



ICE CLEAR SINGAPORE

Disclosure Framework

31 December 2020

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INTRODUCTION

Responding institution:

ICE Clear Singapore Pte. Ltd.

Jurisdiction(s) in which the FMI operates:

Republic of Singapore

Authority(ies) regulating, supervising or overseeing the FMI:

Monetary Authority of Singapore

The date of this disclosure is 31 December 2020. This disclosure can also be found at www.theice.com. For further information, please contact ICE Clear Singapore Compliance at compliance-singapore@theice.com.

I. EXECUTIVE SUMMARY

The objective of this document ("**Disclosure Framework**") is to provide relevant disclosure to market participants on the methods used by ICE Clear Singapore Pte. Ltd. ("**ICSG**" or the "**Clearing House**") to manage the risks it faces as a central counterparty ("**CCP**").

The Disclosure Framework is prepared in accordance with the internationally recognised "Principles for Financial Market Infrastructure" ("**PFMI**") published in February 2012 and developed jointly by the Committee on Payment and Settlement Systems and the Technical Committee of the International Organisation of Securities Commissions. No disclosure is provided with respect to Principles 11 and 24 as they do not apply to CCPs.

The services provided by ICSG comprise clearing services for the energy, financials and digital asset markets operated by ICE Futures Singapore Pte. Ltd. ("**IFSG**"), an Approved Exchange authorised by the Monetary Authority of Singapore ("**MAS**"). Data regarding volume by product open interest is available on the IFSG website. Participants in ICSG include banks, brokers/financial intermediaries, commercial entities and proprietary traders, among others.

The management (including the risk department) of ICSG identify, track and mitigate operational, financial and regulatory risks associated with clearing activities.

ICSG is an Approved Clearing House ("**ACH**") under the Securities and Futures Act (Chapter 289) of Singapore ("**SFA**") and supervised as such by MAS. As an ACH, ICSG is subject to the regulatory requirements for ACH under the SFA and its subsidiary legislations, notices and guidelines. On 24 September 2015, ICSG was recognised as a third-country CCP under Chapter 4 of Title III of the European Market Infrastructure Regulation. In January 2020, ICSG qualified under the temporary recognition regime for non-UK central counterparties, following its earlier application to the Bank of England for recognition as a Third Country Central Counterparty.

II. SUMMARY OF MAJOR CHANGES SINCE THE LAST DISCLOSURE

In 2020, ICSG made changes to the Rules and Finance Procedures to (1) facilitate clearing of JPY-denominated contracts and provide for miscellaneous changes in relation to cash instructions relating to offshore Renminbi; (2) clarify its existing powers relating to the guaranty fund and negative interest rates.

III. GENERAL BACKGROUND ON THE FMI

General description of the FMI and the markets it serves

ICSG provides clearing services for the energy, financials and digital asset markets operated by IFSG, including:

- (a) trade registration and management;
- (b) position management, margining and collateral;
- (c) treasury services, cash payment/receipt and billing;
- (d) risk management;
- (e) default management; and
- (f) contract expiry and deliveries.

As a CCP, ICSG's systems are designed to protect the financial integrity of the markets for which it acts as CCP by maintaining collateral, facilitating payments and collections, and limiting counterparty risk. Positions are marked to market at least daily, and at regular intervals throughout the day. ICSG maintains a comprehensive set of rules and policies in addition to risk management and governance frameworks. ICSG adheres to the required regulatory standards in relation to protection of customer assets.

General organisation of the FMI

ICSG is a wholly-owned subsidiary of IFSG, which is ultimately owned by ICE, Inc. ICSG is part of Intercontinental Exchange group, a leading network of exchanges and clearing houses for financial and commodity markets.

ICSG's governance structure is summarised below.

The Board is advised by its Nominating Committee, Conflicts Committee, Audit Committee, Remuneration Committee, Risk Management Committee and its Risk Committee (a consultative committee comprised of ICSG directors as well as external parties), in addition to senior management. The President & COO reports to the Board and is the person to whom the heads of the risk, compliance, legal, operations, finance/treasury functions report. The audit function organized by ICE, Inc. on a group-wide level provides internal audit oversight of ICSG.

Legal and regulatory framework

ICSG is subject to supervision by the MAS. The MAS reviews, assesses and enforces adherence to the SFA and the regulations promulgated thereunder on an on-going basis, including but not limited to, compliance with the Securities and Futures (Clearing Facilities) Regulations 2013 and the Securities and Futures (Corporate Governance of Approved Exchanges, Approved Clearing Houses and Approved Holding Companies) Regulations 2013. ICSG complies with the statutory objectives as set out in the SFA, which applies requirements on an ACH consistent with the international risk management standards set forth in the PFMI.

ICSG provides regular, as well as event-specific, reports to MAS relating to, among other things, audited financial statements, business, and any such other information as MAS may require for the proper administration of ICSG¹. The MAS will conduct periodic on-site visits and off-site reviews, and regularly engage with ICE Clear Singapore in order to monitor compliance with the PFMI².

¹ Securities and Futures (Clearing Facilities) Regulations 2013, Regulation 14

² See Question 3 of the MAS FAQs on Compliance with the PFMIs.

ICSG accepts transactions on the basis of an open offer mechanism for exchange-traded derivatives. Under an open offer mechanism, at the point an open buy order matches with an open sell order at the relevant market, the Clearing House will become the buyer to the seller and the seller to the buyer. For off-screen trades which are registered with ICSG for clearing (i.e. Block Trades, Exchange for Physical and Exchange for Swaps) a contract will form upon complete details being sent to IFSG and accepted through their systems at which point the Clearing House becomes counterparty to the trade based on open offer.

Whenever a Contract is recorded in a customer account of a Clearing Member, a back-to-back customer-Clearing Member Transaction with equal terms will also arise between the Clearing Member and its customer. The liabilities and obligations of the Clearing House will extend only to, and be enforceable only by, Clearing Members. Some contracts will be void from inception, and some via a 'filter mechanism' enable the Clearing House to avoid clearing certain transactions. The Clearing House can also request additional Margin or restrict a Clearing Member from increasing its open position, inter alia, if a Clearing Member exceeds its Position Limit.

ICSG receives only validated data in relation to both matched trades and block trades. The trading systems are designed to ensure that only details of matched trades or complete block trades are passed to ICSG for clearing. However, the Clearing House retains a right to reject Contracts in the event of an error.

Clearing Members have rights and obligations set out in the Clearing Rules and Procedures ("**Rules**") and a Clearing Membership Agreement ("**CMA**") and, where applicable, an additional addendum to the CMA. Every Clearing Member agrees to be contractually bound by the Rules as a result of becoming a Clearing Member.

System design and operations

ICSG organises its business activities by leveraging technology, operational centres and services that are used to service the exchanges and clearing houses of the Intercontinental Exchange group.

The clearing systems of ICSG encompass a number of integrated systems, most importantly the Front End Clearing System ("**FEC**") and the Extensible Clearing System ("**ECS**"). FEC provides real-time trade processing services enabling Clearing Members to offer real-time risk management services. Within FEC, if trades are marked for give-ups, Clearing Members can initiate allocations and monitor the status.

ECS supports open and delivery position management, real-time trade and post-trade accounting, risk management (daily and intraday cash, mark-to-market/option premium, and original margin using algorithms based on the ICE Risk Model algorithm), collateral management, daily settlement and banking. ECS is a state-of-the-art system offering open, internet-based connectivity and integration options for Clearing Member access to user and account management, position reporting and collateral management.

ICSG offers real-time trade confirmation of trades booked for clearing over standard FIXML formatted messages and supports a multitude of post-trade management functions including trade corrections, trade adjustment, position transfers, average pricing and give-up processing.

The risk management systems calculate real-time original margin and variation margin requirements of intra-day trade activity. Each day, ICSG follows a consistent sequence of events illustrated as follows (all times are Singapore Standard time ("**SGT**")).

Margin payments are due no later than 10 a.m. the following day, regardless of the time zone in which a Clearing Member is located. During the day, any shortfall calculated by the risk management systems can be called from the Clearing Member. Such calls are required to be met within the hour following their issuance.

Intraday variation settlement instructions are delivered to an Approved Financial Institution ("**AFI**"). AFIs are banks that have been designated as an approved financial institution by ICSG for the purpose of making and receiving cash transfers and payment transfer orders.

IV. PRINCIPLE-BY-PRINCIPLE SUMMARY NARRATIVE DISCLOSURE

The following sections contain a principle by principle summary narrative disclosure.

PRINCIPLE 1: LEGAL BASIS

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.

As a robust legal basis for an FMI’s activities in all relevant jurisdictions is critical to an FMI’s overall soundness, this principle should be reviewed holistically with the other principles.

1. The legal basis should provide a high degree of certainty for each material aspect of an FMI’s activities in all relevant jurisdictions.

Material aspects and relevant jurisdictions

The following are the material aspects of ICSG’s activities that require a high degree of legal certainty:

- Rights and interests in financial instruments;
- Settlement finality;
- Netting;
- Arrangements for Delivery versus Payment (“**DvP**”), Payment versus Payment (“**PvP**”) or Delivery Versus Delivery (“**DvD**”);
- Open offer;
- Collateral arrangements (including margin arrangements); and
- Default procedures.

Currently, ICSG conducts business solely in Singapore and only with Singapore-incorporated Clearing Members.

Legal basis for each material aspect

ICSG obtains external counsel’s opinion on the enforceability of its Rules on Clearing Members including the scenario of that overseas Clearing Member’s insolvency.

PRINCIPLE 1: LEGAL BASIS

<p>2. An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.</p>	<p>The Rules are published on the website. Where necessary, the Clearing House may provide further guidance through circulars, which will also be posted on the website, to help clarify the intention behind relevant aspects of the Rules.</p> <p>ICSG takes legal advice on its Rules and CMA from external counsel as it determines appropriate. There is no evidence that the applicable legislation, regulations and rules are not internally consistent.</p> <p>ICSG consults publicly on changes to its rules. Prior to filing any proposed rule change, and absent any emergency or other circumstance, ICSG may consult its Risk Committee in relation to the proposed rule change where this affects its risk management framework. The Risk Committee is entitled to provide recommendations to the Board on risk-related matters affected by any rule change. ICSG must file all changes to the Rules (together with details of the purpose of such rule change) with the MAS in accordance with Regulation 30 of the Securities and Futures (Clearing Facilities) Regulations 2013.</p> <p>This governance process, as well as the procedures outlined in the Rules, allows multiple stakeholders to provide input and feedback regarding Rules amendments.</p>
<p>3. An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.</p>	<p>ICSG provides details of the legal basis for its activities on its website and in dialogue with MAS, Clearing Members and customers as required.</p>
<p>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.</p>	<p><i>Enforceability of rules, procedures and contracts</i></p> <p>All contractual obligations and rights between the Clearing House and Clearing Members are properly executed and expressly stated to be governed by the laws of Singapore. ICSG has sought legal advice to confirm that the Rules and contracts cleared by the Clearing House are enforceable and that actions taken under the Rules will not be voided, reversed or subject to stays. Further, section 67(1) of the SFA provides that the Rules operate as a binding contract between the Clearing House and Clearing</p>

PRINCIPLE 1: LEGAL BASIS

	<p>Members, and section 81C of the SFA requires that ICSG’s clearing and settlement functions will not be disrupted by Clearing Member insolvency.</p> <p><i>Degree of certainty for rules and procedures</i></p> <p>In addition, the Rules provide that in the event of inconsistencies between the Rules and applicable Singapore laws or regulations, such Singapore laws and regulations will prevail and the Rules shall be construed in a manner consistent with those laws and regulations. By complying with applicable laws, ICSG ensures that there is a high degree of certainty that the Rules will not be voided, reversed or challenged in Singapore or elsewhere.</p>
<p>5. An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.</p>	<p>Currently, ICSG conducts business solely in Singapore and only with Singapore-incorporated Clearing Members.</p>

PRINCIPLE 2: GOVERNANCE

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.

In reviewing this principle, it should be noted that if an FMI is wholly owned or controlled by another entity, the governance arrangements of that entity should also be reviewed to ensure that they do not have adverse effects on the FMI’s observance of this principle. As governance provides the processes through which an organisation sets its objectives, determines the means for achieving those objectives and monitors performance against those objectives, this principle should be reviewed holistically with the other principles.

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 considerations.

The ICSG governance structure promotes the various statutory objectives set out in the SFA, including promoting the provision of safe and efficient clearing facilities and the reduction of systemic risk. Pursuant to section 57 of the SFA, ICSG shall also, amongst other things, ensure that it: (i) will not act contrary to the interests of the public when discharging its obligations under the SFA; (ii) will have sufficient financial, human and system resources to operate a safe and efficient clearing facility, meet contingencies or disasters, and provide adequate security arrangements; and (iii) will appoint and employ fit and proper persons as its Chairman and directors.

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.

Governance arrangements

ICSG’s governance arrangements are consistent with publicly promulgated regulatory requirements, statutes and principles of common law.

Companies’ statutes in Singapore in the form of the Companies Act and associated common law principles, in conjunction with the articles of association, also regulate the general responsibilities, decision-making and proceedings of the Board and the shareholders of ICSG. For example, procedures relating to shareholder meetings and director’s meetings are amply described in these laws and regulations. The Board retains ultimate responsibility for the overall success of ICSG but is permitted to delegate

management to ICSG's officers and its own decision- and policy-making and adoption to certain of its committees (described above).

In particular, ICSG complies with the Securities and Futures (Corporate Governance of Approved Exchanges, Approved Clearing Houses and Approved Holding Companies) Regulations 2005. These requirements relate to the delegation of the Board's responsibility to committees of the Board (e.g. Audit, Remuneration and Conflicts Committees). These regulations also set out the criteria relating to the independence of certain of the directors. Terms of Reference for each of the audit, nominating, risk management, conflicts and remuneration committees detail the composition and responsibilities of these committees to which the Board delegates specific responsibilities.

Finally, the Risk Committee acts as a consultative body in connection with certain matters (principally, financial risk in connection with matters such as margin and stress-testing) composed of directors and participants in ICSG. Its recommendations are referred to the Risk Management Committee and/or the Board (as applicable) for adoption.

The Articles of Association provide that the Board has control and management of the affairs and business and has all the powers and duties set forth in the Rules. Ultimate responsibility for operations rests with the Board. The Board formulates or approves policy and oversees and directs the overall management of ICSG's business by its officers. The Board may from time to time delegate authority to the Risk Committee and other Board committees, ICSG officers or to others to act on behalf of ICSG.

Accountability to owners, participants and other stakeholders is achieved by the following methods as appropriate:

- The Board comprises two shareholder representatives;
- The Risk Committee comprises representatives for Clearing Members and their clients; and
- Information is made available upon request to the relevant authorities.

