   |                   |                            |           |  |
| Account Name  |                   |                            |           |  |
| Bank Code   |                   |                            |           |  |
| Account Number  |                   |                            |           |  |
| Client Clearing Margin Account  | Deposit Bank Name |                            |           |  |
|   | Deposit Bank Code |                            |           |  |
|   | Account Name      |                            |           |  |
|   | Account Number    |                            |           |  |
| <p>Note: If “Clearing Account Opened in High Value Payment System” is selected, please fill in bank code, account number, account name of the High Value Payment System; if “Settlement Account Opened with SHCH” is selected, please tick the corresponding account with SHCH and fill in bank code, account number and account name of the account opened in a commercial bank for cash settlement. If “New Account” is selected, please fill in “Application Information of Settlement Account” below:</p> |                   |                            |           |  |
| <p><b>Application Information of Settlement Account</b><br/>Fill in this section only if “New Account” under “Settlement Account Opened with SHCH” is selected.</p>   |                   |                            |           |  |
| Correspondent Account Number  |                   | Correspondent Account Name |           |  |
| Correspondent Bank Code   |                   | Correspondent Bank Name    |           |  |
| Contact Person  |                   | Contact Address            |           |  |
| Telephone   |                   | Post Code                  |           |  |
| <input type="checkbox"/> Legal Representative<br><input type="checkbox"/> Person in Charge  | Name              |                            |           |  |
|   | Type of ID        |                            | ID Number |  |
| <b>The section below shall be filled by SHCH after assessment</b>   |                   |                            |           |  |
| Settlement Account Number (for ___ client clearing )  |                   | Account Opening Date       |           |  |
| Settlement Account Name (for ___ client clearing )  |                   |                            |           |  |
| Operator  |                   | Examiner                   |           |  |
| <b>The section below shall be filled by the applicant for FX clearing service:</b>  |                   |                            |           |  |
| Principal Settlement Account Information  |                   |                            |           |  |
| Foreign Currency  | SWIFT BIC CODE    |                            |           |  |
| Margin Account Information  |                   |                            |           |  |
| USD Margin  | Deposit Bank      | Name                       |           |  |
|   |                   | SWIFT BIC                  |           |  |

|  |                    |  |   |
|--|--------------------|--|---|
| <b>4. Information of the Account Designated or Opened</b>  |                    |  |   |
|  |                    | CODE                                     |   |
|  | Account Number     |  |   |
| <b>RMB Margin</b>  | How margin is paid |  | <input type="checkbox"/> Deposited by Clearing Participant;<br><input type="checkbox"/> Collected by SHCH automatically |
| <b>5. Application for Clearing Limit</b>   |                    |  |   |
| Filled only by the applicant for client bond clearing service  |                    |  |   |
| Bond Service   | Netting            | Clearing Limit for Spot Transaction      |   |
|  |                    | Clearing Limit for Forward Transaction   |   |
|  |                    | Reference Value for Pledged Repo Netting |   |
| Application Statements   |                    |  |   |
| <b>6. Options of Client Clearing Confirmation</b>  |                    |  |   |
| Filled only by the institution choosing bond clearing service  |                    |  |   |
| <input type="checkbox"/> Confirm each transaction <input type="checkbox"/> Confirm transactions in excess of clearing limit<br><input type="checkbox"/> Confirm all transactions automatically   |                    |  |   |
| <b>7. Invoice Delivery Information</b>   |                    |  |   |
| Full Name of Institution (Chinese)   |                    |  |   |
| Mailing Address and Post Code  |                    |  |   |
| Main Contact Person  |                    | Telephone                                |   |
| Email Address  |                    |  |   |
| Alternative Contact Person   |                    | Telephone                                |   |
| Email Address  |                    |  |   |
| Note: The contact persons listed above will be approached for any issue regarding invoice delivery.  |                    |  |   |
| <b>Declaration by Applicant:</b>   |                    |  |   |
| <p>1. The applicant guarantees the authenticity, completeness and accuracy of all information provided herein.</p> <p>2. The applicant authorizes Shanghai Clearing House (hereinafter referred to as "SHCH") to debit and credit the above accounts designated or opened by the applicant. That is, SHCH may directly debit or credit the above accounts based on day-end clearing result, and collect payments and fees related to clearing business (including but not limited to clearing membership fee, clearing service fee, withholding taxes, etc.). The applicant promises to provide sufficient fund for such accounts and confirms that SHCH is fully authorized to debit or credit such accounts.</p> <p>Legal representative or authorized representative's signature or seal:</p> <p>Applicant's official seal:</p> |                    |  |   |

