



Clearing House Overview

August 2010



1 Preface

This document provides users of New Zealand Clearing Limited (NZC)'s services, an overview of the clearing house and the associated clearing and settlement services. It focuses on the basic information that a Clearing Participant will need to know to commence using NZC services.

This is not a legal document. The NZC Clearing and Settlement Rules and Procedures govern the relationship between NZC and Clearing Participants.

This document covers the processes for clearing and settlement. Depository Participants should also refer to the New Zealand Depository Limited overview.

DISCLAIMER

The information contained in this document is a guide only. Participation in, and trading on any NZX Market or participation in the clearing house or depository is subject to compliance with the relevant Rules, and this document is not a substitute for those Rules. NZX, or New Zealand Clearing and Depository Corporation Limited (NZCC) or one of its subsidiaries, as appropriate, will determine, in its sole discretion, whether any Participant or potential Participant meets the requisite criteria to participate in any NZX Market or to clear via NZCC or participate in the depository.

This publication is for information only and does not constitute an offer, solicitation or recommendation to acquire or dispose of any investment or to engage in any other transaction. Those wishing either to trade in or clear or settle any products available at NZX or via NZCC or to offer and sell them to others should consider both their legal and regulatory position, including the relevant Rules, and the risks associated with such products before doing so. All information, descriptions, examples and calculations contained in this publication are for guidance only, and should not be treated as definitive.

No part of this publication may be redistributed or reproduced in any form or by any means or used to make any derivative work without written permission from NZX. NZX (including its subsidiaries, directors, officers, employees and contractors) shall not be liable (except to the extent required by law) for the use of the information contained herein however arising in any circumstances connected with actual trading or otherwise and are not responsible for any errors or omissions contained in this document.

2 Introduction

About NZC

New Zealand Clearing Limited (NZC) is a wholly owned subsidiary of New Zealand Clearing and Depository Corporation Limited (NZCC), which is in turn wholly owned by NZX Limited (NZX). NZC operates as a clearing house under a central counterparty (CCP) model.

An associate company, New Zealand Depository Limited (NZD) is the operator of a central securities depository (CSD) which provides for centralised recording and transfer of beneficial interests in securities. It maintains accounts against which securities positions and derivatives positions are recorded.

The clearing house is a recent addition to the New Zealand financial market landscape and is essential infrastructure that will reduce systemic risk and also enables the introduction of derivatives products. This will have the positive effect of broadening participation in New Zealand capital markets.

As central counterparty to trades on NZX's markets, NZC replaces trade counterparties and becomes the buyer to each seller and the seller to each buyer. NZC therefore assumes counterparty risk for its participants.

Regulatory Environment

Together NZC and NZD operate a settlement system that is designated as a settlement system under part 5C of the Reserve Bank of New Zealand Act 1989.

This legislation provides for a regulatory framework for securities settlement systems and caters for oversight from joint regulators – the Reserve Bank of New Zealand and the New Zealand Securities Commission.

Participation Requirements

A Clearing Participant must be a company and meet specific criteria, including meeting minimum capital requirements on an initial and ongoing basis.

Applicants must possess the personnel, facilities, procedures and controls, accounting systems and back office systems to manage transactions and meet their settlement obligations. An applicant must also have a satisfactory regulatory record.

A Clearing Participant will also need to be a Depository Participant under the NZD Rules.

Clearing Participants fall into three main categories:

Individual Clearing Participant (ICP)

An ICP clears and settles transactions only for itself and will be a participant in an NZX Market.

General Clearing Participant (GCP)

A GCP clears and settles transactions for itself and/or other market participants who are not Clearing Participants. A GCP is not required to be a participant in an NZX Market.

Default Clearing Participant (DCP)

A DCP is a category of GCP that maintains technology to support all products offered by NZX and is required to be available to clear and settle trades for any participant in an NZX Market.

Application Process

Applicants for participation must complete an application form and provide information relevant to their application. The applicant is required to indicate the participant category they wish to operate as. An applicant for GCP status must also identify, where appropriate, the NZX Market Participants for whom it will clear.

An applicant must nominate a natural person who will act as a Responsible Person. The role of the Responsible Person is to represent the Clearing Participant in dealings with NZC and to procure the Clearing Participant to comply with the Rules at all times. The Responsible Person should be an executive who is responsible for the control, leadership and influence of the Clearing Participant's business as a Clearing Participant.

Information that must be included with the application includes:

- Evidence of the applicant's current financial position
- Details of any potentially adverse events, including regulatory investigations and legal proceedings threatened or pending
- Information regarding the applicant's relevant technology, including back office systems
- A company profile, including details of the applicant's corporate and management structure.