Disclosure of governance arrangements

PRINCIPLE 2: GOVERNANCE

	<p>The Articles of Association and the Terms of Reference of the various board committees are made available to relevant stakeholders but are not made available to the public. The public can access more general information about the governance of ICSG through its website or through its PFMI public disclosure document.</p>
<p>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 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.</p>	<p><i>Roles and responsibilities of the Board</i></p> <p>The Board has control and management of the affairs and business and has all the powers and duties set forth in the Rules. Ultimate responsibility for operations rests with the Board. The Board formulates or approves policy and oversees and directs the overall management of ICSG's business by its officers. The Board may from time to time delegate authority to the Risk Committee and other Board committees described below, ICSG officers or to others to act on behalf of ICSG.</p> <p>The Board has various committees to assist with its oversight functions and to ensure compliance with Singaporean laws and international standards. Regulation 8 of the Securities and Futures (Corporate Governance of Approved Exchanges, Approved Clearing Houses and Approved Holding Companies) Regulations 2005 requires ICSG to have a Nominating Committee, a Remuneration Committee, an Audit Committee, and a Conflicts Committee.</p> <p>The Nominating Committee is composed of at least five members of the Board. It identifies candidates, reviews nominations and considers resignations of each director, each member of any committee of the Board, and key persons such as the President & COO, Head of Regulation, Head of Risk and Head of Treasury and Finance.</p> <p>The Remuneration Committee is composed of at least three members of the Board. It is tasked with ensuring that ICSG maintains appropriate and suitable remuneration policies and procedures. The Remuneration Committee makes recommendations to the Board regarding the remuneration framework for directors and other officers.</p> <p>The Audit Committee, which is composed of at least three members of the Board, is responsible for the adequacy of the external and internal audit functions, including reviewing the scope and results of internal and external audits.</p>

PRINCIPLE 2: GOVERNANCE

	<p>The Conflicts Committee is composed of at least three members of the Board. It reviews the adequacy of arrangements within the ICE group for dealing with any perceived or actual conflicts of interest between ICSG’s regulatory and commercial interests as well as the adequacy of its regulation department.</p> <p>The Risk Management Committee is composed of at least three members of the Board and at least a majority of company directors who are non-executive directors (including the chairman of the Committee). Members of the Risk Management Committee are appointed by the Board. The Risk Management Committee, amongst other things, advises and makes recommendations to the Board with respect to the establishment and operation of a risk management system for managing risks on an enterprise-wide basis and the adequacy of the risk management function of ICSG.</p> <p>Consistent with international practice, ICSG has also established a Risk Committee. The Board has established and will periodically review the terms of reference of the Risk Committee. The Risk Committee is comprised of representatives of ICSG, Clearing Members and other market participants, with no single group having a majority of representation. The Risk Committee, amongst other things, makes recommendations to the Board with respect to clearing membership requirements, margin parameter settings and sensitivity analysis, default management procedures, analysis of Guaranty Fund requirements, collateral management, AFI risk reviews, liquidity analysis, and stress scenarios.</p> <p><i>Review of performance</i></p> <p>On an annual basis the Board evaluates its performance and considers whether necessary skills are represented by the individuals who serve on the Board.</p>
<p>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).</p>	<p>Board membership in ICSG is determined by its shareholder. ICSG has three non-executive directors who are independent of the management and business of ICSG, provided that such directors also sit on the board of IFSG. Such directors do not have any management or business relationship or any financial interest in the ICE group other than being directors of ICSG, IFSG and its holding company. Such arrangements have been approved by the MAS.</p>

PRINCIPLE 2: GOVERNANCE

	<p>Directors are required to have appropriate skills and incentives to fulfil their responsibilities and need to meet fit and proper criteria. Independent non-executive directors receive a non-variable director’s remuneration. The Board reviews its overall performance on an annual basis.</p>
<p>5. The roles and responsibilities of management should be clearly specified.</p>	<p><i>Roles and responsibilities of management</i></p> <p>The President & COO supervises the business and affairs of ICSG, subject to the direction of the Board, and is responsible for implementing the decisions of the Board. The President & COO reports to the Board and the officers of ICSG are accountable to the President & COO.</p> <p><i>Experience, skills and integrity</i></p> <p>The Board appoints officers and, pursuant to the Articles of Association, prescribes the authority and duties to be performed by each officer. The Board is responsible for appointing officers, including President & COO, Head of Regulation, Head of Risk and Head of Treasury and Finance, and for ensuring that they have the appropriate experience, skills, and integrity necessary to discharge operational and risk management responsibilities. In addition, the Board is charged with ensuring that risk management and internal control personnel have sufficient authority, resources, and access to the Board so that ICSG will function in accordance with the risk management framework established by the Board.</p>
<p>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</p>	<p><i>Risk management framework</i></p> <p>At least annually, the Board approves the various policies, procedures and frameworks that constitute the risk management framework, to provide for the comprehensive management of all material risks to which ICSG is, or may be exposed, including risk-tolerance levels.</p> <p>These policies set out responsibilities for periodic and systematic identifying and assessing risks, reviewing risk responses and any associated reporting, as well as identifying potential crisis scenario and appropriate response plans. Per such policies, procedures</p>



PRINCIPLE 2: GOVERNANCE

<p>sufficient authority, independence, resources, and access to the board.</p>	<p>and framework, the President & COO is responsible for all activities, including crisis management, implementing default rules and procedures, system safeguards, and recovery and wind-down plans.</p> <p>The Clearing House has a range of policies that specifically deal with the credit, market and liquidity risks that result directly from the clearing activities. Changes to these policies are subject to review by the Risk Committee before being submitted to the Board for approval.</p> <p><i>Authority and independence of risk management and audit functions</i></p> <p>ICSG operates the ‘three lines of defence’ model for risk management. The first line of defence is composed of the business lines and support functions managing day to day risks. This includes the responsibility for identification, notification, self-assessment and mitigation of risk. The second line of defence provides oversight of the risk framework and consolidated risk reporting independent from the first line. The third line of defence is composed of internal and external auditors providing independent assurance.</p> <p>The ICE group provides the internal audit function independently from ICSG’s business activities. Internal audit has the authority to review all areas of the ICE group and provides the Clearing House with an independent source of assurance on compliance controls, including risk management. Internal audit reports directly to the Board.</p> <p>The models used to manage the credit, market and liquidity risks that result directly from the clearing activities are subject to a Model Governance Framework, which amongst other caters for a periodic independent review of these models.</p>
<p>7. The board should ensure that the FMI’s design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly</p>	<p><i>Identification and consideration of stakeholder interests</i></p> <p>As a Singapore incorporated company, ICSG’s Board and management are accountable for the major decisions they take to: the shareholder; and to other relevant stakeholders, such as the various regulatory authorities who oversee its activities, Clearing Members and the market participants in respect of which it provides services. The Board includes independent non-executive board members with a variety of complementary skills, product knowledge and industry experience, and ensures that Board,</p>



PRINCIPLE 2: GOVERNANCE

disclosed to relevant stakeholders and, where there is a broad market impact, the public.

Clearing Member and other stakeholder interests are closely aligned. Other directors of the Board are drawn from the management of ICE, Inc.

The Risk Committee includes member and industry representatives and are responsible for recommending new, and changing market, counterparty, and liquidity risk related policies. In this respect it is an advisory committee to the Board. The Risk Committee receives, as appropriate, periodic reporting on risk related policy review results (incl. stress and back testing), summary exception reports (e.g. limit breaches) or any special report as requested by the committee.

Disclosure of major decisions

Non-confidential decisions of the Board will be clearly disclosed in a timely manner to Clearing Members, other relevant stakeholders, and to the MAS. Additionally, subject to confidentiality requirements, major decisions of the Board having a broad market impact will be disclosed to the public through circulars or press releases (made publicly available on the ICSG website). Further, ICSG will update the information disclosed on its website to reflect any such major decisions appropriately.

PRINCIPLE 3: FRAMEWORK FOR THE COMPREHENSIVE MANAGEMENT OF RISKS

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.

In reviewing this principle, an assessor should consider how the various risks, both borne by and posed by the FMI, relate to and interact with each other. As such, this principle should be reviewed holistically with the other principles.

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.

Risks that arise in or are born by the FMI

In operating its business, ICSG is exposed to operational, business and financial risks.

Operational risk covers all existing and newly arising risks in the context of the ongoing and continuous provision of services by the Clearing House. Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. Operational risk includes Availability Risk, Service Deficiency Risk, Damage to Physical Assets and Threats to Employee Safety, and Legal, Compliance and Business Practices Risk.

Business risk refers to inhibiting factors affecting strategic aims and objectives. Threats relating to the sales volume on the market, the supply and demand situation and the external image have a significant impact on this. Business risk includes revenue risk, cost risk, impacts from macro-economics and from regulatory evolution.

Financial Risk can be broken down into Credit Risk, Market Risk and Liquidity Risk.

Risk management policies, procedures and systems

The various policies, procedures and frameworks that constitute the Enterprise Risk Management Framework provide for the comprehensive management of all material risks to which ICSG is, or may be exposed, including risk-tolerance levels.

PRINCIPLE 3: FRAMEWORK FOR THE COMPREHENSIVE MANAGEMENT OF RISKS

The Enterprise Risk Management Framework allows ICSG to consider operational risks, business risks and financial risks. The framework also considers a range of operational stress scenarios as well as a range of combined credit-, market and liquidity stress scenarios. It sets out responsibilities for periodic and systematic identifying and assessing risks, reviewing risk responses and any associated reporting, as well as identifying potential crisis scenario and appropriate response plans.

ICSG’s business model uses data, systems, network devices and other IT equipment to deliver its business strategy and to meet customer needs. ICSG’s approach to identify, monitor and manage risk aspects is not purely system based. Some but not all of the controls for risk management are system based. ICSG uses a system-based approach to incident management.

The framework helps ensuring that ICSG is sufficiently resourced to monitor risk by these various risk categories and has appropriate independent reporting lines.

Review of risk management policies, procedures and systems

ICSG monitors a range of metrics to track whether the performance in relation to certain key risk metrics is in line with its risk appetite. These risk metrics are reported to the Risk Management Committee on a periodic basis. The Risk Management Committee is mandated to ensure that effective internal controls and risk management practices are implemented including those to achieve security, reliability, resilience and recoverability. ICSG reviews its risk framework on at least an annual basis.

The Risk Committee is responsible for recommending new, and changing market-, counterparty-, and liquidity risk related policies. In this respect it is an advisory committee to the Board. The Risk Committee receives, as appropriate, periodic reporting on risk related policy review results (incl. stress and back testing), summary exception reports (e.g. limit breaches) or any special report as requested by the committee.

PRINCIPLE 3: FRAMEWORK FOR THE COMPREHENSIVE MANAGEMENT OF RISKS

<p>2. An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.</p>	<p>ICSG provides the information to its Clearing Members and, where relevant, to their customers to enable them to manage and contain the risks they pose to the Clearing House. This information includes:</p> <ul style="list-style-type: none"> • ICE Risk Model (“IRM”) parameters and access to the methodology used via IRM; • Daily reporting of margin requirements and positions; • Results of stress testing and back testing; and • Real time access to position via GUI and API as appropriate. <p>Clearing Members are further provided with tools and incentives to manage and contain the risks they pose to the Clearing House. For instance, Clearing Members can impose system limits on the exposure per client account, have access to working orders with the ability to withdraw and have insight in processed orders on a real-time basis. Clearing Members’ contributions to the Guaranty Fund are based on the relative exposure they pose and, in case of a default auction, the order in which the Clearing Members’ contribution is used will be dependent on the active participation and bidding behaviour of Clearing Members during the default auction.</p> <p>ICSG requires Clearing Members to monitor and manage the risks they pose to the Clearing House. These requirements include:</p> <p>(i) Rules that require Clearing Members to maintain adequate risk management systems, which address the risks that such Clearing Members may pose and a requirement that Clearing Members make information and documents regarding their risk management policies, procedures, and practices available upon request;</p> <p>(ii) Rules that require Clearing Members to actively manage their positions and the ability of ICSG, should a Clearing Member fail to continue to meet membership criteria, to remove that Clearing Member from membership; and</p> <p>(iii) Rules that enable ICSG to impose risk mitigation measures, such as higher margin and Guaranty Fund requirements, on those Clearing Members who it considers pose a threat to its operations.</p>
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PRINCIPLE 3: FRAMEWORK FOR THE COMPREHENSIVE MANAGEMENT OF RISKS

	<p>In addition, the Rules give ICSG powers to discipline and take corrective action against Clearing Members who fail to comply with the Rules and the CMA. In particular, the Rules set out the circumstances in which a Clearing Member may be suspended and states when ICSG will be entitled to terminate the membership. The Rules also set out the default rules which apply following a Clearing Member default, together with the disciplinary proceedings for Clearing Members who have breached the Rules.</p>
<p>3. An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.</p>	<p><i>Material risks</i></p> <p>ICSG reviews the interdependencies of risks it is exposed to. The main interdependency it is exposed to is the potential spill-over effect of defaults between Clearing Members and AFIs, and between multiple Clearing Members. These interdependencies and the potential impact are considered as part of daily default stress testing and liquidity stress testing.</p> <p><i>Risk Management tools</i></p> <p>ICSG reviews its suite of stress liquidity scenarios involving interdependencies at least on an annual basis. The suite of default stress scenarios are reviewed semi-annually. In addition, ICSG also routinely reviews operational risk policies under its Enterprise Risk Management Framework that include, amongst others, Operational Risk Management Framework, Disaster Recovery Policy, Business Continuity Policy and Plan (see Principle 17).</p>
<p>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</p>	<p><i>Scenarios that may prevent an FMI from providing critical operations and services</i></p> <p>The scenarios that may prevent ICSG from providing critical operations and services can be broken down in scenarios with default losses, scenarios with non-default losses resulting from investments and scenarios with non-default losses not resulting from investments.</p> <p>To be able to deal with default losses, ICSG collects margin, may apply to the Guaranty Fund and may call powers of assessment from the Clearing Members. ICSG’s margin requirements and Guaranty Fund contributions are calculated such that the Clearing</p>

PRINCIPLE 3: FRAMEWORK FOR THE COMPREHENSIVE MANAGEMENT OF RISKS

authorities with the information needed for purposes of resolution planning.

House has pre-funded resources to deal with losses arising from the default of the one largest Clearing Member (and its affiliates) and the 2 financially weakest Clearing Members (and their affiliates) simultaneously.

Through its liquidity framework ICSG monitors its capability to deal with the simultaneous occurrence of a settlement bank default and the default of the one largest Clearing Member (and its affiliates) and the 2 financially weakest Clearing Members (and their affiliates) simultaneously.

To deal with non-default losses resulting from investments, ICE has Loss Assets, a certain amount of liquid resources set aside. ICSG would pass losses over and beyond Loss Assets over to the Clearing Members.

To be able deal with non-default losses not resulting from investment ICSG monitors it has sufficient financial resources to absorb 6 months of operating expenses. This would for instance allow the Clearing House to continue to operate its critical services without any source of income.

Recovery and wind-down plans

As described above, there is a range of recovery measures in place.

PRINCIPLE 4: CREDIT RISK

Principle 4: Credit risk

An FMI should effectively measure, monitor, and manage its credit exposure 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 largest participants and their affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions. All other CCPs should maintain, at a minimum, total financial resources sufficient to cover the default of the one participant and its affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions.

Because of the extensive interactions between the financial risk management and financial resources principles, this principle should be reviewed in the context of Principle 5 on collateral, Principle 6 on margin and Principle 7 on liquidity risk, as appropriate. This principle should also be reviewed in the context of Principle 13 on participant default rules and procedures, Principle 23 on disclosure of rules, key procedures and market data, and other principles, as appropriate

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.

ICSG effectively measures, monitors and manages its credit exposures to Clearing Members, arising from its payment, clearing and settlement function.

The first level of protection is formed by the Clearing Members being subject to on-going conservative membership standards, which include the assessment and monitoring of Clearing Members' credit worthiness.

