NZX Clearing Self Assessment

Committee on Payment and Settlement Systems and International Organisation of Securities Commission's Principles for Financial Market Infrastructures

1 July 2014

CONTENTS

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I. EXECUTIVE SUMMARY

This self-assessment has been completed as recommended by IOSCO. The assessment is based upon answers to the key considerations in the Committee on Payment and Settlement Systems and International Organisation of Securities Commissions Principles for Financial Market Infrastructures **("the FMI Principles").** The assessment contains a detailed response to each of the key considerations relating to each principle and is followed with an assessment of observation. The assessment category expresses the result of the assessment as one of the following four categories: observed, broadly observed, partly observed and not observed. A recommendation can also be marked as not applicable or not assessed.

II. INTRODUCTION

Assessor

The NZX Clearing Settlement System ("**System**") is a Designated Settlement System under part 5C of the Reserve Bank of New Zealand ("**RBNZ**") Act 1989. This is a self-assessment, which has been completed in accordance with the conditions of the order of the designation.

Objective

The objectives of the assessment are to:

i) satisfy the conditions of designation of the System in accordance with the order of the designation; and

ii) update the assessment to assess against the CPSS-IOSCO Principles for financial market infrastructures, which replaces the Recommendations for central counterparties, and the Recommendations for securities settlement systems.

Scope of the assessment

This assessment relates to the NZX Clearing Settlement System. The System is comprised of New Zealand Clearing Limited ("**NZCL**"), a Central Counterparty Clearing House ("**CCP**") and relevant, to New Zealand Depository Limited ("**NZDL**"), which is a central securities depository ("**Depository**") for the System. NZCL and NZDL are both wholly-owned subsidiaries of New Zealand Clearing and Depository Corporation Limited ("**NZX Clearing**" or "NZCDC"), which in turn is a wholly-owned subsidiary of NZX Limited. The CCP and the Depository are highly interrelated, legally, functionally and in terms of the System's designation as a Designated Settlement System under part 5C of the Reserve Bank of New Zealand ("**RBNZ**") Act 1989. The assessment has therefore been performed on the System as a whole.[1]

Where applicable, the assessment also refers to the broader settlement system, including NZX markets, securities lending and relevant legislation.

Methodology

In completing the self assessment, NZX Clearing has performed a review of its System, against the CPSS-IOSCO Principles for financial market infrastructures, and has broadly followed the assessment guidelines described in the Principles for financial market infrastructures Disclosure framework and Assessment methodology document.

[1] The CPSS-IOSCO – Principles for financial market infrastructures sets out the key types of FMI's for the purposes of the assessment, and describes how where one or more FMI's are highly interrelated, they may be assessed as if they were one FMI.

Sources of Information

The information used in performing this self assessment has been obtained or developed by NZX Clearing in the course of developing and operating a Central Counterparty Clearing House and Depository. The information includes but is not limited to rules, policies, procedures, previous assessments and applicable legislation. Much of the information is publicly available.

III. OVERVIEW OF PAYMENT, CLEARING AND SETTLEMENT LANDSCAPE

Institutional and market structure

NZX is a registered exchange under Part 2B of the Securities Markets Act 1988. It operates the NZSX, NZAX and NZDX markets, which are the principal public markets for trading of securities in New Zealand, as well as the NZX Derivatives Market, an authorised futures exchange under Part 3 of the Securities Markets Act 1988. Trades in securities[2] on the NZSX, NZAX and NZDX markets operated by NZX and trades of derivatives contracts on the derivatives market clear and settle on the System. Participants in those markets enter bids and offers into NZX's trading system. On matching of orders in the trading system, the resulting contract is immediately novated to NZCL and replaced by two separate transactions; one between NZCL and the buyer's Clearing Participant and one between NZCL and the seller's Clearing Participant. Settlement of securities transactions occurs in the Depository on a delivery versus payment basis. Settlement of relevant obligations in respect of derivatives transactions occurs on a daily basis.

The Depository operated by NZDL is also part of the System. All transactions cleared and settled by NZCL settle on the Depository. Every Clearing Participant is required to be a Depository Participant. NZDL can also approve other persons to be Depository Participants. Depository Participants can use the Depository's custodial services to hold securities and also to settle bilateral transactions between themselves by using the Settlement System, but without involving NZCL as central counterparty. Depository Participants can lend and borrow securities held in the Depository between themselves. NZCL acts as central counterparty for securities lending on the Depository.

The Legal Title Transfer System is part of the System and contains the functionality used for the messaging between Depository Participants and NZDL and the securities registries. The Legal Title Transfer System is used for the transfer of legal title to securities for the purpose of settlement of transactions that are cleared and settled by NZCL as central counterparty, and for other purposes, for example, transferring the legal title to the Depository Nominee so that a Depository Participant can transact with another Depository Participant by using the Settlement System.

Regulatory structure

The New Zealand regulatory framework relating to designated settlement systems is founded on Part 5C of the RBNZ Act that provides for the designation of settlement systems. The RBNZ Act provides for joint oversight of designated settlement systems by the Reserve Bank of New Zealand (the "**Reserve Bank**") and the Financial Markets Authority ("**FMA**"), formerly the New Zealand Securities Commission.

[2] The conduct rules for the relevant market will determine the transactions which must be cleared and settled on the System. All derivatives contracts traded on the derivatives market will clear and settle in the System. Trades in securities on the NZSX, NZDX and NZAX will clear and settle in the System if the legal title to those securities can be transferred electronically through the System.

Definitions

Capitalised terms used in this document bear the meanings given to them in the New Zealand Clearing Limited Clearing and/or Settlement Rules **("C&S Rules")** and the New Zealand Depository Limited Depository Operating Rules **("DO Rules").**

IV. SUMMARY ASSESSMENT

Summary assessment of observance of the principles

NZX Clearing has completed this assessment as recommended by IOSCO. The assessment is based upon answers to the key considerations in the Committee on Payment and Settlement Systems and International Organisation of Securities Commissions Principles for Financial Market Infrastructures and is supported by information and documentation made available. Each principle contains a summary and an assessment of each key consideration, followed with an assessment of observation. The assessment category expresses the result of the assessment as one of the following four categories: observed, broadly observed, partly observed and not observed. A recommendation can also be marked as not applicable or not assessed.

In NZX Clearing's opinion, the System observes, or broadly observes, all of the Principles assessed; however Principle 24 was not considered applicable. The following table summarises the principles assessed and the rating allocated.

Table 1 Ratings Summary

Assessment category	*Principle*
Observed	1, 2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23
Broadly observed	3, 5, 15
Partly observed	
Non-observed	
Not applicable	24

V. DETAILED ASSESSMENT REPORT

Principle 1: Legal basis

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

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

The principal jurisdiction relevant to the adequacy of the legal framework is New Zealand. The NZX Clearing Settlement System ("System") is a Designated Settlement System under part 5C of the Reserve Bank of New Zealand ("RBNZ") Act 1989.

In accordance with section 156Q of the Reserve Bank of New Zealand Act 1989, the rules of a designated settlement system relating to the flow of settlement instructions, the determination and calculation of settlement obligation, effecting the settlement, and managing the default of a participant in the designated settlement system are valid and enforceable despite any enactment or law to the contrary.

In accordance with sections 156R, 156T and 156X of the Reserve Bank of New Zealand Act 1989, designation also gives legislative backing to the finality of settlements effected, netting done, and the collateral transferred according to the rules of the settlement system.

Additionally, the Personal Property Securities Act 1999 ("**PPSA**") provides that NZCL has priority over any security interest in personal property if a participant in a designated settlement system has, in accordance with the rules of that designated settlement system, granted a security interest in that property or transferred the property in order to provide collateral or effect a settlement.

Key consideration 2: An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.

NZCDC, NZCL and NZDL are established under New Zealand law. All legislation and regulations governing the operation of NZCL are publicly available and can be accessed, including via the internet, at no charge. This includes the Reserve Bank of New Zealand Act 1989 ("RBNZ Act"), which regulates settlement systems and banks, and more generally all legislation and regulations relevant to the issue and trading of securities, including the Securities Act 1978 and the Securities Markets Act 1988.

The C&S Rules, DO Rules and procedures accompanying these rules are also publicly available on the NZX Clearing website (www.nzclearingcorp.com). NZCDL believes that the C&S Rules and DO Rules are clear and internally coherent.

The C&S Rules provide for NZCL to act as the central counterparty to a transaction cleared and settled on the Clearing House and for the novation of a Clearing Participant's rights and obligations under a transaction with NZCL. These rules are part of a binding and enforceable contract between NZCL and each Clearing Participant which provides certainty to those who rely upon it.

The NZX Participant Rules require that client agreements provide that the Clearing and Settlement Terms of the Trade executed for that client will be novated in accordance with the C&S Rules and that the relevant Clearing Participant will become principal in the resulting Settlement Transaction.

NZCL, as operator of the CCP, interposes itself between Clearing Participants to assume the delivery and payment obligations and associated counterparty risk of Clearing Participants, in respect of transactions when the transaction is accepted for clearing on the System.

There is a continuous netting of the gross obligations and entitlements of Clearing Participants arising from Settlement Transactions arising from Securities Transactions. The validity of netting arrangements under the C&S Rules is provided for in section 156T of the RBNZ Act. This section provides that any netting in accordance with the rules of a designated settlement system is valid and enforceable despite any enactment or rule of law to the contrary.

Under the C&S Rules, collateral can be delivered in three forms: (i) the absolute transfer to NZCL of money collateral and eligibly securities; (ii) the provision of a security interest over money collateral and eligible securities that are not absolutely transferred to NZCL; or (iii) provision of third party collateral (comprising bank guarantees, letters of credit and other third party obligations acceptable to NZCL).

Clearing Participants are required to agree to the creation of a security interest in all collateral lodged by the Clearing Participant (to the extent that ownership of the collateral is not absolutely transferred to NZCL) and the C&S Rules confirm the enforceability of such a security interest.

In the event of a participant's default, the C&S Rules set out broad remedial powers for NZCL and NZDL respectively, including applying the Participant's Collateral, cancelling transactions and suspending the participant's participation in the Clearing House.

The RBNZ Act provides settlement system participants and operators with certainty that settlements effected through a designated settlement system are final and cannot be challenged.

Finally, the C&S Rules and Procedures provide for the operation of the Clearing House, and monitoring and risk management of Clearing Participants. The Rules are a legally enforceable contract between NZCL and Clearing Participants, and include provisions related to: admission criteria, disclosure obligations, maintenance of adequate capital and suspension or termination of a Clearing Participant's participation on breach.

Key consideration 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.

The legal basis for NZX Clearing is articulated to the relevant parties by the conditions of designation of a designated settlements system, as specified in Reserve Bank of New Zealand Designated Settlement System – NZCDC Order 2010. In granting designation, the Reserve bank of the New Zealand and the FMA have considered all aspects of the NZX Clearing legal basis, and the material aspects to which it applies.

Key consideration 4: An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.

The principal jurisdiction relevant to the adequacy of the legal framework is New Zealand. The Clearing House is operated by entities incorporated under New Zealand law. The C&S Rules and DO Rules are governed by the laws of New Zealand and Clearing Participants and Depository Participants agree to irrevocably submit to the exclusive jurisdiction of the courts of New Zealand. The RBNZ Act provides that the rules of the settlement system are valid and enforceable despite any rule of law to the contrary.

Other jurisdictions are relevant insofar as a Clearing Participant or Depository Participant is incorporated outside New Zealand. As at the date of completion of this assessment the only relevant jurisdictions other than New Zealand are Australia, the United Kingdom and Singapore, which have been evaluated in the course of approving applicants from those jurisdictions.

Key consideration 5: An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.

New Zealand law generally allows contracting parties to select the body of law to govern a particular contract (provided there is a sufficient nexus between one or both of the parties, or the subject matter of the contract, and the selected jurisdiction).