| 7. Invoice Delivery Information   |
|---|
| Date:<br>Operator:<br>Telephone:<br>Date:   |
| Note:<br>1. Please complete this Form on the computer, and then print it to sign and affix seal.<br>2. Clearing member account number refers to the holder's account number of the applicant in SHCH system.<br>3. The applicant is required to provide information of at least five personnel. For the column of "Role" in the above Form, please indicate the role of each personnel, including company executive in charge of relevant department (senior than department head), business supervisor (department head), operation contact person, business contact person and risk control contact person. Among the five personnel, there shall be at least one company executive, one business supervisor, one operation contact person, one business contact person, and one risk control contact person. One person may assume more than one role. Any change in such personnel and his/her duties should be duly reported for filing. |

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**Signature Card for Client Central Clearing Service of Shanghai Clearing House**

|  |  |   |  |
|--|--|---|--|
| Full Name of GCM   |  | Clearing Member<br>Account Number   |  |
| Address  |  | Post Code   |  |
| Contact Person   |  | Telephone   |  |
| Seal: (clear stamp in the center)                              |  |   |  |
| Scope of<br>Usage<br>(multiple<br>choices<br>are<br>permitted) | <input type="checkbox"/> Bond <input type="checkbox"/> Interest Rate Swap<br><input type="checkbox"/> FX Bilateral Transactions ( <input type="checkbox"/> Spot<br><input type="checkbox"/> Forward <input type="checkbox"/> Swap <input type="checkbox"/> Option)<br><input type="checkbox"/> Standard Bond Forward<br><input type="checkbox"/> Others (____) | A total of ____ seals,<br>documents affixed with<br>____ business seals and<br>____ private seals are<br>valid. |  |
|  |  | Effective Date:   |  |

**Notice on Seal Registration/ Replacement**

The seal of \_\_\_\_ to be registered/ replaced into is shown in the upper part of this Signature Card.

New seal shall come into effect from \_\_\_\_ (date), and original seal shall expire on the same day.

|  |                                     |
|--|-------------------------------------|
| Clearing member's official seal<br>Date: | Originally registered seal<br>Date: |
|--|-------------------------------------|

Note:

1. This Signature Card is in quadruplicate, among which three shall be kept by SHCH and one by the clearing member.
2. Seal and clearing member's official seal should be clearly affixed with ink, and should not cover other text.
3. Notice on Seal Registration/Replacement should be affixed with clearing member's official seal for domestic institutions, or signed by authorized person for overseas institutions.
4. Clearing member account number refers to the holder's account number of the applicant in SHCH system.

## **Instructions for Registered Seals of Client Central Clearing Service of Shanghai Clearing House**

Seals registered on this Signature Card may be used under the following circumstances with respect to client central clearing service of SHCH:

### **1. Invoice re-application**

After having received invoice, if a clearing member needs to re-apply for the invoice due to special needs, the clearing member shall submit the invoice re-application affixed with the registered seal.

### **2. Change of information on Client Terminal Administrators**

If there is any need to change the information of client-terminal Administrators, the clearing member shall fill in the Application Form of Client Terminal Administrator, indicate the user information to be deleted or added by marking the “cancellation” or “registration”, and send the Form affixed with the registered seal to SHCH.

### **3. Change of account information**

If the account information of a clearing member needs to be changed, the clearing member shall fill in Clearing Member’s Account Information Form affixed with the registered seal, and send the Form to SHCH.

### **4. Change of information of invoice delivery**

If the invoice delivery information of a clearing member is changed, the clearing member shall fill in the Form of Invoice Delivery Contact Information, and send the Form affixed with the registered seal to SHCH. After receiving the Form, SHCH will void the original contact information.

### **5. Circumstances listed in the Procedures Guidance of Contingency Operation:**

- (1) Contingency export of documents is required as statements fail to be downloaded from client-terminal;
- (2) Contingency margin withdrawal is required as margin withdrawal information fails to be submitted;
- (3) Client clearing fails to be confirmed on client-terminal.
- (4) Client margin information fails to be updated on client-terminal.
- (5) Other circumstances listed in Procedures Guidance of Contingency Operation.