The second level of protection is the appropriate collateralisation of market risk through original margin. It is calibrated to be sufficient to cover the expected cost of closing out a defaulting Clearing Member's position in normal market conditions to a 99% confidence interval. Clearing Members may be required to provide additional margin to cover concentration risk, event risks or wrong way risk.

PRINCIPLE 4: CREDIT RISK

	<p>Further protection is provided through the revaluation of cleared portfolios, on at least a daily basis, through settlement of variation margin. This practice of requiring Clearing Members to pay their losses on at least a daily basis serves to avoid the accumulation of large losses over time. Clearing Members with losing positions are held accountable as the market moves.</p> <p>ICSG monitors positions on a nearly real-time basis and may make additional intra-day margin calls in the event that certain risk thresholds are exceeded. Clearing Members are required to provide additional collateral in a timely and proscribed manner in the event of an intraday call.</p> <p>Further, with regard to the management of credit risk from banks, ICSG only uses those AFIs and financial institutions that have a minimum financial rating both from external agencies and the ICSG Counterparty Rating Systems.</p> <p>The associated policies are reviewed at least annually.</p>
<p>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.</p>	<p>To mitigate credit risk, ICSG actively monitors credit quality and credit exposure to Clearing Members and AFIs. ICSG's risk management techniques are comprehensive and specifically designed to prevent the accumulation of losses, ensure sufficient resources are available to cover future obligations and promptly detect financial and operational weaknesses.</p> <p>The assessment of credit quality is updated whenever new information is available. Where relevant share prices or CDS spread information are available, assessments of credit quality will be updated on a daily basis. Without such information being available, the assessment of credit quality will typically be updated on a quarterly basis, following financial submissions or reports. Credit exposures are recalculated and monitored on a daily basis.</p> <p>All positions are marked to market daily, and marked to market intraday to control Clearing Member credit exposure.</p> <p>Clearing Member intraday margins are recalculated and changes in margin requirement intraday added to changes in mark-to-market to reflect an overall change in intraday liability of the Clearing Member. Thresholds are in place with regard to the risk tolerance permitted by ICSG.</p>

PRINCIPLE 4: CREDIT RISK

<p>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 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.</p>	<p>N.A.</p>
<p>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 exposure for the CCP in extreme but plausible market conditions. All other CCPs</p>	<p><i>Coverage of current and potential future exposures to each participant</i></p> <p>ICSG collects margin from Clearing Members to cover its current and potential future exposure. Margin levels are calculated to be sufficient to cover the expected cost of closing out a defaulting Clearing Member’s position in normal market conditions to a 99% confidence interval. Clearing Members may be required to provide additional margin to cover concentration risk, shortfall margin, event risks or wrong way risk.</p> <p>ICSG requires Clearing Members for their margin requirements to deposit highly liquid collateral with the Clearing House that has low credit, liquidity and market risk. Conservative haircuts are applied to collateral in order to further manage market risk.</p> <p>The adequacy of margin requirements and Guaranty Fund size are tested and reviewed on a daily basis. Macro (Member portfolio level) and Micro (Product level) back-testing results are reported on a monthly basis to the Risk Committee.</p>

PRINCIPLE 4: CREDIT RISK

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.

Risk profile and systemic importance in multiple jurisdictions

ICSG is not involved in activities with a more-complex risk profile (such as clearing financial instruments that are characterised by discrete jump-to-default price changes or that are highly correlated with potential participant defaults). ICSG is not considered to be systemically important in any of the jurisdictions it operates in.

Additional financial resources

A mutualised Guaranty Fund covers in the event of a Clearing Member default and the margin held in respect of that Clearing Member proving to be insufficient to cover the subsequent cost of liquidating their position. The size of the Guaranty Fund is determined on the basis that the combination of the defaulters' margin and the total Guaranty Fund are sufficient to withstand the simultaneous default of at least the Clearing Member (and its affiliates) to which the Clearing House has the largest exposure plus the two financially weakest Clearing Members (and their affiliates), under stress conditions representing extreme but plausible scenarios.

ICSG performs default stress tests on a daily basis to test the adequacy of the Guaranty Fund. Stress Loss charges are collected in the event of inadequacy of the Guaranty Fund.

As part of the default waterfall, ICSG has a contractual right to call for additional Guaranty Fund contributions from Clearing Members in the form of assessment rights. Assessment rights are limited to two times the Clearing Member's Guaranty Fund requirement per default.

Supporting rationale and governance arrangements

ICSG has documented its approach for calculating margins in its risk policies. ICSG governs how it deals with assets under management through its investment policy. The risk policies and investment policy are subject to recommendation by the Risk Committee and approval by the Board. These policies are reviewed at least annually.

PRINCIPLE 4: CREDIT RISK

	<p>ICSG maintains a risk model governance framework that governs the models underlying the risk management methodology through controls to the development, independent validation, approval, implementation, and use and monitoring of risk models. All models are independently validated at the frequency required by the original model documentation. All significant changes must be reviewed by the person or team completing the independent validation and approved by the appropriate Model Sign-off Committee. The risk model governance framework provides guidance on what change is not generally to be considered significant.</p>
<p>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 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 positions held by a CCP's participants increases significantly.</p>	<p><i>Stress testing</i></p> <p>ICSG subjects the Clearing Member's portfolios to stress-testing on a daily basis to determine the potential impact of a simultaneous default of the Clearing Member (and its affiliates) to which the Clearing House has the largest exposure plus the two financially weakest Clearing Members (and their affiliates). ICSG uses a comprehensive set of stress test scenarios representing extreme but plausible market conditions. Macro (Member portfolio level) and Micro (Product level) back-testing results are reported on a monthly basis to the Risk Committee.</p> <p>In addition, ICSG reviews and documents the supporting rationale for the size of the Guaranty Fund on a quarterly basis and reports the results of its review to the Risk Committee. The Risk Committee's opinion on the level of the Guaranty Fund, including any recommended adjustments, will be recommended to and considered by the Board.</p> <p><i>Review and validation</i></p> <p>ICSG uses a comprehensive suite of stress test scenarios representing extreme but plausible scenarios. The suite of scenarios is reviewed on at least a semi-annual basis on relevance and completeness.</p> <p>ICSG maintains a risk model governance framework that governs the models underlying the risk management methodology through controls to the development, independent validation, approval, implementation, and use and monitoring of risk models.</p>

PRINCIPLE 4: CREDIT RISK

<p>A full validation of a CCP’s risk-management model should be performed at least annually.</p>	<p>All models are independently validated at the frequency required by the original model documentation and approved by the Model Sign-off Committee.</p>
<p>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.</p>	<p>ICSG considers a wide range of scenarios when conducting stress testing. These include historical scenarios theoretical scenarios and hypothetical scenarios, as well as combinations of them.</p> <p>Historical scenarios are based on significant historic events in terms of extreme price movement and/or correlation change for a relevant product group. Depending on the historic event, for some events the actual historic percentage shift can be applied to contemporary positions and prices, for other events historic percentage shifts are re-calculated and applied to contemporary positions and prices. The aim being to replicate as accurately as possible the historic event that has been selected across the full range of cleared products and apply these stress-tests to contemporary positions. This type of scenario replicates what potentially could happen to a Clearing Member’s portfolios if the event were repeated and is based on applying the same percentage price movements.</p> <p>Theoretical scenarios are based on statistically plausible hypothetical scenarios. The stress shocks are defined by using a technique that combines principal component analysis and extreme value theory (EVT) For each key principal component, the EVT derives the stress shock calibrated to 99.9% confidence interval. The calibrated shocks are then applied to individual risk factors to generate the losses.</p> <p>Hypothetical scenarios are forward looking scenarios that are not purely based on models or history. Deriving these scenarios involves both subjective judgment and imagination. It is important that these are exercised by persons with expert knowledge of the particular markets involved, including the factors that might drive extreme price changes in those markets.</p> <p>ICSG supplements the analysis by conducting reverse stress testing, which examines the magnitude of market shifts required to exhaust the available financial resources.</p>

PRINCIPLE 4: CREDIT RISK

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 safe and sound manner.

Allocation of credit losses

The allocation of credit losses that arise in the event of an individual or combined default of participants are addressed in the Rules. ICSG has established a mutualised Guaranty Fund to be used in the event of a Clearing Member default and the margin held in respect of that member proving to be insufficient to cover the subsequent cost of liquidating their position. The Clearing House contributes a total of 25% of the Guaranty Fund, comprising two layers of 15% upfront and 10% after non-defaulting Clearing Members' contributions. Clearing Members' Guaranty Fund contributions are calculated on the basis of their relative exposure to the Clearing House. Any adjustment to the size of an individual Clearing Member's contribution will be communicated individually by letter.

In the case of losses exceeding the funded financial resources available, ICSG may also impose assessments on Clearing Members, subject to a per default assessment limit (2 times their Guaranty Fund contribution).

Replenishment of financial resources

The Rules set out that Clearing Members must replenish Guaranty Fund contribution upon demand.

PRINCIPLE 5: COLLATERAL

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.

Because of the extensive interactions between the financial risk management and financial resources principles, this principle should be reviewed in the context of Principle 4 on credit risk, Principle 6 on margin and Principle 7 on liquidity risk, as appropriate. This principle should also be reviewed in the context of Principle 14 on segregation and portability, Principle 16 on custody and investment risk, and other principles, as appropriate.

1. An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

The Collateral Management Policy sets out the arrangements by which ICSG considers the eligibility of assets as acceptable collateral.

ICSG accepts collateral with low credit, liquidity and market risks to manage its Clearing Member's credit exposure. ICSG takes into account the following broad general principles when accepting assets as collateral:

- (i) The asset must be able to be re-valued on a daily basis and quoted intraday by third-party financial market news information providers;
- (ii) Assets acceptable as collateral must be highly liquid with an active sale or repurchase agreement market with a diverse group of buyers and sellers or are secured instruments that are freely convertible into cash;
- (iii) The market for the asset should have sufficient price history to permit the ability to analyse the statistical returns of such assets;
- (iv) The asset must comply with all relevant legal and regulatory requirements, including in relation to enforceability of title-transfer arrangements in the relevant jurisdiction;

(v) ICSG must have the operational framework and necessary technology in place to handle deposits, liquidation and return of the asset;

(vi) Cash collateral shall only be in currencies specified by ICSG

(vii) Where the asset is a financial instrument, the following additional principles apply:

- a. Only “vanilla” forms of that instrument will be accepted. Instruments containing special features such as embedded optionality or perpetual bonds will not be accepted. Inflation indexed government bonds are accepted;
- b. Financial instruments issued by a Clearing Member, or any entity that is part of the same group as the Clearing Member, will not be accepted from that Clearing Member;
- c. Financial instruments issued by a CCP or any entity whose business involves providing services critical to the functioning of the Clearing House will not be acceptable (unless that entity is a central bank of issue of a currency in which the CCP has exposures); and
- d. The financial instrument must be of low credit risk.

(viii) Where market conditions dictate, the Clearing House is entitled to review and remove securities from the list of accepted collateral and vary the applicable haircuts at any time.

ICSG publishes the list of "**Permitted Cover**" (acceptable collateral) on its website. ICSG monitors collateral limits on a daily basis.

ICSG considers cases where acceptable collateral could pose wrong-way risk and may impose additional restriction in such cases. Clearing Members are not permitted (via rules and policy) to provide collateral referenced on themselves. Currently ICSG does not assess such wrong-way risk to be present.

PRINCIPLE 5: COLLATERAL

<p>2. An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.</p>	<p><i>Valuation practices</i></p> <p>The Collateral Management and Collateral Haircut Policy set out the collateral valuation and haircut procedures. ICSG revalues collateral daily and also monitors price movements of all acceptable collateral three times a day in order to determine price moves remain within haircut rates.</p> <p>The Collateral Management policy does not specify any procedure for exercising discretion in valuing assets when market prices do not represent their true value.</p> <p><i>Haircutting practices</i></p> <p>ICSG requires and enforces conservative haircuts. Haircuts applied to Permitted Cover and cross currency haircuts (where collateral is posted in a currency other than that of the margin liability) are set to account for the risk associated with fluctuations of collateral asset prices. To establish collateral haircuts ICSG considers estimates of two risk measures: 5-day 99% Expected Shortfall and 2-day 99.9% Value-at-Risk.</p> <p>As part of its daily risk control procedures, ICSG conducts back-testing to verify that the risk model is performing properly. Each asset's price move is compared to the haircut currently in production. Should a breach of the haircut level occur for a particular security, ICSG will investigate the cause of the collateral breach. Where considered necessary, the haircut deemed for the relevant issuer and tenor will be recalculated in accordance with the standard collateral haircut methodology.</p>
<p>3. In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.</p>	<p>The collateral haircut model has some features in place in order to avoid pro-cyclical variation in haircuts. These are:</p> <ol style="list-style-type: none"> 1. Taking into account lookback periods stretching from 1st March 2005 where available, 2. Utilising the most conservative of Mean Average Deviation (MAD) over lookback period, (Exponentially Weighted Moving Average) EWMA MAD and a minimum MAD.

PRINCIPLE 5: COLLATERAL

	<p>3. Having a haircut floor of at least 1%.</p> <p>For cross currency haircuts where the collateral is posted against an original margin liability denominated in a pegged currency, the haircut is derived from largest depegging humps observed by 5 major Asia currencies during the Asian Financial Crisis of 1997-1999 over a 5 day holding period.</p>
<p>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.</p>	<p>The Collateral Management Policy sets out how ICSG deals with concentrated holdings of collateral. ICSG sets absolute limits per type of permitted cover that can be posted against a Clearing Member's requirements. The purpose of these limits is to minimise liquidity risk in the event that it is necessary to liquidate that collateral. Limits are determined with reference to the daily trading volume of the asset. Further, in order to ensure diversification across the collateral lodged by the Clearing Member, ICSG applies concentration limits for each collateral type that determines the total value of collateral as eligible cover. These limits mitigate concentration risk in the collateral of a Clearing Member and ensure a large portion of a Clearing Member's collateral is not exposed to idiosyncratic risk from one particular issuer.</p> <p>ICSG monitors the collateral limits set out above on a near to real-time basis. Breaches are reviewed internally and the Clearing Member concerned will be contacted and advised on the nature of the breach and the actions required to rectify it. Actions a Clearing Member may be required to take in order to remediate the breach include posting additional collateral reducing positions and/or removal of some portion of a collateral type that is in breach of a limit.</p> <p>In order to reduce the operational burden of enforcing the relevant absolute and relative limits, the right to enforce the limit may be waived in such circumstances whereby doing so does not result in a material change in risk.</p> <p>The Collateral Management Policy is subject to a review at least annually.</p>

PRINCIPLE 5: COLLATERAL

<p>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.</p>	<p>Cross-border collateral has at least one of the following foreign attributes: (a) the currency of denomination, (b) the jurisdiction in which the assets are located, or (c) the jurisdiction where the issuer is established.</p> <p>With regard to the currency of nomination, ICSG applies cross currency haircuts where collateral is posted in a currency other than that of the margin liability.</p> <p>With regard to the jurisdiction in which the assets are located, all Permitted Cover needs to be held at a settlement bank or custodian based in Singapore.</p> <p>With regard to the jurisdiction where the issuer is established, ICSG does accept a range of foreign government bonds as collateral. ICSG has obtained an external legal opinion which relates to the enforceability of its taking collateral by way of title transfer arrangements.</p> <p>As at 31 December 2020, the only active Permitted cover is US Government Securities.</p>
<p>6. An FMI should use a collateral management system that is well-designed and operationally flexible.</p>	<p><i>Collateral management system design</i></p> <p>The primary features of ECS, the collateral management system are:</p> <ul style="list-style-type: none"> • Real time update of positions; • Overnight mark to market valuation; • Hard limits on type and concentration of permitted collateral at ISIN level; • Separate review and approval of collateral change requests initiated by participants; and

PRINCIPLE 5: COLLATERAL

- Automatic confirmation checks that requests for changes in collateral will not result in exposures not having sufficient collateral to manage the financial risks that arise from the exposure.

