Shanghai Futures Exchange

CPSS-IOSCO Principles for Financial Market Infrastructures

Information Disclosure

December 2018

Contents

Responding institution: Shanghai Futures Exchange

Jurisdiction in which the FMI Operates: People's Republic of China

Authority Regulating, Supervising, or Overseeing the FMI: China Securities Regulatory Commission

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I. Executive Summary

The Shanghai Futures Exchange (hereinafter referred to as 'SHFE' or the 'Exchange') is a central counterparty (CCP) established in People's Republic of China that mainly provides services including mainly daily clears members' trades and, according to trading results and its applicable rules, calculates and transfers members' trading margin, gains and losses, transaction fees, delivery payment and other amount.

Members of SHFE are classified into Futures Firm Members (FF Members) and Non-Futures Firm Members (Non-FF Members). Margin requirements are implemented for futures trading. Only members are allowed to conduct futures trading and relevant activities on the Exchange (i.e., SHFE accepts trading orders from and clears trades with members only); only through FF members can clients participate in futures trading, clearing, delivery, exchange of futures for physicals (EFP), hedging quota application, etc.

SHFE adopts a two-tiered risk prevention system, under which the Exchange prevents and controls the risks from members, and members in turn prevent and controls the risks from their clients. In addition, SHFE introduces a CCP centralized clearing mechanism to mitigate market risks and to improve market efficiency.

Certified settlement banks (settlement banks) are prudentially designated by SHFE to provide margin custody and transfer services and are subject to SHFE's relevant rules. SHFE currently designates 12 certified settlement banks: the Bank of China, the Agricultural Bank of China, the Industrial and Commercial Bank of China, the China Construction Bank, the Bank of Communications, the Shanghai Pudong Development Bank, the Industrial Bank, the China Everbright Bank, the China Merchants Bank, the China CITIC Bank, the China Minsheng Bank, and the PingAn Bank, all of which are reputable, financially robust national or joint-stock commercial banks that feature nationwide coverage, advanced inter-city funds transfer technologies, established margin management rules, competent technical experts, and a sound record of the depository business.

SHFE manages margin on a separate basis to prevent risks. SHFE opens a dedicated settlement account with every above-mentioned certified settlement bank for depositing members' margin and relevant amount; a member opens a dedicated fund account with a certified settlement bank for depositing its members' margin and relevant amount. The transfer of funds between the Exchange and a member involved in futures trading is executed through SHFE's dedicated settlement account and the member's dedicated fund account. Furthermore, SHFE manages the margin deposited by a member to its dedicated settlement account on a separate basis and sets up an account for each member to daily record and verify the deposits, withdrawals, gains and losses, trading margin, and transaction fees of the member. An FF member manages the margin deposited by a customer to its dedicated fund account on a separate basis and sets up a ledger for each customer to daily record and verify the deposits, withdrawals, gains and losses, trading margin, and transaction fees of the customer. In addition, SHFE may collect any receivables through direct deduction from the dedicated fund account of a member without any notice and may access at any time the balance and transaction history of the account for potential risk identification and control at an early stage.

A certified delivery warehouse is a venue approved by SHFE for conducting physical delivery against a futures contract. SHFE regulates the futures business of certified delivery warehouses according to the *Certified Delivery Warehouse Rules of the Shanghai Futures Exchange* (the '*SHFE Certified Delivery Warehouse Rules*') and applicable delivery measures for relevant products. A certified warehouse is required to establish a separate account for each underlying commodity and designate dedicated persons to be in charge of the physical delivery. The certified warehouses are subject to internal audit as well as random and annual inspection by SHFE; and should pay delivery risk deposit to SHFE to guarantee the performance of their obligations.

Legal and regulatory frameworks.

SHFE conducts various businesses on a fairly solid basis of legal framework. The legal standards are clearly stipulated, well understood, and highly consistent with rules, procedures, and contracts of the Exchange. The whole set of the arrangements have been well implemented and obeyed, constituting a sound basis for SHFE to perform its role as a CCP.

As the futures regulator under the State Council, China Securities Regulatory Commission (CSRC) regulates China's futures market while the China Banking and Insurance Regulatory Commission (CBIRC) serves as the regulator of the banking and insurance industries. Under the supervision of CSRC's regulation, SHFE organizes futures trading on a transparent, fair, and just basis with market integrity, and provides members with trading venues and facilities as well as clearing, delivery, information release, and other relevant services.

Main risks and risk management. As a CCP, SHFE shoulders a wide range of potential internal or external risks that may arise from itself or from its participants, customers, or other entities. These risks mainly include legal risk, credit risks, liquidity risks, physical delivery risks, general business risks, investment and custody risks, operational risks, and violation risks.

SHFE has established a robust risk-management framework: The Risk Management Committee under the Board of Directors participates in decision making which involves SHFE's risk control and management; SHFE adopts supporting detailed rules and measures to comprehensively manage credit, liquidity, delivery, and other risks facing it in daily operations. Internal departments including the Trading Department, the Clearing Department, the Legal Affairs Department, the Market Compliance Department, and concerning Commodities Departments as well as various business systems, are committed to jointly and closely monitoring changes in risk intensity and market environment and, in response thereto and according to policy-making rules, update relevant policies and procedures; and the Risk Management Department and the Risk Management Working Group are devoted to inspecting, assessing, and addressing risks and to making risk control decisions. Total credit risk exposure can be identified and quantified at the exchange level. Comprehensive risk-management framework can identify, monitor, and address the risks exposure of the Exchange per se as well as concerning participants and established specific rules to respond to emergencies. In addition, SHFE addresses potential operational risks by: (1) creating a cyber security system and information security strategies under ISO 27001; (2) managing growing capacity needs of various systems through the standard capacity management process set out in ISO 20000; (3) setting system operational stability goals; (4) enhancing employees' risk awareness; (5) adopting a two-staff, double-check mechanism; (6) developing evaluation indicators for operation; (7) conducting internal inspections and external evaluations; (8) executing agreements with utility providers; (9) building a monitoring system; (10) 24hr facility check and building environment inspection; (11) conducting emergency drills; and (12) setting up disaster recovery backup centers.

Clearing. SHFE implements a daily mark-to-market system and conducts clearing at the end of each day, which shall be completed before market open on the following trading day as required by applicable laws and supporting market rules. After the clearing deadline set by such laws and rules, payment and transfer instructions will become irrevocable and the deadline will not be subject to any extension. Moreover, SHFE has an effective margin model in place that is designed to cover participants' credit risk exposures from various products with a high degree of confidence level; set out detailed and prudent rules on the type, haircut, and concentration limit of the assets acceptable as margin. These assets are required to be of high credit and liquidity and valued on a daily mark-to-market basis. SHFE has built a flexible warrant system that can identify the standard warrants of each customer to ensure the security of collateral assets.

Market surveillance. SHFE conducts look-through regulation based on the system of one account dispatched with one trading code. As a customer's open interests and collaterals are recorded under his trading code and separated from those of other customers, SHFE's system can accurately and easily identify each customer's assets to facilitate the monitoring by the China Futures Market Monitoring Center (CFMMC). In the case of participant default, SHFE may invoke effective and clearly defined rules and procedures for management thereof by taking timely actions, discharging the settlement obligations, and addressing the problem of resources replenishment. Lastly, SHFE may identify a participant violation through an internal real-time monitoring system, investigate the violation and penalize the entity concerned according to relevant rules and, under serious circumstances, timely report to CSRC for formal filing and investigation. A violation constituting a crime will be referred to the judicial authority for criminal prosecution.

Disclosure of rules, key procedures, and market data. SHFE accomplishes this end by: (1) periodically holding Members' Assembly and member forums and timely seeking and analyzing opinions and suggestions from the market to meet the needs of participants and the market it serves; (2) promptly providing solutions to participants after evaluating the opinions and suggestions received through multiple channels; (3) timely improving its businesses, rules, and systems to adapt to the changes in market needs; (4) conducting sufficient full-market testing in advance and organizing training programs for new systems or to-be-launched businesses; and (5) disclosing basic data, service charges, discount policies, circular and announcements, and regulatory information to the market through its official website and the member service system.

II. Summary of Major Changes Since Last Disclosure

N/A.

III. Background on SHFE

- General Description of SHFE and the Markets It Serves

SHFE is a duly-established legal person that fulfils the duties under relevant regulations, accepts the unified regulation of CSRC, and performs self-regulation in accordance with its *Articles of Association*. With a long-term goal of becoming an exchange of top world notch, SHFE is committed to building a secure, orderly, and efficient market, and creating a transparent, fair and just market with sound integrity. Specifically, in the five years ahead, SHFE will adopt global perspectives in its planning, set rules consistent with international standards, and fully manifest local advantages; endeavor to reach goals of 'standard searching, standard alignment, standard reaching, and standard seizing'; strive to diversify its product line, internationalize the market, integrate information and further develop technology and professional talents, so as to better enhance its capacity and competence to serve China's real economy as well as the global influence of the Exchange.

SHFE is a membership-based exchange with a registered capital of ¥125 million. According to its *Articles of Association*, the Members' Assembly, which consists of all members, is the highest authority of the Exchange, with the Board of Directors as its standing presence and has such special committees subordinate to it as the Risk Management Committee, the Compliance Committee, the Trading Committee, the Settlement Committee, the Members Qualification Committee, the Arbitration Committee, the Finance Committee, and the Information Technology Committee. The Board of Supervisors supervises the Exchange and reports to the Members' Assembly. As of the end of 2018, SHFE has admitted 197 members – 149 FF members and 48 Non-FF members, and approved 2,241 remote trading seats nationwide.

SHFE currently lists 16 futures products including gold, silver, copper, aluminum, zinc, lead, nickel, tin, rebar, hot rolled coils, wire rod, crude oil, fuel oil, natural rubber, bitumen, and wood pulp as well copper options, and has launched continuous trading for relevant products. As of December 31, 2018, on a single-sided basis, SHFE futures trading achieves a total trading volume of 1.174 billion lots and a total turnover of ¥81.53 trillion (excluding crude oil futures); Derivative trading achieves a total trading volume of 1.2632 million lots and a total turnover of ¥8.861billion (copper options only).

With a robust computer trading system, SHFE ensures real-time, secure, and reliable frontline and remote trading via large capacity fiber and dedicated lines , access to other Commodity/Futures Exchanges, and other communication technologies; and effects with a central database synchronous transmission and exchange of data of and from clearing, funds, delivery, inter-city delivery warehouse, and risk monitoring systems.

As a CCP, SHFE clears trades through its internal Clearing Department which clears futures trades conducted on the Exchange, manages margin, and prevents clearing risk. Specifically, the Department fulfills the following duties: (1) controlling clearing risks; (2) preparing clearing statements for members; (3) transferring funds; (4) keeping statistics on, registering, and reporting the clearing of transactions; (5) resolving funds disputes among members with respect to futures transactions; (6) conducting delivery settlement ; and (7) managing margins as prescribed.

SHFE implements margin requirements and a daily mark-to-market system, under which it clears trades with members and members clear trades with their customers on a daily basis; and adopts a physical delivery system that requires delivery of the underlying commodity against the maturity of a contract within a prescribed limit. Delivery-related services are provided by certified delivery warehouses, and customers may handle deliveries only through members of the Exchange.

SHFE releases real-time and delayed market data through domestic and foreign authorized information agencies by a satellite broadcasting network and a public telecom network; offers dynamic market data consulting services through a real-time messaging service system and a telephone quotation service system; timely publishes statistics and relevant information on trading, delivery, open interest, and inventory, among others on its official website (http://www.shfe.com.cn/); and provides members, investors, and the public with consultation, training, and other services in the form of media report, telephone communications, and diverse training and exchange programs.

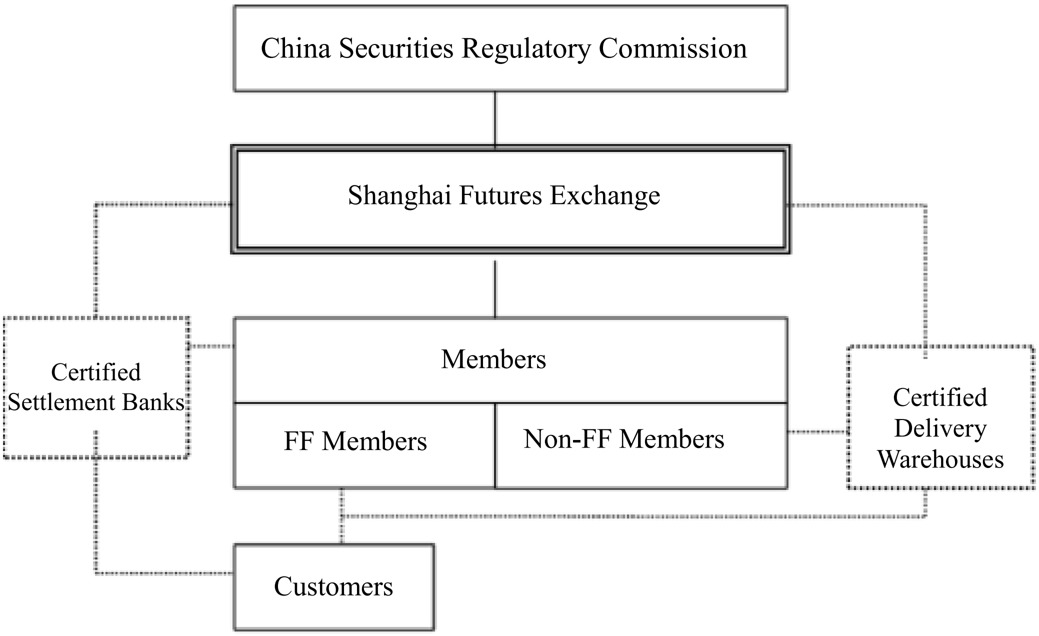
Organization and Governance Structure

In consistent with the *Measures on the Administration of Futures Exchanges* and its *Articles of Association*, SHFE's Board of Directors and management adopt the following structures: the Members' Assembly, as the highest authority, consists of all the members and meets once a year upon convention by the Board, the standing presence of the Members' Assembly. The Board reports to the Members' Assembly and has 17 directors, including 11 member directors and 6 non-member directors, the former being competitively elected by the Members' Assembly upon nomination of the Board or at least one fifth of the members, and the latter appointed by the CSRC. Board Chairman and Vice Chairman are elected by the Board upon nomination of the CSRC. The Chairman shall not simultaneously serve as the President and Chief Executive Officer, who is an ex officio director. The Board establishes Special Committees under itself as deliberative bodies to assist it in performing duties, the scope of which to be defined by the Board.

SHFE sets up Board of Supervisors pursuant to applicable rules of the CSRC and take the *Company Law of the People's Republic of China* as reference, which consists of at least 5 supervisors, including 1 to 3 member supervisors to be elected by the Members' Assembly from the members, 1 to 2 full-time supervisors to be appointed by the CSRC, and 2 or more employee supervisors (accounting for at least 1/3 of all supervisors) to be elected by the Exchange's staff in a democratic and competitive way. A director and an officer shall not simultaneously serve as a supervisor.

The Exchange has one President and Chief Executive Officer who is responsible for the Exchange's day-to-day activities and several Executive Vice Presidents and other officers. The President and the Chief Executive Officer and the Executive Vice Presidents are appointed and dismissed by the CSRC. The Exchange governs multiple functional departments including the Party Committee Office, Party Committee Organization Department, General Office, Risk Management Department, Market Compliance Department, Trading Department, Clearing Department, Delivery Department, Operation Department, Member Services and Investor Education, Commodities Futures Departments I and II, Market Promotion Department, Derivatives Department, Commodity Trading Platform , Media Communication Department, Legal Affairs Department, International Cooperation Department, Information Management Department, Internal Audit and Compliance Department, Discipline Inspection and Supervision Office, Finance Department, Administration Department, Beijing Liaison Office, and Singapore Office.

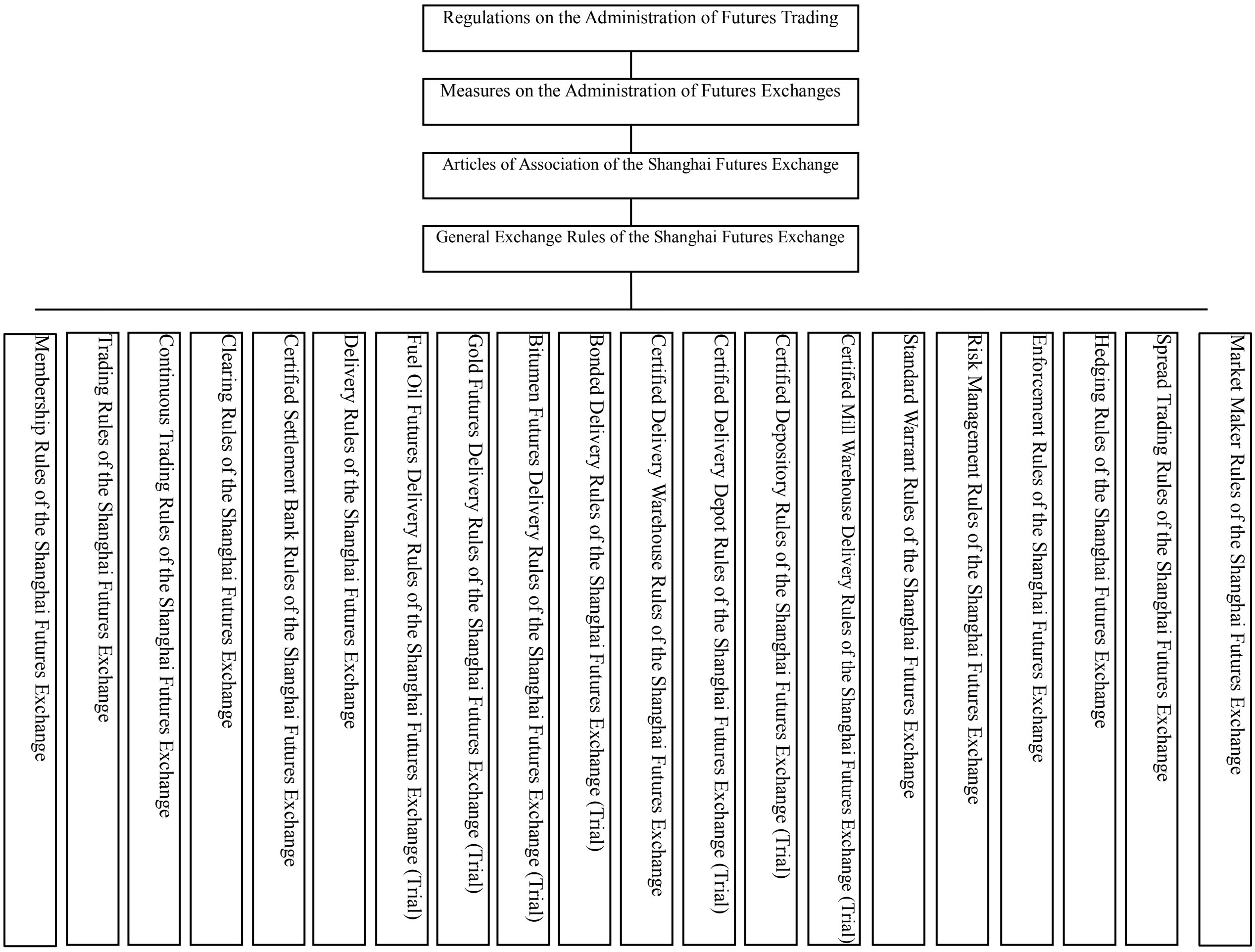
● Legal and Regulatory Framework



China's financial market adopts an industry-based regulatory model: CSRC under the State Council regulates the futures market, while CBIRC serves as the regulator of the banking and insurance industries.

Under the supervision of CSRC's regulation, SHFE organizes futures trading on a transparent, fair, and just basis with market integrity, and provides members with trading venues and facilities as well as clearing, delivery, information release, and other relevant services.