### **6. Application for product line and CFCA Certificate**

If a clearing member needs to apply for product line and CFCA certificate for SHCH central clearing service as needed, the clearing member shall send relevant application materials affixed with the registered seal to SHCH.

### **7. Other circumstances acknowledged by SHCH**

If a clearing member needs to submit other materials related to the central clearing to SHCH, with SHCH’s approval, the materials become effective after being affixed with the registered seal.

### Client Information Form for Agent Service of Client Central Clearing Service

|  |  |  |  |
|--|--|--|--|
| Business   | <input type="checkbox"/> Bond <input type="checkbox"/> FX Bilateral Transactions ( <input type="checkbox"/> Spot <input type="checkbox"/> Forward<br><input type="checkbox"/> Swap <input type="checkbox"/> Option) <input type="checkbox"/> Interest Rate Swap <input type="checkbox"/><br>Standard Bond Forward<br><input type="checkbox"/> Others ( )   |  |  |
| Full Name of GCM   |  | Registered Seal of<br>GCM for Client<br>Clearing |  |
| Account Number of<br>GCM   |  |  |  |
| <b>1. Applicant's Basic Information</b>                                  |  |  |  |
| Full Name of Client  |  |  |  |
| Abbreviated Name of<br>Client  |  |  |  |
| Account Number of<br>Client  |  |  |  |
| National Inter-bank<br>Funding Center<br>Membership Code                 |  |  |  |
| Registered Address   |  |  |  |
| Mailing Address  |  |  |  |
| Business License<br>Number of Enterprise<br>Legal Person                 |  |  |  |
| CBRC Financial<br>License Number   |  |  |  |
| Organization Code<br>Certificate Number                                  |  |  |  |
| Type of Entity (for<br>first-time application)                           | <input type="checkbox"/> Banking Financial Institutions <input type="checkbox"/> Non-banking Financial<br>Institution <input type="checkbox"/> Non-financial Institution <input type="checkbox"/> Unincorporated<br>Product<br><input type="checkbox"/> Policy Bank <input type="checkbox"/> State-owned Commercial Bank<br><input type="checkbox"/> Stock-holding Commercial Bank <input type="checkbox"/> City Commercial<br>Bank <input type="checkbox"/> Rural Commercial Bank <input type="checkbox"/> Foreign-funded Bank<br><input type="checkbox"/> Credit Cooperative <input type="checkbox"/> Securities Company <input type="checkbox"/> Fund<br>Company <input type="checkbox"/> Annuity <input type="checkbox"/> Insurance Company <input type="checkbox"/> Finance<br>Company <input type="checkbox"/> Trust Company <input type="checkbox"/> Central Government-led<br>Enterprise <input type="checkbox"/> Other Enterprise <input type="checkbox"/> Overseas Financial<br>Institution <input type="checkbox"/> Overseas Non-financial Institution<br><input type="checkbox"/> Unincorporated Product |  |  |
| <b>2. Application for Risk Control Parameters such as Clearing Limit</b> |  |  |  |

|   |   |  |  |
|---|---|--|--|
| <b>2. Application for Risk Control Parameters such as Clearing Limit</b>          |   |  |  |
| <input type="checkbox"/> <b>Interest Rate Swap Client Clearing Service</b>        |   |  |  |
| Client's Risk Exposure Limit  |   |  |  |
| Effective Date  |   |  |  |
| Margin Adequacy Ratio <sup>17</sup> (%)   |   |  |  |
| Effective Date  |   |  |  |
| <input type="checkbox"/> <b>Standard Bond Forward Client Clearing</b>             |   |  |  |
| Client's Clearing Limit (in million RMB)  |   | Client's Tolerance (in RMB)                              |  |
| Effective Date  |   |  |  |
| <input type="checkbox"/> <b>Bond Netting Client Clearing</b>                      |   |  |  |
| Clearing Limit for Spot transaction   |   |  |  |
| Clearing Limit for Forward transaction  |   |  |  |
| Reference Value for Pledged Repo Clearing Limit                                   |   |  |  |
| Initial Setting/Adjustment of Clearing Limit for Client                           |   |  |  |
| <input type="checkbox"/> <b>FX Bilateral Transactions Central Client Clearing</b> |   |  |  |
| Threshold of Client's Risk Exposure (converted to USD)                            |   |  |  |
| Effective Date  |   |  |  |
| <b>3. Account Information (Only Applicable to FX Transaction)</b>                 |   |  |  |
| <b>Margin Currency</b>  |   |  |  |
| Initial Margin  | RMB <input type="checkbox"/> USD <input type="checkbox"/> |  |  |
| Variation Margin  | RMB <input type="checkbox"/> USD <input type="checkbox"/> |  |  |
| <b>Margin Account</b>   |   |  |  |
| <b>USD Margin</b>   | Deposit Bank  | Name   |  |
|   |   | SWIFT CODE      BIC                                      |  |
|   | Account Number  |  |  |
|   | Deposit Bank Code   |  |  |
|   | Deposit Bank Name   |  |  |
|   | Payer Account Number                                      |  |  |
|   | Payer Name  |  |  |
| <b>RMB</b>  | Payment Path  | <input type="checkbox"/> Collected by SHCH automatically |  |