The collateral management system is fully flexible to accommodate changes in acceptable collateral and also to changes in concentration limits both at the ISIN level.

As ICSG only accepts collateral to which it has full title, the collateral management system does not have specific features that facilitate tracking the reuse of collateral and the rights to the collateral.

Operational flexibility

The collateral management system is designed to be agnostic of volume even during periods of market stress. Members initiate requests to amend collateral. ICSG's systems take decisions to accept or reject changes (determined by the rules established to monitor acceptable collateral and concentration limits) with minimal manual intervention. Operations are staffed during publicised opening times.

PRINCIPLE 6: MARGIN

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.

Because of the extensive interactions between the financial risk management and financial resources principles, this principle should be reviewed in the context of Principle 4 on credit risk, Principle 5 on collateral and Principle 7 on liquidity risk, as appropriate. This principle should also be reviewed in the context of Principle 8 on settlement finality, Principle 17 on operational risk, and other principles, as appropriate.

1. A 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.

Description of margin methodology

ICSG holds original margin in respect of all open positions. Original margin is calculated using the historical price volatility of the contract being margined. It is collected to ensure Clearing Members can meet their variation margin obligations for the next day, should the market move significantly against the positions the Clearing Members are carrying. ICSG calculates margin requirements using a system that determines the loss a Clearing Member could incur due to prices moves over the liquidation period based on historical market prices and volatility.

Rule 502 imposes the right of ICSG to call and collect margins from its Clearing Members and to set the eligibility and form (including use of haircuts) of collateral that may be lodged by members with ICSG. ICSG has documented its margin policies to address current and potential future exposures. ICSG discloses through its quantitative disclosures the range of models and their key parameters that were considered in setting margin rates.

ICSG publishes the margin files at its website which may be used by market participants in their individual risk management efforts.

Credit exposures

ICSG considers primarily the following factors when calculating margin:

PRINCIPLE 6: MARGIN

	<ul style="list-style-type: none"> • Potential price moves at contract level under normal market conditions to a 99% confidence level, marked-up to cater for pro-cyclical events; • Certain offsetting portfolio effects across contracts that qualify for inter-commodity spread credits and for contracts that qualify strategy spread margin rates; • Impact of concentrated market positions; • Wrong-way risk; and • Delivery risk. <p>By considering these factors ICSG aims to have margin requirements that are commensurate with the risks and attributes of the contract it clears as well as risks and attributes of the portfolio of the Clearing Member holding it.</p> <p><i>Operational components</i></p> <p>The Finance Procedures of the Rules set out the details of settlement times (including Bank Holidays) and arrangements for settling in different currencies. ICSG reserves the right to levy for late payment or settlement and may consider if there are sufficient grounds for declaring the relevant member in default.</p>
<p>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.</p>	<p><i>Sources of price data</i></p> <p>ICSG will use relevant markets’ settlement prices from the exchange for ICSG’s margin system. ICSG has the power to override the settlement prices in cases where there are errors or that it deems that the supplied prices are not reflective of current market conditions.</p> <p><i>Estimation of prices</i></p> <p>Where settlement price data is not available, such as for new contracts, ICSG may reference market data from a similar product as a proxy for settlement prices. Such data set will be subject to a data review and cleansing process.</p>

PRINCIPLE 6: MARGIN

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 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 sub portfolio 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.

Initial margin model

Margin requirements are calculated separately for house and segregated client account, using the IRM algorithm. IRM is a parameter driven calculation which requires a number of different types of parameter to be set and reviewed for each cleared contract, these are:

- Scanning range;
- Inter-month spread charge rates;
- Inter-contract spread credit rates; and
- Strategy spread margin rates (Condors and Butterflies).

All parameters; scanning ranges, inter-month spread charges and inter-commodity spread rates, will be calculated to a confidence level of 99%. This will ensure that ICSG holds sufficient original margin to cover the cost of closing-out a defaulting member’s position in all but the most extreme of market conditions.

Closeout and sample periods

ICSG assumes a 1-day close-out period for calculating its original margin rates. This period is deemed sufficient to liquidate or adequately hedge open positions in case of a default. Where positions are highly concentrated ICSG requires a Clearing Member to lodge extra margin under the Concentration Policy.

When considering historical sample data, the Clearing House uses the most conservative estimates for multiple time horizons ranging from 60 to 250 days or uses time series up to 500 days where recent observations get a higher relative weight depending on the product margin model used.

Procyclicality and wrong-way risk

PRINCIPLE 6: MARGIN

	<p>In order to cater for procyclicality, ICSG includes observations from a stressed time period or imposes a floor when calculating margin rates.</p> <p>ICSG has a wrong-way risk policy that identifies and describes the mitigation in place to address wrong-way risk inherent in adverse correlations between counterparty creditworthiness and market movements. The policy objectives are to formalise identification of such risks, provide specific tools to mitigate each type of wrong-way risk and provide incentives for Clearing Members to avoid wrong-way risk where possible.</p>
<p>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.</p>	<p>ICSG marks or settles to market cleared positions or trades on a daily basis. Marking or settling to market results in either the collection and payment of profits and losses based on exchange settlement prices (variation margin) or based on mark to market values. Although settling or marking to market encompass different process both achieve the same outcome which is to ensure losses are properly accounted for and trades and positions are held at current market value.</p> <p>ICSG has an intraday margining system that considers updated prices and positions, enabling ICSG to make a combined price and size driven intraday margin call at any time during the day. The Intraday Margin Call Policy identify the various thresholds which if exceeded require specific actions and communication with Clearing Members, leading up to the making of an intraday margin call.</p> <p>Intraday margin call policy can be enforced under rule 503(c). Intraday Margin Calls must be paid within one hour of being issued.</p>
<p>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 other product. Where two or more CCPs are authorised to offer cross-margining, they must have</p>	<p><i>Portfolio margining</i></p> <p>Inter-contract spread credit parameters are used to recognise that holding positions with opposite signs in two or more different contracts which are highly correlated is less risky than holding a directional position in only one of the contracts. The parameter itself is set as a percentage credit against the scanning range from the individual legs of the inter-commodity spread position.</p>

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<p>appropriate safeguards and harmonised overall risk-management systems.</p>	<p>When deciding whether to provide risk offsets, ICSG takes into account the level of correlation. There also must be an economic rationale for provision of a risk offset.</p> <p>Inter-commodity spread credits are also set per tier, with the tiers defined as one or more inter-month tier. The spread credit is then applied between each of the inter-commodity tiers.</p> <p><i>Cross-margining</i></p> <p>There is no cross-margining between ICSG and any other CCP.</p> <p><i>Robustness of methodologies</i></p> <p>On a daily basis, the backtesting regime provides feedback on the performance of the margin model, including portfolio offsets provided. The goal is to monitor the model by evaluating the number of actual losses against the number of predicted losses to identify exceptions. The total number of exceptions is evaluated against the desired risk quantile and the model is considered well calibrated if the number of exceptions is consistent with the risk quantile. If the model calibration consistently demonstrates exceptions outside of the quantile, ICSG will review the models and recommend revisions to Risk Committee for their review, and thereafter the Board.</p>
<p>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</p>	<p><i>Backtesting and sensitivity analysis</i></p> <p>Original margin requirements are calculated to a 99% confidence level for price moves over the relevant liquidation time horizon at the individual product parameter level and at Clearing Member account level. In order to check margin requirements were sufficient to cover 99% of market price movements, back-testing is conducted against actual market price movements. Where the absolute change in profit and loss ("P/L") for a portfolio (or contract) is greater than margin for that portfolio (or contract) this is referred to as a "breach".</p>

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assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.

Margin requirements for all member portfolios are calculated separately for house account and segregated client account positions. The Macro back-test compares separately the house and client portfolio margin requirements against the historic P/L for the same account to ensure that 99% of market moves are covered. The margin figure to be tested is the overnight Original Margin requirement as calculated at COB each business day using the IRM algorithm separately for house and client accounts.

The P/L used is the Variation Margin (“VM”) amounts that are calculated daily as a standard part of overnight processes and are called (posted) from (to) member accounts for payment by 10 a.m. the following business day. The VM amounts include realised and unrealised P/L arising from positions held overnight the previous night, revalued at today’s rates.

Each individual contract’s scanning range parameter is also checked on a daily basis to ensure that they continue to meet the 99% confidence level. Where a breach of a parameter is observed, commentary is provided and saved. This commentary is then taken into account when the parameters are next reviewed.

ICSG performs some sensitivity analysis on its margin rates itself on a daily basis and analyses its impact on member margin requirements.

Margin model performance

ICSG has not identified potential shortcomings of the margin model based on backtesting and sensitivity analysis. If it were to identify shortcomings of the margin model, ICSG would investigate with the aim to remediate the shortcomings. In the meantime, it would likely increase margin requirements as to maintain 99% performance levels.

ICSG report the back-testing results on a monthly basis to the Risk Committee. Clearing members and clients only have access to detailed back testing results and analysis for their own portfolios, where applicable.



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<p>7. A CCP should regularly review and validate its margin system.</p>	<p>ICSG has put in place a Risk Model Governance Framework to control its models, which includes the review and independent validation of the models on an annual basis. The findings of the independent validator are shared with the Risk Committee and with the MAS.</p>
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PRINCIPLE 7: LIQUIDITY RISK

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.

Because of the extensive interactions between the financial risk management and financial resources principles, this principle should be reviewed in the context of Principle 4 on credit risk, Principle 5 on collateral and Principle 6 on margin, as appropriate. This principle should also be reviewed in the context of Principle 8 on settlement finality, Principle 13 on participant default rules and procedures, Principle 23 on disclosure of rules, key procedures and market data, and other principles, as appropriate.

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.

ICSG manages its liquidity risk through its liquidity risk management framework and its investment policy.

The liquidity risk management framework is designed so that there is a high level of confidence in ICSG's ability to effect payment and settlement obligations in all relevant currencies as they fall due, including where appropriate intraday. It also includes the assessment of ICSG's potential future liquidity needs under a wide range of potential stress scenarios.

Liquidity stress tests are designed to assess and determine whether the Clearing House has sufficient resources to meet its liquidity needs, in stressed and in extreme but plausible situations. Liquidity stress tests are performed daily (for the previous days' positions). The default stress loss value is based on extreme scenarios.

Liquidity stress test scenarios include the liquidity needs of the Clearing House to facilitate the provision of its clearing services. The liquidity risk management framework addresses the liquidity needs stemming from relationships with any entity towards which the Clearing House has a liquidity exposure including, being:

- Clearing Members (liquidity risk: Holding and liquidation of clearing positions may incur losses (Variation Margin loss));
- AFIs (liquidity risk: no access to funds held on a ICSG account at the AFIs/ commercial banks);

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	<ul style="list-style-type: none"> • Investment Manager (liquidity risk: no access to funds invested in liquidity funds and redemption proceeds are not returned/ delayed); • Custodian banks (liquidity risk: The inability to transfer assets will delay liquidation of assets of defaulting members); and • Interdependencies (between the above parties) <p>The primary objectives of as set out in the investment policy are to:</p> <ul style="list-style-type: none"> • Safeguard the principal (safety); • Provide sufficient liquidity to meet all operational requirements (same day liquidity in Asia time zone); and • Obtain a reasonable rate of return (yield).
<p>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.</p>	<p>ICSG uses web based proprietary access tools to perform enquiry activities on its bank accounts and utilise SWIFT message confirmations to monitor payment status and derive cash balances during the day. Each morning the total and available cash position is established and Clearing Members must inform the Clearing House of their cash withdrawal requests by 12p.m. This allows ICSG to rebalance cash positions or carry out investment activities in accordance with its investment policy.</p>
<p>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</p>	<p>N.A.</p>

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<p>affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.</p>	
<p>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 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.</p>	<p><i>Sufficient liquid resources</i></p> <p>ICSG measures, monitors, and manages its liquidity requirements and resources through its liquidity risk management framework. This framework is designed to ensure that ICSG has sufficient liquid resources to meet all of its payment obligations with a high degree of confidence.</p> <p>ICSG's liquidity risk management framework includes daily stress testing of liquidity requirements to meet intra-day, same-day, and multi-day settlement obligations under extreme but plausible market conditions. Such stress scenarios are designed to ensure that the combination margin requirements, default fund contributions and other financial resources are sufficient to withstand the default of at least the Clearing Member (and its affiliates) to which the Clearing House has the largest aggregate credit exposures and the two financially weakest Clearing Members in extreme but plausible market conditions. Stress scenarios also include reverse stress tests to identify the extreme default scenarios and extreme market condition under which liquid resources would be insufficient.</p> <p>Size and availability of qualifying liquid resources to cover identified minimum liquid resource requirements in each currency to effect settlement of payment obligations, are monitored under the Liquidity Risk Management Framework. Stress tests results are reported to senior management daily and to the Board and Risk Committee on a monthly basis.</p> <p><i>Risk profile and systemic importance in multiple jurisdictions</i></p> <p>ICSG is not involved in activities with a more-complex risk profile (such as clearing financial instruments that are characterised by discrete jump-to-default price changes or that are highly correlated with potential participant defaults). ICSG is not considered to be systemically important in any of the jurisdictions it operates in.</p>

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<p>5. For the purpose of meeting its minimum liquid resource requirement, an FMI’s qualifying liquid resources 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.</p>	<p><i>Size and composition of qualifying liquid resources</i></p> <p>ICSG tests on a daily basis the sufficiency of its liquid resources. The liquidity stress test scenarios have been constructed so as to capture the main liquidity risks faced by the Clearing House. The actual amount of liquidity risk varies daily, in accordance with Clearing Members’ clearing positions, clearing events (such as deliveries) and investment counterparty positions.</p> <p><i>Availability and coverage of qualifying liquid resources</i></p> <p>Liquid resources include cash held at AFIs (less projected outflows), the Clearing House’s own funds and a committed loan facility.</p> <p>ICSG has access to established and reliable brokers to liquidate non-cash assets and can exchange cash into required currency through APS/ commercial banks. On that basis, ICSG expects to have the capability to convert non-cash assets into cash as well to convert cash into required currencies within the day.</p>
<p>6. An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid 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</p>	<p><i>Size and composition of supplemental liquid resources</i></p> <p>Except for uncommitted intraday liquidity provided by settlement banks, ICSG has no supplemental liquid resources in place.</p> <p><i>Availability of supplemental liquid resources</i></p> <p>N.A.</p>