SHFE has, in accordance with the *Regulations on the Administration of Futures Trading* released by the State Council and the *Measures on the Administration of Futures Exchanges* by the CSRC, developed a complete set of rules, policies, and systems to fully cover the trading operations and management of futures market, such as trading, clearing, delivery, membership management, risk control, standard warrant management, and handling of violations.



Market access. Normative documents on market access include the *Regulations on the Administration of Futures Trading*, the *Measures for the Supervision and Administration of Futures Firms*, the *Articles of Association of the Shanghai Futures Exchange* (the '*SHFE Articles of Association*'), and the *Membership Rules of the Shanghai Futures Exchange* (the '*SHFE Membership Rules*'), which cover the requirements for establishing a futures firm and the approval process thereof, membership qualifications, rights and obligations of a member, definitions of eligible market participants, etc.

Contracts. Normative documents on futures trading contracts include the *Regulations on the Administration of Futures Trading*, the *Measures on the Administration of Futures Exchanges*, and the *SHFE Articles of Association*, which specify the Exchange's responsibilities in and corresponding approval processes for designing, listing, amending, and termination of contracts.

Trading. To regulate its trading, clearing, delivery, risk control, and other trading-related activities, the Exchange has, in accordance with applicable laws, regulations, policies, and the *SHFE Articles of Association,* formulated the *General Exchange Rules of the Shanghai Futures Exchange* (the '*SHFE General Exchange Rules*'), which binds upon the Exchange, its members, investors, certified delivery warehouses, certified settlement bank of futures margin and their respective staff.

To implement the *SHFE General Exchange Rules*, the Exchange further promulgated the *Trading Rules of the Shanghai Futures Exchange* (the '*SHFE Trading Rules*') by detailing matters such as trading seat, trading floor, remote trading, price, trader code, and information disclosure. The *SHFE Trading Rules* is binding on the Exchange, its members and their customers.

Also, the Exchange has formulated the *Hedging Rules of the Shanghai Futures Exchange* in line with the *SHFE General Exchange Rules* and other applicable rules, giving full support to participants in the real economy to hedge against their risks through the futures market. The *SHFE Hedging Rules* is binding on members and customers engaged in hedging activities.

Clearing. To regulate its clearing activities, the Exchange has, in accordance with the *SHFE General Exchange Rules*, developed the *Clearing Rules of the Shanghai Futures Exchange* (the '*SHFE Clearing Rules*'), which binds upon the Exchange, its members, their customers, settlement banks, and their respective staff. The Exchange implements margin requirement, daily mark-to-market, and risk reserve fund systems for its clearing, and clears trades with the members only, while each member clears trades with its customers.

Delivery: To regulate its delivery activities, the Exchange has, in accordance with the *SHFE General Exchange Rules*, formulated the *Delivery Rules of the Shanghai Futures Exchange* (the '*SHFE Delivery Rules*') which binds upon the Exchange and its members, customers, and certified delivery warehouses. In view of the different properties of different products, the Exchange formulated the *Fuel Oil Futures Delivery Rules of the Shanghai Futures Exchange (Trial)*, the *Gold Futures Delivery Rules of the Shanghai Futures Exchange (Trial)*, and the *Certified Mill Warehouse Delivery Rules of the Shanghai Futures Exchange (Trial),* which bind upon the depots, depositories, and mill warehouses, to regulate the delivery of fuel oil, gold, and steel (including steel rebar and wire rod) separately. Physical delivery is dealt with in Chapter 5 of the *SHFE Clearing Rules*.

To regulate the futures trading activities of certified delivery warehouses, delivery depots, and depositories, the Exchange has, in accordance with the *Contract Law of the People's Republic of China* and the *SHFE General Exchange Rules*, formulated the *SHFE Certified Delivery Warehouse Rules*, the *Certified Delivery Depot Rules of the Shanghai Futures Exchange (Trial)*, and the *Certified Depository Rules of the Shanghai Futures Exchange (Trial)*, which bind upon all such warehouses and their staff.

To enhance the management of standard warrant and ensure the normal operation of futures delivery, the Exchange has, in accordance with the *General Exchange Rules*, formulated the *Standard Warrant Rules*, which bind upon the Exchange, its members, their customers, all certified delivery warehouses and any other standard warrant business participants in their dealings with standard warrants. (The standard warrants include warehouse standard warrants and mill warehouse standard warrants. A warehouse standard warrant is issued by a certified delivery warehouse through the Exchange's standard warrant system to the owner of the warranted goods as document of title after the warehouse confirms that these goods are acceptable under the *Standard Warrant Rules*. A standard warrant is a document of title that a certified mill warehouse issues through the standard warrant system in accordance with the procedures set by the Exchange, which currently is applicable solely to the steel rebar and wire rod futures contracts.)

To regulate bonded futures delivery activities, the Exchange has, in accordance with the *General Exchange Rules,* formulated the *Bonded Delivery Rules of the Shanghai Futures Exchange (Trial)*, which binds upon the Exchange, its members, their customers and certified bonded delivery warehouses. (Futures bonded delivery means the delivery of the underlying commodity of a futures contract in bonded status within a special customs or bonded area. A bonded warehouse is a venue certified by the Exchange for futures bonded delivery activities.)

Risks and responsibilities. The Exchange has, in accordance with the *General Exchange Rules*, formulated the *Risk Management Rules of the Shanghai Futures Exchange* (the '*SHFE Risk Management Rules*'), which binds upon the Exchange, its members and their customers. For risk management, the Exchange implements the margin requirement, the price limit, the position limit, the trading limit, the large position reporting, the forced liquidation, and the risk warning.

Supervision and enforcement. The Exchange has, in accordance with *SHFE Articles of Association* and the *SHFE General Exchange Rules*, formulated the *Enforcement Rules of the Shanghai Futures Exchange* (the '*SHFE Enforcement Rules*'). The term 'violation' refers to any breach of the *SHFE Articles of Association*, the *SHFE General Exchange Rules* and/or other relevant provisions of the Exchange by a member, customer, certified delivery warehouse, certified futures margin settlement bank or relevant futures market participant. The Exchange investigates, identifies, and deals with violations based on factual evidence and in adherence to the principles of fairness and impartiality. A violation that constitutes a crime will be referred to the judicial authority for criminal prosecution. Should the CSRC has already, for such violations, imposed punishment upon a member, customer, certified delivery warehouse, certified futures margin settlement bank or relevant futures market participant, the Exchange may, at its discretion, grant mitigation or relief of the otherwise imposable penalty.

Emergency response. The Exchange may declare a state of emergency according to the *SHFE General Exchange Rules* if during futures trading occurs any of the following circumstances: earthquake, flood, fire or system breakdown and other force majeure or technical problems that lead to failure of normal trading; abnormal movement of futures price, such as price continuously reaching its limits, leading to large-scale losses of customers, even the risk of forced position liquidation; excessively huge position held by a small number of members or customers; members' risk of settlement; delivery default, etc.

The Exchange may take the following emergency actions to mitigate and release the risks: delaying the opening of the market, suspending trading, adjusting daily price limit, increasing trading margin, reducing position size to a designated extent within a specified time limit, forced liquidation, and so on.

- System design and operation

SHFE provides trading, clearing and physical delivery services with its in-house designed and developed electronic trading platform, which boats a processing speed at 50,000 orders/second and huge upgrading potential as well as adaptability eyeing at the future. The exchange has established 3 data centers in Shanghai and Beijing, with the world-class 'derivatives R&D and data processing center' as its signature. With adoption of multi-pairs of fibers of various diameters, SHFE manages to realize reliable operation with core business system functioning as back-up for each other.

The Exchange has set up the Clearing Department to provide clearing service for the products listed on the Exchange. The Exchange implements daily mark-to-market and the risk reserve fund systems for its clearing activities, while for risk management, has adopted the margin requirement, price limits, position limit, large position reporting, forced liquidation, risk warning, etc. SHFE adopts a two-tiered risk management structure, under which SHFE shall monitor and manage the risks of its Members, while each FF Member shall monitor and manage the risks of its customers.

The Exchange implements the following systems for the clearing business: the clearing management system, the risk assessment system, the futures funds management system, the standard warrant system, the delivery system, etc. To be specific:

Clearing Management System. This system clears the gains and losses, trading margin, transaction fees, taxes and other fees for each member based on the daily settlement price of each contract, transfers the net balance of the member's receivables and payables, and correspondingly increase or decrease the member's clearing deposit. It also provides the members with relevant data and information such as settlement prices, positions, settlement parameters, and transaction fees on a daily basis. In addition, it ensures the normal operation of the clearing business by supporting the management of core businesses such as funds deposit and withdrawal, collateral margin, physical delivery and so on.

Risk Assessment System. This system is designed to timely monitor the rights and interests, gains and losses and potential financial pressure of each member. With this system, SHFE's risk management personnel can conduct intra-day real-time clearing and post-trading stress test to dynamically evaluate the fund risks both of any member and across the entire market; various simulation scenarios can be created for the stress test for different specific situations, and more than one assessment method is supported. The assessment results can be released to appropriate decision makers or market participants in a timely manner, thus strengthening the Exchange's ability to manage the members' settlement fund risks. In terms of delivery risk management, the system may be used to timely identify abnormal accounts related to delivery business or potential delivery risks at the time near delivery, thereby ensuring the smooth delivery.

Futures Fund Management System. As an electronic fund platform linking the Exchange, members and certified settlement banks, this system has realized the real-time reporting, approval, and tracking of the transfer of futures funds. It features safety, high efficiency and convenience, and to a considerable extent, has reduced the operating costs of members, the Exchange and banks, improved the operational efficiency of futures funds, and enhanced the Exchange's monitoring of the fund flow risk.

Standard Warrant System. As a comprehensive warrant management platform linking the

Exchange, members, delivery warehouses and quality inspection agencies, this system has realized the e-management of the delivery notice, warrant registration, transfer, collateralization, cancellation, and the product reporting and inspection, and so on, thus improving the delivery efficiency and ensuring the safety of warrants. Meanwhile, this system can daily mark margin collateral to market, and automatically adjust the amount of the margin converted from collateral according to market situations, thus ensuring the smooth management of margin collateral.

Delivery System: This system is a comprehensive physical delivery management platform linking the Exchange and its members, through which, the members participating in physical delivery submit to the Exchange warrants for delivery and delivery intentions, and the Exchange collects market's delivery intentions and matches warrants between the members. In addition, it is also used for calculating the costs relevant to the delivery business, which in turn ensures smooth physical deliveries.

IV Principle-by-Principle Summary Narrative Disclosure

This part set outs SHFE's summary narrative disclosure for each applicable principle.

Principle 1: Legal basis

An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

Key consideration 1: The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.	SHFE is a futures exchange under the centralized and uniform regulation of CSRC and organizes futures trading as approved by CSRC. As a non-profit legal person, SHFE conducts self-regulation in accordance with its *Articles of Association*. CSRC is China's competent government authority for futures regulation, supervision, while the China Futures Association (CFA), a non-profit association which accepts the guidance and management of CSRC, serves as a bridge that links government and securities and futures industry, safeguards the legitimate rights and interests of its members, and strives to maintain an orderly competition in the securities and futures industry. As a CCP providing clearing services for commodity futures trading, SHFE requires a high degree of legal certainty for the following businesses: novation, interests in financial instruments, settlement finality, netting settlement, collateral arrangements (including margin arrangements), default procedures, and segregation and prompt disposal of margin assets. Currently, all of SHFE's key businesses are conducted within the People's Republic of China, which shall be deemed 'all relevant jurisdictions' for the purposes hereof. Legal basis of CCP. SHFE operates its business under a legal framework that comprises laws, administrative regulations, ministry-level rules, judicial interpretations, its own *Articles of Association* and implementing rules, etc. The legal basis includes: (1) the *General Provisions of the Civil Law*, the *Contract Law*, the *Property Law*, and the *Guaranty Law,* as well as other basic laws promulgated by the National People's Congress or its Standing Committee; (2) the *Regulations on the Administration of Futures Trading* promulgated by the State Council; and (3) the *Measures on the Administration of Futures Exchanges*, the *Measures for the Supervision and Administration of Futures Firms*, the *Interim Measures for the Administration of Overseas Traders' and Overseas Brokers' Engagement in the Trading of Specified Domestic Futures Products*, among others, promulgated by CSRC. The *Regulations on the Administration of Futures Trading*, formulated by the State Council with delegation by NPC, is of equal legal force with laws promulgated by the latter; the *Interim Measures for the Administration of Overseas Traders' and Overseas Brokers' Engagement in the Trading of Specified Domestic Futures Products*, a ministry-level rule developed by CSRC, expressly establishes SHFE's legal status as a CCP. In practice, the foregoing laws and regulations have all been well enforced and complied with. SHFE is a membership-based futures exchange and a non-profit legal person

	in accordance with Articles 87 to 89 of the *General Provisions of the Civil Law*. The legal basis for SHFE’s role as a CCP is formed by the doctrine of freedom of contract and the general assignment of rights and obligations under the *Contract Law* which operates with an effect similar to novation. According to the doctrine of freedom of contract, the parties to a contract may freely define the terms of the contract and their respective rights and obligations. The validity of a contract will be recognized as long as its terms do not contravene the mandatory laws and regulations or public interests; while general assignment of rights and obligations may find its basis in Article 88 of the *Contract Law*, which provides that ‘Either party may, subject to the consent of the other party, assign its rights together with its obligations under the contract to a third party.’ The legal status of SHFE as a CCP is affirmed by the following provisions: according to Article 10 of the *Regulations on the Administration of Futures Trading*, ‘A futures exchange shall provide centralized performance guarantee for futures trading’; Article 33 requires that ‘The clearing of futures trading shall be centrally organized by the futures exchange’; Article 15 of the *Interim Measures for the Administration of Overseas Traders’ and Overseas Brokers’ Engagement in the Trading of Specified Domestic Futures Products* states that ‘Futures exchanges that perform the functions of clearing shall, acting in the capacity of a central counterparty, organize the clearing of trades in specified domestic futures products… The term ‘central counterparty’ as used in the preceding paragraph shall refer to a legal person who, upon conclusion of futures transactions, interposes itself between the trading parties, becoming the buyer to every seller and the seller to every buyer, and who performs clearing on a net basis, to provide centralized performance guarantee for such futures trading.’ Furthermore, the *Futures Law*, presently a draft legislation, expressly sets out that a futures clearing institution shall, as the central counterparty in futures trading, interpose itself between the trading parties upon the consummation of futures transactions, becoming the seller to every buyer and the buyer to every seller, and assume their rights and obligations under futures trading to provide centralized performance guarantee for futures trading.’ Enforceability of the netting arrangement. The legal basis of the netting settlement can be found in the right of set-off under the *Contract Law* and the daily mark-to-market system implemented in futures trading. Article 99 of the *Contract Law* states that, ‘Where two parties owe to each other debt obligations that have fallen due, and of which the subject matters are identical in type and quality, either party may set off its obligations against those of the other party except where such set-off is prohibited by law or by the nature of the contract.’ Article 100 provides that, ‘Where two parties owe to each other debt obligations that have fallen due, and of which the subject matters are not identical in type and quality, the parties may still choose to effect set-off by mutual agreement.’

According to Article 33 of the *Regulations on the Administration of Futures Trading*, a futures exchange is required to implement a daily mark-to-market system, allowed to arrange transaction netting, and authorized to establish relevant frameworks. Article 36 of the *SHFE Clearing Rules* stipulates that, 'After the close of each trading day, the Exchange shall settle the gains and losses, trading margin, transaction fees, taxes, and other fees for each member based on the settlement price of each contract, and conduct a transfer of the net balance of the member's receivables and payables by increasing or decreasing the Member's clearing deposit accordingly.'

Collateral arrangement. SHFE disposes of margin in the form of pledge of movables or pledge of rights. Both currencies and documents of title, such as warrants and treasury bonds, can be the subject matter of a pledge upon approval. According to Article 85 of the *Interpretation of the Supreme People's Court on Issues concerning the Application of the Guaranty Law of the People's Republic of China*, 'Where the debtor or a third party transfers the possession of its special account, sealed money, deposit, or other forms of funds, in each case specified, to the creditor as performance guarantee, said creditor shall be given priority in receiving payment with such amount if said debtor defaults.' The foregoing article provides legal ground for currencies as futures margin. Article 223 of the *Property Law*, which provides that 'The following rights which a debtor or a third party is entitled to dispose of may be pledged: bills of exchange, checks, promissory notes, bonds, certificates of deposit, warrants, bills of lading…', constitutes the legal basis for the acceptance of non-currencies such as treasury bonds, standard warrants, and other documents of title as margin.

Default handling. To protect the rights of the non-defaulting party, SHFE enforces corresponding remedies including pecuniary damages for defaults during the course of trading and delivery. Article 107 of the *Contract Law* states that 'Either party that fails to perform its obligations under the contract or fails to perform them as agreed shall bear the liability for breach of contract by continuing to perform such obligations, remedying such breach, or compensating for losses thus caused', providing the legal basis for SHFE to handle defaults during the course of trading and delivery.

Settlement finality. Article 33 of the *Regulations on the Administration of Futures Trading* provides that 'A futures exchange shall implement a daily mark-to-market system, and shall timely inform its members of the clearing results on the very day of their transactions; and a futures firm shall clear for its customers according to the clearing results of the futures exchange, and timely inform them of the clearing results in the agreed manner.'