<sup>17</sup> If this blank is not filled, the Margin Adequacy Ratio will be regarded as 100% automatically.



| 3. Account Information (Only Applicable to FX Transaction)  |                      |              |     |       |      |
|---|----------------------|--------------|-----|-------|------|
| <b>Margin</b>   | Deposit Bank Code    |              |     |       |      |
|   | Deposit Bank Name    |              |     |       |      |
|   | Payer Account Number |              |     |       |      |
|   | Payer Name           |              |     |       |      |
| 4. Client's Personnel Information   |                      |              |     |       |      |
| Name  | Dept./Title          | Mobile Phone | Fax | Email | Note |
|   |                      |              |     |       |      |
|   |                      |              |     |       |      |
|   |                      |              |     |       |      |
| <b>Declaration by Applicant:</b>  |                      |              |     |       |      |
| <ol style="list-style-type: none"> <li>1. The applicant guarantees the authenticity, completeness and accuracy of all information provided herein.</li> <li>2. SHCH is authorized to automatically debit and credit the above accounts designated or opened by the applicant for central clearing.</li> </ol>   |                      |              |     |       |      |
| Operator:   |                      | Telephone:   |     |       |      |
| Mobile Phone:   |                      | E-mail:      |     |       |      |
| <b>Note:</b> <ol style="list-style-type: none"> <li>1. Please complete this Form on a computer, and then print it to sign and affix seal.</li> <li>2. It is required to provide accurate and complete contact information of at least two contact persons of the client.</li> <li>3. GCM account number refers to the holder's account number of the GCM in SHCH system.</li> <li>4. Client account number refers to the holder's account number of the client in SHCH system.</li> </ol> |                      |              |     |       |      |

**Registration Form for Agent Service of Shanghai Clearing House Clearing  
Member Information Change**

|   |  |                            |  |
|---|--|----------------------------|--|
| Full Name of Clearing Member  |  |                            |  |
| Business  | <input type="checkbox"/> Bond <input type="checkbox"/> FX Bilateral Transactions ( <input type="checkbox"/> Spot <input type="checkbox"/> Forward<br><input type="checkbox"/> Swap <input type="checkbox"/> Option)<br><input type="checkbox"/> FX Anonymous Transactions <input type="checkbox"/> Interest Rate Swap<br><input type="checkbox"/> Standard Bond Forward<br><input type="checkbox"/> Others (_____) |                            |  |
| Type of Business  | <input type="checkbox"/> Proprietary Clearing <input type="checkbox"/> Client Clearing   |                            |  |
| Items to be Changed   | <input type="checkbox"/> Applicant's Personnel Information <input type="checkbox"/> Client-terminal Administrator's Information<br><input type="checkbox"/> Account Information <input type="checkbox"/> Clearing Limit<br><input type="checkbox"/> Options of Client Clearing Confirmation <input type="checkbox"/> Invoice Delivery Information<br><input type="checkbox"/> Others (_____)                       |                            |  |
| Original Information  |  |                            |  |
| Updated Information   |  |                            |  |
| Effective Date  |  |                            |  |
| <b>Information on Settlement Account</b>  |  |                            |  |
| The section below is applicable only when the item to be changed is "Account Information" and the account is "Newly Opened Settlement Account".   |  |                            |  |
| Correspondent Account Number  |  | Correspondent Account Name |  |
| Correspondent Bank Code   |  | Correspondent Bank's Name  |  |
| Contact Person  |  | Address                    |  |
| Telephone   |  | Post Code                  |  |
| <input type="checkbox"/> Legal Representative   | Name   |                            |  |
| <input type="checkbox"/> Person in Charge   | Type of ID   | ID Number                  |  |
| We hereby apply to open a settlement account in SHCH (for_____ business), and authorize the following:<br>1: We authorize SHCH to directly debit or credit the account, based on end of day clearing result.<br>2: We authorize SHCH to directly collect clearing payments, relevant taxes and fees with respect to _____ business from the account without notice in advance. We acknowledge that settlement fund with respect to _____ business could be transferred to and withdrawn from this "settlement account". |  |                            |  |
| <b>The section below shall be filled by SHCH after assessment:</b>  |  |                            |  |