PRINCIPLE 7: LIQUIDITY RISK

<p>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.</p>	
<p>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 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.</p>	<p><i>Use of liquidity providers</i></p> <p>ICSG’s primary source of liquidity is a direct consequence of the Investment Policy, whereby the current emphasis is on holding liquid resources with AFIs and commercial banks. This ensures that the potential liquidity required as indicated through the liquidity stress test scenarios, is available on a day to day basis, even though it is not actually utilised by ICSG.</p> <p><i>Reliability of liquidity providers</i></p> <p>ICSG monitors the financial health and operational performance of the AFIs ICSG limits its exposure to a single institution by investing cash under management across multiple institutions.</p> <p>Procedures to access its liquid resources are tested on a periodic basis.</p>
<p>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.</p>	<p>Although ICSG accepts Singapore Dollar in cash as well as Singapore Government Bonds as collateral, balances under management are insufficient to warrant a dedicated process with MAS as a central bank to manage associated liquidity risks.</p> <p>ICSG has no access to central bank accounts, payment services or security services for collateral denominated in other currencies.</p>
<p>9. An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress</p>	<p><i>Stress test programme</i></p>

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<p>testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to 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 rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.</p>	<p>On a daily basis, ICSG conducts and evaluates the results of liquidity tests in order to determine liquidity requirements. It looks at the intra-day and end-of-day requirements under normal and extreme but plausible conditions. The liquidity risk management framework is designed to identify early warning signals of potential liquidity stress events. These signals are reported and escalated to the appropriate management level. Timely actions can be undertaken to mitigate the impact and/or likelihood of liquidity shortfall prior to an actual liquidity event. When required, ICSG adjusts the availability of its liquidity resources. Results of liquidity tests are circulated to senior management and to the Risk Committee on a periodic basis.</p> <p><i>Stress test scenarios</i></p> <p>When performing the analysis of the liquidity scenarios, ICSG considers the impact on AFIs, depositories, liquidity providers and other entities, and the impact any interlinkages between Clearing Members and other roles they may have. ICSG also considers multiday scenarios and the probability of multiple firm failures and contagion effect among Clearing Members when evaluating the stress scenarios for liquidity.</p> <p><i>Review and validation</i></p> <p>Annually, this Framework will be reviewed and revised by the Head of Treasury and Head of Risk (for reviewing of liquidity stress test scenarios). Recommendations for changes will be proposed to the Risk Committee and if approved, will be submitted to the Risk Management Committee for further approval.</p>
<p>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</p>	<p><i>Same day settlement</i></p> <p>ICSG's Investment policy and liquidity risk management framework are designed so that the Clearing House holds an amount of cash (or short-term investments that are typically near cash) at least equivalent to its calculation of the potential stressed losses</p>

PRINCIPLE 7: LIQUIDITY RISK

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.

that could arise from the Clearing Member (and its affiliates) to which the Clearing House has the largest aggregate credit exposures and the two financially weakest Clearing Members.

In an extreme event, ICSG has the ability under Rule 502(g) to impose, amend or withdraw additional Margin requirements in respect of any Clearing Member at any time and at its discretion, which might be used to effectively retain collateral amounts that might otherwise be returned to Clearing Members as margin. Further, under Rule 110 (b) and 110(c) and the definition of "Failure to Pay", in certain circumstances, ICSG may extend timings in relation to submission of information or making payments when ICSG in its discretion considers that such extension is necessary or in the best interests of the Clearing House in certain circumstances. Any extension or waiver for any length of time longer than 3 Business Days must be approved by the Board.

Replenishment of liquidity resources

The Rules set out that Clearing Members must replenish Guaranty Fund contribution upon demand. The Rules do not specifically cater for the replenishment of other liquidity resources.

PRINCIPLE 8: SETTLEMENT FINALITY

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.

In reviewing this principle, it should be noted that this principle is not intended to eliminate failures to deliver in securities trades. The occurrence of non-systemic amounts of such failures, although potentially undesirable, should not by itself be interpreted as a failure to satisfy this principle. This principle should be reviewed in the context of Principle 9 on money settlements, Principle 20 on FMI links, and other principles, as appropriate.

1. An FMI's rules and procedures should clearly define the point at which settlement is final.

Point of settlement finality

Part 12 of ICSG's rules sets out the basis on which the settlement of a payment, transaction instruction or other obligation is final, irrevocable and unconditional.

The exact point of settlement finality under the Rules differs depending on the type of transfer order which is entered into the ICSG payment system (the "**Payment System**"). Broadly, the Payment System means the system operated by ICSG consisting of the formal arrangements between itself and Clearing Members. Such formal arrangements include the Rules and the Procedures and the standardised arrangements (including, among other things, the CMAs and other agreements involving ICSG, Clearing Members and AFIs) and related functionality for the effecting of transfer orders between ICSG and Clearing Members.

ICSG operates a Payment System whereby transfer orders are made through the APS account structure for the collection and payments of amounts due in respect of contracts or collateral. Such structure involves AFIs (through which payments between Clearing Members and ICSG are made. ICSG requires each Clearing Member to open one or more accounts with an AFI nominated for the purposes of making and receiving cash transfers in respect of amounts due in respect of that Clearing Member's proprietary account and one or more accounts with an AFI nominated for the purposes of making and receiving cash

PRINCIPLE 8: SETTLEMENT FINALITY

transfers in respect of amounts due in respect of that Clearing Member's customer account (each such account maintained with an AFI being a "Nominated Account").

In order to ensure that the provisions in the Rules on settlement finality are legally binding, Clause 5.2 of the CMA requires each Clearing Member at all times to have in place a duly executed Third Party Authority Form in favour of each AFI used by it and in respect of (each of) its Nominated Account(s). Under the same provision ICSG is appointed as the Clearing Member's lawful attorney and agent, pursuant to which appointment ICSG may take any action as it in its discretion determines in connection with the Clearing Member's Nominated Account(s). The power of attorney and agency give ICSG the power to instruct AFIs to receive balance and transaction information, including account statements and transaction advices, from the AFIs in relation to the Nominated Account(s) at any time. Pursuant to the same provision, Clearing Members agree and acknowledge that the AFI will act upon any instructions received from the Clearing House in relation to the Nominated Account(s), notwithstanding that such instructions may result in an overdraft on any of the Nominated Account(s), without any further reference to, or authority from, that Clearing Member. Finally, Clearing Members will represent, warrant and acknowledge to ICSG that instructions given by ICSG in relation to the Nominated Account(s) shall be deemed to be, and may be treated by any AFI as, instructions given on behalf of the Clearing Member. This process is designed to ensure that all payments made by the AFI under ICSG's settlement finality rules will, immediately upon execution, be irrevocable and the AFI will not be able to reverse the payment from the ICSG account without receipt of authorisation from ICSG evidenced in writing.

ICSG has taken legal opinions on enforceability of its Rules in all relevant jurisdictions, including in connection with settlement finality.

Finality in case of links

N.A.

PRINCIPLE 8: SETTLEMENT FINALITY

<p>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.</p>	<p><i>Final settlement on the value date</i></p> <p>It is ICSG's practice through its rules and procedures to settle on value day or with same day settlement. Delivery positions are managed and monitored on an ongoing basis. Participants have access to relevant documented procedures. The capability of members to deliver is included within membership assessment processes.</p> <p><i>Intraday or real-time settlement</i></p> <p>ICSG provides real-time settlement. Confirmation of settlement is generated by the delivery system and communicated via an automated messaging system to the relevant member. There is no batch processing of settlement instructions during the settlement day.</p>
<p>3. An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.</p>	<p>The settlement finality of Payment Transfer Orders and Securities Transfer Orders is provided for under the Rules as follows:</p> <p>(i) Payment Transfer Orders become irrevocable and unconditional at the time when the AFI of the account from which payment is to be made sends a SWIFT confirmation message, other electronic message, fax, telephone or other message confirming that the relevant payment will be or has been made (subject to certain provisions for corrections of errors); and</p> <p>(ii) In respect of Securities Transfer Orders:</p> <ul style="list-style-type: none"> a) position transfer orders become irrevocable when the definitive record of the open contract position of the Clearing Member is updated as a result of a successful position transfer clearing run in the ICSG systems to reflect the transfer, assignment or novation of contracts which are given effect pursuant to such position transfer order; b) collateral transfer orders become irrevocable when either ICSG receives the non-cash collateral, or when any related securities transfer order becomes irrevocable; and c) IFSG Block Clearing Orders become irrevocable when ICSG becomes party to resulting contracts with Clearing Members.



PRINCIPLE 8: SETTLEMENT FINALITY

Moreover, the Rules limit the circumstances in which transfer orders may be amended or cancelled, such as manifest or proven error, the contract being void ab initio, or the transaction not being eligible for clearing or not accepted for clearing.

The process by which transfer orders are effected in ICSG's systems, in conjunction with the APS account structure, ensures that the point of settlement finality for contracts cleared on ICSG is clear and definite. The Rules clearly define the point where after which unsettled payments, transfer orders or other obligations may not be revoked by a Clearing Member. Further, confidence in the clearing function of ICSG is maintained because once settlement finality is achieved, transfer orders become irrevocable in the manner described above and are thus protected from general laws of insolvency, such that transfer orders can be seen to completion notwithstanding an insolvency of a Clearing Member.

PRINCIPLE 9: MONEY SETTLEMENTS

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.

This principle should be reviewed in the context of Principle 8 on settlement finality, Principle 16 on custody and investment risks, and other principles, as appropriate.

1. An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.

ICSG uses the APS to transfer funds to and from Clearing Members. The APS consists of a number AFIs, which hold physical accounts for the Clearing Members and the Clearing House.

The APS supports the following currencies, covering the settlement and margining of all products for which ICSG offers clearing services: For Original Margin: Chinese Renminbi (CNH), U.S. Dollars (USD), Singapore Dollars (SGD) and Euros (EUR). For Variation Margin: Chinese Renminbi (CNH), Singapore Dollars (SGD) and U.S. Dollars (USD).

Clearing Members must complete the APS Mandate (Third Party Authority form) for each account/currency pair which authorises the Clearing House to issue direct debits for amounts due to it in accordance with the Rules.

Although ICSG accepts Singapore Dollar in cash as collateral, flows and balances under management are insufficient to warrant a dedicated process with MAS as a central bank for money settlements.

ICSG has no access to central bank money in other currencies.

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 risk.

ICSG uses the APS to transfer funds to and from Clearing Members. The APS consists of a number AFIs, which hold physical accounts for the Clearing Members and the Clearing House. An AFI should meet certain criteria including having an S&P short-term A-1 and long-term A rating or better (or the equivalent from other approved agencies as confirmed by the Clearing House).

PRINCIPLE 9: MONEY SETTLEMENTS

	<p>The financial institutions that ICSG uses for settlement are reputable organisations and are licenced and supervised by the MAS under the Banking Act (Chapter 19) of Singapore.</p>
<p>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.</p>	<p>ICSG monitors the financial health of the AFIs. ICSG also utilises an internal rating system to monitor and evaluate these institutions. The rating system is used to generate an internal rating for each institution, based on a combination of financial data, market data and an overall qualitative assessment of the AFI's financial condition and market standing. ICSG limits its exposure to a single institution by investing cash under management across multiple institutions.</p> <p>ICSG's liquidity risk management framework includes daily stress testing of liquidity requirements to meet intra-day, same-day, and multi-day settlement obligations under extreme but plausible market conditions. These stress tests include scenarios that assume failure of the largest settlement bank.</p>
<p>4. If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.</p>	<p>The payment services agreements between ICSG and the APS banks state that funds transfers are final when effected and that confirmations are irrevocable. Once an MT910 SWIFT message has been given by the payment bank the payment bank will not be able to reverse the payment without authorisation from ICSG.</p> <p>For intraday instruction, as per the service agreement, the APS banks are obliged within 1 hour of the time of receipt of the instruction to make payment of the amount specified and send a SWIFT MT910 message in confirmation.</p> <p>Intraday finality is supported, once the payment instruction is sent it is effective once the confirmation is received. The transaction is final and cannot be reversed.</p>

PRINCIPLE 9: MONEY SETTLEMENTS

	<p>Under the current investment guidelines ICSG limits its exposure to single financial institution by investing cash under management across multiple AFIs' liquidity funds with credit rating at least one notch above that of AFIs yet retaining prompt access to the invested funds.</p>
<p>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.</p>	<p>ICSG's legal agreements with its AFIs and the Rules ensure that all settlements are final when effected. Pursuant to such legal agreements, settlement fund transfers are irrevocable and unconditional at the time when the AFI of the account from which payment is to be made sends a SWIFT confirmation message, other electronic message, fax, telephone or other message confirming that the relevant payment will be or has been made (subject to certain provisions for corrections of errors).</p>

PRINCIPLE 10: PHYSICAL DELIVERIES

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.

This principle should be reviewed in the context of Principle 15 on general business risk, Principle 23 on disclosure of rules, key procedures and market data, and other principles, as appropriate.

1. An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.

ICSG clears a physically delivered currency contract. The Rules and the Delivery Procedures specifically clearly state obligations of ICSG and Clearing Members as well as the procedures involved with respect to physical deliveries.

Each Clearing Member who is a seller under a contract subject to delivery (the "**Seller**") and each Clearing Member that is a buyer to the same contract (the "**Buyer**") is required under the Rules to make such payments and deliveries and deliver such tenders, notices and invoices as are required pursuant to the Delivery Procedures and Rules. The Rules clearly provide that the passing on by ICSG of such tenders or such other documents shall not constitute acceptance by ICSG of such tenders or such documents if the Clearing Member to which ICSG passed on such tender or documents rejects the same where permitted to do so. In the event of such rejection, ICSG shall also be entitled to reject the tenders or other documents. Similarly, where a Clearing Member who is a Buyer under a contract rejects a deliverable delivered to it, ICSG as Buyer under the corresponding back-to-back contract shall be entitled, if to do so would be in accordance with the applicable contract terms, to take the same action as against the Seller under that contract and ICSG shall not be deemed to have accepted such delivery until the relevant Buyer has accepted delivery under the first contract.

Further, the Rules provide that ICSG may direct a Clearing Member who is a Seller to deliver the deliverable to another Clearing Member that is a Buyer. The Seller and the Buyer shall each be bound by any such direction. Delivery in accordance with any such direction shall be deemed to constitute delivery by the Seller to ICSG and from ICSG to the Buyer for the purposes of the contract or contracts in question (but title shall not pass unless and until such time specified in the Delivery Procedures). All payments in relation to such contracts shall nonetheless be made only to and from ICSG by the Clearing Members concerned.

PRINCIPLE 10: PHYSICAL DELIVERIES

2. An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.

ICSG identifies, monitors, and manages the risks and costs associated with the storage and delivery of physical instruments or commodities. Operational Risks associated with storage and delivery are identified and monitored through the Operational Risk Framework.

Where it is possible that the buyer fails to deliver the goods, should ICSG not be able to fulfil the sellers' obligations, it has the possibility to force an Alternative Delivery Procedure (ADP) or cash settle the contracts in a process also known as Invoicing Back at a price determined by the appropriate Exchange or Clearing House panel.

Wherever possible deliveries will be made through a Delivery Versus Payment (DvP) mechanism. Where this is not possible, ICSG will always debit the buyer (via a buyer security or an invoice) before the delivery takes place, it will also only credit the seller (via a delivery contingent credit or an invoice) once the delivery has taken place and ICSG was able to confirm it. Buyer security and delivery contingent credit are calculated by reference to the relevant Exchange Delivery Settlement Price (EDSP).