Further, the RBNZ Act provides that the settlement finality provision of the Act extends to any application made to a New Zealand court by a foreign court, foreign representative, or foreign creditor to reverse, repay, recover or set aside a settlement that relates to an insolvency that is within the jurisdiction of the relevant foreign court, foreign representative or foreign creditor. This limits the impact of insolvency laws of foreign jurisdictions in New Zealand, in circumstances where an overseas participant in a designated settlement system is insolvent under the applicable local laws. This provision also ensures that a settlement that is effected in accordance with the rules of a designated settlement system cannot be reversed by a foreign court, liquidator or creditor on the grounds that the participant in the designated settlement system is subject to the insolvency laws of the foreign jurisdiction.

Most of the participants in the Clearing House are New Zealand incorporated entities, and subject to New Zealand law. In the case that a participant is incorporated overseas, the rules set out requirements that such participants provide confirmation to NZCL that the rules are contractually enforceable in the relevant jurisdiction and that NZCL will be able to enforce its rights in respect of any collateral and associated security interests. NZCL may take as collateral securities issued by entities incorporated outside New Zealand.

Other jurisdictions are relevant insofar as a Clearing Participant is incorporated outside New Zealand. As at the date of completion of this assessment the only relevant jurisdictions other than New Zealand are Australia and the United Kingdom, which have been evaluated in the course of approving applicants from those jurisdictions. No material issues have been identified in this evaluation.

The Clearing House has no cross-border links with other clearing houses.

Assessment:	Observed
Comment:	

Principle 2: Governance

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

Key consideration 1: An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.

The objectives of the NZX Clearing are broadly addressed by the C&S, DO Rules and risk management policies, including to ensure the integrity and stability of the financial market and the optimum effectiveness of the settlement system. The risk management measures employed by NZX Clearing are designed to (1) ensure early detection of unsound market activities and practices; (2) prevent the accumulation of losses and thus mitigate contagion risk; (3) ensure the sufficient financial resources are available to cover financial obligation arising from counter-party default; and (4) allow expeditious action to be taken to safeguard the financial integrity of the markets.

In addition, the Governance Policy sets out a number of objectives which address key considerations of an FMI such as accountability of the Board and management, appropriateness of the NZX Clearing risk profile, meeting the needs of shareholders and stakeholders, and ensuring balance in authority and appropriate oversight.

Key consideration 2: An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.

NZCL and NZDL are wholly-owned subsidiaries of NZX Clearing, a wholly-owned subsidiary of NZX, a registered exchange under the Securities Market Act 1988. NZX Clearing has a Board separate to that of the NZX Board.

The NZX Clearing Governance arrangements are contained in the Governance Policy which is available to shareholders, stakeholders and the relevant authorities. The policy provides clarity in the respect of board members and management to ensure accountability to shareholders and stakeholders.

The NZX Clearing Board of Directors is separate from the NZX Limited Board, and comprises a minimum of three Directors with an independent Chair. The NZCDC Board is responsible for overall governance of the NZCDC Group. Any changes to NZCDC's policy document are subject to the Board approval. A detailed description of the responsibility and accountability of the management team and the Board can be found in the policy documents.

The NZX Clearing Group does not have a separate Audit and Risk Committee, as this role is undertaken by the NZX Clearing Board.

The NZX Clearing Board has a clear line of communication with the independent external auditor and the internal finance and audit team, and it may, at its discretion, meet with the independent auditor without company management being present. Auditors may be invited to attend the NZX Clearing Board meeting when NZX Clearing financial reporting and audit matters are discussed.

The NZX Clearing Board has established a Credit Committee to assist the Board in managing financial risk. Among other things, the Credit Committee has responsibility for reviewing and approving amendments to margin rates, and reviewing and making recommendations to the Board for the amendment of credit related policies and procedures, including margin and collateral management procedures. The Credit Committee meets on an ad hoc basis to consider specific risk related items as they arise. The NZX Clearing Chair is the designated representative on this committee. All NZX Clearing Board members can attend the Credit Committee meetings. The governance role of the Board is disclosed on the NZClearing website.

Key consideration 3: The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including 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.

A single board is responsible for the governance of the Settlement System as a whole, including the governance of the CCP and CSD. The roles and responsibilities of the NZX Clearing Board are addressed in the NZX Clearing Governance Policy and risk management policies. The Board meetings take place regularly and review and consider NZX Clearing's financial and operational performance, regulatory and any risk related matters.

NZX Clearing Directors are not appointed to represent any one Participant or group of Participants.

The NZX Clearing Conflicts Policy contains the Regulatory and Risk Charter, which defines the risk management and regulatory oversight role that it will undertake, and any restrictions/safeguards that may apply to its activity. This includes restrictions relating to any CEO, COO and the Directors. In addition the NZX Clearing Board Protocols also addresses Board conflicts as imposed by The Companies Act 1993. These documents set out principles and guidelines to be followed and restrictions in relation to disclosure of directors' interests, decision making conflicted due to a relationship with a Participant, objectivity at risk because of a personal interest, and discussions or resolution making that have an impact on risk management or supervisory matters.

Key consideration 4: The board should contain suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive board member(s).

The Governance Policy sets out the requirements for Board composition. The NZX Clearing Board has a mix of skills, including: quantitative, practical markets knowledge; financial skills; legal, compliance and process skills and experience; technology knowledge; regulation, risk management and regulator management; knowledge of the rules, procedures, and legislation to ensure that they are being appropriately administered by NZX Clearing management.

Currently NZX Clearing has a board of four persons; two independent board members, one non-executive board member, and one NZX representative. One of the independent directors chairs the NZX Clearing Board.

Key consideration 5: The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.

The roles and responsibilities of management are set out in the position descriptions, with authority to act clearly laid out in the delegated authorities policy. Management is made accountable for their performance through a performance review process.

Key consideration 6: The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.

NZX Clearing has documented a risk management framework which specifies the Clearing House's risk tolerance level, key risks exposed to the Clearing House, responsibilities and processes regarding the identification, measurement and management of these key risks.

The NZX Clearing also has a Regulatory and Risk Charter that defines the risk management and regulatory oversight role that it will undertake. This is coupled with a Regulatory and Risk Code of Conduct. The code of conduct describes applicability and responsibility of risk management and supervisory powers, and management of the separation of the commercial and risk management and supervisory activities and objectives of NZX Clearing at a practical, day-to-day level.

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

The public, including participants have been consulted for NZX Clearing's C&S rules, procedures and critical risk management policies. Before granting the designation of the settlement system, the joint regulators (RBNZ and FMA) have also reviewed and approved NZX Clearing's rules, procedure and policies. Critical amendments to such rules, procedures and policies are submitted to the joint regulators for approval. The C&S rules, procedures and critical policy documents are all publically available on the NZX Clearing website.

Assessment:	Observed
Comment:	

Principle 3: Framework for the comprehensive management of risks

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

Key consideration 1: An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.

NZX Clearing and its subsidiaries are exposed to number of risks in the normal course of business. The most significant of these is the risk created by acting as central counterparty to trades occurring on NZX Markets.

NZX Clearing has developed a risk management framework to identify, measure, monitor and manage the following risks exposed to NZX Clearing:
- Counterparty Credit Risk
- Liquidity Risk
- Operational Risk
- Legal Risk
- Settlement Bank Risk

The above risks are managed through the implementation of a series of risk management policies and procedures that covers risk identification and definition, assessment and measurement, and risk reporting.

The risk management framework is subject to an annual review.

Key consideration 2: An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.

The C&S Rules and DO Rules set out the events or circumstances that constitute a Credit Event, and/or a Default Event. The events or circumstances are very broad, and include such things as failure to settle outstanding obligations, failure to meet margin calls, failure to satisfy ongoing participation requirements, failure to comply with any of the Rules, conditions or directives of NZX Clearing.

NZX Clearing has supervision procedures in place to ensure that Clearing Participants meet their participation standards on an ongoing basis. The monitoring and supervision of Clearing Participants is carried out by reviewing reports which Clearing Participants are required to submit, and carrying out routine on-site visits to ensure ongoing compliance with standards.

NZX Clearing's capital adequacy rules require the participants to maintain adequate capital to cover their operational, counterparty, currency, market and position risk requirement. The participants are required to report for any significant changes in their capital adequacy levels. The frequency of reporting is increased if a participant's capital adequacy drops below 120% and the participant will be treated as default if the capital adequacy is lower than 100%.

NZX Clearing also has a Pre-default Credit Policy which sets out simple measurable credit parameters which participants can monitor and measure themselves against, and which provides certainty as to how the Clearing House manages exposures to specific participants.

In addition, NZX Clearing has the power to impose financial penalties on Participants who fail to settle their settlement obligations in a timely fashion. NZX Clearing also encourages participants to actively manage their collateral to avoid margin calls.

The Rules, standards, Policies, fees and financial penalties help to incentivise participants to remain within the parameters set by the NZCL risk management framework.

Key consideration 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.

NZX Clearing's risk management framework specifically identifies and addresses risks posed from other entities, including settlement bank, liquidity, legal, credit, general business and operational risks.

NZX Clearing's operational risk management addresses the reliance on external service providers, including NZX. It is essential for NZX Clearing to carry out the NZX Clearing group business and manage its risk effectively and efficiently, that it has adequate and relevant technological infrastructure (including application and backups). Business Continuity Plans encompass crisis management arrangements.

NZX Clearing generates and reviews a Cash Exposure summary each business day. The summary lists the cash balance NZX Clearing holds with every bank, including the cash collateral and risk capital. Given the distribution of the aggregated cash exposures to every bank, NZX Clearing will move cash across banks to mitigate the concentration risk on any single bank.

Key consideration 4: An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.

NZX Clearing has developed its Business Continuity plan to identify events that may give rise to disruption of the core operation and service, including bomb threat, earthquake, fire, flood and gas leak. Based on the length of the evacuation of the normal place(s) of business, different scenarios have been created and procedures have been developed to manage the scenario and ensure the core operation and service can be recovered on a timely basis.

A Clearing Participant's failure to provide adequate cash for settlement may also prohibit NZX Clearing from providing the normal settlement service to the market. NZX Clearing has developed Default Management Procedures to manage the wind-down of the defaulting participant's positions and ensure that the settlement system performs in an orderly and effective way in the event of the participant's default. NZX Clearing keeps risk capital to cover financial losses related to the default.

NZX Clearing is reliant upon its shareholder, NZX, for recovery or orderly wind-down in the case of significant depletion of its risk capital. Detailed plans for a range of different capital loss scenarios are in the process of being developed

Assessment:	Broadly observed
Comment:	NZX Clearing will develop scenarios and prepare appropriate plans for its recovery or orderly wind-down following the depletion of risk capital.

Principle 4: Credit risk

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

Key consideration 1: An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

One of the key components of NZX Clearing's risk management framework is the credit risk management policy and procedure that are designed to monitor, measure and mitigate the counterparty credit risk. The counterparty credit risk is the risk of loss as a result of default by a Clearing Participant. This is by far the biggest risk faced by a clearing house. There are two dimensions to the counterparty credit risk:

(a) Principal risk: risk of loss on delivery of contract or payments from the defaulting participants. In a Clearing and Settlement Transaction, NZX Clearing is exposed to large credit risk on settlement day when the full principal or notional value of the contract is at risk during the delivery of securities. This situation occurs when securities are delivered and no payment is made or when payments are made but no securities are delivered. In a Stock Borrowing and Lending Transaction, NZX Clearing is exposed to principal risk when a Stock Borrower fails to return securities on the due date. In an equity or debt instrument settlement transaction, NZCDC eliminates the principal risk through delivery versus payment in which the instrument and cash are exchanged simultaneously; and

(b) Replacement cost risk: risk of loss as a result of replacing a defaulted transaction. If a participant defaults, the clearing house would be obligated to the other non-defaulting participants by entering into a purchase or sale transaction identical to the position held by the defaulting participants. Replacement cost risk arises because the purchase price can be higher than the original purchase transaction and the sale price may be lower than the original sale transaction. The magnitude of the loss is a factor of the volatility of the contract, the time taken to close out the transaction and the size of the defaulted position.