For full details of the application process and information requirements refer to the Guide for Applicants.

Technology

The clearing and settlement software used is the Tata Consulting Services ("TCS") BaNCS system. This product is used widely by banks, capital markets and insurance companies around the world.

The core TCS BaNCS components utilised by NZC include:

- Core Services: including entity and user management, instruments and accounts
- Clearing: novation and netting of trades
- Risk Management: margin and collateral management, including derivatives mark-to-market

The platform provides flexible connectivity options and can cater for those customers who desire integration with their own back office systems (via ISO15022 messaging) and also for those who wish to use a browser based user interface.

Services and Processes

Common daily processes for the clearing house are:

- Trade capture and reporting
- Novation and netting
- Position management
- Risk management processing
 - Margin calculation
 - Collateral management
- Settlement processing and fails management
- Reporting

The following sections briefly describe each of these processes.

3 Trade Capture and Validation

NZC provides clearing services for all NZX markets. The TCS BaNCS system supplied by Tata Consultancy Services Limited (TCS) and supporting infrastructure is flexible and can clear and settle a broad range of products. The clearing house can also accept OTC trades, which can be voluntarily submitted to NZC for clearing and settlement.

Trade Capture

As orders are matched in NZX's trading system, the resulting trade (and associated information) is passed to the TCS BaNCS system and NZC on a real-time basis.

For information purposes, BaNCS will also capture crossings and other transactions not cleared and settled through NZC.

NZC validates the trade data received from the trading system immediately on receipt to ensure that the required data has been provided and it is in an acceptable format. For example, duplicate trade messages will be rejected.

Assignment of Settlement Attributes

Through the use of standing instructions, each valid trade is assigned the following attributes:

- The Clearing Participant responsible for the trade
- The Clearing Participant's settlement account where the trade will be processed
- Contract amount
- Position status.

Responsible Participant

Each trade received must be cleared and settled by a Clearing Participant. Where a trade is executed by a Trading Participant who is not also a Clearing Participant, the Trading Participant must have arrangements in place with either a GCP or a DCP for the settlement of trades. Standing instructions in BaNCS determine which GCP or DCP is responsible for clearing that Trading Participant's trades.

Contract Amount

NZC calculates the contract amount for each transaction using the contract or lot size quantity and price information in the trade message.

Position Status

A close out indicator will also be present on the trade feed for derivatives contracts. This is used to determine whether a derivatives trade creates a new position or closes out an existing position.

Account Structure

Settlement Accounts held in the NZD's CSD are the primary place of record keeping for trades, settlement obligations, margin and collateral. Settlement Accounts can hold both product and cash balances.

The TCS BaNCS system also supports segregation for:

- Participants – a GCP or DCP can segregate its own transactions from those of a particular trading participant
- Transactions – client, house and market making can be segregated into separate settlement accounts.

Each Clearing Participant must have at least one settlement account.

Derivatives transactions (and associated collateral) must be segregated into separate settlement accounts for transactions of the clients of a Clearing Participant and house (Principal) positions of the Clearing Participant.

Trade Reporting

Accepted (and rejected) trades can be viewed through the BaNCS user interface on a real time basis. Where the Clearing Participant connects via the message interface, a trade confirmation message will be sent real-time.

The original counterparty to each transaction is not shown to participants, which preserves anonymity.

4 Novation and Netting

NZC acts as central counterparty for settlement of accepted transactions. Novation and netting are fundamental to NZC's role as a central counterparty.

Novation

Through novation, a trade is replaced with two transactions. NZC becomes the buyer to every sell transaction and the seller to every buy transaction. A Clearing Participant will be the counterparty to NZC on every transaction.

Netting

A Clearing Participant's settlement obligations to NZC will be netted. Netting affords processing economies to Clearing Participants. Rather than settling multiple trade obligations one by one, Clearing Participants will settle with NZC one net obligation per security and one overall cash obligation per currency for each settlement time and each settlement account.

Through the course of a trading day, NZC will net the gross obligations arising from the novated settlement transactions of each Clearing Participant and calculate net open positions for each Clearing Participant on a continuous basis.

Obligations in respect of the delivery of product with the following common attributes will be netted:

- Settlement date
- Product (ISIN or Instrument Code)
- Settlement Account.

Cash is netted by currency, account and product type (e.g. cash products, derivatives)

Settlement Obligations

At the end of each day, as part of end of day processing, NZC prepares and sends to all participants a summary of outstanding Net open positions. These reports are available through the BaNCS reports module or the messaging interface.