Under Article 57 of the *Measures for the Administration of Futures Firms*, 'A futures firm shall provide transaction clearing reports to customers after close of trading each day. Customers may access such reports at such time and in such manner as stipulated in applicable futures brokerage contract. The futures firm shall clear customer transactions on the very day thereof based on the clearing results provided by the relevant futures exchange or another qualified clearing service provider. The content, format, treatment,

	and date of the clearing items shall be fully consistent with those of the futures exchange.' Article 27 of the *Provisions of the Supreme People's Court on Issues concerning the Trial of Futures Dispute Cases* stipulates that, 'The customer's confirmation of the transaction clearing results of a given day shall be deemed as a confirmation of any and all of the position and transaction clearing results prior to that date; any consequences arising from such confirmation shall be solely assumed by the customer.' Additionally, Article 32 of the *Measures for the Supervision and Administration of Futures Firms* (2017) provides that, 'In the event of dissolution or bankruptcy, a futures firm shall first properly handle customers' margin funds and other assets and settle its futures businesses.' The *Provisions on the Resolution of Securities Firm Risks* also set out relevant articles regarding settlement finality. These provisions form the legal basis for settlement finality. Pursuant to Article 134 of the *Enterprise Bankruptcy Law*, the application for bankruptcy of a financial institution shall be made by the financial regulator under the State Council; while according to Article 10 regarding bankruptcy acceptance procedures, the period from the filing of a bankruptcy application to the acceptance of the case should in general be no less than 30 days. These provisions give reasonable assurance that financial institutions are generally not susceptible to abrupt bankruptcy, which means settlement finality would not be affected. Margin segregation. Article 28 of the *Regulations on the Administration of Futures Trading* states that 'Margin funds collected by a futures exchange from its members or a futures firm from its customers… shall be deposited in a separate account and segregated from its proprietary capital. The margin funds collected by a futures exchange from a member shall belong to the member and not be used for any purpose other than for clearing for that member.' The foregoing article provides legal protection to SHFE with regard to the margin funds and positions of market participants. In addition, Article 109 of *Enterprise Bankruptcy Law* prescribes that, 'A creditor secured by the specific property of the bankrupt shall enjoy the priority in being repaid with such specific property.' Therefore, when an enterprise engaged in futures trading goes bankrupt, SHFE has the priority over other creditors with respect to repayment with the margin funds deposited by that enterprise. Prompt disposal of collateral. Pursuant to Article 71(2) of the *Guaranty Law*, where the conditions for enforcement of the pledged interest are met, SHFE is entitled to a corresponding portion of the margin assets in accordance with relevant agreements, or to enjoying priority of repayment with the sales proceeds of documents of title including standard warrants. The legal basis for the collateral and margin arrangement, especially for the collection of margins and for the prompt disposal thereof when futures

	participants are under-margined, can also be found in Chapter 17 (pledge) of the *Property Law*. For instance, Article 208 provides that, 'A debtor or a third party may, for guaranteeing the debtor's repayment of debts, pledge his (its) movable properties to, and place them under the custody of, the creditor, who shall enjoy priority of repayment with such properties in the event that the debtor fails to fulfill obligations when they become due or when such conditions for enforcement of the pledged interest as agreed by the parties are met.'
Key consideration 2: An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.	SHFE's rules, procedures, and contracts, clearly published on its official website, are available to the public. In addition, SHFE extensively solicits comments and advices from relevant participants before and when drafting a rule, procedure, or contract and, before the implementation thereof, shares relevant legal opinions and analysis with relevant market participants through public representations, video seminars, and other methods, so as to ensure its rules, procedures, and contracts are clearly drafted and understandable. SHFE formulates or amends its rules, procedures, and contracts in accordance with existing laws and regulations, and ensures their consistencies therewith by seeking legal opinions or conducting in-depth analyses. At present, there is no inconsistency between the rules, procedures and contracts of SHFE and applicable laws, regulations, and ministry-level rules. As an established practice, before releasing or amending its market rules, SHFE conducts a fair competition review by assessing their impacts on market competition against the *Anti-Monopoly Law* and its supporting rules, in order to not inadvertently preclude or stifle competition. According to Article 93 of the *Measures on the Administration of Futures Exchanges*, 'Where a futures exchange formulates or amends its articles of association or trading rules; or lists, suspends, cancels, or re-lists any trading product; or lists, modifies, or terminates any contract, prior approval of CSRC shall be obtained.' Article 95 provides that 'A futures exchange shall seek the opinions of CSRC for proposed formulation or modification of the implementing rules to its trading rules, and file a report with CSRC before official release and implementation thereof.' In practice, the foregoing laws and regulations have been well enforced and complied with.
Key consideration 3: An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants'	The legal basis for SHFE's activities chiefly comprises applicable laws, regulations, rules, procedures, and contracts, all of which are public and readily accessible. In addition, should any relevant authorities, participants, or participants' customers have any questions regarding such legal basis, SHFE may also offer specific legal opinions or analyses.

customers, in a clear and understandable way.	
Key consideration 4: An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.	The rules, procedures, and contracts of SHFE are formulated in strict accordance with the *Contract Law*, *the Regulations on the Administration of Futures Trading*, the *Measures on the Administration of Futures Exchanges*, the *Provisions of the Supreme People's Court on Issues concerning the Trial of Futures Dispute Cases*, the *Provisions of the Supreme People's Court on Issues concerning the Trial of Futures Dispute Cases (II)*, and other laws, judicial interpretations, administrative regulations, and ministry-level rules; and all its market rules, before their drafting and amendment, have been approved by or revised according to the opinions of CSRC. Therefore, it is assured that SHFE's rules, procedures, and contracts will not be voided, reversed, or subject to stays and have a high degree of certainty. To date, none of SHFE's rules, procedures, and actions has ever been held by the court to be unenforceable in People's Republic of China.
Key consideration 5: An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.	Currently, SHFE only engages in futures and futures-related businesses under Chinese laws, and all such businesses have well-founded, clear, transparent, and enforceable legal basis.

Principle 2: Governance

An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

Key consideration 1: An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest	With supporting the stability of financial markets and other relevant public interests as its mission, SHFE places a high priority on the safety and efficiency of the market. While ensuring stability and progress, SHFE will fulfill its front-line supervisory duties; provide global clients with the most diversified product offerings, the most efficient and transparent trading and settlement platform, and most sophisticated and secure technical support; and endeavor to make its market prices a global benchmark. SHFE aspires to become an exchange of top world notch with well-regulated, efficient, transparent market; global coverage; diversified products; worldwide client base; centralized and accessible market data; and leading technologies and security. SHFE aims to

considerations.	share nearly all the characteristics of a world-class exchange in the next five years. SHFE submits to the regulation of CSRC. According to its *Articles of Association* and market rules, SHFE is expressly required to guarantee the normal operation of futures trading and the legitimate rights and interests of parties to futures trading as well as the interests of the public at large. In addition, according to relevant provisions of the *Regulations on the Administration of Futures Trading*, SHFE is a non-profit institution with a goal to protect the public interests.
Key consideration 2: An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.	SHFE has established its governance structure in accordance with the *Regulations on the Administration of Futures Trading* and the *Measures on the Administration of Futures Exchanges,* and has in place documented governance arrangements which are available on its official website. As a self-regulatory legal person, SHFE has an established governance structure which comprises the Members' Assembly, the Board of Directors (Board), officers, and the Board of Supervisors. The Members' Assembly, as the highest authority of the Exchange, consists of all the Exchange members. The Board is the standing presence of the Members' Assembly, while the Board of Supervisors serves as the supervisory organ of the Exchange, both of which report to the Members' Assembly. SHFE has one President and Chief Executive Officer who is responsible for the day-to-day management of the Exchange. The Exchange is obliged to report to CSRC from time to time, so as to improve its lawful and compliant operation and guarantee futures markets' safety and stability. For example, the Exchange is required to submit to CSRC its annual financial statements within four months following the end of each year, which shall be audited by an accounting firm licensed to practice in securities and futures businesses; submit quarterly and annual work reports on the business operations and the implementation of laws, administrative regulations, ministry-level rules, and policies within 15 days following the end of each quarter or 30 days following the end of each year, as appropriate.
Key consideration 3: The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including	The *SHFE Articles of Association* clearly specifies the managing powers and duties of the Board, and the supervisory powers and duties of the Board of Supervisors; information on the performance of duties by the Members' Assembly, the Board, and the Board of Supervisors has been systematically documented and retained. As the highest authority of SHFE, the Members' Assembly comprises all the Exchange's members. The Members' Assembly elects and changes member directors and member supervisors. The Board is the standing presence of and reports to the Members' Assembly.

procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.	Pursuant to the *SHFE Articles of Association*, the Board exercises the following powers and duties: (1) convening the meetings of and reporting its work to the Members' Assembly; (2) approving the appointment and removal of the Chairman and the Vice Chairman upon the nomination of CSRC; (3) passing a non-confidence motion against any member of the Board and delivering it to the pertinent authorities for approval; (4) drafting the *Articles of Association* and the *General Exchange Rules of the Exchange* and any amendment thereto and presenting them to the Members' Assembly for approval; (5) reviewing the budget plans and final account reports of the President and Chief Executive Officer and presenting them to the Members' Assembly for approval; (6) reviewing plans pertaining to the Exchange's merger, division, change of organization form, dissolution and liquidation and presenting them to the Members' Assembly for approval; (7) determining the constitution of a special committee; (8) deciding on the admittance and exit of members, overseas brokers and overseas traders that trade directly on the Exchange; (9) deciding on the disciplinary actions for violations; (10) deciding on the change of the name, domicile, and place of business of Exchange; (11) reviewing the implementing rules and measures made under the *Articles of Association* and the *General Exchange Rules of the Exchange*; (12) reviewing and approving the application plan for the risk reserve fund; (13) reviewing and approving the Exchange's development plans and annual work plans proposed by the President and Chief Executive Officer; (14) reviewing and approving the Exchange's external investment plans; (15) supervising the President and Chief Executive Officer's implementation of resolutions of the Members' Assembly and the Board; (16) monitoring the Exchange's officers' and other staff members' state of compliance with applicable national laws, administrative regulations, ministry-level rules, and policies, as well as its own Articles of Association and market rules; (17) organizing the audit of Exchange's annual financial report and deciding on the engagement and change of accounting firm; and (18) exercising other powers and duties prescribed by the *SHFE Articles of Association* and delegated by the Members' Assembly. The Board establishes Special Committees under itself as deliberative bodies to assist it in performing duties. A special committee consists of member representatives, SHFE staff members, and other professionals. Members of a special committee are appointed by the Board with a term of three years. Special committees under the SHFE Board include: (1) Strategic Development Committee, responsible for deliberating and advising on the SHFE's strategic planning and assessing the implementation thereof; (2) Risk Management Committee, responsible for building SHFE's risk control system and advising the Board on risk assessment and resolution in the case of major emergencies; (3) Compliance Committee, responsible for the oversight of members' trading behaviors and advising the Board on penalty against rule-breaking members; (4) Trading Committee, responsible for making suggestions to and advising the Board on the day-to-day trading operation and such businesses as hedging and arbitrage approval; (5)

	Settlement Committee, responsible for making suggestions to and advising the Board on daily settlement, delivery settlement, and margin depository business of certified banks; (6) Members Qualification Committee, responsible for making suggestions to and advising the Board on the member admittance, exit, qualification review, and other related matters; (7) Arbitration Committee, responsible for making suggestions and advising on the drafting, modification, and promotion of SHFE's Articles of Association and market rules, and mediating the economic disputes among futures market participants; (8) Finance Committee, responsible for proposing opinions to the Board on financial budget plans, final account report drafts, and other matters; (9) Information Technology Committee, responsible for making suggestions to and advising the Board on technical systems; (10) Product Committee, responsible for making suggestions and advising on the product development strategy and plans, and making suggestions to and advising the Board on the futures trainings and investor education; and (11) Delivery Committee, responsible for providing guidance suggestions to and advising the Board on the approval, setup, inspection of certified delivery warehouses, prevention of delivery risks, approval and launch conditions for registered brands, and other matters. The performance of the Board is reviewed on a regular basis; to be specific: the Board is the standing presence of and report to the Members' Assembly which deliberates and approves the work reports of the Board; member directors are elected by the Members' Assembly and non-member directors appointed by CSRC. In addition, the Board of Supervisors oversees the directors in their performance of duties; proposes the removal of any director who violates any law, administrative regulation, ministry-level rules, or the *Articles of Association*; and orders a director who acts against the interests of SHFE to correct his actions.
Key consideration 4: The board should contain suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive board member(s).	According to the *SHFE Articles of Association*, the Board consists of 17 directors, including 11 member directors and six non-member directors. Member directors are nominated by the Board or one fifth or more of members in a jointly manner and competitively elected by the Members' Assembly. The non-member directors are appointed by CSRC. Member-nominated directors represent the interests of the market participants at large, while CSRC-appointed directors voice the pubic interests at a more general level. All members of the Board possess necessary expertise in the futures industry. SHFE is a membership-based exchange and does not have in place a corporate governance mechanism that features non-executive directors or independent directors.
Key consideration 5: The roles and responsibilities of management should be clearly specified. An	The *SHFE Articles of Association* clearly specifies the powers and duties of the management. SHFE has one President and Chief Executive Officer who is responsible for its day-to-day management and several Executive Vice Presidents and other senior officers. The President and Chief Executive Officer and the Executive Vice Presidents are subject to appointment and

FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.	removal by CSRC; other officers are employed according to applicable rules. The President and Chief Executive Officer exercises the following powers and duties: (1) implementing the rules and resolutions adopted by the Members' Assembly and the Board; (2) overseeing the day-to-day affairs of the Exchange; (3) formulating related implementing rules and measures in accordance with the *Articles of Association* and the *General Exchange Rules of the Exchange*; (4) formulating the application plan for the risk reserve fund; (5) drafting development plans and annual work plans of the Exchange and implementing them upon approval; (6) formulating external investment plans of the Exchange and implementing them upon approval; (7) preparing the budget plans and final account reports of the Exchange; (8) developing the merger, division, change of organization form, dissolution, and liquidation plans of the Exchange; (9) preparing the plans for the change of name, domicile, or place of business of the Exchange; (10) deciding the internal setup plans and the hiring and dismissal of staff members; (11) determining employee salary, rewards, and penalties; and (12) exercising such other powers and duties as delegated by the *SHFE Articles of Association* or the Board. If the President and Chief Executive Officer is temporarily unable to perform his duties, an Executive Vice President designated by him shall do so on his behalf. SHFE has in place president office meetings which are attended by the President and Chief Executive Officer, Executive Vice Presidents, and other senior officers to decide on the major matters in its daily management. The Members' Assembly deliberates and approves the work reports of the Board and the President and Chief Executive Officer, as well as financial budget plans and final account reports of the Exchange. The Board has the power to deliberate the financial budget plans and final account reports proposed by the President and Chief Executive Officer and present them to the Members' Assembly for approval; to review and approve SHFE's development plan and annual work plan proposed by the President and Chief Executive Officer; to supervise the President and Chief Executive Officer in implementing the resolutions of the Members' Assembly and the Board; and to monitor SHFE officers' and other staff members' state of compliance with applicable national laws, administrative regulations, ministry-level rules, policies, the *Articles of Association* and market rules of SHFE. Moreover, the Board of Supervisors may supervise the conducts of officers in their performance of duties, proposes the removal of any officer who violates any law, administrative regulation, and SHFE's Articles of Association, and order an officer who acts against the interests of SHFE to correct his actions. The foregoing external and internal supervision and assessment measures work effectively to ensure that the management has the motive and capacity to achieve the objectives of SHFE.

Key consideration 6: The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.	SHFE has an established internal risk prevention and control system including the Chairman, the President and Chief Executive Officer, the Chairman of Board of Supervisors, and senior officers, as well as specific implementation requirements thereof, with the risk management and internal control requirements and rules for responsibilities, accountabilities and decision-making clearly defined. The Risk Management Committee under the Board participates in the decision-making related to risk control and management and comprises member representatives, industry professionals and SHFE staff members. The Risk Management Committee is a deliberative organ under and reports to the Board and assists the Board in performing relevant works. The main duties of the Risk Management Committee include: (1) providing professional guidance and experience input for the building of SHFE's risk management system; (2) making suggestions and advising on SHFE's efforts to improve its market rules and risk management rules; (3) pre-researching, predicting, and making suggestions and advising on the major risks that have a material impact on normal operation of the market; and (4) providing risk assessment and resolution advices on the major practices and significant business innovation. The members of the Risk Management Committee are allowed to independently express their opinions at a risk-control meeting. In the case of a major issue requiring deliberation, the Risk Management Committee will hold a meeting. The Committee may directly report to and make proposals to the Board to ensure that it makes decisions on business risk management under the authorization of the Board. Meanwhile, SHFE has dedicated internal risk management department which conducts relevant risk management, research, and other related works as required by the Risk Management Committee to maintain the secure and stable operation of SHFE's businesses. To prevent financial market risks, SHFE released the *SHFE Risk Management Rules,* which cover a comprehensive, multi-dimensional risk management system comprising margin requirement, price limits, position limit, trading limit, large trader position reporting, forced liquidation, and risk warning. SHFE has also set up the Discipline Inspection and Supervision Office and the Internal Audit and Compliance Department that conduct disciplinary inspections and internal audits respectively and require the department concerned to rectify the issues discovered within a specified time limit, thus forming an effective system of checks and balances and supervision.
Key consideration 7: The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect	A member of SHFE may get involved in decision-making through participating in the Members' Assembly or the Board. For example, the Board has the power to deliberate and approve the SHFE's development plans and annual work plans proposed by the President and Chief Executive Officer, as well as the implementing rules and measures formulated under SHFE markets rules. The Members' Assembly has the power to deliberate

appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.	and adopt the *Articles of Association* and the *General Exchange Rules of the Exchange*, and their draft amendments, and deliberate and approve the financial budget plans and final account reports of the SHFE. SHFE also solicits on an annual basis the comments from its members through surveys and interviews, questionnaires, members' meeting, and other methods.

Principle 3: Framework for the comprehensive management of risks

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

Key consideration 1: An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.	**I. Comprehensive risk-management framework** When providing clearing services as a CCP, SHFE shoulders a wide range of internal or external risks that may arise from the Exchange per se, its participants, customers, or other entities. These risks include but are not limited to legal risk (see Principle 1), credit risk (Principle 4), liquidity risk (Principle 7), physical delivery risk (Principle 10), general business risk (Principle 15), investment and custody risk (Principle 16), operational risk (Principle 17), and violation risk (see Principle 19). The Board reviews periodically SHFE's risk-management policies and framework. Special committees under the Board, such as the Strategic Development Committee, the Risk Management Committee, the Compliance Committee, the Trading Committee, the Settlement Committee, the Members Qualification Committee, the Arbitration Committee, the Finance Committee, the Information Technology Committee, the Product Committee, and the Delivery Committee, assists the Board in performing its tasks and fulfills their duties during day-to-day operations. In particular, the Risk Management Committee participates in making decisions on SHFE's risk control and management programs and reports to the Board (see Principle 2 on governance). To facilitate its routine risk-management efforts, SHFE has set up the Risk Management Department and the Risk Management Working Group that are responsible for: (1) inspecting, assessing, handling, recording, and reporting risks; (2)making risk-control decisions; (3) preparing risk management reports; (4) creating a list of material risks; and (5) developing emergency management policies to coordinate responses to various emergencies, improve risk reporting procedures, and consolidate emergency management resources. SHFE's functional departments, including the Trading Department, Clearing Department, the Legal Affairs Department, the Market Compliance Department, and the Commodity Futures Departments,

	as well as various business systems are committed to jointly and closely monitoring changes in risk intensity and market environment and, in response thereto and according to policy-making rules, updating relevant policies and procedures. SHFE manages various risks in day-to-day operations with the supporting rules and measures built on the *SHFE General Exchange Rules*, such as the *SHFE Trading Rules*, the *SHFE Clearing Rules*, *SHFE Membership Rules*, the *Risk Management Rules of the Shanghai Futures Exchange* (the '*SHFE Risk Management Rules*'), the *Enforcement Rules of the Shanghai Futures Exchange* (the '*SHFE Enforcement Rules*'), the *Certified Settlement Banks Rules of the Shanghai Futures Exchange* (the '*SHFE Certified Settlement Banks Rules*'), and the *SHFE Delivery Rules*. Risk management measures and processing procedures are disclosed to the market in written forms of rules, detailed rules, and measures. For legal risks (see Principle 1), SHFE has put in place a legal framework consisting of laws, judicial interpretations, administrative regulations, and the Exchange's market rules, laying a solid foundation for offering services as a CCP. In addition, the to-be-enacted *Futures Law* will provide a more defined legal basis for engaging in futures trading on the Exchange. For credit risks (see Principle 4), SHFE identifies and measures members' sources of credit risks and the size of risk exposures by conducting intraday and post-trading stress tests through its risk assessment system; mitigates and eliminates the credit risks facing it through daily mark-to-market clearing and margin call; directs the financial resources that can cover current and potential future exposures caused by each participant with a confidence level of 99% or higher to credit risks; establishes a default waterfall for the tail credit risks uncovered by margin and collateral; and ensures high availability and stability of the risk reserve fund through separate accounting. For liquidity risks (see Principle 7), SHFE has created a sound management framework by developing rules, executing agreements, building monitoring systems, conducting stress tests, establishing a risk waterfall model, and performing due diligence to manage the liquidity risks from members, certified settlement banks, and liquidity providers. Specifically, SHFE takes ex-ante risk management measures to prevent members' liquidity risks; establishes rigorous admission criteria and performs annual inspections and random inspections to manage the liquidity risks from certified settlement banks. In addition, SHFE has built the technical systems that can continuously identify, measure, and monitor funds settlement and flows; has maintained sufficient liquid financial resources including lines of credit from commercial banks; and conducted stress tests to assess the liquidity risk exposures of all members and customers in extreme but plausible conditions. For physical delivery risks (see Principle 10), the delivery risks that have been identified by SHFE mainly include the custody risks from the warehouses under whose custody standard warrants are put and the delivery

	default risks of buyers and sellers during the course of physical deliveries. SHFE imposes stringent requirements on warehouses. For instance, the obligations and responsibilities of buyers, sellers, the Exchange, certified delivery warehouses, and other participants as well as the definition of delivery default and the methods for compensation upon default are set out in the *SHFE Delivery Rules* and the *Standard Warrant Rules of the Shanghai Futures Exchange* (the '*SHFE Standard Warrant Rules*').
	For general business risks (see Principle 15), SHFE is subject to the regulation of CSRC and sets strict requirements on capital investment and management. For this reason, SHFE has set up the Finance Committee that provides professional suggestions on financial management and the Financial Audit Committee to review material expenditures out of each department's financial budget; identifies and monitors general business risks on an ongoing basis through bookkeeping system and financial analyses; and has maintained sufficient net liquid assets funded by equity that can cover the operational costs for minimum six months. As SHFE focuses on its principal businesses and has sufficient financial resources to cover it business risks, it is unlikely that its equity funds will fall below the minimum requirements.
	For custody and investment risks (see Principle 16), SHFE manages settlement banks in accordance with the *SHFE Certified Settlement Banks Rules*, which provides defined and stringent requirements for the qualification and management of such banks. The current 12 settlement banks are all reputable national commercial banks, and margin is operated within a 'closed loop' supervised by CFMMC. In addition, SHFE holds proprietary funds in the form of cash and deposit, and currently has made no short-term investments.
	For operational risks (see Principle 17), SHFE addresses potential risks by: (1) establishing a network security system and developing information security strategies under internationally accepted quality management systems and standards; (2) enhancing new and senior employees' risk awareness; (3) adopting a two-staff, double-check mechanism; (4) developing assessment indicators; (5) conducting internal inspections and external evaluations; (6) executing agreements with utility providers; (7) building a monitoring system; (8) 24hr facility check and building environment inspection; (9) carrying out emergency drills; and (10) setting up disaster recovery centers.
	For violation risks (see Principle 19), an all-member clearing system involving multi-tiered participant arrangements is applied. SHFE understands basic information on customers' accounts and identifies, monitors, and manages the substantial risks arising out of multi-tiered participant arrangements by look-through regulation, trading codes, and relevant system designs. In addition, SHFE has built an internal real-time monitoring system to identify participants' trading violations, and to investigate violations and penalize the entities concerned according to the *SHFE Enforcement Rules* and, under serious circumstances, timely report to