NZX Clearing has strict initial participation and ongoing compliance requirements to ensure only financially strong and credible companies will be accredited or allowed to continue as participants. NZX Clearing also imposes margins on every participant who has outstanding exposures. In the normal course of business, NZX Clearing's exposures to participants are measured on a daily basis. NZX Clearing can also make intra-day margin calls because positions and obligations are created on and can be viewed on a real time basis. The margin requirements are then compared to available collateral and, where required, a margin call can be made. The margin call will stipulate the timeframe in which additional collateral is to be provided. The margin rates are reviewed monthly and the credit risk management policies and framework are reviewed annually. The margin rates for new products are set at the time the stock is firstly quoted.

Key consideration 2: An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.

NZX Clearing is exposed to counterparty credit risk on unsettled trades, which may arise from the failure by a counterparty to meet its obligation or commitment to the CCP. All trades on NZX's markets enter the clearing house and are immediately novated such that NZCL becomes the buyer to every sell trade and the seller to every buy trade.

As buy and sell settlement transactions that are novated to NZCL offset each other, NZX Clearing is not exposed to direct price movements in the underlying equities or derivatives. However, equity or derivative price movements, market activity and an individual participant's own solvency may have an impact on a counterparty's ability to meet its obligations to the NZX Clearing Group. Failure to meet these obligations exposes NZX Clearing Group to potential replacement cost risk on unsettled transactions. This counterparty credit risk is managed primarily through:

i) Initial entry and ongoing obligations for Clearing Participants;
ii) Risk based capital adequacy requirements;
iii) Margin requirements calculated daily that must be met by the submission of eligible collateral; and
iv) Fixed capital resources to be used in the event of participant default.

The outstanding security and cash settled obligations are settled through Delivery versus Payment (DvP). Margin requirements are calculated for each participant based on that participant's unsettled transactions in each security. Margin rates for each security are based on the underlying characteristics of the security and its price volatility. Margin requirements, including initial margin and variation margin are calculated on a daily basis using current market prices. Each day, margin requirements are compared to collateral held and a margin call made where necessary. Participants are then required to post additional collateral. The cash settlement derivative contracts will be marked to market on a daily basis and the marked amount will be settled on the following day.

NZX Clearing regularly stress tests Clearing Participant exposures against the amount and liquidity of margin collateral and risk capital resources. NZX Clearing's ongoing monitoring of participants' unsettled positions and exposures, coupled with daily margining and collateral management, enables it to efficiently manage its central counterparty credit risk.

NZX Clearing is also exposed to counterparty credit risk through securities lending transactions. As NZCL is exposed to the full principal value of each loan, NZX Clearing requires collateral to be posted equal to 105% of the loan. All loans are revalued on a daily basis and additional collateral required where appropriate.

Key consideration 3: A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI 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.

The collateral requirement and additional financial resources for NZX Clearing is covered in detail in the following Key consideration 4 from a CCP's perspective. NZCDC's businesses other than as CCP do not expose the company to risk of participant failure so this consideration does not apply.

Key consideration 4: A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions.

In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.

NZX Clearing's total exposures are covered with a high degree of confidence by the calculation of margin, the provision of collateral, and the provision of additional risk capital. The Capital Management Policy encapsulates the approach of NZX Clearing with respect to maintaining sufficient and liquid financial resources and covers the following areas:

i. Risk Capital requirements required to cover the risk of default of a participant;
ii. Operational capital requirements;
iii. Capital Composition; and
iv. Review and reporting.

Risk Capital is set aside to deal with potentially large credit and/or liquidity risks that may arise through the default of the largest participant on any settlement transactions and stock lending transactions. This risk capital is to ensure stability in the market as the clearing house operator would require financial resources to deal with counterparty credit risk and liquidity risk following a default.

The level of risk capital set aside complies with international best practices in the following aspects:

(a) The quantum of the risk capital is calculated based on acceptable parameters such as using the historical extreme market conditions and the assumption that the largest market participant will default;
(b) The quantum of the fund is not static but is dynamically calculated based on the levels of business conducted in the market;
(c) An assessment of a default by the second largest participant is also made; and
(d) An assessment of the parameters and assumptions used in the model is conducted on a quarterly basis, with the model updated at least annually, covering an 18 month time horizon

Key consideration 5: A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A 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. A full validation of a CCP's risk-management model should be performed at least annually.

NZX Clearing calculates the margin and risk capital requirement for each participant on a daily basis. The risk report generated every morning includes the information on margin, collateral and the results of the daily stress tests. The adequacy of its total financial resources is assessed and reported to management. In a highly volatile market, the margin and the risk capital requirement are assessed valued intra-day.

Arrangements relating to the reviewing and reporting of sufficiency of financial resources maintained by NZX Clearing, are set out in the Capital Management Policy. This includes Board reporting of capital utilisation, projections for future requirements and recommendations for additional capital (if necessary). This information is provided to the Board and the joint-Regulators on a monthly basis. This is supplemented by ad-hoc reporting where there are specific events that give rise to concern over current capital levels. This includes events and structural shifts in market activity that may result in additional capital being required.

The NZX Clearing risk management framework and the relevant risk models are reviewed annually.

Key consideration 6: In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.

The "extreme" scenario that is stress tested is the hypothetical situation where the trading participant with the biggest position fails on a day with an extreme, but plausible market event. Stress testing considers the most volatile periods experienced by the New Zealand equity markets for the past 20 years. Core attributes of the test are failure of a participant with the biggest position, largest daily market movement observed since 1991, and existing debt and equity products. In addition, future capital requirements have been considered, derived from expected product launches and assumptions in respect of growth rate of these additional products.

Certain scenarios have been assessed when reviewing capital levels by reference to the period from 1991 to present, including:

I.1.1.1 largest decline in single day;

I.1.1.2 largest unsettled position;

I.1.1.3 largest 5 day cumulative trading value; and

I.1.1.4 multiple concurrent defaults.

As liquidity may deteriorate to a great extent when the largest participant defaults, NZX Clearing has increased the liquidation period in conducting the stress test. NZX Clearing has also taken into account the fact that the market liquidity and volatility will be even worse when the security collateral will have to be liquidated to cover the default losses. A number of stress scenarios have also been developed to assess whether the funding facility is in place to ensure the effectiveness of the settlement system in the event of the default.

Key consideration 7: An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.

NZX Clearing has a Default Management Procedure, which covers the following areas of default management:

- Managing the risk and impact associated with the default of a Clearing Participant in an orderly manner;

- Controlling and minimising the impact of default;
- Ensuring continuity of operations of the Clearing House and non-defaulting Clearing
- Participants; and
- Preventing potential systemic risk on markets served by NZCL.

The C&S Rules and Procedures provide a comprehensive and descriptive list of occurrences that constitute a Credit Event, including failure to meet delivery or payment obligations. NZX Clearing may treat a Credit Event as a Declared Default and may exercise any of the powers in the C&S Rules to manage the default event.

In the event of a Default, that requires NZX Clearing to liquidate and utilize some or all of a Clearing Participant's collateral, the replenishment of the collateral will depend on the scenario. If the collateral is utilized to settle the participants open positions and the participant is suspended, then no further collateral will be required from that participant. If the positions are transferred to another participant(s), credit exposures and resulting margin requirements will be recalculated and margin calls made, as required, in accordance with the C&S Rules.

In addition, the NZX Clearing Default Management Procedures contain the recovery process in the event of a Participant default. The recovery exercise includes liaising with a liquidator to reimburse any facilities used to make good the settlement amount of the defaulting Participant, and any other expenses incurred in the course of the default proceeding. This includes the replenishment of risk capital.

Assessment:	Observed
Comment:	

Principle 5: Collateral

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

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

Eligible Collateral includes cash, bank performance bonds, and securities (including NZ and US government securities and NZX 50 listed securities). Security Collateral is acceptable for covering initial margin but a minimum of 30% of the total margin requirement must be met with cash. In addition, Clearing Participants must provide cash for meeting the variation margin call on derivative products. Bank guarantees provided as collateral will have to be issued by specified banks and will be subject to bank exposure limits.

In considering types of eligible collateral, NZX Clearing has identified the following attributes:

i. Accessibility: The price information of the acceptable collateral must be accessible, transparent and readily available;
ii. Liquidity: The acceptable collateral must be able to be readily converted to cash upon liquidation with minimal impact to its prices; and
iii. Volatility: The value of collateral must be stable over time. This is to avoid potential significant depreciation on the collateral value due to market activities.

NZX Clearing is currently accepting Guarantees issued by commercial banks as collateral. According to the explanatory note of CPSS-IOSCO Principles for Financial Market Infrastructures, guarantees are in general not acceptable collateral. In rare circumstances and subject to the regulatory approval, a guarantee fully backed by collateral that is realizable on a same-day basis can be accepted as collateral.

Key consideration 2: An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.

All collateral lodged with NZCL is re-valued on each trading day, using the latest price and haircut rate, to ensure that the liquidated value of such collateral is at least sufficient to cover any projected shortfall. The haircut rates applied for each type of collateral depend on the price volatility and liquidity of the asset. The haircut rate may vary for different classes of collateral and even for different assets in the same class, as determined by NZCL. Collateral requirements are reviewed and/or revised from time to time to ensure its adequacy.

Key consideration 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.

The haircut rates on the collateral assets are determined according to the 99% Value at Risk measurement of the asset price movement. NZX Clearing also takes into account the liquidity risk in stressed market conditions when deciding the haircut rate on security collateral or foreign currency collateral.

Key consideration 4: An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.

NZX Clearing imposes a requirement that at least 30% of the collateral held must be lodged in cash as part of it’s liquidity risk management. In addition only liquid securities are approved to be lodged as collateral and therefore the liquidation of this security collateral in a default situation would not have severely adverse effects on their price. NZX Clearing also restricted the total amount of Bank Guarantee issued by one particular bank that can be accepted as collateral. In addition, NZX Clearing’s C&S procedures enable NZCL the decline securities that would otherwise be eligible securities as collateral if NZCL would have an unreasonably high exposures in respect of such securities upon delivery of these securities as collateral.

Key consideration 5: An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.

At this stage, NZX Clearing does not hold cross-border collateral.

Key consideration 6: An FMI should use a collateral management system that is well-designed and operationally flexible.

The collateral management system forms part of the risk management framework, which has been designed based on the minimum standards from the Bank of International Settlements and the International Organisation of Securities Commissions Recommendations for Central Counterparties, November 2004, which is consistent with the Principles for Financial Market Infrastructures regarding the collateral management.

The collateral is valued and managed with NZX Clearing’s main operational system TCS BaNCS. It is operationally flexible as NZCL may re-run collateral valuation with the latest price and quantity at any time during the day.

Assessment:	Broadly Observed
Comment:	Bank Guarantee is currently one of the acceptable collateral according to NZX Clearing’s rules and procedures. NZX Clearing has accepted one guarantee issued by a New Zealand incorporated commercial bank as collateral. This guarantee is not backed by any collateral. NZX Clearing will review the Clearing and Settlement rules and procedures to exclude the Bank Guarantee from the list of eligible collateral.

Principle 6: Margin

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

Key consideration 1: A 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.

Margins are imposed on the cash products that have been traded and guaranteed by NZX Clearing for settlement, but have not yet settled. The total margin requirement will be calculated as the sum of the initial margin, variation margin and additional margin required as follows:

(i) Initial margins - are assessed on the basis of the unsettled trades' potential value variation in case of unfavourable market movements. Initial margin for cash products is calculated in a Value at Risk (VaR) based approach. The initial margin for a particular security can be netted within and across a day but the netting of initial margin cannot be done across securities;

(ii) Variation margins - as the consequent profits or losses of the mark to market process, cover the change in value of an unsettled position since the last valuation. Variation margins - can be offset by all the securities in a given day but cannot be offset inter-day; and

(iii) Additional margin will be optionally charged to each participant in a form of either percentage or amount if NZCL identifies high risk in the participant's outstanding exposures and/or its financial health.