Original Margin on the positions in delivery is held by ICSG until delivery is complete. In the event of a failed delivery, ICSG may call additional seller's security and/or buyer's security and collect further payments until delivery is made. Moreover, the Clearing House has the ability to pass on a Clearing Member any cost incurred as a result of the Clearing Member's failure to fulfil its delivery obligations.

PRINCIPLE 12: EXCHANGE-OF-VALUE SETTLEMENT SYSTEMS

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.

This principle should be reviewed in the context of Principle 4 on credit risk, Principle 7 on liquidity risk, Principle 8 on settlement finality, and other principles, as appropriate.

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.

The Rules provide the legal and contractual basis for final settlement of relevant financial instruments and which together with risk management arrangements in place eliminate principal risk to ICSG.

Where a futures or options expiry results in a physical delivery, ICSG will always debit the buyer for the value of the goods to be delivered before the delivery takes place. Conversely the sellers will only be credited once ICSG has established unequivocally that the delivery has taken place. This method will apply in any situation where DvP is not available.

Where DvP is available, ICSG will always use this facility when settling deliveries.

ICSG settles contracts on a gross basis and the finality of settlements of linked obligations is simultaneous. ICSG does not currently rely on DvP or PvP service provided by another FMI.

PRINCIPLE 13: PARTICIPANT-DEFAULT RULES AND PROCEDURES

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.

Because of the extensive interactions between the default management principles as they apply to CCPs, this principle needs to be reviewed in the context of Principle 14 on segregation and portability. This principle should also be reviewed in the context of Principle 4 on credit risk, Principle 7 on liquidity risk, Principle 23 on disclosure of rules, key procedures and market data, and other principles, as appropriate.

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.

Participant default rules and procedures

The Rules contain detailed provisions on events of Clearing Member default and disciplinary proceedings which, are treated as 'default rules' with any actions taken by ICSG pursuant to such provisions being treated as 'default proceedings', in each case for the purposes of Part III of the SFA and the Securities and Futures (Clearing Facilities) Regulations 2013. The Rules are designed to ensure that ICSG can take timely action on an event of Clearing Member default to contain losses, manage liquidity pressures and to enable ICSG to continue to function as a clearing house.

The Rules provide significant latitude as to when a Clearing Member may be deemed to be subject to an event of default to ensure ICSG has sufficient freedom of action in order to protect itself, and the market, from potential systemic risk. For example, the circumstances in which ICSG may declare a Clearing Member default include a Clearing Member's failure to meet payment obligations to ICSG, a Clearing Member's insolvency or the insolvency of any of that Clearing Member's group companies and breach by the Clearing Member of the Rules or applicable law.

If an event of default has been declared, ICSG may immediately suspend or terminate the clearing membership and any other entitlements under the Rules of the Defaulter, take any action to close out the Defaulter's positions and take any other action as is necessary to control or reduce losses or liquidity pressures resulting from an event of default. The Rules provide ICSG with a certain level of discretion and flexibility in its implementation of the default rules, to enable it to adequately address each event of default separately

PRINCIPLE 13: PARTICIPANT-DEFAULT RULES AND PROCEDURES

and tailor any default proceedings to the particular financial emergency or Clearing Member default at issue. For example, if ICSG determines that the suspension or termination of a Defaulter's clearing membership would either not be in the best interests of ICSG or would be likely to adversely affect the operation of any market, it has discretion to temporarily postpone or not enforce such suspension or termination.

In the event that the Defaulter has customer-related positions, ICSG may transfer non defaulting customer positions from the Defaulter to one or more non-defaulting Clearing Members, to the extent permitted by law and in all cases subject to agreement from the receiving Clearing Member(s).

The Rules also expressly provide for the following on the occurrence of an event of default:

1. Delay of settlement deadlines where the Clearing House or its Board (in cases where certain longer delays are deemed required) has determined that doing so is necessary;
2. The manner in which the Clearing House may transfer positions in customer accounts of a Defaulter and the factors which it may consider in doing so, including any portability preferences stated to it by any customer of any Defaulter;
3. Actions which the Clearing House may immediately take upon the occurrence of an event of default, including suspension/termination of membership, service of various notices of default, among others; and
4. The range of remedies and mechanisms which are available to the Clearing House, including without limitation transfer of positions, termination of contracts and application of the Guaranty Fund.

The Rules clearly set out the roles, obligations and responsibilities of ICSG, the defaulter and non-defaulting members in connection with the above, as applicable.

Use of financial resources

PRINCIPLE 13: PARTICIPANT-DEFAULT RULES AND PROCEDURES

	<p>ICSG collects margin on all open contract positions and other pre-funded financial resources from Clearing Members, including a Clearing Member's Guaranty Fund contribution, to protect ICSG from potential losses arising from events of default. Where necessary to cover losses from a Clearing Member default, ICSG's default resources will be used in the following order:</p> <ul style="list-style-type: none"> • Defaulter's Original Margin; • Defaulter's Guaranty Fund contribution; • Where the defaulter was party to contracts in products whose underlyings are digital -assets, the Digital Currency Contract ICSG Contribution (currently USD 3 million) for application solely against losses relating to such products; • ICSG's Initial Contribution to the Guaranty Fund (15% of Guaranty Fund); • Non-defaulting Clearing Member's Contribution; • ICSG's Secondary Contribution to the Guaranty Fund (10% of Guaranty Fund); and • Powers of Assessment (2x Guaranty Fund contributions) <p>The Rules require Clearing Members to make required replenishment on demand in the event that the Guaranty Fund is needed to resolve a Clearing Member default.</p>
<p>2. An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.</p>	<p>ICSG has a default management framework which sets out specific responsibilities with the regard to the default provisions set out in the Rules. It outlines the actions management will carry out in the event of a default.</p> <p>The default management framework maintains a measure of flexibility as it is intended to provide a structure and guidance to management. It is not designed to be prescriptive and recognises that the cause of insolvency and post-insolvency actions may vary depending on the prevailing circumstances which lead to the default rules being implemented.</p> <p>The default management framework also addresses the need for coordination: the President & COO is responsible for ensuring all required notifications and, where relevant, information will be shared in order to assist in the orderly management of a default.</p>

PRINCIPLE 13: PARTICIPANT-DEFAULT RULES AND PROCEDURES

	<p>The default management framework is tested and reviewed on an annual basis.</p>
<p>3. An FMI should publicly disclose key aspects of its default rules and procedures.</p>	<p>ICSG's default rules are included within Part 9 of the Rules and cover</p> <ul style="list-style-type: none"> • Events of default affecting Clearing Members; • Actions to be taken following declaration of a Clearing Member event of default; • Treatment of contracts following a Clearing Member event of default and hedging; • Transfer of contracts and margin on a Clearing Member event of default; • Termination and close out of contracts on a Clearing Member event of default; • Net sums payable; and • Administrative matters concerning an event of default <p>Additionally, ICSG has set out terms for default auctions which are available in the Default Auction Procedures of the Rules.</p> <p>The risk management section of the ICSG website contains descriptions of key aspects of default arrangements and the use of default auctions.</p>
<p>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 practical and effective.</p>	<p>The default management framework is tested and reviewed on an annual basis.</p>

PRINCIPLE 14: SEGREGATION AND PORTABILITY

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.

Because of the extensive interactions between the default management principles as they apply to CCPs, this principle should be reviewed in the context of Principle 13 on participant default rules. This principle should also be reviewed in the context of Principle 19 on tiered participation arrangements, Principle 23 on disclosure of rules, key procedures and market data, and other principles, as appropriate.

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.

Customer protection from participant default

The Rules require a Clearing Member to segregate customer money and customer assets from a Clearing Member's own money and assets through the use of a customer account and a proprietary account. Any contract entered into by the Clearing Member must be designated and recorded in ICSG's books, promptly and accurately, as for a Clearing Member's proprietary account or for its customer account. No assets or positions relating to the Clearing Member's own account should be recorded in its customer account, enabling to distinguish the assets and positions in contracts held for the account of its customers from those held for its proprietary account.

The Rules provide that each Clearing Member is responsible for ensuring that its proprietary bank account and its customer bank account which is held at an AFI and nominated by the Clearing Member for the purposes of making and receiving cash transfers are linked appropriately to the relevant Clearing Member's proprietary account and its customer account respectively. Further, Clearing Members must ensure their own compliance with applicable laws relating to conduct of business, client money, segregation and use of client assets and segregation of customer transactions.

The Rules do not permit the Clearing House to aggregate, set off or apply any margin, surplus collateral or other surplus assets available to it in relation to a Defaulter's customer account to meet a shortfall on that Defaulter's proprietary account. However, to ensure the fullest possible protection of customer assets, the Clearing House will aggregate, set off or apply any margin,

PRINCIPLE 14: SEGREGATION AND PORTABILITY

surplus collateral or other surplus assets available in relation to a Defaulter's proprietary account to meet a shortfall on that Defaulter's customer account as set out in the Rules.

If any amounts are so aggregated, set off or applied, the net sum payable by the Clearing House in relation to the defaulting Clearing Member's proprietary account shall be reduced by the same amount as is so included within the net sum for its customer account. Where and to the extent that ICSG determines to apply proprietary account assets of a defaulting Clearing Member to its customer account, such amounts (together with any Guaranty Fund contributions or any amounts received by ICSG under a controller guarantee of a defaulting Clearing Member) must first be applied to reduce any losses on the customer account, which would otherwise have a net sum representing a shortfall or loss.

The Rules allow for the portability of contracts and margin on an event of Clearing Member default. In particular, as part of a Clearing Member's default proceedings, ICSG may: (i) arrange for a transfer, sale, assignment or novation of a Defaulter's contracts to another Clearing Member (such Clearing Member, a "**Transferee**"); or (ii) ICSG may also arrange for the termination of a Defaulter's contracts with ICSG (and any related contract between that Clearing Member and its customer on economic terms similar to the corresponding contract recorded in that Clearing Member's customer account, a "**Customer-Clearing Member Transaction**") and the entry into of replacement contracts between ICSG and a Transferee (by way of novation and amendment or otherwise) or between such customer and such Transferee, as applicable.

Upon such a transfer, in order to ensure the protection and segregation of any customer money and customer assets:

(i) Any related margin recorded in the relevant customer account may, at the discretion of ICSG, also be transferred from that customer account to the Transferee's customer account;

(ii) To the extent that any transfer of margin takes place, the Defaulter shall have no claim against ICSG or any Transferee for return of such margin and ICSG shall be released from any liability or obligation to return such margin (or any property in substitution thereof) to the Defaulter; and

(iii) As between the Transferee and ICSG, ICSG shall have all rights in relation to any margin transferred as if the same were margin transferred to ICSG directly from the Transferee.

There is a number of conditions that must be satisfied before contracts, Customer-Clearing Member Transactions and related assets can be ported to a Transferee. For example, porting must not result in a customer account being under-collateralised and porting must not be unlawful nor expose ICSG to liabilities or legal challenges. In addition, a consenting Transferee will need to have been found. In order for positions to be ported on an event of default, a customer needs to have appointed a replacement Transferee who is prepared to act as such. If no such Transferee is appointed or can be found, or the Transferee that has been so nominated declines to become party to replacement contracts or Customer-Clearing Member Transactions, ICSG will terminate the contracts and Customer-Clearing Member Transactions, offsetting any resultant losses or combining any resultant gains against the collateral on the account. Transferees may not commit to accept contracts and Customer-Clearing Member Transactions until a default occurs and they can assess the risks arising on the exposures under contracts that they would accept. Transferees may have other conditions that they require to be met prior to porting, such as the posting of additional collateral, supply of "know your customer" documentation or execution of agreements.

Customer protection from participant and fellow customer default

Customer collateral posted by each Clearing Member is held segregated from the Clearing Member's own collateral. However, within the customer collateral account there is no segregation between the collateral of the Clearing Member's customers. Customer collateral as such therefore is not protected from the concurrent default of the Clearing Member and fellow customers.

Legal basis

ICSG has obtained external legal opinions relating to the enforceability of its CMA, Rules (including its portability rules) and the application of provisions in Singapore statutes which relate to settlement finality. Currently, ICSG does not have any remote or foreign Clearing Members.

PRINCIPLE 14: SEGREGATION AND PORTABILITY

<p>2. A 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.</p>	<p>Customer positions are kept in an omnibus client segregation account per Clearing Member. Customer collateral assets are held in a customer account per Clearing Member.</p> <p>Collateral assets as listed as Permitted Cover and subject to the limitations on the Permitted Cover may be used to meet Original Margin requirement and Guaranty Fund requirements.</p> <p>The Rules entitle ICSG at its discretion to rely on information provided to it by a Clearing Member or a customer, including as set out in any default portability preference expressed to it by a customer of the Clearing Member. ICSG is contractually entitled to request specific information of Clearing Members in respect of a customer in addition to receiving customer margining information on a regular basis. Positions recorded in the customer accounts are margined on a gross basis. In so far as (1) the default management tools of ICSG relating to a Clearing Member as a whole and (2) regulations and practices applying to Clearing Members which require them clearly to identify customer positions on their books and records each operate as intended, ICSG does not believe there is any fellow customer risk. For example, ICSG is permitted to apply margin relating to a Clearing Member’s proprietary position for the benefit of the Clearing Member’s customer account when calculating net sums payable on an event of default.</p>
<p>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.</p>	<p>The Rules allow for the portability of contracts and margin on an event of Clearing Member default. In particular, as part of a Clearing Member's default proceedings, ICSG may: (i) arrange for a transfer, sale, assignment or novation of a Defaulter's contracts to another Clearing Member (such Clearing Member, a "Transferee"); or (ii) ICSG may also arrange for the termination of a Defaulter's contracts with ICSG (and any related contract between that Clearing Member and its customer on economic terms similar to the corresponding contract recorded in that Clearing Member's customer account, a "Customer-Clearing Member Transaction") and the entry into of replacement contracts between ICSG and a Transferee (by way of novation and amendment or otherwise) or between such customer and such Transferee, as applicable.</p> <p>Upon such a transfer, in order to ensure the protection and segregation of any customer money and customer assets:</p>

PRINCIPLE 14: SEGREGATION AND PORTABILITY

	<p>(i) Any related margin recorded in the relevant customer account may, at the discretion of the Clearing House, also be transferred from that customer account to the Transferee's customer account;</p> <p>(ii) To the extent that any transfer of margin takes place, the Defaulter shall have no claim against ICSG or any Transferee for return of such margin and ICSG shall be released from any liability or obligation to return such margin (or any property in substitution thereof) to the Defaulter; and</p> <p>(iii) As between the Transferee and ICSG, the Clearing House shall have all rights in relation to any margin transferred as if the same were margin transferred to the Clearing House directly from the Transferee.</p> <p>There is a number of conditions that must be satisfied before contracts, Customer-Clearing Member Transactions and related assets can be ported to a Transferee. For example, porting must not result in a customer account being under-collateralised and porting must not be unlawful nor expose ICSG to liabilities or legal challenges. In addition, a consenting Transferee will need to have been found. In order for positions to be ported on an event of default, a customer needs to have appointed a replacement Transferee who is prepared to act as such. If no such Transferee is appointed or can be found, or the Transferee that has been so nominated declines to become party to replacement contracts or Customer-Clearing Member Transactions, ICSG will terminate the contracts and Customer-Clearing Member Transactions, offsetting any resultant losses or combining any resultant gains against the collateral on the account. Transferees may not commit to accept contracts and Customer-Clearing Member Transactions until a default occurs and they can assess the risks arising on the exposures under contracts that they would accept. Transferees may have other conditions that they require to be met prior to porting, such as the posting of additional collateral, supply of "know your customer" documentation or execution of agreements.</p>
<p>4. A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant's customers' 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</p>	<p>The Rules (including rules and procedure relating to segregation and portability) are available on the ICSG website. The Rules clarify whether a participant's customer's collateral is protected.</p>



PRINCIPLE 14: SEGREGATION AND PORTABILITY

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.