	CSRC for formal investigation. A violation constituting a crime will be transferred to the judicial authority for criminal prosecution. **II. Risk-management policies, procedures, and systems** To ensure timely risk identification and handling, SHFE has developed the trading system, the clearing management system, the risk assessment system, the monitoring system, the historical data analysis system, the futures funds management system, the delivery system, and the standard warrant system as well as a statistical information platform. Such systems and platform work together to provide an overview of members' and customers' risk exposures and allow SHFE to timely address the risks uncovered in accordance with such rules as daily mark-to-market, margin requirement, price limits, position limit, large trader position reporting, forced liquidation, and risk warning. In addition, SHFE adopts such measures as trading codes, separate account management, and two-tiered clearing to facilitate participants' and their customers' to better manage and control potential risks. Internally, for its risk-management framework, SHFE has developed an audit system covering its entire businesses and operations to ensure normal operation of clearing business as a CCP; formed an effective system of checks and balances and supervision by setting up the Discipline Inspection and Supervision Office and the Internal Audit and Compliance Department that conduct disciplinary inspections and internal audits respectively and require the department concerned to rectify the issues discovered within a specified time limit; and identifies risks and improves various business procedures by conducting internal audits of major projects. Externally, SHFE's annual financial statements are subject to risk-oriented periodic audits by an independent auditor.
Key consideration 2: An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.	SHFE implements a trading code system, segregation of funds, and a tiered clearing system under which the Exchange clears trades with members and members clear trades with customers. During clearing each day, SHFE provides participants and their customers with information on laws and regulations, market rules, operating procedures, prices, trading volume, open interest, margin, and position limit. In addition, based on their performance, SHFE recognizes outstanding members and takes measures against incompliant members according to relevant rules. These participant management mechanism and incentive measures enables SHFE to effectively urge participants to manage their risks.
Key consideration 3: An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement	Currently, the entities closely linked to SHFE include members, settlement banks, and delivery warehouses, for whom SHFE has developed a sound participant risk-management framework as follows: (1) Members. SHFE monitors members' and customers' trading behaviors through a real-time monitoring system, and deals with defaulting members in accordance with the *SHFE Trading Rules*, the *SHFE Clearing Rules*, the

banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.	*SHFE Risk Management Rules*, the *SHFE Enforcement Rules*, among others. (2) Settlement banks. To address liquidity and credit risks from certified settlement banks, SHFE formulates the *SHFE Certified Settlement Bank Rule*, which provides qualification requirements for applicants and a supervision system for the banks admitted. Moreover, SHFE conducts annual inspections of settlement banks covering their qualification status and performance. (3) Delivery warehouses. The *SHFE Certified Delivery Warehouse Rules*, which governs the futures-related businesses of certified delivery warehouses, enables SHFE to handle potential credit and operational risks associated with delivery warehouses. The warehouse management system additionally helps ensure the authenticity of instruments.
Key consideration 4: An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.	Pursuant to the *SHFE Articles of Association*, CSRC may shut down the Exchange at its discretion; SHFE may, subject to the approval of CSRC, terminate according to resolutions of the Members' Assembly or for the purposes of combination or division of the Exchange; and a liquidation team would be set up upon termination of the Exchange. As a non-profit legal person regulated by CSRC, SHFE does not use its own funds to invest in other areas and has accrued sufficient amount of net liquid assets funded by equity that support and ensure business sustainability, it is thus able to maintain sustainable, robust operations while suffering general business losses. Furthermore, emergency response plans have been created both at the CSRC level and SHFE level to address multiple risk events including failure to normally, comprehensively, and fully conduct CCP clearing business or to conduct normal operation and management activities. Although business termination is highly unlikely, SHFE has assessed the effectiveness of a full range of options for recovery or orderly wind-down. In addition, SHFE has set up the Risk Management Department that assesses its critical services and operations and prepares and implements corresponding plans. In extreme conditions, short-term credit loans from banks may help SHFE perform the obligations disrupted by lack of resources.

Principle 4: Credit risk

An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.

Key consideration 1: An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.	The credit risks facing SHFE mainly arises from members' failure to pay off their outstanding debts. To manage participants' credit exposures and the credit risks arising from payment, clearing, and settlement, SHFE has developed a set of comprehensive, robust risk-management frameworks as follows: (1) a credit risk management framework built on the *SHFE General Exchange Rules* and comprising, among other specific market rules, the *SHFE Clearing Rules*, the *SHFE Delivery Rules*, the *SHFE Risk Management Rules*, and the *SHFE Enforcement Rules*; (2) the *Membership Rules*, which sets out stringent membership admission criteria that members must meet on an ongoing basis, and requires clearing members to be well-capitalized and have relevant personnel and technical systems to ensure that they can perform their membership responsibilities (see Principle 18 on access and participation requirements); (3) daily mark-to-market clearing that orders a member to deposit a certain amount of margin before opening positions and a daily mark-to-market risk management under which SHFE monitors, measures, and identifies on a quantitative basis, members' credit exposures in real time through its risk assessment system; (4) implementing margin call, price limits, forced liquidation, forced position reduction, and other systems at day-end clearing to eliminate members' current credit risk exposures; (5) setting minimum clearing deposit requirement and establishing strict haircuts management for collaterals to prevent the members having a margin deficit from trading on the Exchange and to control or mitigate potential future credit risk exposures; (6) a minimum 99% confidence level for the margin used to cover the current exposures, and the sufficiency of the available financial resources that cover current and potential future exposures of each participant; (7) risk reserve fund which is extracted at a certain ratio from the transaction fees collected from members and is of high availability and stability as it is calculated separately and deposited into a special account. If a defaulting

	member still falls short of funds after SHFE has taken relevant measures, SHFE may draw on the risk reserve fund according to relevant procedures; (8) a default waterfall for the tail credit risks uncovered by margin or collaterals; and (9) conducting clearing only through the Clearing Department at its own risk. A certified settlement bank only holds in custody members' margin and assumes no clearing functions or risks. The current 12 certified settlement banks, either large commercial banks or state-owned joint-stock commercial banks, demonstrate greater capacity in risk management. SHFE reviews its credit risk-management framework before listing a new product, implementing a new mechanism, and revising its rules and conducts at least one comprehensive review each year.
Key consideration 2: An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.	SHFE identifies the sources of credit risk, both current and future, by monitoring members' funds account and by calculating margin requirements. For current credit risks, SHFE may assess members' credit risk exposures by conducting intraday real-time clearing each day; identifying and measuring credit exposures through its risk control and management system; and calculating members' margin, gains and losses, and other funds in real time. Generally, the personnel at the Clearing Department may warn the members with greater risks through phone and eliminate such risks through margin call at day-end clearing. When conducting real-time clearing（real-time risk monitoring）, the risk management personnel at SHFE may measure and detect credit risk exposures by simulating specified scenarios, the parameters of which may either be set according to the then market risk profile (e.g. the risk management personnel may adjust the margin of a contract based on the then total open interests in the life cycle stage of the contract); or be preset based on the assessment of future risk profile (e.g. the risk management personnel may preset the margin requirement for various contracts based on arrangements for public holidays or price limit hits). In addition, SHFE's risk management personnel may determine the frequency of real-time clearing on an 'as needed' basis. When necessary, SHFE can and should have the right to require a member to provide additional margin according to real-time clearing results. Following day-end clearing, a member whose clearing deposit falls below the minimum requirement will be deemed as having received a margin call from SHFE, in which case, the difference between the minimum requirement and the balance of clearing deposit will be the amount to be replenished. After issuing the margin call, SHFE may deduct the amount from the member's dedicated fund account through settlement banks. If a deficiency still exists, the member should bring the balance to the minimum requirement before market open on the following trading day, failing which, where the balance of the clearing deposit is larger than zero but less than the

	minimum requirement, the member should not open new positions; where the balance of the clearing deposit is less than zero, SHFE will conduct forced liquidation in accordance with the *SHFE Risk Management Rules*. Regarding the management of potential future credit risks: First, SHFE sets minimum clearing deposit requirements – ¥2,000,000 for FF members and ¥500,000 for non-FF members. In addition to SHFE's trading margin requirement, a member with a margin call needs to satisfy the minimum requirement for clearing deposit. Second, SHFE has established prudent haircuts and management criteria in light of market liquidity and other factors (see Principle 5 Collateral). Third, to prevent the members having a margin deficit from trading on it, SHFE collects margin at a sufficiently high ratio and has taken into account the factors including the close-out period. SHFE has set up its clearing agency as an internal department that has easy access to data and information to ensure the timeliness of the information. Moreover, SHFE evaluates the reliability and effectiveness of its assessment system at least annually.
Key consideration 3: A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI	N/A.

should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.	
Key consideration 4: A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit	SHFE uses such financial resources as margin and risk reserve fund to cover credit risks. In particular, the margin can cover current and potential future exposures of each participant at a confidence level of 99% or higher; SHFE determines the minimum sufficient amount of risk reserve resources based on its assessment of market size and risk changes. Currently, SHFE is one of the systemically important institutions in P.R. China and does not deal in products characterized by discrete jump-to-default price changes. Pursuant to the *SHFE Clearing Rules*, margin is divided into trading margin and clearing deposit. Trading margin is the funds deposited by a member into the dedicated settlement account of the Exchange to ensure performance; it is the portion of margin being used to maintain existing positions. Clearing deposit is the funds deposited in advance by a member into the special clearing account of the Exchange which are not being used to maintain existing positions; the minimum amount of clearing deposit is prescribed by the Exchange. Moreover, the risk reserve fund is extracted from the management expenses at a certain ratio of the transaction fees collected from members and is of high availability and stability as it is calculated separately and deposited into a special account. Lastly, SHFE may obtain from banks certain lines of credit to cover credit risk. To maintain sufficient financial resources to cover credit exposures, SHFE collects adequate margin during day-to-day operations, specifically, the clearing deposit, trading margin, and other funds deposited by members can cover the systems' current exposures with a minimum 99% confidence level. Furthermore, SHFE assesses the sufficiency of the risk reserve fund and bank credit loans at least once each year and will, in view of market risk profile, increase the assessment frequency. SHFE currently maintains a risk reserve fund in an amount of over ¥4 billion, a size determined taking account of the changes in market size and risk level during the development of the futures market, which has been approved by CSRC following the Board's adoption.

exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.	
Key consideration 5: A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A	SHFE carries out rigorous stress tests and sets specified scenarios to assess the sufficiency of available financial resources under various default conditions. In particular: (1) Before conducting a reverse stress test, SHFE will evaluate the effectiveness and suitability of the assumptions and parameters of the test. (2) During a reverse stress test, which is conducted through a risk control and management system, SHFE determines the total amount of financial resources to be provided in specified simulated scenarios as well as under the conditions when price limit on one contract or one or all products is hit on one, two, or three consecutive days that involve one or all members or customers.

CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP's required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of	(3) After completion of a reverse stress test, the personnel at the Clearing Department will analyze the test result, assess the risk exposures on the following one or several days, evaluate the sufficiency of the current total risk reserve fund, and will, in the event of greater market risks, conduct more tests. Test results will be timely and directly communicated to proper decision-makers. SHFE uses backtesting, i.e., by comparing estimations with actual figures, to verify its stress test models, and will increase the assessment frequency as warranted by market risk profile. In addition, SHFE assesses the sufficiency of the risk reserve fund, the credit from banks, and other financial resources used to cover credit risk on an annual basis.

positions held by a CCP's participants increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.	
Key consideration 6: In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.	When conducting stress tests, SHFE creates extreme market scenarios and credit risk scenarios to ensure that it has sufficient financial resources to cover a spectrum of forward-looking stress scenarios in extreme market conditions. SHFE has, in establishing the base margin for each product, considered peak historic price volatilities, price determinants, yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions, so as to ensure that the above-mentioned risks are covered at a confidence level of at least 99 percent. Moreover, SHFE carries out intraday real-time and after-hours reverse stress tests with respect to the sufficiency of members' margin according to relevant systems set out in the *SHFE Risk Management Rules*. In intraday real-time stress tests, a system assesses a member's credit default risks by calculating the member's margin, gains and losses, and other funds. SHFE carries out intraday stress tests to measure credit risk exposures on a day. When conducting the tests, the risk management personnel at SHFE may measure and detect credit risk exposures by simulating specified scenarios, the parameters of which may either be set according to the then market risk profile (e.g. the risk management personnel may adjust the margin of a contract based on the then total open interests in the life cycle stage of the contract); or be preset based on the assessment of future risk profile (e.g. the risk management personnel may preset the margin requirement for various contracts based on arrangements for public holidays or price limit hits). This process allows SHFE to assess a member's largest potential credit risks in specified simulation scenarios at clearing before market close on a day. The risk management personnel may conduct more calculations on an 'as needed' basis. In addition, for members who have an alarmingly high funds utilization ratio, SHFE will more intensively monitor changes in their funds, positions, and relevant contract prices and give them adequate risk warnings through phone. In after-hours reverse stress tests, SHFE applies price limits to all products in accordance with the *SHFE Risk Management Rules* to control risks. If a contract hits price limit on a given day, SHFE will, after trading hours on that day, conduct stress tests based on the future risks of all contracts with that

	same underlying product. The tests will estimate members' funding situation in the following two days (i.e., assuming price limit is hit on three consecutive days), with price changes generally derived from the cumulative magnitude of price limits. Trading margin requirement for members will progressively increase as price limit is hit consecutively over a longer period. These tests allow SHFE to estimate the exposure it will face after the price limit is hit on three consecutive days. Stress test results will be directly reported to the Risk Management Department and the management. SHFE will not immediately require a member to deposit margin based on the test result, but will warn it about fund shortfall and negative equity.
Key consideration 7: An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a	SHFE has established explicit rules and procedures that address any possible credit losses to effectively allocate potentially uncovered credit risks. The procedures to replenish financial resources during a stress event are set out in the *SHFE Clearing Rule*. If SHFE suffers any actual credit loss resulting from any individual or combined default among its members while fulfilling their duties, it will seek compensations by taking the following measures in sequence: (1) disqualifying the members concerned and setting the membership fee off against its loss; (2) drawing on the risk reserve fund with the approval of the Board; (3) making use of its own assets; and (4) exercise the right of recourse to the Member through legal proceedings. Moreover, in the event of greater market risks, SHFE may obtain certain intraday lines of credit from settlement banks.

safe and sound manner.	

Principle 5: Collateral

An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

Key consideration 1: An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.	SHFE accepts the marketable securities with low credit, liquidity, and market risks as margin. Currently, standard warrants are the only marketable securities recognized as margin. SHFE manages standard warrants through the standard warrant system to ensure they are authentic and valid. In practice, a customer authorizes a member to submit a warrant through the standard warrant system, which in turn checks the quality and ownership of the warrant and determines whether there is any legal dispute involved. Moreover, SHFE manages warehouses on a rigorous basis through regular on-site inspections, in order to ensure that the goods stored meet relevant standards and are properly managed. To reduce credit risks, SHFE daily marks the assets accepted as margin to market. To mitigate concentration risks, SHFE places a cap on the amount of margin that a member pays with marketable securities – currently four times (the 'allotting multiplier') the available cash held by the member under its dedicated settlement account. The allotting multiplier may be adjusted in view of market risks and members' credit standing. In addition, SHFE has launched a standard warrant trading platform that makes trading of standard warrants easier to increase liquidity.
Key consideration 2: An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.	Detailed provisions on valuations of marketable securities and prudent haircuts are set out in the *SHFE Clearing Rules*. Specifically, the maximum amount of margin convertible from a standard warrant is 80% of its market value, which is calculated daily by the Clearing Department based on the settlement price of the nearest delivery month futures contract in that product on that day. SHFE currently discounts standard warrants to 80% of their market value. This discount factor (equaling a 20% haircut) covers the full range of price limit of SHFE on futures contracts, and substantially covers the price risks of standard warrants. The discount factor may also be adjusted by SHFE as it deems necessary.
Key consideration 3: In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are	SHFE establishes prudent haircuts by taking procyclicality into consideration to prevent significant adjustments in stressed market conditions and may, when necessary, adjust the haircuts.

calibrated to include periods of stressed market conditions, to the extent practicable and prudent.	
Key consideration 4: An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.	SHFE monitors the concentration of warrants as margin by tracking the proportion of warrants to the total amount of margin weekly. No concentrated holdings of assets have been identified. Marketable securities produce minor adverse effects during liquidation as the single type accepted accounts for a small proportion of SHFE's margin.
Key consideration 5: An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.	N/A.
Key consideration 6: An FMI should use a collateral management system that is well-designed and operationally flexible.	SHFE's standard warrant system can use the customer code to identify all of the standard warrants associated with a particular customer. During prescribed time windows, members may freely post standard warrants as margin or release them from the pledge. Any margin funds converted from standard warrants are immediately available for use. During clearing on a day, the Clearing Department recalculates the value of a standard warrant based on the settlement price of the day and determines the amount margin funds thus converted at the maximum allotting multiplier. Operations related to the standard warrant system are subject to a two-staff, double-check mechanism at the SHFE end to ensure smooth management of warrants.