|  |  |                            |  |
|--|--|----------------------------|--|
| Settlement Account Number<br>(for ____ business)   |  | Account<br>Opening<br>Date |  |
| Settlement Account Name (for<br>____ business)   |  |                            |  |
| Operator   |  | Examiner                   |  |
| <b>Statement on the Change</b>   |  |                            |  |
|  |  |                            |  |
| <b>Declaration</b>   |  |                            |  |
| <p>1. We guarantee the authenticity, completeness and accuracy of all information provided herein.</p> <p>2. We shall assume all consequences and legal liabilities for any breach of the rules and regulations on clearing membership or business stipulated by SHCH.</p> |  |                            |  |
| <p>Official seal:</p> <p>Date:</p>   |  |                            |  |
| Operator   |  | Telephone                  |  |
|  |  |                            |  |

Note: For any of the following cases, the clearing member shall complete this Form, affix it with effective seal and send to SHCH Member Services Department within five business days:

- (1) major changes in terms of qualification such as reorganization, restructuring, spin-off and merger;
- (2) change of basic information such as legal representative, shareholders, registered capital and business staff;
- (3) any event with respect to the central clearing service that the member participates in, such as legal disputes, commercial cases, and administrative penalties, etc.

**Registration (Filing) Form for Agent Service of Client Information (Change)**

Full Name of GCM \_\_\_\_\_ GCM's

Client Business Seal

GCM Account Number \_\_\_\_\_

| <b>Registration for Information Change</b>   |  |
|--|--|
| Full Name of Client  |  |
| Abbreviated Name of Client   |  |
| Client Account Number  |  |
| Type of Business   | <input type="checkbox"/> Bond <input type="checkbox"/> FX Bilateral Transactions ( <input type="checkbox"/> Spot <input type="checkbox"/> Forward<br><input type="checkbox"/> Swap <input type="checkbox"/> Option) <input type="checkbox"/> Interest Rate Swap<br><input type="checkbox"/> Standard Bond Forward<br><input type="checkbox"/> Others (_____) |
| Item to be Changed   | <input type="checkbox"/> Applicant's Basic Information <input type="checkbox"/> Clearing Limit<br><input type="checkbox"/> Relationship with Relevant GCM <input type="checkbox"/> Account Information<br><input type="checkbox"/> Client's Personnel Information <input type="checkbox"/> Others (_____)  |
| Original Information   |  |
| Updated Information  |  |
| Effective Date   |  |
| <b>Statement on the Change</b>   |  |
|  |  |
| Note:<br>1. Please complete this Form on a computer, and then print it to sign and affix seal.<br>2. GCM account number refers to the holder's account number of the GCM in SHCH system.<br>3. Client account number refers to the holder's account number of the client in SHCH system. |  |

Operator: \_\_\_\_\_

Telephone: \_\_\_\_\_

Mobile Phone: \_\_\_\_\_

Email \_\_\_\_\_

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### Application Form for Exiting Clearing Service of Shanghai Clearing House

|   |  |           |  |
|---|--|-----------|--|
| Full Name of Clearing Member  |  |           |  |
| Type of Business Participated in  | <input type="checkbox"/> Bond <input type="checkbox"/> FX Bilateral Transactions ( <input type="checkbox"/> Spot<br><input type="checkbox"/> Forward <input type="checkbox"/> Swap <input type="checkbox"/> Option) <input type="checkbox"/> FX Anonymous<br>Transactions <input type="checkbox"/> Interest Rate Swap <input type="checkbox"/> Standard Bond<br>Forward <input type="checkbox"/> Others ( )  |           |  |
| Type of Business to Resign  | <input type="checkbox"/> Bond <input type="checkbox"/> FX Bilateral Transactions ( <input type="checkbox"/> Spot<br><input type="checkbox"/> Forward <input type="checkbox"/> Swap <input type="checkbox"/> Option) <input type="checkbox"/> FX Anonymous<br>Transactions <input type="checkbox"/> Interest Rate Swap <input type="checkbox"/> Standard Bond<br>Forward <input type="checkbox"/> Standard Interest Rate Derivatives<br><input type="checkbox"/> Others ( ) |           |  |
| Whether Applying for Termination of Membership  | <input type="checkbox"/> Yes <input type="checkbox"/> No   |           |  |
| Original Information  |  |           |  |
| Updated Information   |  |           |  |
| Statement   |  |           |  |
| Declaration   |  |           |  |
| 1. The applicant guarantees the authenticity, completeness and accuracy of all information provided herein.<br>2. The applicant shall assume all consequences and legal liabilities for any breach of rules and regulations on clearing membership or business stipulated by SHCH.<br><br><div style="text-align: right;">           Official seal:<br/>           Date:         </div> |  |           |  |
| Operator  |  | Telephone |  |