We do not believe there are any constraints on ICSG's ability to segregate or port such positions based on the legal advice obtained by ICSG. We note that there are customary reservations relating to such legal advice as is typically included in such advice, but we do not believe they are material in this instance.

PRINCIPLE 15: GENERAL BUSINESS RISK

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.

This principle should be reviewed in the context of Principle 3 on the framework for the comprehensive management of risks, Principle 21 on efficiency and effectiveness, and other principles, as appropriate.

<p>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.</p>	<p>ICSG identifies monitors and manages its general business risks with a robust management and control systems through governance, financial statements and internal audit. The governance structures include monthly management reports, including financial statements, financial projections, risk reports and incident reports.</p>
<p>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.</p>	<p>ICSG holds sufficient liquid net assets, funded by equity, to ensure a recovery or orderly wind-down of critical operations and services at all times. ICSG has assessed that an orderly wind-down of its business would take no longer than six months. Financial resources equal to six months of operating costs will be more than sufficient during wind-down, given the likely reduction in personnel expenses, marketing costs and volume-based expenditures.</p>



PRINCIPLE 15: GENERAL BUSINESS RISK

<p>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 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.</p>	<p><i>Recovery or orderly wind-down plan</i></p> <p>The Rules provide for recovery and wind-down following the insolvency of a Clearing Member, a business decision of ICSG to exit clearing services and the insolvency of ICSG.</p> <p>ICSG has determined that its liquid operating resources, maintained in order to have a feasible plan of action pursuant to Regulation 17 of the Securities and Futures (Clearing Facilities) Regulations 2013, are sufficient to support its operations during any recovery or wind-down process.</p> <p><i>Resources</i></p> <p>ICSG holds sufficient liquid net assets, funded by equity, to ensure a recovery or orderly wind-down of critical operations and services at all times. ICSG has assessed that an orderly wind-down of its business would take no longer than six months. These resources, together with the capital required to cover the general business risks, are separate and in addition to the resources ICSG commits to cover for default losses or resources for non-default losses resulting from investments.</p>
<p>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.</p>	<p>ICSG holds sufficient liquid net assets, funded by equity, to cover any general business losses so that it can continue operations and services as a going concern if these losses materialise. These assets are held in cash.</p>
<p>5. An FMI should 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.</p>	<p>ICSG's approach to raising additional financial resources (including, where appropriate, capital) will depend on the circumstances. Accordingly, the options include exploring the following possibilities: direct funding from ICSG's parent; amending intercompany service agreements to provide economic relief and/or additional services; leveraging the resources of affiliated clearing house entities within the ICE, Inc. group; merging ICSG with another ICE, Inc. clearing house; offering shares</p>



PRINCIPLE 15: GENERAL BUSINESS RISK

	or an economic interest in ICSG; 'delisting' unprofitable products; transferring unprofitable products to another affiliated or unaffiliated clearing house; and selling ICSG.
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PRINCIPLE 16: CUSTODY AND INVESTMENT RISKS

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.

This principle should be reviewed in the context of Principle 4 on credit risk, Principle 5 on collateral, Principle 7 on liquidity risk, and other principles, as appropriate.

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.

ICSG safeguards its own and its Clearing Members' assets through the use of AFIs that employ accounting practices, safekeeping procedures and internal controls that protect deposits. An AFI should meet certain criteria including having an S&P short-term A-1 and long-term A rating or better (or the equivalent from other approved agencies as confirmed by the Clearing House). The financial institutions that ICSG uses for custody should have an S&P short term rating of A-1 or better (or the equivalent from other approved agencies as confirmed by the Clearing House) and are reputable organisations and are licenced and supervised by the MAS under the Banking Act (Chapter 19) of Singapore.

ICSG monitors the financial health of the AFIs and custodians. ICSG also utilises an internal rating system to monitor and evaluate these institutions. The rating system is used to generate an internal rating for each institution, based on a combination of financial data, market data and an overall qualitative assessment of the AFI's financial condition and market standing. ICSG limits its exposure to a single institution by investing cash under management across multiple institutions.

2. An FMI should have prompt access to its assets and the assets provided by participants, when required.

ICSG has received external legal advice on the enforceability of its taking of collateral from participants by way of a title transfer arrangement. This forms the primary legal basis to support ICSG's enforcement of its interest and ownership in collateral provided to it by participants.

Additionally, the SFA provides protection to ICSG and Clearing Member assets. Pursuant to section 81C of the SFA, the provision of market collateral and market charges under the Rules will not be considered invalid due to inconsistencies with insolvency law concerning the distribution of assets. This section of the SFA also prevents a court applying insolvency law from interfering

PRINCIPLE 16: CUSTODY AND INVESTMENT RISKS

	<p>with a wide range of actions taken under the Rules. With regard to insolvency proceedings commenced in a foreign jurisdiction, section 81L of the SFA states that a Singapore court will not recognise or give effect to a foreign order if that order is not permitted by the SFA.</p> <p>Although the default of a participant will not in and of itself hinder ICSG’s access to its assets (as collateral is held by way of title transfer arrangements), ICSG ensures that it has prompt access to its assets by establishing banking and custody arrangements which contain customary and prudent and explicitly documented provisions as to processing of instructions and the availability of services provided by such banks and custodians.</p>
<p>3. An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.</p>	<p>ICSG monitors the financial health of the AFIs it uses. ICSG limits its exposure to a single institution by monitoring cash under management and investing it across multiple institutions.</p>
<p>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.</p>	<p><i>Investment strategy</i></p> <p>The primary objectives of the investment strategy is (in order of importance) to (1) safeguard the principal (safety); (2) provide sufficient liquidity to meet all operational requirements (same day liquidity in Asia time zone); and (3) obtain a reasonable rate of return (risk weighted yield).</p> <p>The investment policy is subject to recommendation by the Risk Committee and approval by the Risk Management Committee. It is reviewed at least annually.</p> <p>Under the current investment guidelines, ICSG limits its exposure to a single financial institution by investing cash under management across multiple AFIs liquidity funds with credit rating at least one notch above that of AFIs yet retaining prompt access to the invested funds.</p>



PRINCIPLE 16: CUSTODY AND INVESTMENT RISKS

Risk characteristics of investments

The exposure per AFI, liquidity funds (if applicable) and custodians (if applicable) is monitored and reported on a monthly basis. Under the investment policy the exposure to AFIs and liquidity funds is subject to limits to avoid concentration of credit risk.

ICSG does not invest in its own securities or those of its affiliates.

Besides liquidity being one of the primary objectives of the investment policy, the liquidity risk management framework is designed so that there is a high level of confidence in ICSG's ability to effect payment and settlement obligations in all relevant currencies as they fall due, including where appropriate intraday. It also includes the assessment of ICSG's potential future liquidity needs under a wide range of potential stress scenarios.

PRINCIPLE 17: OPERATIONAL RISK

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.

This principle should be reviewed in the context of Principle 20 on FMI links, Principle 21 on efficiency and effectiveness, Principle 22 on communication standards and procedures, and other principles, as appropriate.

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.

Identification of operational risk

ICSG has a suite of policies that constitute its Enterprise Risk Management Framework. These policies are subject to routine review by Senior Management and the Board.

Management of operational risk

Identified operational risks are assessed, assigned to an owner and where necessary further mitigation measures are identified. Key operational risks are monitored against the risk appetite of ICSG. The operational risks, their assessment, their owner and controls are all captured in the Operational Risk Assessment Matrix.

Policies, processes and controls

As described above, ICSG embarks under the Operational Risk Management Framework on a risk identification and assessment exercise at least on an annual basis. If the level of identified and assessed risks is not in line with risk appetite further mitigation measures are identified and implemented. The approach ICSG takes has been loosely based on the COSO Enterprise Risk Management Framework. For cybersecurity specifically the ICSG approach is based on the National Institute of Standards and Technology (“**NIST**”) Cybersecurity Framework.

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	<p>In terms of risk governance, ICSG operates according to the business practice the ‘three lines of defence’ model for risk management. The first line of defence is composed of the business lines and support functions managing day to day risks. This includes the responsibility for identification, notification, self-assessment and mitigation of risk. The second line of defence provides oversight of the risk framework and consolidated risk reporting independent from the first line. The third line of defence is composed of internal and external auditors providing independent assurance.</p> <p>ICSG has policies that govern the hiring, training, retention and development of staff. All resourcing requirements to support ICSG business and operational requirements are discussed and agreed with Senior Management.</p> <p>Change management procedures, as well as portfolio and project management structures are in place to deal with the risks associated with systems changes and major projects.</p> <p>ICSG seeks to avoid any unnecessary operational risk and its risk appetite is low. It also ensures that in all cases appropriate measures are taken towards establishing a good level of operational risk awareness. ICSG’s tolerance levels aim to ensure that any events that run close to or fall outside of the risk appetite are identified and responded to.</p>
<p>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.</p>	<p><i>Roles, responsibilities and framework</i></p> <p>At least annually, the Board approves various policies, procedures and frameworks that constitute the risk management framework, to provide for the comprehensive management of all material risks to which ICSG is, or may be exposed, including risk-tolerance levels. These policies set out responsibilities for periodic and systematic identifying and assessing risks, reviewing risk responses and any associated reporting, as well as identifying potential crisis scenario and appropriate response plans. Per such policies, procedures and framework, the President & COO is responsible for all activities, including crisis management, implementing default rules and procedures, system safeguards, and recovery and wind-down plans.</p> <p><i>Review, audit and testing</i></p>

PRINCIPLE 17: OPERATIONAL RISK

	<p>On an annual basis, ICSG prepares a self-assessment that includes a review of its systems, policies and procedures. Disaster recovery arrangements are tested at least once a year. Business continuity arrangements are tested at least twice a year. ICSG offers its Clearing Members an opportunity to participate in an industry-wide Business Continuity test on an annual basis. So far, Clearing Members have not expressed appetite in participating in such test. Further, the systems, policies and procedures may be subject to internal and external audit. Audit activities are scoped and planned taking a risk-based approach.</p>
<p>3. An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.</p>	<p>The objective of ICSG is to provide a safe and efficient clearing service. In relation to operational reliability, ICSG monitors the unscheduled down-time of critical client facing systems and monitors the frequency and severity of incidents. The Board has set the risk appetite for unscheduled down-time and the number and severity of incidents, ICSG reports to the Board on this metric on a monthly basis.</p>
<p>4. An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.</p>	<p>In relation to scalability, ICSG monitors the peak capacity utilization. The Board has set the risk appetite for peak capacity utilization. ICSG reports to the Board on this metric on a monthly basis.</p>
<p>5. An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.</p>	<p><i>Physical security</i></p> <p>ICSG utilises the parent company’s (ICE Inc.) physical security policy framework.</p> <p>Physical security and Information security are subjected to tests undertaken both by Internal Audit and independent external expert resources. A rigorous Service Organisation Control (“SOC”) Type 2 audit is performed annually to produce independent verification and testing of ICE controls based on standards developed by American Institute of Certified Public Accountants (“AICPA”). So called Trust Services Principles, cover areas of security, availability and confidentiality of service organization’s systems. ICSG is not specifically listed in the 2016 SOC Type 2 report however it falls under the same ICE standard information security controls as tested within the report.</p>

PRINCIPLE 17: OPERATIONAL RISK

ICE Inc.'s Physical and Environmental Controls Policy has been developed using the NIST guidelines.

Information security

ICSG has adopted ICE Inc.'s Cybersecurity Strategy as a group-wide strategy designed to maintain the highest possible levels of confidentiality, integrity, availability, and performance for all systems of ICE Inc. and its subsidiaries. It sets out high level functions of managing cyber security including the development and implementation of safeguards and control activities to ensure the following:

- Identification of cyber risks and threats,
- Protection of ICE systems, information assets and infrastructure
- Detection of cyber incidents and events
- Response and recovery activities from a cyber security event.

The CISP is designed so that strategies and goals relating to Information Security are met. It includes provisions to ensure compliance with regulatory and legal requirements and requires all staff to report suspected or confirmed breaches of information security or threats in a timely manner.

The CISP also prescribes requirements to address specific information security controls, such:

- Access Control
- Data Protection and Privacy
- Network and Systems Security
- Risk Management
- Incident Management
- Remote Access
- Security Testing
- Social Media
- Cyber Threat Intelligence

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	<ul style="list-style-type: none"> • Acceptable Use, etc. <p>In order to address goals of the CSS and requirements set out in CISP, Information Security departments is organized into two major teams: Cybersecurity team, which is defensive in nature and operates detection, prevention and response controls and Security Assurance, which is responsible for proactive work, including programme testing, issue identification and longer-term improvements.</p> <p>ICE Inc.'s Cybersecurity Strategy has been developed based on the NIST Cybersecurity Framework, which organizes the Cybersecurity programme into 5 core functions:</p> <ul style="list-style-type: none"> • Identify - Develop the organizational understanding to manage cybersecurity risk to systems, assets, data, and capabilities. • Protect - Develop and implement the appropriate safeguards to ensure delivery of critical infrastructure services. • Detect - Develop and implement the appropriate activities to identify the occurrence of a cybersecurity event. • Respond - Develop and implement the appropriate activities to take action regarding a detected cybersecurity event. • Recover - Develop and maintain the appropriate to maintain plans for resilience and to restore any capabilities or services that were impaired due to a cybersecurity event. <p>ICE Inc.'s Information Security Risk management programme is heavily based on NIST Special Publication "800-30: Risk Management Guide for Information Technology Systems".</p> <p>Physical security and Information security are subjected to tests undertaken both by Internal Audit and independent external expert resources. A rigorous SOC Type 2 audit is performed annually to produce independent verification and testing of ICE controls based on standards developed by AICPA. So called Trust Services Principles, cover areas of security, availability and confidentiality of service organization's systems. ICSG is not specifically listed in the 2016 SOC 2 report however it falls under the same ICE standard information security controls as tested within the report.</p>
<p>6. An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations,</p>	<p><i>Objectives of business continuity plan</i></p>

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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 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.

ICSG's Business Continuity Policy and Plan has the following objectives: (i) preserve the health and safety of staff; (ii) avoid confusion and reduce exposure to error during an interruption by providing an organised and consolidated approach to managing response, recovery and resolution activities; (iii) reduce the impact resulting from short-term business interruptions by providing appropriate responses for rapid recovery from unplanned incidents; and (iv) resume essential operations within two hours.

ICSG Disaster Recovery Plan has a recovery time objective of two hours and a recovery point objective of ten minutes.

Design of the business continuity plan

The Business Continuity Plan considers the following scenarios: (i) brief or prolonged unavailability of employee offices; (ii) brief or prolonged unavailability of primary computer systems; and (iii) unavailability of key staff. ICSG's scenario response includes remote work, cross-training personnel between geographically diverse locations, and alternate work locations in selected cities, which is sufficient to recover operations and resume daily processing, clearing, and settlement no later than two hours following a disruption (including in the event of a widescale or major disruption). The Business Continuity plan also addresses the dissemination of information to staff, service providers, clients and regulators.