Principle 6: Margin

A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

Key consideration 1: A	SHFE implements a margin system that includes trading margin and clearing

CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves.	deposit, among which, trading margin is collected in proportion to the value of futures contract and should be deposited in advance. SHFE has set margin levels commensurate with the risks and particular attributes of each product and the market it serves that can reasonably cover – at least one price limit hit – the risks associated with existing products. The price data used in the margin system are from SHFE's trading system. SHFE routinely manages margin with the *SHFE Clearing Rules* and the *SHFE Risk Management Rules*, which are disclosed on its official website and available to all market participants. Provisions on the collection of margins are set out in the *SHFE Clearing Rules*. Margin is divided into clearing deposit and trading margin. Trading margin refers to the funds deposited by a member into SHFE's dedicated settlement account to ensure performance; it is the portion of margin being used to maintain existing positions. Once a futures trade is executed, SHFE collects margin from both sides either in proportion to the value of the contract concerned or by other methods as prescribed. Clearing deposit is the funds deposited in advance by a member into SHFE's dedicated settlement account, which is not being used to maintain existing positions. SHFE sets minimum requirements for clearing deposit – ¥2,000,000 for FF members and ¥500,000 for non-FF members. Moreover, for the long and short positions in one product held by a Non-FF Member or a customer at one member, SHFE may calculate and collect trading margin on a larger-side basis. Detailed explanations of margin and the adjustment of margin are given in the *SHFE Risk Management Rules*, which provide that SHFE may adjust margin by how close a contract is to the delivery month and by the size of open interest; adjust margin through price limits in the event of consecutive occurrences of one-sided market; and adjust the base trading margin in view of overall market conditions. To manage current credit exposures, SHFE collects a margin that can cover the exposures at a minimum 99% confidence level; measures and identifies risk exposures during intraday real-time risk monitoring processes; and eliminates risks with such measures as issuance of margin call and forced liquidation after day-end clearing. During real-time risk monitoring processes (intraday stress tests), SHFE may, through its risk control and management system, assess the largest risk exposure by estimating members' margin, gains and losses, and other amounts at a fixed contract value. The frequency of assessments may be increased by the risk management personnel at the Clearing Department on an 'as needed' basis. For the members who conduct unduly frequent transfer of funds, the risk management personnel will pay special attention to changes in their funds, positions, and contract prices, and fully warn them about associated risks. After the completion of day-end clearing, a member whose clearing deposit falls below the minimum requirement will be deemed to have received a margin call from SHFE and is required to make up the shortfall before market

	open on the following trading day. If the member fails to do so, where the clearing deposit is larger than zero but less than the minimum requirement, the member should not open new positions; where the clearing deposit is less than zero, SHFE will enforce liquidation according to the *SHFE Risk Management Rules*. In the latter case, the member should first close out its positions within the time limit prescribed, failing which, forced liquidation will be conducted by SHFE. During the liquidation, SHFE prioritizes speculative over hedging positions and futures over options positions. Specifically, SHFE first selects the contract to be liquidated by descending open interest after market close on the preceding trading day, then successively liquidates positions of all customers under the member, ranking by descending net position losses. If multiple members are subject to forced liquidation, SHFE will determine the sequence of these members by descending amount of additional margin required from each. Regarding the management of potential future credit risks: First, SHFE sets minimum requirements for clearing deposit – ¥2,000,000 for FF members and ¥500,000 for non-FF members. In addition to SHFE's trading margin requirement, a member with a margin call needs to satisfy the minimum requirement for clearing deposit. Second, SHFE has developed prudent haircuts and management criteria by taking market liquidity into account (see Principle 5 on collateral). Third, to prevent the members having a margin deficit from trading on it, SHFE collects margin at a sufficiently high ratio and has taken into account the factors including the close-out period. According to the *Measures for the Supervision and Administration of Futures Firms*, if a customer has insufficient margin due to defaults during futures trading, his carrying futures firm (member) should eliminate the shortfall with risk reserve fund or the firm's (member's) own assets, and may not divert other customers' margin funds. If a member fails to fulfill its contractual obligations, SHFE is entitled to take the following protective measures according to *Clearing Rules*: (1) apply the member's clearing deposit; (2) suspend opening of new positions; (3) conduct forced position liquidation as prescribed until the margin released is sufficient to fulfill the relevant obligations and responsibilities; (4) convert the Member's margin collateral into cash, and use the proceeds therefrom to fulfill relevant obligations and responsibilities; (5) disqualify the member and apply the membership fee to cover the obligations; (6) draw on risk reserve fund to cover the obligations with the approval of the Board of Directors; (7) use its own assets to cover the obligations; and (8) exercise the right of recourse to the member through legal proceedings. The responsibilities of each party involved in forced liquidation are clarified in the *Provisions of the Supreme People's Court on Issues concerning the Trial of Futures Dispute Cases*. SHFE has not admitted participants from different time zones, and does not engage in any business that requires the consideration of a participant's local funding market and the operating hours of relevant payment and settlement

	systems. Trade clearing and settlement is conducted by Beijing Time only.
Key consideration 2: A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.	SHFE calculates margin based on the prices generated from its system to maintain availability and reliability of price data. For listed products, the prices used in SHFE's margin model are mainly from the transaction data on the contracts executed in the futures market and those on corresponding commodities in the spot market, including relevant macroeconomic data as well as product output and consumption data released by the National Bureau of Statistics, industry associations, and international organizations. SHFE also refers to the price fluctuation data on relevant products in the international market (the Chicago Mercantile Exchange and the London Metal Exchange for example), when determining margin requirements. For the products to be listed, SHFE ensures the reliability and timeliness of price data with representative, authoritative historical price data in China's spot market from third parties. Detailed margin calculation methods for newly listed contracts, inactive contracts, and untraded futures contracts are set out in the *SHFE Clearing Rules*.
Key consideration 3: A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future	The margin models that SHFE adopts based on the market it serves can effectively meet risk-management requirements and ensure smooth operation of the market. Model design: SHFE collects trading margin in proportion to contract value under the models that determine margin levels based on assumptions of market efficiency and historical data relevance as well as product attributes. Basic level margin is set with the popular exponentially weighted moving average (EWMA) model which is based on historical product price data. Specifically, SHFE estimates the price volatility at a confidence level of no less than 99% with a weighted average method over a certain sampling period, where the weighting decreases exponentially with each previous period. SHFE also considers calculating basic level margin with various quantitative models, and then selecting a relatively conservative one as the reference basic level margin. In light of product attributes, officers at SHFE may determine the basic level margin by taking account of other factors. SHFE requires its margin models with the larger-side margining system to cover the exposures of at least one day with a minimum 99% confidence level, and it applies stringent criteria to the selection of margin models, key parameters, and close-out period; historical data sampling; identification and mitigation of specific wrong-way risks; and limiting of procyclicality. Moreover, the *SHFE Risk Management Rules* contains detailed provisions on how margin requirement is to be adjusted based on the size of open interest, how close a contract is to the delivery month, and when the price limit is hit.

exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio's distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the subportfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products, and (c) to the extent practicable and prudent, limit the need for destabilising, procyclical changes.	Model assumptions: SHFE's margin models determine margin levels based on the assumption of market validity and valuable historical data as well as product characteristics. Key parameters and input of model: The margin models, mainly comprising the EWMA model that is based on historical product price data of nearby month contracts and the generalized autoregressive conditional heteroskedasticity (GARCH) model, can cover exposures of at least one day with a minimum 99% confidence level. When estimating margin levels, SHFE mainly considers the following factors: price changes in active products, and the time length of roll-over period. Moreover, SHFE evaluates close-out period according to historical close-outs and the price volatility in the futures market based on the volatility in the spot market. Key parameters such as moving window parameters and decay factors are set according to market attributes of various products. Close-out periods: Close-out periods are set out in the *SHFE General Exchange Rules*, the *SHFE Clearing Rules*, and the *SHFE Risk Management Rules*. To eliminate the adverse effect that decreased liquidity of futures products may have on close-out periods, SHFE has set different position limits for various products by how close a contract is to the delivery month. forced liquidation is first carried out by members. Unless otherwise prescribed by SHFE, members are required to complete forced liquidation within the morning session after market open. If a member fails to complete the liquidation within the prescribed time limit, SHFE will enforce the liquidation. A member required to carry out forced liquidation due to negative clearing deposit is not permitted to establish new positions before it eliminates the margin shortfall. The liquidation price is formed through market trading. If forced liquidation is not fully completed within the prescribed time limit due to price limit or other market factors, the remaining positions may be liquidated in the following trading day in accordance with the *SHFE Risk Management Rules* until all relevant positions are closed out. Historical data sampling period and considerations: For newly listed contracts, SHFE selects the sampling period based on the price volatility of the underlying physical products by taking into consideration such factors as market size, market attributes, and price transparency. For existing contracts, the sampling period should cover huge price volatilities. Limiting the destabilizing effect of procyclical changes: SHFE's margin collection scheme prevents the destabilizing effect of procyclical changes to a large extent by: (1) requiring contributions to margin in advance; (2) collecting margin at a fixed percentage; (3) setting high margin levels; and (4) maintaining low adjustment frequency.

	Identifications and mitigations of specific wrong-way risk: Standard warrants are the only marketable securities accepted as margin. SHFE sets reasonable haircuts for standard warrants, marks their value to market daily, and ensures their authenticity through the Standard Warrant System. Except for cash and standard warrants, no other assets are accepted as margin; collaterals are thus not exposed to issuers' credit risks or wrong-way risks.
Key consideration 4: A CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. A CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.	SHFE collects trading margin in proportion to contract value and implements a daily mark-to-market clearing system. Pursuant to the *SHFE Risk Management Rules,* SHFE may adjust margin levels based on the level of open interest, life cycle stage of contracts following listing, and price limit hits. Margin requirements may also be adjusted in the event of one-sided market, public holidays, and other special circumstances as SHFE deems necessary. During trading on a day, SHFE calculates a member's trading margin and clearing deposit based on the settlement price and the margin requirement of the preceding trading day and does not allow a member whose clearing deposit falls below the minimum requirement to open new positions. At daily clearing, SHFE settles the gains and losses of all contracts at the settlement price of the day, collects trading margin based on the settlement price and the margin requirement of the day, and increases or reduces members' clearing deposits accordingly. Where the balance of a member's clearing deposit falls below the minimum requirement, a margin call will be deemed to have issued to the member. According to relevant rules, SHFE has the authority to, without a notice to a member, deduct any receivables from the member's dedicated fund account through certified settlement banks, and to access the balance and transaction history of the account at any time.
Key consideration 5: In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the	SHFE's larger-side margining system allows reduced margin requirements during arbitrage trading of the various futures contracts in the same product. Under this system, SHFE collects margin based on larger of the margin required for the long positions and for the short positions held by a customer in the same product. Currently, SHFE does not grant margin discounts across its products, and no offsets or reductions in required margin between products at SHFE and another CCP are permitted. SHFE has developed and analyzed its larger-side margining system over many years. The system has been proven its robustness over this period.

other product. Where two or more CCPs are authorised to offer cross-margining, they must have appropriate safeguards and harmonised overall risk-management systems.	
Key consideration 6: A CCP should analyse and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model's coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been	SHFE conducts backtesting each month with respect to its margin model and relevant parameters to test the coverage of margin. SHFE performs adequate sensitivity analysis of the coverage of the margin collected when developing, using, and evaluating its margin model, and analyzes and assesses, on a periodic or *ad hoc* basis, margin losses due to price fluctuations and fund losses at membership and market levels caused by extreme risks. Backtesting results show that SHFE's margin scheme has achieved its target confidence level. If its model does not perform as well as expected, SHFE will take countermeasures according to applicable rules, and file them with CSRC.

experienced by the markets it serves and extreme changes in the correlations between prices.	
Key consideration 7: A CCP should regularly review and validate its margin system.	SHFE modifies and adjusts margin requirements according to the *SHFE Clearing Rules* and the *SHFE Risk Management Rules*, and files the updated margin requirements with CSRC. Before effecting a modification or adjustment, SHFE will, within a reasonable time, issue a prior notice to the market through its official website and the membership service system. SHFE's business departments as well as the Risk Management Department, and the Risk Management Committee organize joint conferences to validate the implementation status of its margin system and adjusted margin requirements. Issues involving major policy adjustments will be submitted to CSRC after consideration by the management.

Principle 7: Liquidity risk

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

Key consideration 1: An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.	SHFE has a robust framework for managing liquidity risks from all relevant participants. Participants posing liquidity risks in SHFE's existing businesses include members and certified settlement banks, with the latter being the only participants with multiple roles. However, banks shoulder different responsibilities and obligations when they act as members and as settlement banks; the dedicated margin funds account that SHFE opens at a settlement bank is also separated and managed separately from the dedicated fund account used by the bank in proprietary businesses. SHFE thus measures and prevents potential liquidity risks from each bank separately by its role – as a member and as a settlement bank. Main potential sources of SHFE's liquidity risks include: (1) members' insolvency due to defaults or bankruptcy; (2) insufficient funds at margin settlement banks for margin withdrawals; (3) margin settlement banks' failure to provide SHFE with a certain amount of intraday credit as liquidity providers according to relevant agreement; and (4) difficulties in liquidating the collaterals of low liquidity. SHFE identifies, measures, and monitors its asset settlement and fund flow during and after trading hours through its clearing system, risk control and

	management system, fund management system, trading system, audit system, standard warrant system, and delivery system on a timely and ongoing basis. The institutional framework and measures with which SHFE manages liquidity risks mainly include rules and agreements, such as the *Regulations on the Administration of Futures Trading*, the *Measures on the Administration of Futures Exchanges*, the *SHFE Clearing Rules*, the *SHFE Settlement Banks Rules*, the *Margin Rules of the Shanghai Futures Exchange* (the 'S*HFE Margin Rules*') as well as the futures margin depositary agreement between it and each certified settlement bank. To manage the liquidity risks from members, SHFE implements ex ante risk controls including: (1) requiring advanced deposit of margin and forbidding investors from trading with a margin deficit; (2) increasing margin levels once the total open interest exceeds a certain threshold; (3) only accepting cash and the highly liquid standard warrants as margin; and (4) implementing price limits. Such limits are applicable to both members and customers with respect to every contract, thereby limiting the potential scale of default of a participant and its affiliates in extreme scenarios. To manage the liquidity risks from certified settlement banks, SHFE has laid down supervisory requirements regarding their credit standing, capital adequacy ratio, accesses to liquid resources, and operational capacity. Moreover, SHFE has dedicated personnel to monitor their liquidity concentrations during operations. If the fund balance of a bank is or is likely to be insufficient, SHFE will transfer funds from other banks with sufficient liquidity to help the bank meet payment obligations on time. SHFE also conducts routine inspections on the liquidity of settlement banks each year.
Key consideration 2: An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.	SHFE identifies, measures, and monitors its asset intraday and post-trading settlement and fund flow through its clearing system, risk controls and management system, fund management system, trading system, audit system, standard warrant system, and delivery system on a timely and ongoing basis. First, the risk control and management system assesses the sufficiency of a member's margin during clearing on a day by taking account of changes in open interests, adjustments of margin ratio in view of changes in market conditions, as well as the member's floating gains and losses, funds deposits, amount of margin from pledged warrants, and delivery payment on the day. The system also estimates all members' and customers' funding risks following three price limit hits. Second, during daily clearing, the fund management system evaluates a member's funds available for withdrawal on that day according to factors such as the member's margin, amount of margin from pledge, gains and losses of the day, and maximum withdrawal percentage, so as to ensure that the member's clearing deposit does not fall below the minimum requirement after withdrawal of funds. In addition, SHFE's fund system monitors certified settlement banks'

	concentration of funds in real time. According to the *SHFE Settlement Banks Rules*, if SHFE needs additional liquidity during funds settlement, settlement banks should provide the funding support upon request of SHFE to help SHFE mitigate risks.
Key consideration 3: A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.	N/A.
Key consideration 4: A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of	SHFE has maintained sufficient liquid resources. SHFE's qualifying liquid resources include trading margin, clearing deposit, marketable securities accepted as margin, risk reserve fund, and its own assets. First, SHFE adopts ex ante risk controls by: (1) requiring advanced deposit of margin and forbidding investors from trading with a margin deficit; (2) increasing margin levels once the total open interest exceeds a certain threshold; (3) only accepting cash and the highly liquid standard warrants as margin; and (4) implementing price limits and limitations on total open interests. Both price and position limits are applicable to both members and customers with respect to every contract, thereby limiting the potential scale of default of a participant and its affiliates in extreme scenarios.

confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.	Second, SHFE regularly conducts stress tests to estimate the amount of liquid funds and routinely monitors banks' balances. When facing risks, SHFE uses stress tests to assess liquidity risk exposures in extreme but plausible conditions. Results of stress tests can cover all members and customers. Third, according to the *SHFE Settlement Banks Rules*, SHFE requires banks to cooperate with it in meeting liquidity needs and conducts regular tests on settlement banks' liquidity. Furthermore, SHFE may ensure adequate liquid resources through inter-bank fund transfer. As SHFE is only systemically important in People's Republic of China and is not exposed to more complex risks, its liquid resources are sufficient.
Key consideration 5: For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources	SHFE's qualifying liquid resources include cash, trading margin, clearing deposit, marketable securities accepted as margin, risk reserve fund, and its own assets. There are no barriers impeding SHFE's access to these qualifying liquid resources, for the following reasons: First, both trading margin and clearing deposit must be deposited in RMB in

in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.	advance at large State-owned or national joint-stock commercial banks. Second, collaterals are highly marketable standard warrants. Third, SHFE's risk reserve fund, deposited in cash in advance at large State-owned or national joint-stock commercial banks, is also readily available. The use of risk reserve fund is subject to the approval of the Board of Directors and must be in compliance with the pre-established purposes and procedures after CSRC is duly notified. SHFE conducts RMB settlement and adopts ex ante risk controls by requiring advance deposit of margin. Most of the margin funds consist of cash by far. While the People's Bank of China does not extend SHFE any regular credit loan at present, SHFE can obtain certain lines of credit from settlement banks to ensure its on-time performance of settlement obligations. (see the *SHFE Clearing Rules*, the *SHFE Standard Warrant Rules*, the *Regulations on the Administration of Futures Trading*, and the *Measures for the Administration of Futures Exchanges*).
Key consideration 6: An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid	SHFE's supplementary liquid resources are lines of credit from commercial banks. Based on assessments of participants' credit and liquidity risks, SHFE has established various risk control systems: margin requirements can cover a price limit hit of at least one day; implementing a daily mark-to-market system; and conducting real-time settlement multiple times a day to keep risks

resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.	at manageable levels. As SHFE's qualifying liquid resources are sufficient to meet the liquidity needs even under extremely stressed conditions, no supplementary liquid resources have been used. SHFE always prioritizes qualifying liquid resources over supplementary liquid resources if liquidity needs arise.
Key consideration 7: An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity	SHFE's liquidity providers include the margin settlement banks that have executed with it a margin depository agreement. Settlement banks are required to take effective measures to mitigate fund liquidity risks under the *SHFE Clearing Rules*, the *SHFE Settlement Banks Rules*, and the *SHFE Margin Rules* as well as the *Banking Institution Futures Margin Depository Agreement* executed with SHFE. If SHFE needs additional liquidity during funds settlement, settlement banks should provide the funding support upon request to help SHFE mitigate risks. While currently SHFE is not qualified to obtain credit loan from China's central bank, the margin settlement banks are all State-owned commercial banks that do have access to such credit loan. In addition, a futures firm must deposit margin into a dedicated margin funds account. Margin may only be transferred among the following accounts of a futures firm: its dedicated margin funds account, its dedicated fund account opened at where SHFE is located, and its fund account at SHFE. These accounts form a 'closed loop' for the futures firm's margin funds; and margin

risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.	may only move within this closed loop. Margin is measured and supervised by CSRC's regional offices by comparing the total amount of funds in the loop as reported by futures firms, settlement banks, and SHFE, with the equity of each company and customer. Settlement banks should not allow any other entity or individual to freeze or transfer any funds in SHFE's dedicated settlement account and, if any other entity intends to take measures which may affect the margin depository service (freezing the funds in a member's dedicated fund account for example), promptly notify SHFE. Furthermore, settlement banks should take effective measures to prevent liquidity risk associated with funds as required by SHFE. SHFE investigates settlement banks' risk-management efforts and financial position through annual inspections and random checks that are aimed at regulating their operations and financial status. Concentration of margin in these banks are monitored by SHFE's systems on an ongoing basis.
Key consideration 8: An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.	N/A.
Key consideration 9: An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to	Trading and settlement on SHFE are conducted in RMB only. In carrying out stress tests with respect to the existing single currency, SHFE has considered the attributes of the settlement business, historic market data, and plausible, extreme conditions. Stress tests are conducted to identify SHFE's liquidity risk caused by members' liquidity shortfall and the risks arising from insufficient balance in dedicated fund accounts at banks. Possible sources of members' liquidity risks are dramatic changes in market conditions, and substantial net withdrawal of funds due to increases or reductions of positions, among others. When the market is exposed to major risks – such as during special circumstances including price limit hits of a nearby month contract and other major volatilities on a trading day – the risk management personnel will first conduct intraday or post-trading credit risk