5 Position Management

Positions are maintained in settlement accounts, which record the total buy, total sell and net position at a product level.

For derivatives contracts, when a trade is accepted, the BaNCS system will check whether a position with the same parameters exists. If an existing position exists, the trade is added to that position, if not a new position is created.

Give-up / Take-up

The give-up and take-up process permits the transfer of derivatives positions between settlement accounts of a Clearing Participant or between Clearing Participants.

The transfer is complete only when the receiving Clearing Participant agrees to take up the position.

Match Out / Close Out

In addition to the process described in netting above, NZC can also amend or reduce existing derivatives positions of a Clearing Participant through a position adjustment, either at the time of trade or through a supplementary request. This closes out (or matches) the long position of a Clearing Participant with an equivalent short position of the Clearing Participant.

This process reduces a Clearing Participant's open interest in a particular contract.

6 Risk Management

Through novation, NZC assumes counterparty risk for all trades on approved markets and accepted discretionary trades. Therefore, the primary risk for NZC is counterparty risk, in particular arising from Clearing Participant default.

Other risks faced by NZC include liquidity risk, operational risk, legal risk and settlement bank risk. These are mitigated through robust operational and financial processes and controls.

Risk Management Mechanisms

Key risk management measures include:

- Participation standards
- Supervision of participants
- Capital adequacy
- Margin and collateral
- Delivery versus payment
- Risk capital.

Participation Standards

Clearing Participants are required to have minimum financial resources and operational capability, first to be admitted to the clearing house and then on a continuing basis.

Supervision of Participants

Supervision procedures are in place designed to monitor individual Clearing Participant's adherence to the requirements of the Rules on an ongoing basis.

Capital Adequacy

Minimum capital requirements are designed to provide assurance that Clearing Participants are capable of meeting their financial obligations.

Margin and Collateral

To manage the risk of Clearing Participant default, NZC requires that Clearing Participants collateralise the risk of their open positions. Margin and collateral requirements are discussed further below.

Delivery Versus Payment

For product deliveries, the operation of the system ensures that product delivery is accompanied by cash payment. This means that no party is exposed to principal risk by delivering product but not receiving cash in return (or vice versa).

Risk Capital

In addition to margin, NZC itself holds capital to be used in the event of participant default.

Margin

At the end of each day, the net open positions and the margin requirements for each Clearing Participant are calculated. The margin requirements for each Clearing Participant include initial, variation and additional margin.

An intra-day margin calculation may also be made in times of extreme volatility. Any intra-day margin call will specify the timeframe within which additional collateral must be provided.

Initial Margin

Initial margin is required for all products and is set at a rate to cover possible losses using a 99% confidence level.

Initial Margin Calculation

Initial margin requirements for Cash Products (Equity and Debt) are determined using a Value at Risk (VaR) model.

For derivatives, NZC uses SPAN[®]. By using a set of pre-determined parameters set by NZC, SPAN[®] assesses what the maximum potential loss may be for a given portfolio over a one-day period, and matches the level of initial margin to cover this risk. In calculating the amount of margin required, SPAN[®] recognises the unique characteristics of derivatives while also taking into account other factors such as inter-month and inter-commodity relationships.

Variation Margin

At the end of each trading day, NZC revalues all outstanding derivatives positions and unsettled debt and equity trades at the closing price of the product and calculates a mark to market profit or loss for each position.

For futures contracts, this resulting profit or loss is realised through debiting or crediting the cash to relevant Clearing Participants settlement accounts.

For debt, equity and option products, mark-to-market profits and losses are not realised, but Clearing Participants are required to collateralise any mark-to-market losses.

This amount represents the potential replacement cost as a result of price changes between trading day and settlement day.

Additional Margin

NZC may also impose additional margin to cover specific risks not already covered by initial and variation margin. For example, this could cover the risks associated with the deteriorating financial position of a Clearing Participant.

Notification and Payment

At the end of each business day, the margin requirements are calculated and advised to each participant. Each Clearing Participant must meet any margin call the following business day by providing additional eligible collateral.

Margin requirements are calculated in the currency of the underlying product. Derivatives margin must be provided in the currency of the underlying contract.

Eligible Collateral

Initial margin requirements and variation margin for cash products may be met through a combination of cash, eligible securities and third party guarantees from an approved issuer. Securities will be subject to a haircut.

Margin must be met by a minimum of 30% cash.

Collateral is revalued on a daily basis, or more frequently as required.

