New Zealand Clearing and Depository Corporation Limited

Introduction of Recovery Tools - Consultation

December 2022

NZX Clearing

Contents

NZX Clearing

1. Purpose of this document

New Zealand Clearing and Depository Corporation Limited (NZCDC) is further maturing its risk management in line with regulatory expectations. This includes the completion of a recovery plan and introduction of additional recovery tools into the New Zealand Clearing Limited: Clearing and Settlement Rules (Rules). This document sets out where we are going and provides an opportunity for you (Clearing Participants), to provide further feedback.

What are we asking from you?

We want your feedback on key areas of the recovery plan: the operation of the new recovery tools to manage a risk to these services, and the rules which would be put in place to implement the tools. An exposure draft of the changes to the Rules is included with this consultation.

Feedback should be provided by email to risk@nzx.com. Feedback is sought by close of business Friday, 25 February 2023.

Why are we asking for this feedback?

The purpose of centralising clearing is to centralise the view of risk within the market, to mitigate against the likelihood and impact of a default event. Having an appropriate risk management framework is core to this model and is a regulatory requirement for the clearing house. A recovery plan and appropriate tools in that plan is the last layer of defense in the risk management model to mitigate against the impact of a default and part of NZCDC's key regulatory obligations.

We have been consulting the market on the recovery tools since 2019, including a formal consultation as well as a number of workshops on the recovery tools with market participants. The feedback received through those processes has been fed into the design being consulted on in this document. We highlight in this document where feedback has led to changes.

This paper gives you a further opportunity to review the tools, including the changes, and provide comments before the tools go to the regulators for their consideration. More background information is included in Appendix B: FAQs on the Consultation.

What will we do with this feedback?

This feedback will be used to finalise the design of the recovery tools and the recovery plan. We will consider against the principles of the design (outlined below), and the responses and make decisions regarding how the feedback impacts the design of the plan. We will provide a consultation response document so that you can understand what changes have resulted from the feedback received, and the final decisions being submitted to the Joint Regulators.

The finalised design and recovery plan will be provided to the Joint Regulators to consider. The Joint Regulators will need to review the plan.

The recovery tools will also need to be created in the Rules. It is important that the Rules reflect the manner in which the tools have been designed, and we are providing an exposure draft of the proposed Rule amendments to seek your feedback as to whether this has been achieved.

The Joint Regulators will need to “non-disallow” the Rule changes. The Rule changes will also need to be notified to the market before coming into effect.

2. Executive summary

Risk management and recovery planning

A key part of the risk management of a central counterparty clearing house (CCP), includes recovery planning. Recovery planning is a process a CCP must undertake to identify the risks to its critical services and the resources it can access to recover if the risk to those critical services eventuates.

Each CCP has a recovery plan which is a document it develops and provides to its regulator, as to how it would recover its critical services in a crisis event. In New Zealand, the Financial Markets Infrastructures Act 2021 (currently in the implementation process) makes this a legal requirement. The Act requires financial market infrastructures to have a recovery plan (defined as a contingency plan in the Act) that is comprehensive, adequate and credible and includes financial recovery tools.

We completed our first recovery planning exercise in 2018, developing an initial recovery plan. This exercise identified some gaps in the tools available to recover in the event of a participant default that went beyond the risk model (being beyond extreme but plausible scenarios). These gaps include tools seen at CCPs globally to manage a clearing participant default, so that the CCP does not simply terminate all contracts and lose all value for participants in those contracts (see section 6.4 Termination for description of termination process).

We have been consulting on the tools to fill the identified gaps since 2019.

The default waterfall

The default waterfall is the resources available for the clearing house to use in a clearing participant default, including the recovery tools. The default waterfalls for the cash and derivatives market are included in Section 3: Default waterfalls, for your feedback.

While the structure of the waterfalls are similar, the derivatives market default fund is only available to be used to offset losses arising from managing the derivatives positions of the defaulter. NZCDC provides all pre-funded risk capital for the cash market and there is no cash market default fund currently. Any future cash market fund will likely sit in a similar place in the cash market default waterfall.

Using recovery tools in a default

The recovery tools are available to be used in a clearing participant default. To do this, there must be a Credit Event and a Declared Default, as defined in the current Rules. The clearing house retains the discretion when to declare a default. The default period is outlined in section 4: The Default Period.

Clearing participants will be obliged to participate in a default recovery process, if they are a participant at the point the default is declared. A clearing participant may not be required to participate in future defaults, if they are excluded, as per the exclusion request process outlined in Section 5: Liability and resignation.