use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting	stress tests against these risks, and then based on the test results, check whether members or certified settlement banks meet liquidity requirements. SHFE carries out intraday stress tests to measure risk exposures on a day. When conducting the intraday tests, the risk management personnel at SHFE may measure and detect risk exposures by simulating specified scenarios, the parameters of which may either be set according to the then market risk profile (e.g. the risk management personnel may adjust the margin of a contract based on the then total open interests on and the life cycle stage of the contract); or be preset based on the assessment of future risk profile (e.g. the risk management personnel may preset the margin requirement for various contracts based on arrangements for public holidays or price limit hits). This process allows SHFE to assess a member's largest potential risks in specified simulation scenarios at clearing before market close on a day. In addition, for members who have an alarmingly high funds utilization ratio, SHFE will more intensively monitor changes in their funds, positions, and relevant contract prices and give them adequate risk warnings. At least five stress tests are conducted each day. Reverse stress tests are generally conducted after market close. To control risks, SHFE applies price limits to all products in accordance with the *SHFE Risk Management Rules*. If a contract hits price limit on a given day, SHFE will, after trading hours on that day, conduct stress tests based on the future risks of all contracts with that same underlying product. The tests will estimate members' funding situation in the following two days (i.e., assuming price limit is hit on three consecutive days), with price changes generally derived from the cumulative magnitude of price limits. Trading margin requirement for members will progressively increase as price limit is hit consecutively over a longer period. These tests allow SHFE to estimate the exposure it will face after the price limit is hit on three consecutive days. SHFE will not immediately require a member to deposit more trading margin based on the test result but will warn it about fund shortfall and negative equity. Stress test results will be directly reported to the Risk Management Department and the management. To address liquidity risks from certified settlement banks, SHFE has laid down supervisory requirements regarding their credit standing, capital adequacy ratio, accesses to liquid resources, and operational capacity. SHFE has also dedicated personnel to monitor their liquidity concentrations during operations. If the fund balance of a bank is or is likely to be insufficient, SHFE will transfer funds from other banks with sufficient liquidity to help the bank meet payment demands on time. Moreover, SHFE regularly checks banks' liquidity and conducts inter-bank fund transfer tests. SHFE has developed its stress test models on the basis that the base margin can cover risks with a minimum 99% confidence level. The suitability and effectiveness of adjustments to base margin are assessed by SHFE's business departments as well as the Risk Management Department and the Risk

rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.	Management Committee. SHFE validates its risk-management models by combining internal tests with full-member tests, adjusts parameters based on market conditions, and uses backtesting in evaluations to compare estimations with the actual figures. The frequency of evaluation is determined by changes in market risk profiles.
Key consideration 10: An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.	SHFE has established sound rules and procedures regarding the use of liquid resources. First, the rules, systems and corresponding measures enable it to meet its settlement and payment obligations on time following any individual or combined default among its participants. If one or more members fail to fulfill their contractual obligations, SHFE is entitled to take the following protective measures: (1) draw on the members' clearing deposit; (2) suspend opening of new positions; (3) conduct forced liquidation as prescribed until the margin released is sufficient to cover the obligations; (4) use the cash converted from the marketable securities that the members deposit to cover the obligation; (5) disqualify the members and apply the membership fee to cover the obligations; (6) draw on risk reserve fund to cover the obligations with the approval of the Board of Directors; (7) use its own assets to cover the obligations; and (8) take right of recourse to the members through legal proceedings. In addition, SHFE responds to unforeseen risks by obtaining certain lines of credit from settlement banks under a futures margin depositary agreement executed with them and reduces liquidity exposures with loans from commercial banks. Since the founding of SHFE, these rules and procedures have been tested in a wide range of extreme market conditions including the 2008 financial crisis. No member default has occurred thus far.

Principle 8: Settlement finality

An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where

necessary or preferable, an FMI should provide final settlement intraday or in real time.	
Key consideration 1: An FMI’s rules and procedures should clearly define the point at which settlement is final.	The point at which clearing is final is clearly defined in SHFE’s supporting business rules. SHFE implements a daily mark-to-market system and timely notifies members of clearing results after completion of clearing on a day. A member who disagrees with the clearing data should notify SHFE in writing no later than 30 minutes prior to the next market open or, under special circumstances, within two hours after the market open. If a member does not challenge the clearing data within this period, the member is deemed as having accepted the accuracy of the data. A futures firm should in turn carry out clearing with its customers based on SHFE’s clearing result and timely notify the customers of clearing results in the manner they have agreed. Each customer should confirm the clearing result as stipulated in the futures brokerage contract; if there is a disagreement, the customer should notify the futures firm in writing within the time limit specified in the futures brokerage contract, in which case, the futures firm should verify the figures within the agreed time limit. No objection raised by a customer within the specified the time limit is deemed as a confirmation of the result. Furthermore, a confirmation of any day’s clearing result is deemed as a confirmation of all the positions and trading and clearing results before that day, the consequences of which are to be solely borne by the customer. After the clearing and settlement deadline, payment and transfer instructions will become irrevocable and the deadline will not be subject to any extension (see the *SHFE Clearing Rules*, the *Measures for the Supervision and Administration of Futures Firms*, the *Provisions of the Supreme People’s Court on Issues concerning the Trial of Futures Dispute Cases*, and the *Regulations on the Administration of Futures Trading*). In addition, the *Enterprise Bankruptcy Law*, the *Provisions of the Supreme People’s Court on Issues concerning the Trial of Futures Dispute Cases*, the *Regulations on the Administration of Futures Trading*, the *Measures for the Supervision and Administration of Futures Firms*, and the *Provisions on the Resolution of Securities Firm Risks* provide a legal basis for the finality of settlement (see Principle 1 Legal basis). Among them, the *Enterprise Bankruptcy Law* provides that an application for the bankruptcy of a financial institution should be filed by the financial regulator under the State Council; bankruptcy application acceptance procedures are set out in Article 10, which provides that the period from the filing of a bankruptcy application to the acceptance of the case should in general be no less than 30 days. The *Measures for the Supervision and Administration of Futures Firm*s requires any futures firm subject to dissolution or bankruptcy to properly handle customers’ margin funds and other assets first. These provisions give reasonable assurance that financial institutions are generally not susceptible to abrupt bankruptcy, which means settlement finality would not be affected if a member became bankrupt. The above-mentioned information is disclosed to members and investors in the form of rules and operational guidelines as well as through SHFE’s official

	website and other channels.
Key consideration 2: An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.	SHFE implements a daily mark-to-market system and its business rules can ensure the completion of final settlement before market open on the following trading day. Day-end settlement is conducted by the Clearing Department after market close at 15:00 each trading day. Funds deposits by members are completed by the Department before 15:00 if requests are submitted before market close. Funds withdrawal requests submitted before market close are collectively processed after market close and daily settlement on the same day, while funds deposit or withdrawal requests submitted after market close and daily settlement are processed on the following trading day. No members' applications for withdrawal of marketable securities are accepted after 14:30. During daily settlement, the Department carries out final settlement for all contracts based on the settlement price of that day, and makes a one-off transfer of all gains and losses, trading margin, transaction fees, and taxes as well as other receivables and payables for all contracts, on a net basis, by crediting or debiting members' clearing deposit accordingly. Following the settlement, a member whose clearing deposit falls below the minimum requirement will be deemed as having received a margin call from SHFE, in which case, the difference between the minimum requirement and the balance of clearing deposit will be the amount to be replenished. After issuing the margin call, SHFE may deduct the amount from the member's dedicated fund account through settlement banks. If a deficiency still exists, the member should bring the balance to the minimum requirement before market open (21:00 for continuous trading) on the following trading day, failing which, where the balance of the clearing deposit is larger than zero but less than the minimum requirement, the member should not open new positions; where the balance of the clearing deposit is less than zero, the member should close out its positions within the morning session, or SHFE will enforce liquidation in accordance with the *SHFE Risk Management Rules*. For timeliness and finality of fund transfers, SHFE instructs certified settlement banks to provide safe, accurate, and timely margin deposit and transfer services for the customers concerned, and to adjust business hours in light of changes in SHFE's trading and settlement time, so as to meet the needs for the margin depositor business. For intra-bank fund transfers, a settlement bank, upon receipt of SHFE's fund transfer instruction, is required to transfer funds to the dedicated fund account that SHFE designates in real time. For inter-bank fund transfers, a settlement bank should, upon receipt of SHFE's fund transfer instruction, ensure that the funds are timely received by the bank that SHFE designates (see the *SHFE Clearing Rules*, the *Continuous Trading Rules of Shanghai Futures Exchange*, the *SHFE Risk Management Rules*, and the *SHFE Settlement Banks Rules*).
Key consideration 3: An FMI should clearly define the point after which	After the point which clearing and settlement results are final, payment and transfer instructions will generally become irrevocable and immune to exceptional circumstances and relevant deadlines will not be afforded any

unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.	extensions. Moreover, SHFE implement a daily mark-to-market system to ensure the completion of the final settlement by the end of the proposed value date. A prior, market-wide notice will be issued for adjustments to the settlement schedule due to public holidays. SHFE has never postponed settlement to the following business day, whether for itself or for any member. If a member delays settlement for certain reason, SHFE will deal with the member according to the default procedures; if SHFE delays settlement for its own reason, it will take measures according to the established emergency response plan, and, if necessary, switch to the Zhangjiang Disaster Recovery Center. Following the last trading day for a contract, holders of open positions in the contract are required to perform their obligations by physical deliveries. The above-mentioned information is clearly defined in SHFE's business rules, operational guidelines, notices, and announcements and disclosed to the public through SHFE's website.

Principle 9: Money settlements

An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.

Key consideration 1: An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.	SHFE conducts money settlements in central bank money only. SHFE conducts settlement through its Clearing Department at its own risks, while banks only hold in custody members' margin and assume no settlement risk. Moreover, SHFE opens no account at China's central bank, and designates commercial banks rather than the central bank as settlement banks. The existing 12 certified settlement banks – either large State-owned or national joint-stock commercial banks with superior risk-management capacity – all make settlement in the money issued by the central bank. SHFE has opened a dedicated settlement account at each of the 12 banks. A member must conduct money settlement between its dedicated fund account opened at these banks and SHFE's dedicated settlement account. All money settlements are completed through these dedicated accounts by either bank transfer or negotiable instruments. (See the *SHFE Clearing Rules*).
Key consideration 2: If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity	First, all contracts listed on SHFE are settled in either RMB issued by the central bank or highly liquid marketable securities. Second, the settlement banks designated by SHFE are all reputable, financially robust national commercial banks that engage technical professionals with futures knowledge and higher risk prevention awareness and demonstrate superior risk-management capacity. To mitigate risks and ensure the security of settlement funds, SHFE has designated a dozen of commercial banks as fund settlement banks, for whom it has developed strict

risk.	admission criteria and approval procedures. Admission criteria for margin settlement banks are set out in the *SHFE Clearing Rules* and the *SHFE Certified Settlement Banks Rules*. Before conducting futures margin depository business, a newly admitted settlement bank is required to enter into a Banking Institution Futures Margin Depository Agreement with SHFE to specify both parties' rights and obligations. Third, members' margin, deposited in the accounts opened at settlement banks in cash form, is of high liquidity and availability.
Key consideration 3: If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.	Specific business and technical requirements for settlement banks are set out in the *SHFE Certified Settlement Banks Rules*. In addition, SHFE has signed a Futures Margin Depository Agreement with each certified settlement bank, which stipulates that settlement banks are only responsible for the custody of members' margin funds and do not perform settlement functions. SHFE takes the following measures to strictly monitor settlement banks' concentration of credit and liquidity risks according to the *SHFE Certified Settlement Banks Rules*: First, SHFE deposits funds at twelve designated large State-owned or national joint-stock commercial banks to avoid excessive concentration of risks; Second, a certified settlement bank is required to notify the Exchange and the CFMMC of any major business risk or loss that may impair its credit within three business days from the day the risk or loss arises, and to submit written reports on the analysis of the impact of such risk or loss on its futures margin depository business and the resolutions to address such risk or loss. Third, a certified settlement bank is required to conduct reconciliation of the dedicated settlement account of the Exchange on a daily basis; Fourth, a settlement bank is required to provide the Exchange with real-time feedbacks on the balances and historical transactions of members' dedicated fund accounts and to take effective measures to prevent fund liquidity risks; Fifth, the Exchange has the right to initiate inter-bank transfers of margin deposits held with certified settlement banks at any time to test the security of margin deposits; Sixth, SHFE monitors members' margin funds accounts in real time through the futures fund management system to ensure the security of funds; Seventh, the Clearing Department designates dedicated persons in charge of reconciling the data submitted by settlement banks on a daily basis; Eighth, SHFE's settlement banks, all of which are listed banks, are required to disclose their financial status to regulators and the market on a regular basis; and Ninth, SHFE conducts on-site inspections on certified settlement banks each year and supervises the banks' risk management efforts and financial status.

Key consideration 4: If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.	SHFE uses both its and settlement banks' bookkeeping systems in money settlements. First, SHFE controls credit and liquidity risks from its bookkeeping system by identifying, measuring, and monitoring the flow of funds. This is achieved by developing settlement management, funds management, risk assessment, and other technical systems as well as assigning dedicated professionals. Second, to minimizes the risks associated with settlement banks' bookkeeping systems, the Exchange requires settlement banks to: (1) promptly complete account reconciliation as requested by Exchange after completion of clearing on a daily basis; (2) provide the Exchange with real-time response to any inquiry on the balance and historical transactions of the Exchange's dedicated settlement account at any time during business hours; (3) deliver to the Exchange transaction documents such as customers' debit/credit notes or breakdown of fund transfers of a day; and (4) provide the account statement of the Exchange's dedicated settlement account as required. Margin is measured and supervised by CSRC's regional offices by comparing the total amount of funds in the loop as reported by futures firms, settlement banks, and SHFE, with the equity of each company and customer (see the *Interim Measures for the Segregated Management of Futures Brokerage Firms' Margin*).
Key consideration 5: An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.	The funds received by SHFE and its participants can be transferred in real time between its dedicated settlement account and members' dedicated fund accounts. To prevent liquidity risks arising from overdue settlements of funds, SHFE requires settlement banks to observe the following rules for funds settlements: (1) adjust their business hours in light of changes in the trading and clearing hours of the Exchange in order to meet the needs for the futures margin depository services; (2) for intra-bank fund transfers, upon receipt of SHFE's fund transfer instruction, transfer funds to the dedicated fund account that SHFE designates in real time; (3) for inter-bank fund transfers, upon receipt of SHFE's fund transfer instruction, ensure that the funds are transferred in the most efficient way and are timely delivered to the bank that SHFE designates; (4) reject any request by any other entity or individual to freeze or deduct the funds deposited in the dedicated settlement account of the Exchange. If any other entity or individual intends to freeze the funds deposited in members' dedicated fund accounts or take other actions that may affect the margin depository business, certified settlement banks should promptly notify the Exchange. Transfers are final and irrevocable. (see Principle 8 Settlement finality and the *SHFE Certified Settlement Banks Rules*).

Principle 10: Physical deliveries

An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.	
Key consideration 1: An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.	Physical delivery refers to the process that a buyer and a seller settle open positions in an expired futures contract through transfer of the ownership of the underlying products. Pursuant to the *SHFE Delivery Rules*, all the holders of open interest in a futures contract should fulfill their obligations through physical delivery following the last trading day of the contract. Moreover, physical deliveries against any customer's futures contracts should be executed by members of the Exchange and conducted in the name of the member on or through the Exchange. During physical deliveries, SHFE, after taking into account the buyers' intentions, matches participants for settlement by allocating available standard warrants to buyers on the second delivery day according to the relevant principles specified in the *SHFE Delivery Rules*. The deliverable commodity, represented by standard warrants, should be the commodities with registered trademarks whose producers are registered with the Exchange. The *SHFE Standard Warrant Rules* specify that a standard warrant should contain the following elements: (1) the full name of the owner of the underlying goods; (2) variety, quantity, quality, and number of the underlying goods; (3) the venue where the underlying goods are stored; (4) the warehousing fees charged; (5) for the already insured underlying goods, , the amount of the coverage, date of issuance, expiration of the policy, and the name of the insurer shall all be contained; and (6) issuer, place and date of issuance. The obligations and responsibilities of buyers, sellers, the Exchange, and certified delivery warehouses are set out in the *SHFE Delivery Rules*. The Exchange regularly organizes business training programs for members and investors to ensure that they are familiar with and understand the physical delivery procedures for relevant products. The *SHFE Delivery Rules* and the *SHFE Standard Warrant Rule* have been disclosed to the public through SHFE's website.
Key consideration 2: An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.	The risks that have been identified by SHFE mainly include the custody risks from the warehouses under whose custody standard warrants are put and buyers' and sellers' delivery default risks during the course of physical deliveries. The Exchange addresses custody risk associated with standard warrants by: (1) requiring delivery warehouses to obtain its approval before they engage in futures delivery-related businesses; (2) executing a binding agreement with each certified delivery warehouse and requiring certified delivery warehouses to pay risk collateral to ensure performance of obligations; (3) designating delivery warehouses to be in charge of the custody, safety, and confidentiality of underlying commodities; and (4) requiring warehouse internal audit as well as implementing random and annual inspection conducted by the Exchange.

	To manage buyers' and sellers' delivery default risk during the course of physical delivery, firstly, SHFE has authorized independent third-party quality inspection agencies to inspect the brand, quality, and quantity of warrants during load-in of the underlying products according to the *SHFE Standard Warrant Rules* and other rules; secondly, SHFE tracks and monitors a seller's deliverable resources and the accounts opened at a buyer's standard warrant system before the delivery day; thirdly, SHFE collects delivery margin from both buyers and sellers during deliveries. Moreover, the definition of delivery default and the methods for compensation upon default are set out in the *SHFE Delivery Rules* (see Principle 13 Participant-default rules and procedures).

Principle 11: Central securities depositories

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

Summary narrative	N/A.

Principle 12: Exchange-of-value settlement systems

If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

Key consideration 1: An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.	SHFE settles on a net basis and prescribes that a physical delivery can only be carried out after the trading of the corresponding futures contract is completed. Principal risk can be effectively managed under current physical delivery method. SHFE implements margin requirements and a daily mark-to-market system according to the *Regulations on the Administration of Futures Trading*, under which futures exchanges, futures firms, or non-futures firm clearing members are prohibited to allow members with insufficient margin to trade futures. The *SHFE Clearing Rules* provide that after the end of each trading day, the Exchange will settle all the contracts based on the settlement price of the day, and increase or deduct members' clearing deposit accordingly. After settlement, if a member's clearing deposit is lower than the minimum requirement, the member should bring the balance to the minimum requirement before opening of the next trading day; if the balance of clearing deposit is less than zero, the Exchange will conduct forced liquidation according to relevant rules. Pursuant to the *SHFE Delivery Rules*, only after paying for the underlying commodities can the buyer obtain a standard warrant, which ensures that delivery of warrants only occurs when the corresponding funds are received. The *SHFE Clearing Rules* set out that the Exchange should secure payment from the buyer (member) before allowing the member (seller) to make the

	physical delivery. SHFE, as a CCP which acts as the buyer to every seller and the seller to every buyer, calculates the quantity of receivables/payables or standard warrants to be transferred to/from each member. Moreover, SHFE's final settlement of linked obligations occurs simultaneously, and does not rely on the delivery-vs-payment (DvP) or payment-vs-payment (PvP) service from other FMIs in physical deliveries.