The Disaster Recovery Plan is based on a warm site strategy. The Chicago (ORD) production site, located at the ICE data centre in Chicago is replicated in all aspects of hardware, software, firewall, and network equipment at the recovery site located in Atlanta (AT). The recovery site will be a mirror image of the ORD site. Operating system, database and some application software will be up and running (in idle state) at the recovery location.

When a disaster occurs, the recovery site databases will be restored using the replicated transaction logs, the system and network will be tested and verified, DNS resolution will be modified, and the system will be made available to the customers.

Secondary site

PRINCIPLE 17: OPERATIONAL RISK

	<p>The business continuity plan incorporates the use of secondary site in Singapore or ICE office locations in the UK or US. If the secondary site in Singapore would be unavailable as well, because of its limited geographic distance from the primary site, operations can be taken over completely from the ICE offices in UK or US.</p> <p>The business continuity plan may involve the alternative arrangements such as paper-based and fax procedures to allow the processing of time critical transactions if regular electronic communication is not available.</p> <p><i>Review and testing</i></p> <p>On an annual basis, ICSG prepares a self-assessment that includes a review of its systems, policies and procedures. Disaster recovery arrangements are tested at least once a year. Business continuity arrangements are tested at least twice a year. In relation to availability, ICSG monitors the outcomes of its Disaster Recovery and Business Continuity tests. The Board has set the risk appetite that there should be no unsuccessful Disaster Recovery or Business Continuity tests. ICSG reports to the Board on this metric on a monthly basis.</p> <p>ICSG offers its Clearing Members an opportunity to participate in an industry-wide Business Continuity test on an annual basis. So far, Clearing Members have not expressed appetite in participating in such test. Further, the systems, policies and procedures may be subject to internal and external audit. Audit activities are scoped and planned taking a risk-based approach.</p>
<p>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.</p>	<p><i>Risk to the FMI's own operations</i></p> <p>ICSG leverages the technology, operational centres and services that are also used to service other clearing houses within the ICE group. Leveraging the technology and operational centres brings efficiency benefits, allows ICSG to leverage the proven robustness of existing systems and procedures and commercially lowers the threshold for new members that are already familiar with the ICE set-up.</p> <p>Controls to mitigate the key risks of the associated material outsourcing are a combination of the following controls: (1) Service Level Agreements, where relevant captured in Key Performance Indicators subject to regular monitoring, (2) coordination and governance mechanisms, (3) incident management procedures, (4) security and BCP tests and (5) internal audit and inspection arrangements.</p>



PRINCIPLE 17: OPERATIONAL RISK

	ICSG poses limited risks to other FMIs.
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PRINCIPLE 18: ACCESS AND PARTICIPATION REQUIREMENTS

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.

In reviewing this principle, it should be noted that FMIs are subject to the constraints of local laws and policies of the jurisdiction in which the FMI operates, and those laws may prohibit or require the inclusion of certain categories of financial institutions. This principle should be reviewed in the context of Principle 19 on tiered participation arrangements, Principle 21 on efficiency and effectiveness, and other principles, as appropriate.

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.

Participation criteria and requirements

The membership requirements of ICSG are designed to permit fair and open access, whilst protecting ICSG and its Clearing Members.

Membership requirements include, amongst other things:

- i. Holding sufficient capital;
- ii. Being party to a CMA;
- iii. Holding all necessary regulatory authorizations, licenses, permissions and approvals;
- iv. Itself, its directors, officers and other relevant persons being fit and proper as set out in the Rules;
- v. Having appropriate technical and operational systems and controls;
- vi. Having appropriate business continuity procedures;
- vii. Being able to meet margin requirements;
- viii. Having contributed to the Guaranty Fund as appropriate; and
- ix. Not being subject to insolvency or other event of default.

PRINCIPLE 18: ACCESS AND PARTICIPATION REQUIREMENTS

	<p>All Clearing Member must (if proposing to become a Clearing Members in relation to IFSG transactions) also be a member of IFSG. Additionally, Clearing Members must institute risk management controls and demonstrate the operational capability to handle customer business. All Clearing Members must establish banking arrangements with approved AFIs to facilitate payments to and from ICSG.</p>
<p>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.</p>	<p><i>Justification and rationale of participation criteria</i></p> <p>The membership requirements of ICSG designed to permit fair and open access, whilst protecting ICSG and its Clearing Members. The membership requirements are the same for all applicants and include fitness criteria, financial standards, operational standards and appropriate registration qualifications with applicable statutory regulatory authorities.</p> <p><i>Least restrictive access</i></p> <p>Membership criteria are either risk based or a direct consequence of regulatory requirements. ICSG does not have a structural review process in place, but believes the criteria permit fair and open access, whilst protecting ICSG and its Clearing Members.</p> <p><i>Disclosure of criteria</i></p> <p>The membership requirements of ICSG are publicly disclosed in the Rules.</p>
<p>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</p>	<p><i>Monitoring compliance</i></p> <p>ICSG applies a due diligence process to ensure that all applicants meet the required criteria and conducts on-going monitoring of Clearing Members. All Clearing Members are required to provide monthly financial statements on a timely basis. Furthermore, the Rules require Clearing Members to provide notice of significant financial, regulatory, and organisational events that could impact upon</p>

PRINCIPLE 18: ACCESS AND PARTICIPATION REQUIREMENTS

participant that breaches, or no longer meets, the participation requirements.

the financial or operational capacity of a Clearing Member. In addition, the Clearing House monitors the ongoing adherence of key membership criteria and reviews adherence to certain criteria in more detail as part of its inspection programme.

Suspension and orderly exit

Rule 208 sets out the circumstances under which a membership may be suspended. Rule 208(b) provides that suspension does not relieve the Clearing Member from its obligations under the Rules in order to ensure that such suspension does not in and of itself result in disorder to the Clearing House.

Rule 209(a) broadly describes the circumstances under which a clearing membership may be terminated by the Clearing House. In order to ensure that such termination does not result in a disorderly exit by the Clearing Member, Rule 209(e) sets out certain restrictions which will apply to a Clearing Member whose membership is due to be terminated, including restrictions on entry into new contracts and the requirement to replenish the Guaranty Fund under certain circumstances. Rule 209(f) also provides that certain obligations and rights survive the effectiveness of a termination in connection with events such as arbitrations, investigations and contingent liabilities. Additionally, Rule 209(j) emphasises that failure to effect an expeditious termination may result in assets of the terminating member continuing to be available for default management purposes, such as the application of its Guaranty Fund contributions.

In all cases, the rules relating to suspension and termination incentivise the members to conduct their activities in an orderly manner.

The Rules publicly set forth Clearing Member obligations and procedures for the suspension and orderly exit of a Clearing Member that breaches, or no longer meets, ICSG participation requirements.



PRINCIPLE 19: TIERED PARTICIPATION ARRANGEMENTS

Principle 19: Tiered participation arrangements

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

This principle should be reviewed in the context of Principle 14 on segregation and portability, Principle 18 on access and participation requirements, and other principles, as appropriate.

1. An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.

Tiered participation arrangements

ICSG does not have any formal tiered participation arrangements.

However, the majority of Clearing Members provide access to clients who trade on the IFSG market. Such indirect participants rely on the clearing services provided by the Clearing Members (direct participants). On a daily basis, ICSG requires all Clearing Members to provide a breakdown of positions of each indirect client in each Customer Omnibus Account.

Risks to the FMI

ICSG's primary risk exposure is towards its Clearing Members, not their clients. Where a Clearing Member applies for clearing membership which includes the provision of services to clients, ICSG assesses the Clearing Member's capability to manage and deal with client risk.

Clearing Members are required to ensure that any documentation put in place with indirect clients is in line with the Rules.

2. An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.

Given that the Clearing Member is wholly responsible to ICSG for any positions of indirect participants, ICSG monitors such positions as part of its overall review of its Clearing Members. This will include, inter alia, inclusion in its Counterparty Rating



PRINCIPLE 19: TIERED PARTICIPATION ARRANGEMENTS

	System, application of specific capital-to-margin ratios on the Customer Account and application of concentration charges (as appropriate) on the Customer Account.
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.	Both ICSG and IFSG, to which ICSG provides clearing services, monitor trading activity and positions of indirect clients through, inter alia, Large Trader Reports, Gross Customer Margin files and monitoring of positions ahead of physical delivery. Where appropriate, ICSG will require additional margin to be posted to cover concentrated or large client positions.
4. An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.	ICSG reviews risk posed by its direct participants and their indirect participants through its regular monitoring - including, inter alia, the Counterparty Rating System.

PRINCIPLE 20: FMI LINKS

Principle 20: FMI links

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

In reviewing this principle, it should be noted that the questions apply only to FMIs that have established links with one or more other FMIs. Additionally, the term CSD generally refers to a CSD that also operates an SSS. The use of this broader definition for CSD in this principle mirrors market convention in the discussion of FMI links. This principle should be reviewed in the context of Principle 8 on settlement finality, Principle 11 on CSDs, Principle 17 on operational risk, and other principles, as appropriate.

1. Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.

ICSG does not currently have any link arrangements in place.

2. A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.

ICSG does not currently have any link arrangements in place.

PRINCIPLE 21: EFFICIENCY AND EFFECTIVENESS

Principle 21: Efficiency and effectiveness

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

This principle should be reviewed in the context of Principle 17 on operational risk, Principle 18 on access and participation requirements, Principle 22 on communication procedures and standards, and other principles, as appropriate.

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.

On a regular basis, ICSG staff meets with Clearing Members and other market participants to understand how to effectively and efficiently meet their needs. ICSG secures further input on the design of its clearing and settlement arrangements, its operating structure, its delivery system and technologies and its services and products through the industry representation in its Risk Committee. ICSG also solicits market feedback on rule changes through public consultation.

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.

ICSG's objective is to provide a safe and efficient clearing facility.

In terms of the effectiveness of operations ICSG has stated objectives in terms of operational reliability, uptime, security, scalability, data integrity and business continuity.

ICSG monitors performance against these operational objectives on a quarterly basis in order to assure that these objectives are met.

In terms of the effectiveness of its clearing risk management capabilities, ICSG aims to cover 99% of its credit exposure through margin and have margin requirements plus Guaranty Fund such that the Clearing House can cover losses arising from the default of the one largest Clearing Member (and its affiliates) and the 2 financially weakest Clearing Members (and their affiliates)



PRINCIPLE 21: EFFICIENCY AND EFFECTIVENESS

	<p>simultaneously. ICSG back-tests its risk models and stress tests its arrangements on a daily basis. Backtest and stress test results are reported to the Risk Committee on a monthly basis.</p> <p>In terms of the effectiveness as a business, ICSG has an annual budget and multi-year forecasts that are specific-initiatives to grow and develop the business. ICSG monitors and reports on performance against budget and planned initiatives on a monthly basis.</p>
3. An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.	ICSG monitors performance against its objectives on at least a monthly basis in order to assure that these objectives are met.

PRINCIPLE 22: COMMUNICATION PROCEDURES AND STANDARDS

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.

This principle should be reviewed in the context of Principle 17 on operational risk, Principle 21 on efficiency and effectiveness, and other principles, as appropriate.

1. An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.

Communication procedures

ICSG uses the widely accepted and internationally utilised Society for Worldwide Interbank Financial Telecommunication ("**SWIFT**") for messaging of payment transactions.

Communication standards

ICSG utilises FIXML real-time trade feeds to communicate trade information. FIXML is an internationally recognised, industry-standard messaging protocol used by vendors to automate clearing transaction processing.

PRINCIPLE 23: DISCLOSURE OF RULES, KEY PROCEDURES, AND MARKET DATA

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.

In reviewing this principle, information should be disclosed to the extent that it would not risk prejudicing the security and integrity of the FMI or divulging commercially sensitive information. This principle should be reviewed in the context of Principle 8 on settlement finality, Principle 13 on participant default rules and procedures, Principle 24 on the disclosure of market data by trade repositories, and other principles, as appropriate.

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.

Rules and procedures

Clearing Members have rights and obligations set out in the Clearing Rules and Procedures (the “Rules”) and a Clearing Member Agreement (“CMA”) and, where applicable, an additional addendum to the CMA. Every Clearing Member agrees to be contractually bound by the Rules as a result of becoming a Clearing Member. The Rules are clear and comprehensive and provide sufficient information to enable Clearing Members to have an accurate understanding of the risks, fees and other material costs they incur at ICSG. The Rules are publicly available on the ICSG website.

Disclosure

ICSG publishes summary information on risk management (including default management), membership, regulation, technology and treasury processes on its website. The website also contains a register of circulars published by the Clearing House. Circulars may contain further guidance to the Rules or operating procedures of the Clearing House as well as notification of changes to the Rules.

ICSG consults publicly on changes to its rules. Prior to filing any proposed rule change, and absent any emergency or other circumstance, ICSG may consult with its Risk Committee in relation to the proposed rule change where this affects its risk management framework. The Risk Committee is entitled to provide recommendations to the Board on risk-related matters

PRINCIPLE 23: DISCLOSURE OF RULES, KEY PROCEDURES, AND MARKET DATA

	<p>affected by any rule change. ICSG must file all changes to the Rules (together with details of the purpose of such rule change) with the MAS in accordance with Regulation 30 of the Securities and Futures (Clearing Facilities) Regulations 2013.</p>
<p>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 would incur by participating in the FMI.</p>	<p>The Rules clearly and comprehensively detail the rights and obligations of Clearing Members. The Rules also document the daily operation of ICSG as well as the operation of ICSG during non-routine, though foreseeable, events such as Clearing Member default. In addition, ICSG provides Clearing Members with policies and procedures that provide further detail regarding its design, operations and the various integrated systems used by ICSG.</p> <p>ICSG publishes summary information on risk management (including default management), membership, regulation, technology and treasury processes on its website. The website also contains a register of circulars published by the Clearing House. Circulars may contain further guidance to the Rules or operating procedures of the Clearing House as well as notification of changes to the Rules.</p>
<p>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.</p>	<p>ICSG has a robust governance process for any changes to the Rules, which includes consultation with multiple stakeholders, public disclosure of all proposed changes and notification of material changes. ICSG provides the necessary and appropriate documentation and training to facilitate participants’ understanding of the Rules, systems and operating procedures. Additionally, ICSG offers support to its Clearing Members support through the ICE group’s full-service client services and support team that is available at all times.</p> <p>There is no specific evidence of the understanding of rules and procedures by the Clearing Member or of the risks they face by being a Clearing Member other than the absence of evidence of the contrary through consultation responses and major operational incidents.</p> <p>Where the Clearing House would identify such need for an increase in understanding it would engage with the relevant Clearing Member to conduct training.</p>



PRINCIPLE 23: DISCLOSURE OF RULES, KEY PROCEDURES, AND MARKET DATA

<p>4. An FMI should publicly disclose its fees at the 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.</p>	<p>ICSG's fees are publicly available on its website and Clearing Members are notified of any changes to such fees by circular. The fees published are integrated exchange and clearing fees for IFSG and ICSG. To the extent that the Clearing House provides technology and communication services, it does not charge separate fees.</p>
<p>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.</p>	<p>ICSG discloses its Disclosure Framework as at the date provided on the cover page. This Disclosure Framework is updated following material changes at ICSG and, at a minimum, every two years. Publicly disclosed information is available on the ICSG website. All publicly available information is provided in English.</p>