The initial margin for derivative products is derived from the Standard Portfolio Analysis of Risk (SPAN) system. SPAN has become a recognised standard for portfolio risk assessment and is used as the official performance bond (margin) mechanism of over 50 exchanges, clearing houses, service bureaus and regulatory agencies. SPAN divides all the financial instruments in one portfolio into different combined groups according to the underlying asset, so that futures and options on the same asset can be grouped together. For each combined asset group, SPAN will calculate the Scan Risk Charges based on the "Risk Array" analysis, in which the effects of variations in price and volatility on the portfolio value are examined. The analysis is based on a series of 'what if' scenarios where futures prices and volatilities are altered to varying degrees. The scenarios used for assessing the Scan Risk Charges are reviewed and adjusted regularly along with other risk metrics to reflect the recent market changes. In order to cover the inter-month basis risk on portfolios of financial derivatives with different maturities, SPAN also imposes Intra-Commodity Spread Charges. To reflect the offset effects of the value variation among combined asset groups, SPAN calculates and subtract the Inter-Commodity Spread from the total margin requirement for the portfolio. The Inter- Commodity Spread is derived on the basis of the correlation among the price movements of the underlying grouped assets.

Key consideration 2: A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.

All price data is automatically updated in the System in real time, as trades occur in the NZX trading system. There is no reliance on any third-parties for provision of pricing data. In the unlikely event that a system outage affects the data feed between the trading system and BaNCS, the latest pricing data can be manually extracted from the trading system.

Key consideration 3: A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future 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 policies and procedures provide cover for potential losses arising from default in all but extreme market situations.

For Securities Transactions the rate is set to cover a reasonably foreseeable one-day price movement. Initial movement is based on a Value at Risk (**VaR**) model. When calculating initial margin the VaR model considers a liquidation period. This is assessed for each instrument and is a measure of relative liquidity, the time in which the security could be converted to cash without price impact. The liquidation period is based on the number of non-trading days; daily average trading volume; average bid/ask spread; and market capitalisation relevant to the instrument. The confidence level used is 99%.

Once an initial margin rate is set, the initial margin requirement is calculated as a function of the rate, the current price of the instrument and the open position of each Clearing Participant in respect of the contract or product. The initial margin is revalued each day.

For derivatives products the Standard Portfolio Analysis of Risk (SPAN®) system is used. With SPAN a portfolio approach is taken and therefore the initial margin requirements are not solely a function of price, quantity and initial margin rate.

The adequacy of computed margin is reviewed, i.e. back tested, on a daily basis in addition to the past 2 days' price movements. Where this indicates a surge in volatility initial margin rates will be amended. Initial margin rates are reviewed on a monthly basis. VaR is calculated for the past 20, 90, and 250 days. The maximum VaR in each of these time periods will be selected.

Key consideration 4: A CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. A CCP

should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.

Variation margin is also calculated daily for open positions in securities. For debt and equity products variation margin is imposed to reflect mark to market losses (no adjustment is made for mark to market gains).

All open positions in futures contracts are marked to market daily. The mark to market profit and losses for a particular day will be settled in cash on the morning of the next business day.

Only short positions in option contracts are margined (because the buyer of an option does not have any obligations under an option). Margin is calculated daily for unrealised losses and the Clearing Participant is required to provide collateral in this amount.

The C&S Rules provide for NZCL to make intra-day margin calls. NZCL will make a margin call on a CP at any time during the day when a material margin deficit is detected. The details of the intraday margin call, including the margin call amount and the submission time will be advised to the participants concerned via email.

NZCL has discretion as to the circumstances in which it will make an intra-day margin call. For example it might make an intra-day margin call on the accumulation of a larger than usual net open position by a Clearing Participant; in the event of large price movements in products cleared through the system; or if there has been degradation in the value of eligible collateral held.

Key consideration 5: In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorised to offer cross-margining, they must have appropriate safeguards and harmonised overall risk-management systems.

NZX Clearing does take the correlation between different products into account in determining the margin requirement. For example in derivatives products the inter commodity spread between two highly correlated products is calculated to offset the required margin requirement. NZX Clearing does not offer cross-margining arrangement with other CCPs.

Key consideration 6: A CCP should analyse and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model's coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.

The methods and risk parameters for calculating the margin requirement are reviewed and tested monthly to ensure that the consequent margin cover is adequate to protect NZX Clearing from the potential counterparty credit risk arising from the market movements. Factor's considered includes price volatility and market conditions..

Key consideration 7: A CCP should regularly review and validate its margin system.

The margin system and risk management framework as a whole, undergoes regular reviews by management and the Board. NZX Clearing also conducts the back testing on a daily basis to test the adequacy of overall margin coverage by comparing the total margin amount with the losses on each clearing participant's outstanding positions.

Assessment:	Observed
Comment:	

Principle 7: Liquidity risk

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

Key consideration 1: An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.

Management of liquidity risk is encapsulated in the NZX Clearing risk management framework. Liquidity risk is managed by maintaining adequate reserves, and continuously monitoring forecast and actual cash flows and matching the maturity and currency profiles of financial assets and liabilities.

Key consideration 2: An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

NZX Clearing generates a daily risk report each morning which calculates a variety of key values including net and maximum cash requirement for settlement.

NZX Clearing uses a central bank model (via the RBNZ ESAS System and each participant's settlement bank) for NZ dollar settlements. ESAS provides irrevocable real time settlement of payments to an Exchange Settlement account held at the Reserve Bank.

Private clearing banks are used for transactions in other currencies, with foreign exchange settlements occurring between Clearing Banks (which maintain NZCL foreign exchange accounts) and banks maintaining foreign exchange accounts for the Clearing Participant.

Prior to settlement a participant is required to ensure that its Settlement Account contains sufficient funds to meet its settlement obligations on that day. Participants are encouraged to lodge the maximum cash requirement for settlement so that in the unlikely event that they are unable to meet their sell obligations, they have enough cash to pay for their buy obligations.

To fund its Settlement Account a participant must instruct its Settlement Bank to pay the settlement funds, through either ESAS (in the case of NZ dollar settlements), or Clearing Bank (in the case of foreign currency settlements).

Key consideration 3: A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.

The liquidity resources required for NZX Clearing is covered in detail in the following Key consideration 4 from a CCP's perspective. NZCDC's businesses other than as CCP do not expose the company to risk of participant failure so this consideration does not apply.

Key consideration 4: A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of 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.

NZX Clearing liquidity resources include cash held as eligible collateral, and risk capital. The requirement for collateral is that 30% of collateral lodged is cash, therefore it is available for immediate use. Apart from one Bank Guarantee, all the collateral posted to NZX Clearing is currently in the form of cash. In addition, the NZX Clearing Capital Management Policy ensures that risk capital is available in such a form that it can be accessed immediately in the event of participant default.

NZX Clearing has high degree of confidence of being able to meet the payment obligations under the stress scenarios.

Key consideration 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.

NZX Clearing uses a central bank model (via the ESAS System and each participant's settlement bank) for NZ dollar settlements and creditworthy private clearing banks for foreign currency settlements.

NZX Clearing's investment policy details in what assets and for how long the cash collateral and the risk capital can be invested. NZX Clearing shall only invest cash collateral and risk capital in qualifying banks that must have a Standard and Poors rating of A, or equivalent, or above. The cash collateral is generally held on an overnight basis but, where considered appropriate, it may be invested on term deposit ranging from 1 to 3 months, provided that the funds can be accessed immediately if required. The risk capital may be placed on deposit on a short term ranging from 1 to 6 months provided that the funds can be accessed immediately if required. The cash invested with the qualifying banks can be easily withdrawn and moved around to cater for NZCDC's funding needs, even in extreme but plausible market conditions.

Key consideration 6: An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.

As a systemically important FMI in New Zealand, NZX Clearing has backup liquidity support provided to it by the RBNZ. This is contained in a Memorandum of Understanding which was established with the Reserve Bank of New Zealand in October 2010. This is only for use in those circumstances where NZX Clearing has collateral or risk capital held as repo-eligible securities. Currently NZX Clearing places all collateral and risk capital as callable funds or bank term deposits.

Key consideration 7: An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity 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.

When participants submit any cash or security collateral, the ownership of these is transferred from the participants to NZCL. Any cash collateral and risk capital can only be invested with qualifying banks. In addition, when any Bank Guarantee is accepted as collateral, the Guarantee needs to be issued by the qualifying banks and the Beneficiary of the Bank Guarantee must be NZCL. NZX Clearing defines a bank as qualifying based on its credit rating, equity capital level and financial strength. A qualifying bank must have the capacity to manage its own liquidity risk and should be reliable to provide liquid financial resource when NZX Clearing needs it.

Key consideration 8: An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.

All funds for NZD settlements must be lodged to NZX Clearing's ESAS account at the RBNZ. Settlement funds remain in this account throughout the course of the day and are then redistributed out to Participants at the end of the day upon completion of the settlement processes.

Key consideration 9: An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to 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.

NZX Clearing computes the maximum settlement cash requirement for every clearing participant on a daily basis. In the risk report sent monthly to the Board, NZX Clearing includes the daily maximum cash requirement across all participants. The maximum cash requirement is measured as the total cash required for the largest buying participant if the participant cannot deliver any securities it has sold but receive all the securities it has bought.

NZX Clearing also performs the stress test on a daily basis to assess the financial resources required to cover the losses in the event where the participant with the largest outstanding position defaults in an extreme but plausible market. As documented in its risk capital management paper, the stress scenario includes but not limited to (1) one or two largest participants in one market fail; (2) one or two largest participants across different markets fail; (3) the liquidation takes one day; and (4) the liquidation takes 5 days or longer.

The stress testing models and parameters will be reviewed on an annually basis or on ad hoc cases where the price volatility and/or market structure have changed significantly.

Key consideration 10: An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.

The NZX Clearing's Clearing and Settlement Rules 7.4 explicitly lists the remedy actions NZCL may, without limitation, take as NZCL deems necessary to manage the default. The Default Remedies include settling, recalculating or carrying forward outstanding settlement obligations. NZX Clearing has developed Default Management procedures to manage the defaulting participant's outstanding settlement obligations and positions in an orderly manager so that the impact of the default on the whole clearing and settlement system can be effectively managed and minimised. NZX Clearing will cooperate with defaulting and non defaulting clearing participant to settle the outstanding obligation with each non defaulting clearing participant. NZX Clearing will aim to avoid unwinding, revoking or delaying the settlement of the obligation, which is due to settle, through a series of actions, such as taking over defaulting participant's settlement obligation, moving positions to non defaulting participants, borrowing stocks or buying stocks to cover the security delivery obligation.

NZX Clearing's Clearing and Settlement Rules and Procedures enable NZCL to impose any costs and charges related to the default event on the defaulting clearing participant. According to the Default Management Procedures, NZX Clearing may start the recovery exercise immediately following the default event. NZX Clearing may liaise with the liquidator on any issues related to the recovery of the sum that should be reimbursed to NZCL to cover the losses and costs incurred in the course of the default proceeding.

Assessment:	Observed
Comment:	

Principle 8: Settlement finality

An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

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

Settlement finality is immediate upon completion of the DvP settlement process. NZX Clearing's Clearing and Settlement Rule 4.1.3 has clearly defined the finality of settlement. The rule states that settlements effected in accordance with Rule 4.1.2 are valid and final and may not in any circumstances be reversed or avoided once the cash or security has been debited from or credited to the specified settlement account.

Key consideration 2: An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.