Principle 13: Participant-default rules and procedures

An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

Key consideration 1: An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.	SHFE's rules and procedures clearly define cases of default as well as the methods to identify defaults. In addition, SHFE adopts a two-tiered risk prevention system, under which the Exchange manages the risks from members, and members in turn manage the risks from their customers. The defaults identified by the Exchange include but are not limited to members' failure to perform or to fully perform their margin obligations to the Exchange and delivery default. In particular, the former refers to the circumstance under which a member's clearing deposit falls below the minimum requirement after completion of settlement; delivery default includes: (1) a seller's failure to deliver the agreed number of standard warrants within the specified delivery period; (2) a buyer' failure to make the agreed delivery payment within the prescribed delivery period; and (3) substandard goods delivered by a seller. In accordance with the *SHFE Clearing Rules*, if a member fails to fulfill its contractual obligations, SHFE is entitled to take the following protective measures : (1) draw on the member's clearing deposit; (2) suspend the member from opening new positions; (3) conduct forced liquidation as prescribed until the margin released is sufficient to cover the obligations; and (4) use the cash converted from the marketable securities that the member deposits to cover the obligation. If a deficiency still exists, the Exchange may cover the obligations by applying the membership fee of the defaulting member, drawing on the Exchange's risk reserve fund, and using the Exchange's own assets in sequence. In addition, the Exchange will exercise the right of recourse to the member through legal proceedings. In the case of a physical delivery default, if only one party defaults, the defaulting party is to pay the non-defaulting party 20% of the contract value in default as liquidated damages. In this case, the Exchange will return the delivery payment or standard warrants to the non-defaulting party and terminate the delivery. If both parties default, the Exchange will terminate the delivery and impose a fine at 5% of the contract value in default on both parties.
Key consideration 2: An FMI should be well	The management's responsibilities for default handling as well as the handling procedures are clearly defined in the Exchange's internal management systems

prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.	and procedures. Moreover, the Exchange maintains close contact and communications with CSRC and CFMMC. If a member fails to fulfil its contractual obligations, the Exchange will timely contact CSRC and may use the risk reserve fund with CSRC's approval. The Exchange reviews on a periodic or *ad hoc* basis its internal management systems and procedures through rule revisions, departmental policy scrutiny, internal audit, and compliance check. When there is any material change to its business rules, the Exchange will review its relevant internal default handling systems. SHFE addresses trading, clearing, delivery, and technical risks as well as other emergencies that materially affect or are likely to materially affect market safety and stability by: (1) creating emergency response plans and procedures; and (2) establishing clear prevention, response, and resolution procedures that ensure normal, full, and sufficient operations of various businesses and orderly operational management; and (3) setting up an emergency response leadership group and an emergency response working group who are responsible for identifying risks, classifying risk incidents according to severity, and developing differentiated response procedures by incident type and classification; and (4) incorporating response results in assessments on responsible personnel and departments.
Key consideration 3: An FMI should publicly disclose key aspects of its default rules and procedures.	The Exchange's default handling procedures, including countermeasures, scope of countermeasures, persons or entities taking countermeasures, and the mechanisms ensuring performance, are clearly defined in its relevant rules and measures and publicly disclosed through its website. SHFE revises its default handling rules on an *ad ho*c basis in light of changes in its businesses and rules and issues updates on its official website.
Key consideration 4: An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are	Generally, default handling measures, such as drawing on clearing deposits, restricting opening of positions, and forced liquidation, may be taken by the Exchange according to its rules. As a result, the Exchange conducts unscheduled system tests and emergency drills on these default handling measures on an annual basis to strengthen links with CSRC, CFMMC, members, and customers, and reports drill results to the emergency response leadership group and the emergency response working group. When developing or revising default handling rules, SHFE invites members and customers to participate in discussions and consults their opinions to improve the rules.

practical and effective.	

Principle 14: Segregation and portability

A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.

Key consideration 1: A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.	SHFE has segregation and transfer arrangements that effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant. First, since futures firm members of China's futures exchanges are not allowed to engage in proprietary trading, there is no case of segregation or embezzlement of positions between members and clients. In addition, the *SHFE Membership Rules* and the *SHFE Clearing Rules* stipulate that the Exchange shall manage the dedicated settlement account deposited by its members via separate accounts. This applies to the margin deposited by each member in the Exchange's dedicated settlement account, as well as the margin deposited by each customer in a member's dedicated fund account. FF members are prohibited from misappropriating the customer margins. Second, the *Interim Measures for the Segregated Management of Futures Brokerage Firms' Margin* state that if a customer's equity falls below zero, the carrying futures firm should promptly make up the margin shortfall with its own funds and is prohibited from using other customers' margins. Third, the Exchange implements a trading code system for investors, under which FF members and investors shall obey the rule of one trader being dispatched with one trading code, rather than trading in omnibus accounts. The trading code system enables the Exchange to respectively record the positions, margin in use, and collateral of each customer. Through the account segregation and transfer arrangements, the Exchange can effectively protect customer positions and collaterals from the default or insolvency of carrying members. Fourth, in accordance with the *SHFE Clearing Rules*, if an FF member cannot continue in the futures brokerage business for any reason or is subject to consolidation, division, business suspension, dissolution, or bankruptcy, the member may apply to the Exchange for transfer of customers' positions. The Exchange has established convenient procedures to ensure completion of transfer of positions within one business day. Fifth, China's laws have provided a sound basis for SHFE's segregation and transfer arrangements with respect to the assets of participants' customers. As SHFE's members and customers are domestic legal or natural persons, no foreign laws are involved. Moreover, SHFE's rules regarding customer segregation and transfer arrangements are compliant with the existing legal framework of the People's Republic of China.
Key consideration 2: A	As China's futures markets generally adopt look-through regulation under the

CCP should employ an account structure that enables it readily to identify positions of a participant's customers and to segregate related collateral. A CCP should maintain customer positions and collateral in individual customer accounts or in omnibus customer accounts.	trading code system, the Exchange and its members can accurately and easily identify each customer's assets through its systems. In addition, according to the *Interim Measures for the Segregated Management of Futures Brokerage Firms' Margin*, a futures brokerage firm must deposit its customers' margin in full at a commercial bank engaged in the futures trading settlement business, which margin should be segregated from its proprietary funds and managed within a network of accounts. Margin is measured with the equity of customers by CSRC's regional offices by comparing the total amount of funds in the loop as reported by futures firms, settlement banks, and SHFE. Under the guidance of CSRC, CFMMC monitors the margins in the futures market on a daily basis, supervises the implementation of CSRC's rules on the safe custody of futures margins, and promptly reports issues that may endanger futures margins. The trading code system ensures that the information associated with each customer is unique and helps segregate the assets held by the customers under the same member. As a customer's positions, trading margin, and collaterals are all recorded under his own code, under no circumstances would the margin funds of other customers affiliated with the same member be misappropriated to bail out a fellow customer with insufficient funds. Once a customer has a margin shortfall, the carrying member will first use its own funds to eliminate the same.
Key consideration 3: A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant's customers will be transferred to one or more other participants.	SHFE's transfer arrangements allow the transfer of positions and collateral of a defaulting participant's customers to one or more other participants. In accordance with the *SHFE Clearing Rules*, if an FF member cannot continue in the futures brokerage business for any reason or is subject to consolidation, division, or bankruptcy, it or any of its customers may apply to the Exchange for transfer of customers' positions. SHFE has established convenient procedures to ensure completion of transfer of positions within one business day. China's laws also ensure that the positions and collateral of the customers of a defaulting participant can be transferred to one or more other participants. According to the applicable laws, a customer's positions and collateral are the customer's instead of his carrying member's properties. When his carrying member becomes bankrupt, a customer may dispose of his positions and collateral at his discretion without being affected by the bankruptcy.
Key consideration 4: A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant's customers'	SHFE's segregation and transfer arrangements are set out in the *SHFE Trading Rules* and the *SHFE Clearing Rules* and have been published on its website. In addition, the *Measures for the Supervision and Administration of Futures Firms*, the *Interim Measures for the Administration of Futures Investor Protection Fund,* and the *Provisions of the Supreme People's Court on Issues concerning the Trial of Futures Dispute Cases* provide the legal basis for the arrangements.

positions and related collateral. In particular, the CCP should disclose whether customer collateral is protected on an individual or omnibus basis. In addition, a CCP should disclose any constraints, such as legal or operational constraints, that may impair its ability to segregate or port a participant's customers' positions and related collateral.	

Principle 15: General business risk

An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Key consideration 1: An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.	SHFE's Finance Department identifies and monitors general business risks on an ongoing basis through the set financial system and day-to-day financial analyses. In terms of management, SHFE has set up the Finance Committee and the Financial Audit Committee to ensure the correctness and effectiveness of its operational strategies. In particular, the Finance Committee, mainly staffed by officers of SHFE's members and subject to the management of the Board, considers SHFE's financial budget plans and final report drafts and offers professional suggestions on SHFE's financial management programs; the Financial Audit Committee under the management of the Financial Department is comprised of heads and employee representatives of relevant departments, and reviews material expenditures out of the financial budgets of various departments. Moreover, SHFE reviews the potential impacts on cash flow and capital in its commercial risk evaluation and then assesses its overall financial condition by preparing periodic financial reports, implementing an internal review system, and conducting analyses such as stress tests, liquidity analysis, cost-benefit analysis, debt-paying analysis, and budget and final account analysis. In addition, SHFE has purchased insurances to cover property losses and created a thorough disaster recovery emergency plan to address the risks from power and network providers.

	In general, SHFE currently faces few potential business risks as it focuses on primary businesses, retains sufficient risk reserve fund, develops a solid market infrastructure, and maintains sound operations.
Key consideration 2: An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.	SHFE has retained sufficient net liquid assets which funded by equity at a faster speed and is able to continue ongoing and sound CCP clearing business once facing common losses. The growth of SHFE's net liquid assets outpaces the growth of losses arising from potential common risks; and the high liquidity of the net liquid assets enable SHFE to continue operations and services in the event of common losses.
Key consideration 3: An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a	Pursuant to the *SHFE Articles of Association*, CSRC may shut down the Exchange at its discretion; SHFE may, subject to the approval of CSRC, terminate according to resolutions of the Members' Assembly or for the purposes of combination or division of the Exchange; and a liquidation team would be set up upon termination of the Exchange. To maintain business sustainability, SHFE has created an emergency response plan and relevant procedures and measures in alignment with CSRC, prepared a viable recovery or orderly wind-down plan, and reserved sufficient, highly liquid net liquid assets funded by equity equal to at least six months of operating

minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.	expenses to address losses in extreme conditions.
Key consideration 4: Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.	SHFE analyzes critical financial indicators on a month-to-month basis in order to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions. SHFE's net liquid assets funded by equity, mainly comprised of cash and bank deposits, are placed under the custody of large State-owned commercial banks that are regulated by China's regulators. In adverse market conditions, all of the non-cash assets can be converted into cash with little or no loss of value. Moreover, the Financial Department conducts periodic assessment of these assets against the standards of simple structure, high liquidity, and ease of realization.
Key consideration 5: An FMI should	SHFE has sufficient liquid resources backed by stock and risk reserve fund, and in the case of emergencies, can obtain lines of credit from banks to address

maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.	business risks. Moreover, as a membership-based exchange regulated by CSRC, SHFE is not permitted to make external investments, its equity is thus unlikely to fall below the amount needed.

Principle 16: Custody and investment risks

An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.

Key consideration 1: An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.	Currently, SHFE deposits its own and its participants' assets in 12 certified settlement banks, including the Industrial and Commercial Bank of China, the Bank of China, the Agricultural Bank of China, the China Construction Bank, the Bank of Communications, the China Merchants Bank, the Industrial Bank, the China Minsheng Bank, the China Everbright Bank, the China CITIC Bank, the PingAn Bank, and the Shanghai Pudong Development Bank. All of these banks are reputable, large State-owned or national joint-stock commercial banks subject to the regulation of CBIRC and headquartered within the same time zone. The *SHFE Certified Settlement Banks Rules* set out the admission criteria for certified settlement banks covering qualification application, institutional development, technical systems, operational rules, risk prevention, among others; and grants the SHFE right to supervise the banks' credit status, system security, and operational status and to conduct annual inspections and assessments of their operational rules, technical systems, qualification review and internal control systems. In addition, margin is measured by CSRC's regional offices by comparing the total amount of funds in the loop as reported by futures firms, settlement banks, and SHFE, with the equity of each company and customer. (See Chapters 2 and 6 of the *SHFE Certified Settlement Banks Rules* and the *Interim Measures for the Segregated Management of Firms' Margin*).
Key consideration 2: An FMI should have prompt access to its assets and the assets provided by	SHFE is able to protect its assets and the assets provided by participants. SHFE manages its proprietary and non-proprietary assets strictly and prudently according to relevant rules and has the right to promptly access to and dispose of all of the assets. While distinguishing proprietary assets from non-proprietary assets, SHFE fully protects and ensures prompt accesses to these assets by keeping them in current or short-term time deposits at State-owned or national

participants, when required.	joint-stock commercial banks. When opening an account, SHFE enters into a depository agreement with each settlement bank to specify both parties' rights and obligations, which is of legal force and protected by the *Law of the People's Republic of China on Commercial Banks* and other applicable laws and regulations.
Key consideration 3: An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.	To decrease the concentration of margin funds, SHFE currently designates 12 banks – all of which are reputable, large State-owned or national joint-stock commercial banks – as its settlement banks. Moreover, SHFE conducts stress tests to understand the concentration of its own funds and the liquidity risk exposures to the banks; the Clearing Department monitors the balance of each bank through SHFE's funds system, so as to ensure that each of them has proper balance to address the liquidity that SHFE requires in day-to-day operations; and SHFE tests the margin of each settlement bank by transferring funds of varying amount on an *ad hoc* basis to check the security of deposits and maintain funds concentration, and when necessary, will properly manage the funds.
Key consideration 4: An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.	Currently, SHFE maintains its funds in cash or deposit and makes no short-term investments. In addition, all of its material investment decisions are made by the Board or the Members' Assembly and should be reported to CSRC.

Principle 17: Operational risk

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.

Key consideration 1: An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.	Plausible sources of SHFE's operational risks mainly include unstable technical systems, operational errors, under capacity, impacts of major businesses launched, and disruption of utility services. Accordingly, SHFE has created an operational risk-management framework covering: (1) Organizational structure. SHFE's Board considers and periodically assesses its risk-management systems; the Risk Management Committee and the Risk Management Working Group subordinate to the Board conduct relevant programs; and set up internal departments that are mainly responsible for managing operational risks and conducting internal risk assessments, audits, and compliance inspections. (2) Overall institutional design. SHFE has created a comprehensive risk-management system as well as multi-level organizational, business, and assurance systems for operational risk management of SHFE. (3) Standard development and strengthened management that ensure high operational stability and reliability of technical systems. SHFE has formulated the *Measures for Cybersecurity of the Shanghai Futures Exchange* (the '*SHFE Cybersecurity Measures*') and the *Information Security Strategies of the Shanghai Futures Exchange* (the '*SHFE Information Security Strategies*') in accordance with the *Cybersecurity Law* to protect cyber security; has applied ISO 27001 – Information Security Management Systems Requirements to operational procedures, which are also subject to periodic review and audit; and accepts regular external audits each year for timely identification and discovery of operational issues. (4) Management of growing capacity needs of various systems through the standard capacity management process set out in ISO 20000, in line with which, the technical departments quarterly assess the capacity operational indicators and make a capacity plan in advance for the following year. (5) Operational accuracy and operational risk management. SHFE adopts a two-staff, double-check mechanism to ensure high operational accuracy and incorporates operational accuracy in employee performance evaluation to minimize operational risks. Moreover, SHFE endeavors to raise the awareness of risk prevention among its employees by regularly organizing operational risk education programs for both new and senior employees; raising risk management awareness across different stages of product development, launch, and established operation; and strengthening business and technical personnel's ability to foresee and identify operational risks. (6) Regular internal inspections and external assessments. SHFE reviews the implementation status of operational risk-management scheme, checks potential risks, and creates a checklist of risks to ensure the implementation of operational risk management concepts and measures. (7) Trading continuity plans. To address emergencies and maintain trading continuity, SHFE has developed an emergency response plan; created a cybersecurity emergency contingency plan and accompanying operational guidelines; entered into agreements with utility providers; and established same-

	city and remote-location disaster recovery systems in Shanghai and another city.
Key consideration 2: An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.	Pursuant to the *SHFE Articles of Association*, the *Working Procedures of the Board of Directors*, and the *Working Procedures of Special Committees under the Board of Directors*, the Board and the operational management are jointly and ultimately accountable for operational risks. Internally, the Risk Management Department organizes business and technical departments to conduct periodic assessment of operational risks, drafts risk response plans, and submits system improvement suggestions and summarized reports, both of which will be subject to the review by the Risk Management Committee; and the operational management adopts and guides business departments' adoption of risk-management concepts and rules in system development, launch, and operation by combing operational risks with SHFE's businesses. Externally, competent regulators and the National Audit Office periodically inspect SHFE's operational risk management and provide the relevant audit results. SHFE places high emphasis on potential operational risks arising from systems' significant changes. For instance, according to the *Rules on the Management of Technical Issues of the Shanghai Futures Exchange*, the *SHFE Cybersecurity Measures*, and other normative documents, SHFE should comprehensively and prudently review, audit, and test its systems, operational policies, procedures, and controls when launching a new business or updating a technical system. For upfront design, development, and testing of IT systems, relevant criteria on quality control are also in place.
Key consideration 3: An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.	To maintain high operational stability, reliability, and accuracy, SHFE only expects a maximum of two system faults lasting no more than 40 minutes in total each year. To achieve this end, business and technical departments have developed a series of internal policies and management procedures to ensure high operational reliability; and the Trading Department, the Clearing Department, the Market Compliance Department, and other business departments have incorporated operational accuracy in their duties. Moreover, SHFE adopts a two-staff, double-check mechanism in its production systems to avoid operational errors; includes operational accuracy in assessment indicators; and ensures that operators' activities are non-arbitrary by improving relevant systems, maintaining a log for each position and a ledger for each business, periodically teasing out and refining operational procedures, and launching education and training programs for both new and senior employees, with the aim of mitigating operational risks.
Key consideration 4: An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to	SHFE manages growing capacity needs in line with the standard capacity management procedures under ISO 20000. Accordingly, the technical departments quarterly assess the capacity operational indicators and make a capacity plan in advance for the following year; and various systems draft capacity plans on a quarterly basis and will scale system capacity in view of their operational status. If the capacity of a system reaches the threshold prescribed, the person-in-charge of the system will timely scale system capacity

achieve its service-level objectives.	based on its analysis of unsatisfactory operational performance.
Key consideration 5: An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.	SHFE addresses potential vulnerabilities and threats by: (1) formulating the *SHFE Cybersecurity Measures* and the *SHFE Information Security Strategies* according to the *Cybersecurity Law* and relevant regulatory requirements to regulate information and data security, backup mechanisms, handling procedures of and responsibilities for security incidents; (2) adopting ISO 27001 – *Information Security Management Systems Requirements* to manage daily information security, which verified by relevant international accreditation agency; (3) physically segregating its production network from external networks; (4) applying the highest physical assurances to its production environment in all aspects; (5) deploying major systems in more than one centers; (6) assigning primary and supporting duties for a position to two employees; (7) monitoring security threats in real time; (8) setting security requirements on system software; (9) periodically scanning systems to timely discover security vulnerabilities; and (10) establishing complete identity recognition and authority management systems that enable it to manage the security of critical data and to timely handle any issue uncovered.
Key consideration 6: An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to	In day-to-day managements, SHFE monitors the operation of core systems and software throughout a day with real-time and non-real-time monitoring systems, dedicates persons that work on a 24-hour shift, conducts on-site inspections twice a day to screen hazards and to timely discover faults, and coordinate relevant departments and service providers to resolve problems in time. In addition, SHFE has established a risk emergency response mechanism and the Emergency Response Leadership Group; has developed the corresponding emergency response plan and operational guidelines that fully regulate rapid handling of various risk events disruptive to market operation, public health, and network and technical systems to ensure effective operation and timely recovery of business and technical systems; and addresses risks in the case of emergencies by conducting periodic drills, improving handling procedures, and preparing its system and staff members for emergencies. In line with the above-mentioned rules and guidelines, SHFE has made a continuity plan that requires its trading system to resume operations following major faults within five minutes and other systems within two hours at a secondary site. To this end, SHFE has upgraded and deployed its systems, allocated sufficient resources therefor, and holds periodic emergency drills according to its emergency response plans.

enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.	
Key consideration 7: An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.	Instead of outsourcing its key services, SHFE establishes corresponding departments to be in charge of day-to-day operations and maintenances in trading, clearing, product development, technical operation and maintenance, and other areas. To prevent disruption of utility services, SHFE has executed service agreements with utility providers that set out both parties' rights and obligations; for power supply, SHFE has accesses to uninterrupted power supply in day-to-day operations as a Class-II electricity user and addresses disruptions of power in extreme conditions by maintaining backup power supply systems; for network services, SHFE has built a backup network to which its systems will automatically switch when the primary network services are disrupted. Moreover, SHFE has created a complete assessment plan for those utility providers.