7 Settlement

All settlement takes place across settlement accounts within the CSD operated by NZD.

Product settlement consists of transfer of product and associated cash between NZC and each Clearing Participant. For cash settled derivatives, settlement is a transfer of cash to meet contractual obligations.

Section 156R of the Reserve Bank Act 1989 provides that settlement effected in accordance with the rules of a designated settlement system must not be reversed, repaid, recovered or set aside.

Settlement occurs as a batch process at pre-determined times during each settlement day. The underlying market determines the settlement cycle. For NZX equity and debt markets the default settlement period is T+3.

Securities Settlement

Securities settlement is conducted in two batches. Any unsettled quantity will be carried forward from the first batch to the final batch on a settlement day.

Settlement takes place in the following steps:

- Cash funding
- Pre-settlement product transfer
- Product Reservation
- Recomputation (if insufficient product is available)
- Settlement

Cash Funding

Prior to the commencement of each settlement run, Clearing Participants are required to ensure that sufficient funds are available in their settlement account to meet any settlement obligations for that settlement time. Cash shortfall at that time is considered a credit event and default procedures will apply.

Pre-settlement Product Transfer

Clearing Participants can transfer product to their settlement accounts at any point during the day, up to the final settlement batch.

Reservation

This process consists of NZC blocking products held in net selling Clearing Participants' settlement accounts. The quantity blocked is the greater of the net sell obligation of a Clearing Participant and the available balance in the account.

Recomputation

Where the reservation is partially successful, because insufficient product is available to settle the whole net position, NZC will recalculate the product and cash obligation of each Clearing Participant.

Settlement

The settlement process continues with NZC checking whether net buying Clearing Participants have sufficient funds in their settlement accounts to meet their obligations to pay cash. Product is then unblocked and transferred from the selling Clearing Participants to NZC's settlement account. NZC then debits cash from net buying Clearing Participants' settlement accounts and credits cash to net selling Clearing Participants' settlement account and product to the net buying Clearing Participants' account.

Product Shortfall

If there is a product shortfall in the final settlement run, the settlement failure will be controlled through fail management procedures, which includes:

- Carry forward
- Buy-in
- Cancellation.

Carry Forward

Initially, failed settlement positions for product shortfall are carried forward to a fails batch. Allocation of fails to net buyers is random. Failed positions are treated as a separate position and are settled in a separate batch. Fail obligations will be carried forward for 4 business days (unless NZC believes there is good reason to do otherwise).

Buy-in

If a selling Clearing Participant is unable to deliver the product by the end of the carry forward period, NZC will institute a buy-in from the market on behalf of the Clearing Participant.

Cancellations

If buy-in is not successful, NZC will cancel the position and replace the Clearing Participants' delivery obligation with an obligation to pay a liquidation amount.

Settlement failure will attract a fee for each day the failed delivery obligation remains outstanding.

Derivatives Settlement

Upon option exercise or expiry of a derivatives contract, NZC will generate settlement instructions.

Depending on the contract itself, these will be:

- Cash only;
- Product and cash or;
- Futures contract based.

For a derivatives contract on a physically settled instrument, a settlement instruction will be created for the underlying instrument. This will settle in the same manner and in the same cycle as for the underlying instrument.

The funding requirements for cash settled derivatives will be advised at the end of day up to and including the expiry date. Cash will settle in a batch process the following business day.

Cash Funding

Participants are required to fund their cash requirements before settlement. As settlement of transactions occur, the Participants' cash balances are debited and credited accordingly.

Cash remaining in a Clearing Participant's settlement account will be returned to the Clearing Participant in accordance with their instructions, at the end of each settlement day.

As BaNCS is a multi-currency system, funds may be held in various currencies.

New Zealand Dollar settlement monies are transacted through an Exchange Settlement (ESAS) account held with the Reserve Bank of New Zealand. Private settlement banks are used for all other currencies.

Pre-settlement Product Transfer

Prior to settlement, a Clearing Participant must ensure that sufficient product is available in its settlement accounts to cover its obligations to deliver product.

Product can be transferred into a settlement account by:

- Lodge to the Depository from a registry transfer account;
- Depository account transfer;
- Off-exchange trade with client counterparty in the Depository; or
- Transfer from the RBNZ CSD.

8 Reporting

NZC provides Clearing Participants with reports relating to transactions cleared and settled through the system. Reporting covers trade acceptance, settlement obligations, cash and risk activities.

Reports are generated as part of the end of day process and are available through the ISO15022 message interface or through the user interface. Clearing Participants are also able to export specific queries to excel.