DVP settlement of Securities Transactions for market trades by Clearing Participants is permitted at two times during each Settlement Day; at 11am and at 3pm. Settlement of Lending Transactions is permissible at any time during a Settlement Day. The C&S Rules provide that settlement is final once a Settlement Account or Account has been debited or credited. In circumstances where the seller fails to deliver securities, the unsettled settlement obligation will be carried forward to the next settlement day.

The settlement of OTC transactions can occur at any time throughout the course of a Settlement Day. Unsettled OTC transactions become invalid at the end of the business day.

Key consideration 3: An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.

Once an exchange traded transaction is novated and cleared by the Clearing House, the consequent settlement obligations being settled through the CCP cannot be revoked by a Clearing Participant or by the FMI at any time, either prior to or on the day they are due for settlement. Settlement obligations may change only if a Trading Participant has been allowed to cancel a trade in accordance with the NZX Error Trade Cancellation Policy, which then impacts a settlement obligation. This can only happen prior to but not on the settlement day.

If an Over the Counter (OTC) trade is in 'Accepted' status i.e. only one party has placed his leg of the trade, the counterparty is yet to place a matching order, then the party can cancel the OTC trade unilaterally and the counterparty confirmation or notification is not required.

If an OTC trade is matched and confirmed by both buyer and seller, the cancellation process has to be bilateral. Both the parties have to send in a cancellation request. Only on receipt of both cancellation requests will the trade be marked as cancelled and the consequent settlement obligation revoked. If only one party has instructed cancellation the settlement obligation will remain valid and must be settled.

Assessment:	Observed
Comment:	

Principle 9: Money settlements

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

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

NZX Clearing uses a central bank model (via the Reserve Bank ESAS System) for NZ dollar settlements. Participants are required to have a settlement bank with an ESAS account. Money deposited by a participant into NZX Clearing's ESAS account for the purposes of settlement will be recorded in the Depository in the participant's Depository Account and reflected in NZX Clearing's money nostro account.

After NZDL has received notice that Money has been deposited in its ESAS Account, it will credit the relevant participant's account in the Depository. Transfer of Money for the purposes of settlement occurs by the debiting and crediting of Money to and from accounts in the Depository.

Key consideration 2: If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.

As the central bank settlement system does not facilitate non NZD cash settlement, the Depository uses a clearing bank model for transactions in currencies other than NZD, with Clearing Participants' banks providing foreign exchange for settlement to NZX Clearing's clearing banks. According to the Clearing and Settlement Rules, the clearing bank must have adequate capacity for receiving and making payments in currencies other than NZ$; and hold a rating of not less than A- from Standard & Poor's Ratings Services, or Fitch Ratings Limited or A3 from Moody's Investor Services Limited.

Key consideration 3: If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.

The clearing house's exposure to the banks occurs when NZCL places the funds with and accepts letters of credit or bank guarantees from a bank. Accordingly NZCL ensures that all such investments are with registered banks with high credit quality. In addition, these investments are highly liquid so that they can be liquidated promptly when required with minimal loss.

To mitigate the risk of private settlement bank failure, clearing banks are subject to strict criteria of creditworthiness and its ability to conform to NZX Clearing's operational requirements, and are subject to on-going monitoring of creditworthiness and operational performance.

Key consideration 4: If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.

Once the participants lodge the money into the Depository through the central bank or the commercial Clearing Bank, NZX Clearing then settles all participants' cash obligations on its own books. At the end of every business day, the NZD cash is paid back to participants and no NZD settlement cash remains on the Depository's book overnight. The Depository does not clear the non NZD cash on a daily basis and the Depository keeps all the non NZD cash with the Clearing Bank in the form of cash.

Key consideration 5: An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.

All transactions through NZX Clearing's ESAS account are Real-Time Gross Settlement (RTGS). This allows individual transactions to be settled electronically as the transactions happen. Settlements are final and irrevocable.

Wherever possible, transactions conducted through commercial banks are performed as a Same Day Cleared Payment (SCP). SCPs ensure real-time irrevocable settlement between banks.

Assessment:	Observed
Comment:	

Principle 10: Physical deliveries

An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

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

The C&S Rules provide for securities and funds to transfer in a manner that achieves delivery versus payment (DvP). To settle an obligation to deliver a security a Clearing Participant must transfer legal title to the Nominee. Settlement is effected by the transfer of beneficial interest in the Depository.

At present, no physically delivered commodity contracts are cleared and settled through the System.

Settlement is effected by transfer of Approved Product and Money to and from Settlement Accounts. Settlements are valid and final and cannot be reversed: in the case of money, when cash is received in a settlement account; and in the case of approved products, when product is credited or debited to a Settlement Account in the Depository.

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

By requiring settlement to occur in the Depository, Approved Product is immobilised, enabling transfer of beneficial ownership within the Depository in a dematerialised electronic format. There is no handling of physical certificates or documents of transfer within the Depository. This reduces the storage risks associated with NZX Clearing's delivery obligations.

Assessment:	Observed
Comment:	

Principle 11: Central securities depositories

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

Key consideration 1: A CSD should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

The DO Rules and Procedures provides a robust framework for the operation of the CSD, and are designed to provide protection to both participants and to NZX Clearing. The rules include participation standards for initial membership and ongoing participation, the operation of accounts in the CSD that enable the segregation of assets, transacting on the accounts, lodgment, uplifting and ownership of assets in the CSD, provisions for stock lending, rules relating to Default, and transfer of legal title to assets.

The Depository system has standard processes for the reconciliation of security holdings. The balance of a "Registry Nostro" account in the System is reconciled with the balance of the registry accounts and custodial accounts held in the name of the Depository Nominee. The registry balances are retrieved on a real time basis and the reconciliation is performed at the start and end of each business day.

An external Depository balances audit is performed on an annual basis, which reviews the reconciliation process.

Key consideration 2: A CSD should prohibit overdrafts and debit balances in securities accounts.

The System does not allow security debit balances to be created or held.

Key consideration 3: A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilise or dematerialise securities.

All securities required for settlement through the System must be held in the Depository, and settlement will be effected by transfer of beneficial interest in the securities. This effectively immobilises the security for settlement. There is no handling of physical certificates or documents of transfer within the Depository.

Transfers of securities in New Zealand are usually effected by book entry in the securities register of the issuer. The Securities Transfer Act 1991 (**STA**) allows for either paper transfers or electronic transfers. Where securities are transferred by electronic system approved under the STA, the issuer is exempted from the requirement to send a certificate to the transferee of the securities after they have been transferred. Legal title to nearly all Quoted Securities of Issuers Listed on NZX Markets can be transferred electronically.

Where securities are transferred in accordance with the rules of a designated settlement system, the RBNZ Act provides that no person may refuse to take an action on the grounds that the transfer was ‘not effective’. The Act further provides that the transfer of legal title to securities is effective despite any law to the contrary, ensuring that such transfers will receive the same protection as transfers under an electronic system approved under the STA. The NZX Clearing Settlement System, which is a designated settlement system, can be used to effect the transfer of securities electronically.

Key consideration 4: A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.

The DO Rules allow for customer securities held in the Depository to be held on trust by NZX Clearing for the benefit of the Depository Participant in whose name the Account is held, to the exclusion of all other Depository Participants. Depository Participants may also be providing custody services to their clients via the Depository.

Assets held by a person on trust will not be available to creditors of the person on the custodian’s liquidation. New legislation has recently been enacted in relation to custodial services - Financial Advisors (Custodians of FMC Act Financial Products) Regulations 2014.

Key consideration 5: A CSD should employ a robust system that ensures segregation between the CSD’s own assets and the securities of its participants and segregation among the securities of participants. Where supported by the legal framework, the CSD should also support operationally the segregation of securities belonging to a participant’s customers on the participant’s books and facilitate the transfer of customer holdings.

Relevant rules and legislation provide for customer assets in the possession of participants in the settlement system to be protected by trust law. In particular, participants under the NZX Participant Rules and the NZX Derivatives market who hold client assets must hold these on trust. Under the DO Rules, a custodian trustee is appointed in whose name legal title to the admitted product is registered. Customer assets held in the Depository are protected in the event of insolvency, as these trust arrangements prevent customer assets held on trust being realized in favour of creditors of the insolvent entity.

The C&S Rules and DO Rules also provide for segregation by Settlement Account to further protect customer assets. Customer assets are therefore held in an Account in their own name. Depository Participants also have the ability to maintain a further level of segregation, by having assets belonging to customers on their books held in the Depository in an omnibus account structure.

Key consideration 6: A CSD should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.

In addition to custody services, all transactions cleared and settled by NZCL settle on the Depository. Additional activities conducted by NZDL are the provision of over-the-counter (OTC) transaction settlement, and the operation of a stock lending pool. Depository Participants can lend and borrow securities held in the Depository between themselves. NZCL acts as central counterparty for securities lending on the Depository.

For OTC transactions, NZCL does not act as central counterparty and as such, does not assume any counterparty risk on these transactions. OTC trades can settle DvP or DfP. Where monies are to be exchanged, Depository Participants must provide cash to NZX Clearing's ESAS account at RBNZ.

Risks associated with stock lending are managed as part of NZCL's risk management framework. In a Stock Borrowing and Lending Transaction, NZCL is exposed to principal risk when a Stock Borrower fails to return securities on the due date. Loans are included in NZCL fails management process to manage this risk. All loans are collateralized to 105% of their current value, and loans are revalued on a daily basis. Collateral lodged for loan exposures is included in the Collateral management framework, mitigating risks such as accessibility, liquidity and volatility.

Assessment:	Observed
Comment:	

Principle 12: Exchange-of-value settlement systems

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

Key consideration 1: An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.

The C&S Rules and DO Rules provide for securities and funds to transfer in a manner that achieves Delivery versus Payment ("DvP"). All transactions involving money and securities can only be settled on a DvP basis regardless of whether they are settling on a net basis (on-exchange trades novated to the CCP) or on a gross basis (OTC transactions).

DvP is achieved by the Depository system first blocking the securities in the Seller's Account and then confirming that cash is available from the buyer. Where cash is available, the 'buyers' Account is debited for the value of transaction at which point the blocked securities are transferred to the 'buyers' account and the blocks released. The transfers are simultaneous which ensures there is no principal risk.

Settlement transactions which are the result of netted on-market activity are settled on a net basis using BIS (Bank of International Settlements) Model/Level 3. Netting means all market transactions for a day are reduced to a single security obligation for each traded security and a single cash obligation in a particular currency across all security obligations.

Over the Counter ("OTC") transactions, which includes stock loans ("SLB") and other bilateral transactions, are settled on a gross basis using BIS Model/Level 1. For each OTC transaction there is a unique settlement transaction.

NZX Clearing links to the RBNZ's depository, "NZClear". This enables the transfer of legal title to securities between NZX Clearing and NZClear via the Lodge/Uplift process. For deliveries to NZClear, securities must be uplifted from the Depository before the transfer can occur.

All transfers between NZDL and NZClear are free of payment. DvP is not available in this instance. To achieve DvP, a transaction must be wholly completed in either the NZX Clearing Depository or the NZClear depository. In order to mitigate principal risk arising from the transfer between NZDL and NZClear, the transfer can only be done between a participant's own accounts in each depository.

Assessment:	Observed
Comment:	

Principle 13: Participant-default rules and procedures

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

Key consideration 1: An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.

The C&S Rules provide a comprehensive and descriptive list of occurrences that constitute a Credit Event, including failure to meet delivery or payment obligations.

The range of powers exercisable by NZCL in the event of a Declared Default is very broad, and may be exercised at the discretion of NZCL as it deems necessary or desirable for the protection of the Clearing House operator, the Clearing House, NZDL or NZDL Nominee.

NZCL arranges the capital and liquidity facility to manage the fund requirement in dealing with the default event. The financial resources can be recovered by liquidating the defaulting participant's position and collateral. The C&S Rules allow NZCL to, immediately and without notice, realise or take possession of any collateral and apply the proceeds of sale. C&S Rule 7.4.1(f) provides for the ability for NZCL to transfer some or all of a defaulting participant's (including that of its clients) Settlement Transactions and associated Collateral to another Clearing Participant to minimise the losses from the default. NZCL also has the power to suspend the defaulting Clearing Participant's participation in the Clearing House.