Principle 18: Access and participation requirements

An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

Key consideration 1: An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.	Adopting an all-member clearing system, the Exchange now clarifies its membership criteria and requirements and provides its members and other market participants with fair and open access to its services. First, participation criteria and requirements. **Membership requirements**. Currently, the Exchange has FF members and non-FF members. For non-FF members, the Exchange clearly specifies their membership requirements including sufficient registered capital, good credit, sound business records, well-designed structure, and adequate staffing. For FF members, in furtherance of the provisions of regulations and rules of CSRC, the Exchange also lays down their membership requirements including sufficient registered capital, good credit, sound business records, well-designed structure, and adequate staffing (see the *Regulations on the Administration of Futures Trading*, Chapter 2 of the *Measures for the*

	Supervision and Administration of Futures Firms, the *SHFE Articles of Association*, and the *SHFE Membership Rules*). **Access to options trading**. The Exchange implements an investor suitability system for its options trading, which requires each customer participating in options trading to meet such conditions as passing relevant tests and having basic knowledge, experiences of actual or mock trading, and a certain amount of available funds (see Chapter 2 of the *SHFE Options Investor Suitability Rules*). **Market making requirements**. The Exchange manages market makers based on product type and clarifies that an applicant should have, inter alia, the requisite net assets, dedicated market making department and personnel, sound market making plans, as well as internal control and risk management systems (see the *Market Maker Rules of the Shanghai Futures Exchange*). Second, services available to different participants of the Exchange. The Exchange has formulated rules and detailed rules to specify the rights of its members and market makers. It has also developed several market rules to set out the best practices, rights, and obligations of different participants in their futures and options trading on the Exchange. (see the *SHFE Articles of Association* and Chapter 4 of the *SHFE Market Maker Rules*) Third, all relevant rules are released and made public to the market.
Key consideration 2: An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.	The Exchange's participation requirements are justified in terms of the safety and efficiency of the futures market, are tailed to and commensurate with the specific risks of the commodity futures and options markets, and are publicly disclosed. In terms of safety, the *SHFE Articles of Association*, the *SHFE Membership Rules*, the *SHFE Options Investor Suitability Rules*, and the *SHFE Market Maker Rules* not only meet the general requirements laid out in *Regulations on the Administration of Futures Trading*, the *Measures for the Supervision and Administration of Futures Firms*, and the *Measures for the Suitability Management of Securities and Futures Investors*, but also define reasonable requirements for different participants based on the needs of managing China's market risks and the Exchange's own (specific) risks. In terms of efficiency, the *SHFE Membership Rules*, the *SHFE Market Maker Rules*, and the *Copper Options Trading Guidelines for Futures Firms* have detailed the applying conditions, materials, and processes, so that applicants may be informed of the applying requirements in advance to boost efficiency (see the *SHFE Membership Rules*, Chapter 2 of the *SHFE Market Maker Rules* and Chapters 3 and 4 of the *Copper Options Trading Guidelines for Futures Firms*). Relevant regulations, rules, and the *Exchange's Articles of Association* and implementing rules have been published and can be accessed via the SHFE website.

Key consideration 3: An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.	Currently, China's financial regulators have established ongoing monitoring mechanisms for members. The Exchange has specified its rights and the measures available for dealing with violations in implementing rules. Relevant rules have been disclosed publicly. First, in the *Measures for the Administration of Risk Supervision Indicators of Futures Firms* released in 2017, CSRC sets standards for various risk indicators including the net asset and required ongoing compliance by futures firms (for example, the net asset should not be lower than ¥30 million and the ratio between the net asset and the risk capital reserve should not be lower than 100%. see Chapters 2 and 4 of the *Measures*). Second, the Exchange explicitly stipulates members' reporting obligations and their supervision and management: any member experiencing significant changes in business, management or other aspects should submit a written report to the Exchange within 10 business days (see the *SHFE Membership Rules*). Third, the Exchange has the right and obligation to track and examine the participants' compliance with relevant participation requirements. Pursuant to the *SHFE Enforcement Rules*, the Exchange may exercise regulation over its members, including requiring them to provide such reports as annual reports and third-party audit reports; investigating and taking evidences from them; checking their futures margin accounts; and accessing their computer system for trading, clearing, and financial matters. If a member breaches or no longer meets the participation requirements, the Exchange may terminate its membership and ban it from market entry (see Chapter 3 of the SHFE *Enforcement Rules*). Fourth, as to the management of market maker status, the Exchange may revoke the status for any single product under such circumstances as failure to perform quoting obligations or revoke the status for all products under such circumstances as serious violations. The Exchange has also made arrangement for voluntary forfeiture of market maker status (see the *SHFE Market Maker Rules*).

Principle 19: Tiered participation arrangements

An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

Key consideration 1: An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to	Under the framework of current laws, regulations, and the Exchange's rules and supporting rules, the Exchange makes tiered participation arrangements in its all-member clearing system. It may collect the basic account information of indirect participants through its 'look-through supervision' and relevant trade coding and system design, hence identifying, monitoring, and managing material risks arising out of the tiered arrangements.

identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.	**Tiered participation arrangements** Consisting of direct and indirect participants, the Exchange's tiered participation arrangements forms part of its all-member clearing system. Direct participants are FF and non-FF members; indirect participants are customers of FF members. The Exchange clears for its members and its members clear for their customers. The Exchange may access the name, ID card number, bank account number, and other basic information of a customer since the customer needs to open his account with the China Futures Market Monitoring Center (CFMMC) and file such information with the Exchange. **Risk identification and management** The Exchange adopts a two-tiered risk prevention system, directly assuming risks arising from its clearing members but not customers. Through the trader codes, the Exchange may identify the positions and transaction orders of customers and members in its system, thus understanding the risk of both direct and indirect participants. It may also identify two kinds of risks from the arrangements: the possible default risk arising from customers of FF members due to insufficient margins, and the risk of trading violation. To effectively prevent and control default risks, the Exchange applies the margin requirement, price limits, positions limit, large position reporting, forced liquidation, risk warning, and default risk waterfall, among others, in accordance with the *SHFE Risk Management Rules*. For the risk of trading violation, the Exchange's Market Compliance Department identifies a member or customer's trading violation through its real-time monitoring system, historical data analysis system, and SMART system (a surveillance system). In accordance with relevant provisions of the *SHFE Enforcement Rules*, the Exchange will issue a risk warning against a violating member or notify relevant member to issue a risk warning against its customer in the case of a minor violation, or refer to judicial investigation in the case of a serious violation. In addition, the Exchange may assess the risk management level of its members by performing on-site checks and examining clearing materials, financial statements and relevant records and account books.
Key consideration 2: An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.	The Exchange is capable of identifying material dependencies between direct and indirect participants that might affect it. Through the coding system assigning a code to each account, the Exchange directly knows the positions and funds of its members and customers and makes predictions based on a large position reporting system. Furthermore, futures firms report customer transactions and clearing data to the CFMMC on a daily basis; the CFMMC in turn monitors the safety of futures margin and alarms regulators and the Exchange in the case of any safety issue. The Exchange may also access data on customer interests from the CFMMC when necessary.

Key consideration 3: An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.	The Exchange identifies the proportions of transactions that direct participants conducted on behalf of indirect participants in their capacity, direct participants who conducted transactions on behalf of a large number of indirect participants, and indirect participants who account for a significant proportion of transaction values in the system. A futures firm should be established in accordance with the *Regulations on the Administration of Futures Trading* and the *Measures for the Administration of Risk Supervision Indicators of Futures Firms*. The members' rights and obligations are specified and their brokerage status are managed pursuant to the SHFE *Membership Rules*. Through the clearing system, the Exchange immediately knows the positions and funds of members and customers and identifies the breakdown account of different types of members. It manages member default risks according to the SHFE *Risk Management Rules* and binds member trading activities according to the SHFE *Enforcement Rules*. The Exchange may also take several supervision and management measures including violation warning and awareness campaign, member visits, and on-site inspection.
Key consideration 4: An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.	The Exchange regularly or randomly reviews risks arising from tiered participation arrangements and takes actions to mitigate identified risks when appropriate. Currently, the risk most directly pertinent to the arrangements is default by a customer or futures firm due to insufficient margin. When a direct participant, or a member, exposes to high risks, the Exchange may reduce the risks by taking such measures as raising margins, imposing position limits on relevant products, or enforcing position liquidation according to the *SHFE Risks Management Rules*. Direct participants are responsible for managing the risks of indirect participants. The Exchange regularly or randomly updates the management framework of tiered risk regulation. For potential or actual violation risks from participants in the tiered participation arrangements, the Exchange may take such measures as warning and judicial investigation in accordance with the *SHFE Enforcement Rules* or refer any offence to the judicial authority to ensure the robustness of the arrangements.

Principle 20: FMI links

An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

Summary narrative	'Link' under this Principle 20 refers to direct link between financial market infrastructures or their indirect link through intermediary agents, which can help one financial institution or market expand its business to other financial institutions or markets. Though both SHFE and its subsidiary Shanghai International Energy Exchange Co., Ltd. serve as central counterparties, they are independent legal persons, conduct trading of different products, are subject to different systems of rules, provide independent trading and clearing services, and have in place different risk prevention and control systems. Investors should open separate trading accounts respectively at the two

	exchanges, and may only access services such as trading and clearing from the exchange it opens account with. No 'link' as defined under this Principle 20 exists between the two exchanges. Thus, this Principle 20 is not applicable.

Principle 21: Efficiency and effectiveness

An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.

Key consideration 1: An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.	The Exchange regularly listens to the needs and feedback from market participants from multiple channels, analyze the market opinions and comments, come up with solutions accordingly, and give feedback to market participants. When the market demand changes, the Exchange will adjust and improve its businesses, rules, and systems timely to adapt to such changes. Before the launch of new systems and new features, market-wide test will be conducted to reduce operational risk. Market training will be provided regularly for the launch of new businesses and new systems.
Key consideration 2: An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.	The Exchange has clearly defined short- and long-term objectives for operational effectiveness, and has worked out practical measures to realize them. Specifically, in the five years ahead, SHFE will adopt global perspectives in its planning, set rules in harmonization with international standards, and highlight local advantages; ensure that it finds, aligns, meets, and sets the right standards; strive to enrich its product offerings, build an international market, consolidate market information, and pursue a technology-driven and talent-centric development strategy; and enhance its capacity and competency at supporting China's real economy and boost global influence. The Exchange breaks down its short- and long-term objectives into clearly defined measurable annual goals, and reviews the achievement of such objectives on an annual basis.
Key consideration 3: An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.	The management at the Exchange convenes regular management meetings each year to audit the implementation of its strategic objectives, and adjusts its specific plans when necessary. The management also holds a meeting each year to listen to and review the working reports of and conducts year-end assessment towards various departments and committees.

Principle 22: Communication procedures and standards

An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

Key consideration 1: An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.	The Exchange's systems at the communication layer adopt the internationally accepted communication standard TCP-IP, which can effectively and efficiently connect with all the applications using this international standard. At the application layer, the Shanghai Futures Exchange has adopted the communication protocol Firepower Threat Defense (FTD) which is commonly used in China. Compared with the mainstream FIX protocol overseas, FTD can better adapt to and meet the requirements of existing businesses in China. If the Exchange needs to connect with the system that adopts the internationally accepted communication program, it can introduce a protocol conversion module for efficient connection. The Exchange is considering to adopt the internationally accepted protocol for the next generation trading system.

Principle 23: Disclosure of rules, key procedures, and market data

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.

Key consideration 1: An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.	The Exchange has clear and comprehensive rules and procedures that are fully disclosed to participants, which can be accessed at the website of the Exchange. Any updates of the Exchange's rules will also be made to the public. The Exchange, through its member service system, announce to its members the operational procedures and expenses, etc. Meanwhile, the Exchange will organize market training to introduce and explain the rules to its members and investors. The definition and treatment measures of abnormal events are explicitly stipulated in the *Measures on the Administration of Futures Exchanges* and the *SHFE General Exchange Rules* (see the *Measures on the Administration of Futures Exchanges* and Chapter 8 of the *SHFE General Exchange Rules*).
Key consideration 2: An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they	The Shanghai Futures Exchange discloses clear description of the design and operation of the systems, and the rights and obligations of market participants. First, the Operation Department at the Exchange and the Shanghai Futures Information Technology Co., Ltd. (SFIT) keep detailed documentation on system design and operation data. As for the disclosure of systems operation information, the Exchange not only reports to CSRC the operation information of key systems as required, but also release relevant information of technical system and concerning requirements to market participants.

would incur by participating in the FMI.	Second, the rights and obligations of participants are clearly defined in *Measures on the Administration of Futures Exchanges* and the *SHFE Articles of Association*, which enables market participants to fully understand their rights and obligations so as to better assess the risk of participation. (see Chapter 4 of the *Measures on the Administration of Futures Exchanges* and Chapter 3 of the *SHFE Articles of Association*)
Key consideration 3: An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.	The Exchange provides necessary and proper training for market participants, and formulates procedures to deal with violations of contracts and regulations. To educate investors, the Exchange has carried out various activities on investor education, including *Shanghai Futures Exchange's Futures Auditorium*, *Along with the Investors*, *Shanghai Commodity Futures Monthly Forum*, etc. to serve the industry. These activities have been well prepared in advance and thus well received among the market. Through investor education, the Shanghai Futures Exchange helps market participants better understand the rights, obligations, and risks for the participation of futures market. As for dealing of violation against rules and regulations, if the Exchange finds that some participants are lack of understanding of rules, procedures and risks of the participation, it will explain to them through various ways such as telephone communication, a written letter, face-to-face communication, etc. If the Exchange confirms that the defaults are caused by lack of knowledge, it will first choose to kindly remind the participants. If compliance is still not achieved after the reminding, the Exchange will investigate, identify, and punish the violators of the contracts and regulations according to relevant provisions in the *SHFE Enforcement Rules*. If the circumstance is serious, a timely report will be made to the CSRC recommending to initiate an investigation accordingly; and if criminal violation is involved, the case will be transferred to the judicial authority for criminal prosecution. As for default handling, the Exchange has established a sound risk waterfall mechanism, and the sanctions against any default has been explicitly stipulated in the *SHFE Clearing Rules*, the *SHFE Delivery Rule*, and the *SHFE Risk Management Rules.* Upon occurrence of any loss, the relevant member shall pay in advance for the loss of its customers, and the decision on risk allocation shall be adopted by the Risk Management Committee at the Exchange. As for the arrangement of business continuity, the Exchange has formulated emergency and disaster recovery plans to ensure smooth operation of the market.
Key consideration 4: An FMI should publicly disclose its fees at the	The Exchange publicly disclose information as detailed as the individual service charges and existing discount policies on its official website, and once any concerning changes occur, the Exchange will disclose to the market

level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.	through its member service system.
Key consideration 5: An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO Disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.	The Exchange regularly discloses market information to the public. Each year, the Exchange will complete an assessment report on the *Principles for Financial Market Infrastructures*, and disclose it publicly through the official website. The disclosure is made in both English and Chinese. As for disclosure of basic data, according to the *Regulations on the Administration of Futures Trading*, the *Measures on the Administration of Futures Exchanges*, *the SHFE General Exchange Rules*, and *the SHFE Trading Rules*, the Exchange discloses relevant information that covers price information, trading volume, turnover, delivery volume, delivery amount, open interests, trade ranking, standard warrant, stock, etc.,. The disclosure is carried out daily, monthly, quarterly, and annually. The Exchange also makes other disclosures to the market through announcements and circular. In addition, the Exchange discloses to the market the information on contracts, services, news & events, profile of the exchange, contact information, etc. (See more details in *Regulations on the Administration of Futures Trading*, of *Measures on the Administration of Futures Exchanges*, Chapter 9 of the *SHFE General Exchange Rules*, and Chapter 7 of the *SHFE Trading Rules*).

Principle 24: Disclosure of market data by trade repositories

A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.

Summary narrative	N/A.

V. List of Publicly Available Resources

Laws, Rules and Regulations	**Website Link**
Regulations on the Administration of Futures Trading	http://www.shfe.com.cn/regulation/exchangelaw/21135442.html
Measures on the Administration of Futures Exchanges	http://www.shfe.com.cn/regulation/exchangelaw/211203689.html
Measures for the Supervision and Administration of Futures Firms	http://www.shfe.com.cn/regulation/exchangelaw/911322933.html
Trial Measures for the Administration of Risk Supervision Indicators of Futures Firms	http://www.shfe.com.cn/regulation/exchangelaw/78172445.html
Guidelines for Launching the Pilot Program for Futures Firms to Establish Subsidiaries Mainly Engaging in Risk Management Services	http://www.cfachina.org/ZCFG/ZLGZ/201412/t20141229_1760445.html
Provisions of the Supreme People's Court on Issues concerning the Trial of Futures Dispute Cases	http://www.shfe.com.cn/regulation/exchangelaw/78177758.html
Interim Measures for the Administration of Futures Investor Protection Fund	http://www.shfe.com.cn/regulation/exchangelaw/78175952.html
Contract Law of the People's Republic of China	http://www.gov.cn/banshi/2005-07/11/content_13695.htm
Enterprise Bankruptcy Law of the People's Republic of China	http://www.gov.cn/flfg/2006-08/28/content_371296.htm
Articles of Association of the Shanghai Futures Exchange	http://www.shfe.com.cn/regulation/regulation/rules/ http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
General Exchange Rules of the Shanghai Futures Exchange	http://www.shfe.com.cn/regulation/regulation/regulation/ http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Risk Management Rules	http://www.shfe.com.cn/regulation/regulation/Implementingrules/911322935.html

of the Shanghai Futures Exchange	http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Spread Trading Rules of the Shanghai Futures Exchange	http://www.shfe.com.cn/regulation/regulation/Implementingrules/911323011.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Hedging Rules of the Shanghai Futures Exchange	http://www.shfe.com.cn/regulation/regulation/Implementingrules/911323010.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Delivery Rules of the Shanghai Futures Exchange	http://www.shfe.com.cn/regulation/regulation/Implementingrules/911323009.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Certified Delivery Warehouse Rules of the Shanghai Futures Exchange	http://www.shfe.com.cn/regulation/regulation/Implementingrules/572.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Standard Warrant Rules of the Shanghai Futures Exchange	http://www.shfe.com.cn/regulation/regulation/Implementingrules/911320271.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Fuel Oil Futures Delivery Rules of the Shanghai Futures Exchange (Trial)	http://www.shfe.com.cn/regulation/regulation/Implementingrules/567.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Gold Futures Delivery Rules of the Shanghai Futures Exchange (Trial)	http://www.shfe.com.cn/regulation/regulation/Implementingrules/562.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Certified Mill Warehouse Delivery Rules of the Shanghai Futures Exchange (Trial)	http://www.shfe.com.cn/regulation/regulation/Implementingrules/571.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Certified Delivery Depot Rules of the Shanghai Futures Exchange (Trial)	http://www.shfe.com.cn/regulation/regulation/Implementingrules/573.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Certified Depository Rules of the Shanghai Futures Exchange (Trial)	http://www.shfe.com.cn/regulation/regulation/Implementingrules/11600023.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Trading Rules of the Shanghai Futures Exchange	http://www.shfe.com.cn/regulation/regulation/Implementingrules/565.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Clearing Rules of the Shanghai Futures Exchange	http://www.shfe.com.cn/regulation/regulation/Implementingrules/911319179.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Certified Settlement Banks Rules of the Shanghai Futures Exchange	http://www.shfe.com.cn/regulation/regulation/Implementingrules/911319304.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Enforcement Rules of the	http://www.shfe.com.cn/regulation/regulation/Implementingrules/570.html

Shanghai Futures Exchange	http://www.shfe.com.cn/en/Rules/SHFERules/Rules/
Membership Rules of the Shanghai Futures Exchange	http://www.shfe.com.cn/regulation/regulation/Implementingrules/563.html http://www.shfe.com.cn/en/Rules/SHFERules/Rules/

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