Note: If “Yes” is chosen for “Whether applying for termination of membership”, please submit *Application Letter for Clearing Membership Termination* as well.

### **Application Letter for Clearing Membership Termination**

Shanghai Clearing House,

The applicant has carefully read and fully understood all rules and regulations of the clearing membership and central clearing services of Shanghai Clearing House (hereinafter referred to as “SHCH”).

The applicant hereby applies for the termination of clearing membership (type of clearing membership), due to (statement of reasons), and therefore agrees to deal with procedures regarding the termination. The applicant promises that before the official termination of clearing membership, it has terminated all central clearing business with SHCH, and settled all claims and liabilities.

(For DCMs, details shall be stated on the settlement of proprietary clearing position, membership fee, clearing fee, and risk provisions such as margin and default fund, etc.; for GCMs, details shall be stated on the settlement or transfer of client positions herein or in attached documents).

This application is hereby solemnly submitted for approval.

(Applicant’s full name)

(Official seal) (applicable to domestic institutions)

Or signature of authorized person (applicable to overseas institutions)

Date

### Emergency Instructions on CCP Clearing in Shanghai Clearing House

Fax Instruction Number : \_\_\_\_ ( from 001)

 Type: ☐proprietary clearing

☐client clearing

|  |  |                               |  |                                 |  |
|--|--|-------------------------------|--|---------------------------------|--|
| <b>Related Business (optional)</b>                     | <input type="checkbox"/> Bond Netting <input type="checkbox"/> Interest Rate Swap <input type="checkbox"/> FX Bilateral <input type="checkbox"/> Standard Bond Forward <input type="checkbox"/> Others (_____)   |                               |  |                                 |  |
| <b>Contingency Instruction Requirement (mandatory)</b> | <input type="checkbox"/> Funds transfer <input type="checkbox"/> Report export<br><input type="checkbox"/> Information inquiry    ( <input type="checkbox"/> Account balance <input type="checkbox"/> Risk management compliance check status <input type="checkbox"/> Other information:_____)<br><input type="checkbox"/> Change of clearing method <input type="checkbox"/> Objection on clearing data<br><input type="checkbox"/> Maintenance of bond journal <input type="checkbox"/> Client confirmation<br><input type="checkbox"/> Maintenance of margin ledger <input type="checkbox"/> Others(_____) _ |                               |  |                                 |  |
| <b>Contingency Content (mandatory)</b>                 | For cash transfer  | Payer account number          |  | Payee account number            |  |
|  |  | Payer account name            |  | Payee account name              |  |
|  |  | Transferred amount (in-words) |  | Transferred amount (in numbers) |  |
|  | <b>Specific operation requirements for contingency instructions:</b>   |                               |  |                                 |  |

**Instructions:**

1. **Cash transfer:** Please fill in paying and payee accounts' numbers and names, transferred amounts, and specify the currency; if the previously provided receiving account is the only receiving account, the information about payee account can be left blank. 2 **Report export:** Please specify the report name, the time range and the email for receiving the report (for the report that is only permitted to be sent through the electronic path). 3. **Information inquiry:** Please specify the information to be inquired; 4. **Change of clearing method :** Please specify the CFETS original transaction code; specify gross-to-netting or netting-to-gross for the change type; specify gross or netting for the change result; 5. **Objection on clearing data:** Specify the GID of trades on which you have any objection and reasons; 6. **Maintenance of bond journal:** Specify the bond transferring direction, the bond code, the short name of bond and the par value of the product; 7. **Client confirmation:** Specify the CFETS original transaction code, choose approval or rejection; 8. **Maintenance of margin ledger:** Please specify amounts and the date of the ledger; for FX Bilateral, please specify margin types (initial margin or variation margin); and mark amounts with "+/-" where "+" refers to deposit and "-" refers to withdraw;

**For all above mentioned contingency instructions, where GCM conducts client business, please specify the client account and the short name of client.**

Commitment made by instruction sender: The instruction sent is true, accurate, complete and valid.