The NZX Clearing Capital Management Policy provides for the identification of events that would give rise to additional capital requirements. Board reporting of capital utilisation, projections for future requirements and recommendations for additional capital (where necessary) are provided to the Board on a regular basis, and for specific events that give rise to concern over current capital levels such as replenishment of capital in a Default situation, ad-hoc reporting to the Board would occur to determine the appropriate course of action.

Key consideration 2: An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

NZX Clearing has Default Management Procedures in place to manage the risk and impact associated with the default of a Clearing Participant in an orderly manner; control and minimize the impact of default; ensure continuity of operations of the Clearing House and non-defaulting Clearing Participants; and prevent potential systemic risk on the whole capital market. The Default Management Procedure lists the actions that the Clearing House can take in the event of a participant default, including the services suspension, positions and fund management, collateral liquidation, capital utilization, replenishment of resources following the default and disciplinary action.

The Default Management Procedures set out the process to be followed in the event of a default. A Default Management Committee (DMC) will be formed in the event of a default and specific steps are provided for dealing with the default. Flexibility is provided for in the default management procedures by conferring discretion on the DMC. The Default Management process is tested on an annual basis.

Given that NZCL currently only clears and settles trades executed on NZX Markets, the default management procedures do not contemplate coordination with multiple market operators or CCPs. The communication protocol caters for notification to NZCL's regulators and other stakeholders.

Key consideration 3: An FMI should publicly disclose key aspects of its default rules and procedures.

Rules pertaining to participant default are contained in section 7 of the C&S Rules which are available on the NZX Clearing website. A Default Management Policy is also available to participants. Internal default procedures are not made publicly available.

Key consideration 4: An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.

NZX Clearing's rules and procedures, including those regulating the default event, have been publicly consulted with its participants and other stakeholders. The close-out procedures, which describe the process of closing out an existing security settlement obligation with the cash amounting to the replacement cost, have been implemented on each occasion that a participant has been unable to deliver securities within six days following the original settlement date. During the annual inspection of each Clearing Participant, NZCL reviews and tests such procedures to ensure that they are practical and effective.

NZX Clearing's default management procedures also include liquidation of collateral, utilization of risk capital and other default handling measures. NZX Clearing does not consider tests on liquidation of collateral and risk capital to be necessary, as the collateral and risk capital are mainly in the form of cash and can be easily used to manage the default losses.

NZX Clearing runs internal testing to identify various defaulting scenarios and develop detailed default management processes. NZX Clearing reviews the default procedures on an annual basis. Changes regarding the regulatory environment and global practices on default management are incorporated in the updated default procedures.

Assessment:	Observed
Comment:	

Principle 14: Segregation and portability

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

Key consideration 1: A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.

NZX Clearing's Clearing and Settlement Rules 2.21 details the Clearing Participant's rights and obligations regarding the segregation of its transactions cleared and settled through the Clearing House into 2 or more settlement accounts. A Clearing Participant or NZX may apply to NZCL for approval of segregation on particular transactions. NZCL may, in its absolute discretion, request the participant to segregate transactions into 2 or more accounts. Once the segregation is approved and implemented, the position and the related margin and collateral will be booked separately and will not be netted against records in other settlement accounts. According to the C&S Rules, if a Clearing Participant becomes insolvent, the position and collateral in its Customer Account will be protected and not used to offset against the payment obligation in respect of the participant's Principal Account.

For Derivatives contracts it is mandatory for Participants to segregate their principal and client business. For transactions on the cash market, Participants are also able to segregate each of their customers positions and associated collateral, from each other and from the Participants principal position. Segregation however, of principal and client business in the cash market isn't mandatory, as principal business accounts for a minor proportion of the market transactions so that it is not significant enough to be considered a risk.

Key consideration 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.

According to the segregation requirement, NZCL will create different settlement accounts for recording participant's positions, the positions of their customers, and associated Collateral. Positions are segregated by individual Accounts in the Depository. Margin is calculated and collected at an account level and there is no netting of margin across accounts. Cash and/or eligible securities that are transferred to NZX Clearing as collateral to meet a margin call are transferred to NZX Clearing's Collateral Account in the Depository and reflected in the applicable participant's account or in the case of a General Clearing Participant (GCP), the individual account of their customer. Participants are prohibited to withdraw the collateral if the collateral release will lead to a margin call for that settlement account.

At the participant level, further segregation of cash or securities held as Collateral occurs at the balances level within each Account. Collateral balances are segregated in the Account by the type of outstanding obligations the collateral will apply to. This can be collateral for derivative positions, for cash market settlement exposures, or for outstanding stock loan.

The segregation of positions and collateral in this manner facilitates the NZX Clearing's default management procedure by enabling settlement, position and collateral transfer, or position closeout, as the case may be.

NZX Clearing has priority interest in all Collateral provided by a Participant and complete discretion to apply the Collateral as it sees fit in the event of a Participant default.

Key consideration 3: A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant's customers will be transferred to one or more other participants.

The NZX Clearing Default Management Policy outlines its approach to managing the open positions of a defaulting Clearing Participant. These include (but are not limited to):

1. Taking over the defaulting Clearing Participant positions through borrowing or buying the products, or using the Clearing Participant's collateral to meet delivery or payment obligations of the defaulting Clearing Participant;
2. Transferring the defaulting Clearing Participant positions to one or more non-defaulting Clearing Participants for further action;
3. Closing out the defaulting Clearing Participant positions by liquidating them in the open market.

NZX Clearing may determine, at its discretion, whether to take actions on the participant open positions. In doing so, NZX Clearing will attempt not to exacerbate an already stressed event, and therefore all relevant factors related to the risk and integrity of the market will be taken into account. For example, NZCL may be able to unwind a position over a number of days on market, or unwind a position off market so the market is not adversely affected by the panicked sell down of a security or group of securities by the NZX Clearing. One of NZCL's preferred actions for managing a default is to transfer the defaulting participant's customer position to one or more non-defaulting participants. The internal Default Management Operational Procedures detail how the position transfer can be arranged in the default event.

Key consideration 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 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.

The C&S Rules and DO Rules which covers Account structure, segregation and Default remedies are publicly available on the NZX Clearing website. In addition the Default management procedure is summarized in an external document that is available to participants.

Assessment:	Observed
Comment:	

Principle 15: General business risk

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

Key consideration 1: An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

NZX Clearing's activities expose it to a variety of business risks. NZX Clearing may experience significant loss in revenue and/or rise in expense due to inefficient procedures, adverse market environment, ineffective response to the technological progress, or poor execution of business strategies. NZX Clearing has robust operational procedures to manage the daily operation and minimize the operational risk. The NZX Clearing Board receives regular financial and other information to monitor and assess the business risks faced.

NZX Clearing is also exposed to the foreign currency risk and interest rate risk. The NZX Clearing Group undertakes certain transactions denominated in foreign currencies, hence exposure to exchange rate fluctuations arise. The foreign currencies in which transactions are primarily denominated are United States Dollars (participant fees, derivative clearing and settlement and IT costs). Exchange rate exposures are managed within approved policy parameters. Management considers forward exposures and manages these in line with internal policies and procedures, and where appropriate, enters forward exchange agreements to keep any exposure to an acceptable level.

NZX Clearing is exposed to interest rate risk in that future interest rate movements will affect cash flows and the market value of fixed interest and other investment assets. NZX Clearing currently does not use any derivative products to manage interest rate risk.

The maximum credit risk associated with the cash and cash equivalents and receivables and prepayments of the Group is considered to be the value reflected in the Statement of Financial Position. The risk of non-recovery of these amounts is considered to be minimal. NZX Clearing does not require collateral or other security to support financial instruments with credit risk. Credit risk associated with cash and cash equivalents is managed through the use of a number of institutions for deposits.

Key consideration 2: An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.

The NZX Clearing Group manages its capital to ensure that entities in the NZX Clearing Group will be able to continue as a going concern while maximising the return to stakeholders. Details of the significant accounting policies and methods adopted, including the criteria for recognition, the basis of measurement and the basis on which income and expenses are recognised in respect of each class of financial asset, financial liability and equity instrument are disclosed in the notes to the financial statements in the NZX Clearing annual report.

NZX Clearing clears and settles equity and debt instruments as well as derivative contracts. The time taken to achieve an orderly wind down of equity and debt settlement is much shorter than that for closing out derivatives clearing and settlement. The current policy requires NZX Clearing to maintain working capital to support the business to continue for at least 3 months, which is adequate as the equity and debt settlement accounts for the majority of NZX Clearing's business. In the future, when the derivative business grows dramatically, NZX Clearing may need higher working capital to ensure the financial institution can carry on the business over a period that is long enough for an orderly wind-down of its critical operations and services.

Key consideration 3: An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a 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.

NZX Clearing has a Business Continuity plan in place to recover the business and operation in a short time period in the face of extreme events. NZX Clearing also maintains working capital at an appropriate level given the nature of the respective businesses. Under the current framework NZCDC calculates 12 weeks of working capital requirements, adds an additional risk margin and uses this as the basis for determining it has adequate resources. Any additional cash held in NZCDC over and above this is paid to NZX by way of dividend, subject to the paid up capital not falling below the Boards assessment of the prudent level of capital required to ensure business continuity.

Key consideration 4: Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet it's current and projected operating expenses under a range of scenarios, including in adverse market conditions.

The financial assets held by NZX Clearing to cover its general business risk are maintained in the form of cash. These assets can be easily used to meet its operating expenses at any time if required.

Key consideration 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.

In accordance with NZX Clearing's Capital Management Policy, NZX Clearing maintains working capital and risk capital at an appropriate level given the nature of the respective businesses. This is comprised of paid up equity capital and held in line with NZX Clearing's investment policy. NZX Clearing management reports the capital utilization to the Board, along with projections of future capital requirements. In circumstances where more capital is required, recommendations will be made to the Board in this regard. Once approved by the Board, NZX Clearing will approach its sole shareholder NZX for the extra equity requirement. In circumstances where NZX may not be able to provide additional capital, NZX Clearing may consider other options for winding down the business in an orderly manner or seek additional capital from other sources.

Assessment:	Broadly observed
Comment:	NZX Clearing will develop scenarios and prepare appropriate plans for its recovery or orderly wind-down following the depletion of risk capital.

Principle 16: Custody and investment risks

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

Key consideration 1: An FMI should hold its own, and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.

The NZX Clearing investment policy is to invest money collateral transferred to it and the own risk capital in an account with a bank having a minimum credit rating of A.

Eligible securities that are transferred to NZCL as collateral are transferred to NZCL's Product Collateral Account in the Depository owned by NZX Clearing. Securities lodged in the Depository are transferred into the name of the Depository Nominee or into the name of a Custodian (in the case of US Treasury Bills provided as collateral).

As NZCL and NZDL are part of the NZX Clearing Group, NZCL can easily monitor the financial condition of the Depository. For overseas securities held as collateral, the basis for the selection of the custodian includes the stability and experience of the custodian and confirmation of protection of the securities against claims of the custodian's creditors. To date the custody facility for overseas securities has not been used and therefore no further assessment of the operation of the custodian has been undertaken.

Any Admitted Product or Money (and any Security Interest in the same) recorded in an Account in the Depository in the name of NZCL (including a Money Collateral Account and a Money Product Account) are held by NZDL and/or Nominee as trustee for NZCL to the exclusion of all other Persons.

This ensures these assets are not available to meet the obligations of NZDL or the Nominee on liquidation.

Cash held on behalf of participants for settlement, is held in the NZX Clearing ESAS account at the RBNZ.