Instruction sender's account:

Short name of instruction sender:

Effective seal (seal left with SHCH or official seal):

Sending date:

Instruction sender's telephone:

Fax number of instruction sender:

Contact person of instruction sender:

## **Instructions**

### **1. General instructions**

- (1) Fax instruction number: Generated by the sender itself in the sequence of 001,002.....on a daily basis.
- (2) Where GCM conducts client contingency operation, the member should specify client's account and client's short name.
- (3) All information contained in the instruction should be clear, and there should be no alterations.
- (4) SHCH Fax number: 021-63326661.

### **2. Instructions on specific business**

#### **(1) Funds transfer**

- 1) Please fill in the number and name of payer and payee accounts, transferred amount, and specify the currency.
- 2) If the previously offered payee account is the only payee account, information about payee account can be left blank.

#### **(2) Report export**

- 1) Reports referred herein are cash clearing reports, cash settlement reports, margin reports, SFTP files, etc.
- 2) In the case of contingency, SHCH may provide digital file for reports that must be sent through the electronic path (such as SFTP files).
- 3) Please specify the report name, the time range and the email address to receive the report (if necessary).

#### **(3) Information inquiry**

Please provide content of information to be inquired.

#### **(4) Change of clearing method**

Please specify the CFETS original transaction number, specify gross-to-netting or netting-to-gross for the change type, and specify gross or netting for the change result.

#### **(5) Objection on submitted clearing data**

Please specify the GID on which you have any objection and reasons.

#### **(6) Maintenance of bond journal**

Please specify the bond transferring direction, the bond code, the short name of bond and the par value of the product.

#### **(7) Client confirmation**

Specify the CFETS original transaction code, choose approval or rejection.

#### **(8) Maintenance of margin ledger**

- 1) Please specify amounts and the date of the ledger; for FX Bilateral please specify margin types (initial margin or variation margin).
- 2) Amount: Please mark amounts with "+/-" where "+" refers to deposit and "-" refers to withdraw.

### **3. Opening of contingency account**

After opening the contingency account for Standard Bond Forward and Interest Rate Swap, the CM should promptly notify SHCH.



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**Application Form for Direct Connection Interface on Central Clearing in  
Shanghai Clearing House**

|                          |   |   |                  |  |
|--------------------------|---|---|------------------|--|
| Institution Type         | <input type="checkbox"/> General clearing member <input type="checkbox"/> Direct clearing member<br><input type="checkbox"/> Client   |   |                  |  |
| Business                 | <input type="checkbox"/> Bond <input type="checkbox"/> Interest Rate Swap <input type="checkbox"/> FX Bilateral Transactions ( <input type="checkbox"/> Spot<br><input type="checkbox"/> Forward <input type="checkbox"/> Swap <input type="checkbox"/> Option) <input type="checkbox"/> Standard Bond Forward<br><input type="checkbox"/> Others ( ) |   |                  |  |
| Institution Name         |   |   | Institution Code |  |
| Business Contact Person  | Name  |   | Telephone        |  |
|                          | Email   |   |                  |  |
|                          | Address   |   |                  |  |
| Technical Contact Person | Name  |   | Telephone        |  |
|                          | Email   |   |                  |  |
|                          | Address   |   |                  |  |
| Application Type         |   | <input type="checkbox"/> Pushing interface for real-time inquiry<br><input type="checkbox"/> Interface for receiving day-end data |                  |  |
| Official Seal            |   |   |                  |  |

Application Date:

### Confirmation of Pledging/ Releasing Bond Collaterals by Non-Clearing Member

Fax Instruction Number:  
Shanghai Clearing House,

We, \_\_\_\_\_ hereby apply for using the following bonds as bond collaterals to offset margin requirement for RMB Interest Rate Swap Central Clearing, and authorize general clearing members \_\_\_\_\_ to handle issues related to pledge/release of bonds on our behalf.

| No. | Product Code | Product's Short Name | Par Value | Pledge/Release |
|-----|--------------|----------------------|-----------|----------------|
|     |              |                      |           |                |
|     |              |                      |           |                |
|     |              |                      |           |                |

Full name of applicant:  
account:

Full name of applicant's bond

Applicant's bond account number:

Sending date:

Confirmation telephone:

Confirmed by:

Receiving fax number:

Registered seal of applicant:

Note:

1. Fax Instruction Number: is generated by the sender, and is a unique number generated on a daily basis.
2. All information herein should be clear and there should be no alterations.
3. SHCH's fax number: 021-63326661.
4. The registered seal of the applicant refers to the applicant's settlement business seal reserved with SHCH.
5. This operation is only applicable for RMB Interest Rate Swap Central Clearing.

### Application for Replacing Pledged Bonds

Shanghai Clearing House,

We (or client) have made a bond pledged repo transaction, with holder's account of \_\_\_\_\_ and trade number of \_\_\_\_\_ on date \_\_\_\_\_. We have made initial settlement default and hereby apply for replacing such pledged bonds (in the case of application on behalf of a client, we confirm this application represents the client's true will), with following details:

The details of the original pledged bonds:

| Settlement date | Code of pledged bonds | Face value of bonds that should be pledged (in RMB10,000) | Pledge ratio (%)                       | Valuation of such bonds (RMB) | Value that should be pledged (in RMB 10,000) |
|-----------------|-----------------------|---|--|-------------------------------|--|
|                 |                       |   | Subject to pledge ratio issued by SHCH |                               |  |
|                 |                       |   | Subject to pledge ratio issued by SHCH |                               |  |
|                 |                       |   | Subject to pledge ratio issued by SHCH |                               |  |

The details of the new pledged bonds

| Product code | Short Name of Product | Face value of replacement bonds (in RMB10,000) | Pledge ratio (%)                        | Valuation of such bonds (RMB) | Replacement value (in RMB10,000) |
|--------------|-----------------------|--|---|-------------------------------|----------------------------------|
|              |                       |  | Subject to pledge ratio issued by SHCH  |                               |                                  |
|              |                       |  | Subject to pledge ratio issued by SHCH. |                               |                                  |
|              |                       |  | Subject to pledge ratio issued by SHCH  |                               |                                  |

Note:

1. For pledge repo transaction that has been included into bond netting and whose initial settlement is not completed, CM may apply in writing to SHCH for replacing such pledged bonds.
2. Value of new bonds should be greater than the value that is originally pledged for such transaction.

3. "Valuation of bonds" is available in client-terminal "comprehensive query"--"query information about valuation of securities".
4. This application is only applicable to bond netting.

Reserved seal:

Date:

**Filing Form of Information (Change) about Non-clearing Member  
Client-Terminal Administrator**

Short name of non-clearing member: \_\_\_\_\_

Full name of non-clearing member: \_\_\_\_\_

Account of non-clearing member: \_\_\_\_\_

|  |              |  |
|--|--------------|--|
| <input type="checkbox"/> Registration<br><input type="checkbox"/> Cancellation   | Name         |  |
|  | Login Name   |  |
|  | ID Number    |  |
|  | Telephone    |  |
|  | Mobile Phone |  |
| <input type="checkbox"/> Registration<br><input type="checkbox"/> Cancellation   | Name         |  |
|  | Login Name   |  |
|  | ID Number    |  |
|  | Telephone    |  |
|  | Mobile Phone |  |
| General clearing members<br>(hereinafter referred to as<br>“GCM”) in default model (fill<br>this item for newly added<br>one-to-many agency<br>relationship) |              |  |

CFCA Certificate Serial Number: \_\_\_\_\_

Official seal of non-clearing member: \_\_\_\_\_ Date: \_\_\_\_\_

Client business seal of GCM: \_\_\_\_\_ Date: \_\_\_\_\_

**Note:**

1. There should be more than one client-terminal administrator.
2. “Login Name”: Please fill in English letters or a combination of English letters and numbers (differentiate uppercase and lowercase letters); the login name should be within 12 characters;
3. “CFCA Certificate Serial Number”: Please fill in certificate serial numbers starting with “041”, for example, 041@712345678-X@shchcs@00000001;
4. The non-clearing member’s account refers to the non-clearing member’s holder account in Shanghai Clearing House.
5. “GCM in default model” is to be filled in by the client with multiple GCMs. At present, only Interest Rate Swap business supports the one-to-many agency relationship.