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

The operation of the Rules and the RBNZ Act provides for enforcement and prompt access to product and cash collateral. Securities registered on a register in New Zealand and held in the Depository as collateral are readily available. Overseas securities held by NZDL's foreign custodian are held in a segregated account and are readily accessible (subject to time zone).

NZX Clearing cash is held on call, or invested in term deposits for a short duration if considered appropriate. Risk Capital may be deposited on a term up to six months, but must be able to be accessed immediately if required.

Cash held on behalf of participants for settlement is held in the NZX Clearing ESAS account, and is accessible immediately.

Key consideration 3: An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.

When considering each investment, consideration is given to the overall exposure to a specific bank. Exposures are aggregated in respect of investment of cash collateral and risk capital of NZX Clearing, guarantees in respect of Clearing Participants and exposure as a clearing bank.

Investments are limited across counterparties in order to manage concentration risk. Exposures are limited relative to the credit rating of the institution and the level of total funds invested.

NZX Clearing is able to reject collateral delivered by a participant, if, as a result of accepting that collateral, NZX Clearing would have an unacceptable exposure to that security or the issuer thereof.

For diversification purposes, the aggregate credit exposures relating to cash investment to one bank cannot exceed 50% of NZX Clearing's total exposures to all qualified financial institutions relating to cash investment.

Each business day, NZX Clearing analyses the combined credit exposure to the banks based on the amount of cash investments and the amount of bank guarantees received. The investment portfolio may then need to be re-weighted to ensure the credit exposures remain within the set limits.

Key consideration 4: An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.

NZD cash, collateral and risk management capital is invested at New Zealand-incorporated registered banks.

NZCL has internal policies which determine the requirements for investing cash. The policy sets criteria for qualifying financial institutions, on the basis of a number of factors, including having a minimum Standard & Poor's credit rating of A or above.

Foreign currency collateral can be held at New Zealand-incorporated or registered banks, New Zealand branches of foreign-incorporated banks registered in New Zealand, or an overseas registered bank as considered appropriate.

Exposure limits are set for all financial institutions, in the case of New Zealand incorporated banks, according to the amount of shareholders funds and credit rating and in relation to banks incorporated outside New Zealand, according to their credit rating.

Cash collateral is held on call, or invested in term deposits for a short duration if considered appropriate. Risk Capital may be deposited on a term up to six months, but must be able to be accessed immediately if required.

The NZX Clearing management of investment risk is included in the NZX Clearing risk management framework. The NZX Clearing Investment Policy is available to participants.

Assessment:	Observed
Comment:	

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 fulfillment of the FMI's obligations, including in the event of a wide-scale or major disruption.

Key consideration 1: An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

Operational risk is managed through a standard process of risk identification, analysis and management. Key steps in this process include the documentation of high level processes, associated risk and key controls.

Within this framework the operational risk management processes are documented, authorisation processes are designed to ensure sufficient segregation and transactions/balances are reviewed and reconsidered regularly.

In addition, a rigorous change control process is in place to manage all system changes. This includes identification, investigation & documentation, analysis, delivery and testing, and release management.

Key consideration 2: An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.

There are adequate controls to ensure operational reliability. The operational team is responsible for the smooth operations of the System. Segregation of duties ensures that only the operational team has access to the production environment and that no one person in that team has access to all system functionality.

Where there are outages, "Incident Reports" are created and circulated to the key stakeholders.

All issues, bugs and fixes need to pass through an internal electronic tracking system. This system manages the workflow process and ensures ITIL like methods are followed. There are logical check points ensuring accurate recording, pre-change check lists, testing plans and final change control sign off. System and operational reliability is reviewed by the NZX Clearing Board on a regular basis. The NZX Clearing directors are not directly engaged with the operation of the CCP or the Depository.

NZX Clearing is subject to a full external financial audit. At the operational level, risks and controls are managed through risk identification and control assessment. The effectiveness and operation of controls is assessed on a regular basis, and any issues are reported to the NZX Clearing Board.

Key operational metrics are made public in NZX's monthly Operational Metrics Report which is released to the market.

Key consideration 3: An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.

The over-arching framework used in the identification, analysis and management of operational risk is based on AS/NZS 4360 standard on risk management. This standard is an internationally recognised benchmark for risk management.

Operational reliability and associated risks link back to the overall objectives of NZX Clearing. NZX Clearing's approach to achieving operational reliability includes identification of core business processes, identification of key risks, and assignment of a rating designed to measure the significance of a specific risk. Rating assignment is based on a combination of likelihood and impact. NZX Clearing has an operational target of ensuring that the system is up running for 99.9% of the time.

Key consideration 4: An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.

NZX Clearing's business operations are reliant on external service providers, including NZX. Hence, it is essential for NZX Clearing to carry out the NZX Clearing group business and manage its risk effectively and efficiently, that it has adequate and relevant technological infrastructure (including application and backups).

The NZX Clearing System is scalable and can cope with a large number of order transactions which is much higher than the average daily volume for the markets the NZX Clearing serves. In addition, most of the NZX Clearing systems used are scalable technology so that NZX Clearing is in the position to increase the capacity of those systems in a relatively short period of time without having to make major changes to the applications. Performance of all the main systems is monitored to ensure that in the event of significant changes, NZX Clearing is able to take corrective action immediately.

Key consideration 5: An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

The NZX Clearing system operates under a comprehensive system security risk assessment and mitigation framework designed to identify and address system vulnerabilities which may exist in the system design, development or implementation.
This risk assessment framework addresses the following key area's of risk:

- the physical environment
- system capacity
- operating system software
- data integrity
- access controls
- system testing

There are extensive internal controls and procedures to ensure security is maintained and operations are run effectively and efficiently. Controls and procedures are designed to maximise system up time and high availability of the NZX Clearing System.
Roles and responsibilities are clearly defined and functions separated logically. System access is tightly controlled with password storage and controls assigned to the relevant system's administrator.

All system changes are tested to ensure all identified risks are mitigated prior to software rollouts to production. All software rollouts occur during planned outages, generally after hours. Post deployment, all systems are tested to ensure the rollout is successful, prior to operation. All hardware changes are planned in a similar manner to the software rollouts. Fail over and disaster recovery tests are conducted every 6 months for the Market and more frequently for internal systems and procedures.

NZX Clearing has Business Continuity, system fail over and disaster recovery plans in place. In terms of the NZX Clearing System it is recommended that participants have at least two connections into NZX for redundancy purposes as well as access to the System web interface.

The infrastructure is designed and architected to be fully redundant and has proven fault tolerant hardware. The system and architecture is continually reviewed to ensure a robust, stable and efficient environment. NZX Clearing runs a primary, secondary site for failover and disaster recovery purposes. It also has the ability to access and manage the environments via secure 3G networks to ensure its markets can continue to operate where a data centre or access thereto is unavailable.

Key consideration 6: An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide- scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to 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.

A Business Continuity Plan (BCP) is in place that covers both NZCL and NZDL. As there is integration with NZX systems, the BCP largely follows the NZX's BCP.

A key component of the BCP is disaster recovery planning, critical to ensuring that core systems and data can be recovered on a timely basis.

Timeliness and accuracy of recovery is enhanced by using dual path hardware at the production site. To further enhance resilience there are dual sites for all core infrastructure (in Auckland and Wellington). These sites run in a mode where the databases replicate one another on a real time basis.

The databases replicate in real time, and there is low risk of data loss. The process to complete the switch to the secondary back up site, including the transition of all users and their systems to the secondary site, takes between 30-60 minutes.

Most of the NZX personnel that operate NZX's markets are located in NZX Centre, Cable Street, Wellington. NZCL/NZDL staff are located in the same premises or at the NZX premises in Auckland. If NZX Centre is not available, then there are DR sites in both Wellington and Auckland. The infrastructure can be operated remotely from other places in New Zealand.

Disaster Recovery testing is planned to take place every six months. Participants are required to take part in these events. This was last tested in March 2014 when NZX Clearing reverted to the secondary site and operated from this site for 5 days before reverting back to the primary site.

The BCP and DRP are continuously reviewed and updated where considered necessary or appropriate.

Key consideration 7: An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.

Participants have back office systems that interface with the NZX Clearing system. The C&S Rules require each Clearing Participant to maintain adequate disaster recovery and business continuity arrangements to ensure they are able to continue to operate in the event of a business disruption situation. NZX Clearing reviews these arrangements as part of its compliance and supervision visits.

In addition, NZX Clearing is reliant on third parties to operate the System, including network services provided by Telecom providers to NZX and on payment services provided by various banks and the Reserve Bank. NZX Clearing is also reliant on NZX to provide services including provision of network and software, and on TCS, the provider of the software solution for the System. NZX Clearing is party to agreements with NZX that relate to the provision of these services and the software and is a party to agreements with TCS with respect to the TCS software.

Assessment:	Observed
Comment:	

Principle 18: Access and participation requirements

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

Key consideration 1: An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

The C&S and the DO Rules prescribe the requirements that must be met by a person for participation in the Clearing House and/or Depository. Access to the System is at the absolute discretion of NZX Clearing.

The participation requirements are objective and permit fair and open access. Restrictions on access to the system contained in the access criteria reflect the risks associated with the Clearing House and Depository.

Key consideration 2: An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.

Participation requirements are prescribed in the C&S Rules and the DO Rules, which are publicly available on the NZX Clearing website. Requirements are justified on the basis that they allow NZCL and NZDL, to refuse access to an applicant (or to disconnect access to the Clearing House or Depository) if they consider access to the system by the applicant or participant would be detrimental to the wellbeing, proper conduct, stability or integrity of the Clearing House or Depository (as the case may be). Specific areas of risk are addressed in the requirements. The main areas covered are financial and operational risk.

Requirements for financial resources of Clearing Participants are contained in the C&S Rules and C&S Procedures. In addition to this NZCL has a "pre-default" credit policy. The over-arching credit policy is based on regular monitoring of capital adequacy, financial results and operational systems and processes; ongoing risk assessment by each participant; and quantitative measures that determine exposure limits and risk premiums. These risks cover: maximum clearing exposure; maximum outstanding loan value (borrow); risk premium for stock and additional margin. Quantitative measures are used to determine when additional margin will be imposed.

Capital requirements are loosely based upon Basel II and IOSCO recommendations and mirrors requirements in other jurisdictions. The capital adequacy test is the higher of a minimum amount and a Total Risk Requirement (TRR). The TRR is the aggregate of calculated capital requirements with respect to: operational risk; counterparty risk; position risk; large position risk; currency risk; primary market risk; underwriting risk; and market risk. Upon application NZCL makes an assessment of the operational capability of the applicant. This assessment is made through review of many factors, including: review of operational policies and procedures; review of back-office systems and conformance testing (including volume and performance testing); review of risk management and compliance policies and procedures; onsite visits prior to accreditation; and operational testing. This assessment aims to determine whether the applicant will be able to meet day-to-day operational requirements through a normal settlement day. The assessment of adequacy of operational capability is made relative to the size and nature of the Clearing Participant's business and the risks that they pose to the CCP. Internal audit is not a standard requirement for Clearing Participants, but NZCL has the ability to require an internal audit.

The standards are considered to be achievable and well balanced with the risks faced by NZX Clearing.

Key consideration 3: An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.

Participants' compliance with requirements are monitored by NZX Clearing by way of a desk based review of regular financial reports, review of events notified as required by the C&S Rules and review of transactional data and adhoc information requests.

On site reviews are also made for Clearing Participants. The timing and coverage of these visits are based on a risk-based assessment of each Participant. Generally each Participant will be visited annually, but this frequency will vary depending on the risk assessment for that Participant.

Monthly and annual reporting requirements are imposed by the C&S Rules and DO Rules. In addition, daily financial reporting is required for Clearing Participants, when capital adequacy levels fall below 120% of the prescribed levels. NZX Clearing also has the ability to request additional information when considered appropriate or necessary.

The Rules and process relating to suspension and/or termination of a participant are clearly set out in the C&S Rules and DO Rules which are publicly available of the NZX Clearing website. A Participant may be suspended for a number of reasons including where a credit event has occurred, failure to pay an amount due, failure to comply with ongoing participation requirements, or an alleged breach of the C&S Rules which, if proven, could have a materially adverse effect on NZX Clearing or the Clearing House.

Each suspension or termination will be managed on a case-by-case basis. However, upon suspension or termination, NZX Clearing will ensure that all transactions and settlement transactions are completed; no new transactions can be entered into; and a Clearing Participant's derivatives positions are assigned to another Clearing Participant, together with associated collateral.

Assessment:	Observed
Comment:	

Principle 19: Tiered participation arrangements

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

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

The requirements relating to indirect participation are contained in the C&S Rules and Procedures. A General Clearing Participant (GCP) is a Clearing Participant accepted by NZX Clearing to enter into agreements with other parties to clear and settle on their behalf, as well as their own. The parties they clear and settle on behalf of will typically be NZX Trading Participants.

Every GCP is required to enter into an agreement with each customer that it provides clearing and settlement services to. The agreement must be disclosed to NZX Clearing, and must address a number of points as set out in the C&S Rules and procedures. These include such things as risk management provisions including dealing, position and settlement limits and controls and filters, collateral payments, dealing with errors and default, receipt and delivery of securities and money for settlements, provision of security for the obligations of the customer. In the case of transactions arising from a Derivatives Contract, the Rules specifically require GCP's to call for cash or collateral from their customers for margin and settlement.

Further tiers of participation arrangements may exist where the customer of a GCP acts on behalf of their own clients. In this instance, the Rules require that the Customer ensures that each client agreement entered into between the Customer and its clients includes such disclosures, statements and other provisions as are required by the rules of the NZX Market in relation to clearing and settlement of Transactions for the client, including a limited liability statement. NZCL has the power to request information from the GCP regarding its customers or its customer's clients, at any time.

The Depository does not recognize indirect participants, although an omnibus structure caters for them. The direct participant has complete control of access and bears all risk regarding transactions on behalf of the clients.

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

The GCP is required to segregate the positions of its trading participants that they are clearing and settling for, by having a separate Account for each in the System. They will also have an Account for their own principal position. This segregation displays the risk borne by each trading participant for their customers. With the segregation, CCP can easily identify and measure the direct participant's exposures to the indirect participant. In addition, NZX requires Trading Participants to provide their clients positions on a daily basis, which enables NZX to analyse the exposures and dependence of direct and indirect participants.

With regards to the functioning of the system as a whole, the proportion of transactions processed that are dependent on the performance of indirect participants versus direct participants is very small.

For Derivatives transactions specifically however, the majority of transactions do originate from indirect participants, who are NZX trading participants. Generally they have direct access to the market for trading, and do not rely on the operational capabilities of the GCP they clear and settle through.

Key consideration 3: An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.

Risks resulting from the direct/indirect participant relationship are managed in several ways as follows:

- The standard for membership as a GCP's is higher, including greater Capital Adequacy requirements;
- GCP's are required to have a detailed agreement with each of their trading participants, which must be disclosed to NZX Clearing;
- Every Derivative Clearing Participant is required to collect margin from their customers and the margin must be sufficient to ensure that the Clearing Participant is able to satisfy its derivative related settlement obligations to the Clearing House; and
- The Clearing Participant becomes principal and assumes all obligations for settlement transactions related to the trading activity of its customers.

Key consideration 4: An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.

The rules relating to tiered participation arrangements are reviewed on a regular basis, including the introduction of a new product or market.

The dependences and risk management processes between indirection participant and direct participant will be checked and assessed during the onsite inspection that NZX and NZX Clearing carry out on a regular (usually annual) basis. When any breach in rules and procedures is identified, the Participant may face disciplinary procedures, and may be requested to remedy the breach. NZX and NZX Clearing may also raise good practice suggestions for participant to mitigate the potential risk as well as improve the efficiency of its operations.

Assessment:	Observed
Comment:	

Principle 20: FMI links

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

Key consideration 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.

New Zealand is different to most other jurisdictions in that it has two CSD's. The RBNZ also operates a CSD with which NZX Clearing has interdependencies. The interdependency exists because most of the parties who are participants of the NZX Clearing system are also participants of the RBNZ CSD, and securities required for settlement of transactions in NZX Clearing often originate from the RBNZ CSD. They therefore need to be transferred to NZX Clearing by the Clearing Participant who requires them for settlement.

Risk therefore exists where the process for transferring securities between the two systems may fail, causing a delay in transfer of securities required for settlement. This risk is managed in several ways as follows:

(a) Transfers over SWIFT network – all transfers between RBNZ and NZX Clearing occur via SWIFT message over the SWIFT network. The process is a complex set of steps that transfer legal title at the Registry and beneficial ownership in the respective CSD at the same time. The process is highly reliable, however it has been designed to include notifications and process dependencies. These ensure that if any one part of the process fails, the process stops and a rollback occurs.
(b) Testing – NZX Clearing, RBNZ and the affected participants and Registries underwent rigorous testing prior to the implementation of the transfer facility. In addition, system upgrades and/or upgrades to SWIFT formats are tested by all parties if and when required.
(c) NZX Clearing controls the transfer process and software. The latest version of SWIFT is used, and annual upgrades occur where required.

The RBNZ CSD is also a Designated Settlement System under the Reserve Bank of New Zealand Act 1989 and as such, operates under and is subject to the conditions of an order very similar to that of NZX Clearing. It is also structured based on the IOSCO recommendations for a SSS which provides further protections and assurances of minimum operating standards.

In October 2010, a Memorandum of Understanding was established with the Reserve Bank of New Zealand that cemented the co-operative relationship between the two entities with regards to clearing and settlement in New Zealand. The key terms of the agreement are:

(a) The RBNZ will treat the settlement system as systemically important infrastructure providing back-up liquidity support to NZX Clearing in the unlikely event it be required;
(b) The parties will provide technologically connected systems with seamless and efficient inter-operability; and
(c) A joint industry council, creating a unified approach to dealing with industry issues.

Key consideration 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.

As the RBNZ CSD is a Designated Settlement System under the Reserve Bank of New Zealand Act 1989, and also operates under the IOSCO Principles for FMI's, NZX Clearing considers that adequate protection exists.

Key consideration 3: Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high-quality collateral and be subject to limits.

Whilst there is a degree of interoperability between the two FMI's, there are no credit or liquidity risks as there are no settlements or cash exchanges. In addition, RBNZ CSD, as one of the Designated Settlement systems in New Zealand, is also required to be compliant with IOSCO requirement in terms of measuring, monitoring and managing the risk in running its settlement business.

Key consideration 4: Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.

There are no provisional transfers between the CSD's. All transfers go via a transfer account at the registry that is owned by the initiating participant. All transfers are final.

Key consideration 5: An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD's participants.

NZX Clearing does not have a link with an issuer CSD

Key consideration 6: An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.

NZX Clearing does not have a link with an issuer CSD

Key consideration 7: Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.

NZX Clearing has not established a link with any other CCP.

Key consideration 8: Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP's ability to fulfill its obligations to its own participants at any time.

NZX Clearing has not established a link with any other CCP.

Key consideration 9: A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.

N/A

Assessment:	Observed
Comment:	

Principle 21: Efficiency and effectiveness

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

Key consideration 1: An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.

The infrastructure under which the NZX Clearing operates its CCP and CSD (and SSS), were introduced in the New Zealand market in 2010, to bring the New Zealand financial market landscape into global alignment. The infrastructure is designed to reduce systemic risk and enable a broad range of products to be traded, cleared and settled.

The infrastructure was established with the IOSCO recommendations for CCP and SSS's as its basis, which is considered appropriate for its participants and the markets it serves.

Examples of participant driven efficiencies in the CCP include:
- Net settlement
- Novation to the CCP
- Electronic link with RBNZ CSD
- Clearing and settlement for multiple products, including Derivatives
- Use of SWIFT messaging protocols
- Legal title transfer system within the System
- Stock lending pool

In designing the clearing and settlement system, NZX Clearing had worked closely with participants on the core issues related to the clearing and settlement process, including but not limited to the settlement hours, number of settlement batches, cash transfer time and method, security reconciliation and security lodge and uplift time and method. In addition, NZX Clearing had published and consulted the participants as well as the wide market on the risk management framework, risk and investment policies, and key operational procedures.

Key consideration 2: An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.

The objectives of the CCP are addressed in the C&S Rules, which are publicly available on the NZX Clearing website.

In addition, NZX Clearing adheres to service delivery standards (developed by NZX for key systems, including the clearing system), which have been communicated to participants and are regularly reported against.

Key consideration 3: An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.

NZX Clearing has procedures in place to control costs, including a forecast process and reporting against forecast on a monthly basis. As the majority of NZX Clearing costs are fixed, it is possible to reasonably predict actual costs. Monthly management accounts are distributed to the NZX Clearing Board and discussed at Board meetings. The pricing structure is transparent to participants and is reviewed on an annual basis.

An annual operational audit is required under the designation order. This provides an opportunity to review effectiveness in a number of areas, including security and processes relating to the System, compliance monitoring framework, operational capability and compliance with the conditions of designation as a Designated Settlement System.

Assessment:	Observed
Comment:	

Principle 22: Communication procedures and standards

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

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

The System uses two international standards for numbering and messaging protocol.

ISINs
An International Securities Identification Number (ISIN) uniquely identifies each security. Its structure is defined in ISO 6166 and the code is a 12-character alphanumeric code that does not contain information characterising the instrument, but serves as a uniform identification of a security at trading and settlement.

ISIN is the primary identifier used for instruments in the settlement system.

15022 Messaging
The messaging interface of the System utilises the 15022 messaging standard. This is a SWIFT standard and enables the System to communicate with the SWIFT network. These messages are also used for the communication between the Depository and RBNZ system. This standard is also commonly used by custodians and banks.

Assessment:	Observed
Comment:	

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

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

Key consideration 1: An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.

The C&S and DO Rules and Procedures are publicly available on the NZX Clearing website. Other information publicly available through the website includes the NZX Clearing Annual Report(s), published audit reports, services overview documents, fee schedules and key margin parameters.

Operational metrics are also made public in NZX's regular operational Metrics Report that is released to the market.

Key consideration 2: An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.

Comprehensive documentation is available to potential and existing participants, that describes in detail Participants' rights and obligations, and every aspect of the System design and operation.

Documentation includes:
- Rules and Procedures
- CCP, CSD and BaNCS overview documents
- Detailed business process documents
- Participant handbook
- System user manuals
- Technical specifications
- External Policy documents

Key consideration 3: An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.

New participants are provided with system training and their systems must undergo conformance testing prior to being allowed to commence as a Participant.

In addition, potential new Participants undergo an accreditation process following the submission of an application. This process includes reviewing compliance plans, capital adequacy arrangements, operational procedures and reporting frameworks. Also, the individual who has been assigned the role of Responsible Person under the C&S Rules or the DO Rules, are reviewed for suitability, and undergo a detailed session with NZX Clearing staff to ensure that they understand the obligations the Participant is subject to under the Rules.

At an operational level, Participants are provided with system user manuals, business process documents and a Participant handbook.

Key consideration 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.

NZX Clearing fees are provided in a fee schedule which is publicly available of the NZX Clearing website.

Key consideration 5: An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO Disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.

The CPSS-IOSCO self-assessment against the principles outlined in the SSS Recommendations and the self assessment against the principles outlined in the CCP Recommendations have been previously published and available on the NZX Clearing website. This new self-assessment against the Principles for financial market infrastructures will also be available in the same manner.

A set of NZX Clearing operational metrics are publicly available in the NZX regular operational Metrics Report, which is released to the market each month.

Assessment:	Observed
Comment:	

Principle 24: Disclosure of market data by trade repositories

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

N/A

Assessment:	N/A
Comment:	