The recovery tools

The detailed design of the recovery operational procedures is included in this consultation, in Section 6: Recovery Tools. The principles of the design are:

1. Provide tools which will allow the market to continue to operate in a default scenario, where possible, avoiding a scenario where all outstanding settlements are cancelled and the market is closed
2. Improve the transparency of the recovery process and application of tools so that, where possible, clearing participants can understand their potential liability
3. Ensure that the defaulter pays first for any loss, by using its margin and any default fund contribution first, and any recovery from a defaulting clearing participant is returned to those parties who contributed to the management of the participant's default
4. Ensure all participants in the clearing eco system bear some risk, through:

    a. The clearing house having "skin in the game" by having a pre-funded contribution to the default waterfall, which is meaningful and early in the default waterfall
    b. Non-defaulting participants bearing risk through the mutualised default fund (where applicable) and emergency assessments

5. Result in the least loss possible for participants ultimately and their customers, including:

    a. Allowing any action to be taken quickly and recovering from any default as soon as possible
    b. Ensuring initial margin of non-defaulting clearing participants is not able to be used to manage another clearing participant's default
    c. Managing contagion risk and avoiding decisions which result in pro-cyclical defaults

6. Ensure the market has clarity of the clearing house's decision-making process.

What happens after recovery?

Should a recovery scenario be successful, and the clearing house is able to continue operating, there are two key steps that will need to be taken:

1. Replenishment – the clearing house will need to replenish the capital to manage the ongoing risk in the market. This includes replenishing the capital provided by the clearing house to manage the risk, and the derivatives market default fund. The process for replenishment is covered in Section 7: Replenishment.
2. Reimbursement – should resources be recovered from a defaulting clearing participant, there will be a process to reimburse those clearing participants who provided resource to the recovery process. This includes those who had amounts haircut or have provided emergency assessments. This process for reimbursement is covered in Section 8: Reimbursement .

Should a recovery scenario be unsuccessful, the clearing house may be placed into liquidation. In a liquidation scenario, clearing participant's may want to close-out their positions with the clearing house, as covered in Section 9: Close-out netting in default or liquidation of the clearing house.

Other developments resulting from previous feedback

The consultation process undertaken over the past years has identified areas where the clearing houses' broader risk management could be enhanced.

Feedback has been provided on the transparency and information provided by NZCDC on the ongoing risk to the clearing house. We publish, on a quarterly basis key quantitative details of the level of risk exposed to the clearing house. This is the public quantitative disclosure information, published on NZCDC's website here (www.nzx.com/services/nzx-clearing/publications).

Participants have asked for greater input in understanding the risk model used by the clearing house. We are considering repurposing the current Participant User Group to have a greater focus on risk management. As the Participant User Group is a regulatory requirement, this will require discussion with the Joint Regulators, as well as clearing and depository participants. We expect to start these conversations in 2023.

Feedback was provided on the current lack of default fund in the cash market. A default fund has the potential to increase capital efficiency for the whole market by mutualising the cost of risk rather than having participants all individually covering the cost of risk through individual initial margin requirements. Default funds are standard global practice for risk management in mature markets.

Similarly, feedback queried the amount of capital put forward by the clearing house as skin in the game in both the derivatives and cash market, and separation of obligations between the markets. A wider review of the default waterfalls, including mutualised contributions from clearing participants and the clearing house, will follow the implementation of the recovery tools.

3. Default waterfalls

Section 11.9 of Exposure Draft of Rules

In a default scenario, there are different resources and tools available to the clearing house. These resources can be either pre-funded (for example, margin) or post-funded (for example, emergency assessments).

Restoring a CCP's matched book

The clearing house will initially aim to use market tools to restore a matched book. This will include buying in or closing out positions on market or, if required, through negotiated deals.

Given the size of New Zealand's market, it is not proposed to use auctions to attempt to transfer a defaulting participant's positions to a non-defaulting participant in order to restore a matched book. Auctions are considered to be operationally burdensome on participants and given the small number of participants in the market, we consider they are unlikely to be viable. Instead, sale of assets will be completed on market, through negotiated deals or positions will be terminated through the voluntary or mandatory termination process (outlined in section 66.4 Termination).

Q1: Do you agree that auctions are not appropriate for the New Zealand market?

Using the default waterfall

Following the actions to restore the matched book, the default waterfall will be used. Below are the proposed waterfalls outlining the order in which the resources available to the clearing house will be used, should a clearing participant default. These waterfalls are set so that clearing participants and the clearing house know ex-ante how resources will be used in a default.

How has previous feedback been addressed?

Participants want to ensure they are not exposed to the risk of markets that they do not clear. The default waterfalls are structured so that clearing participants do not have to cover the exposures of a default not on their market.

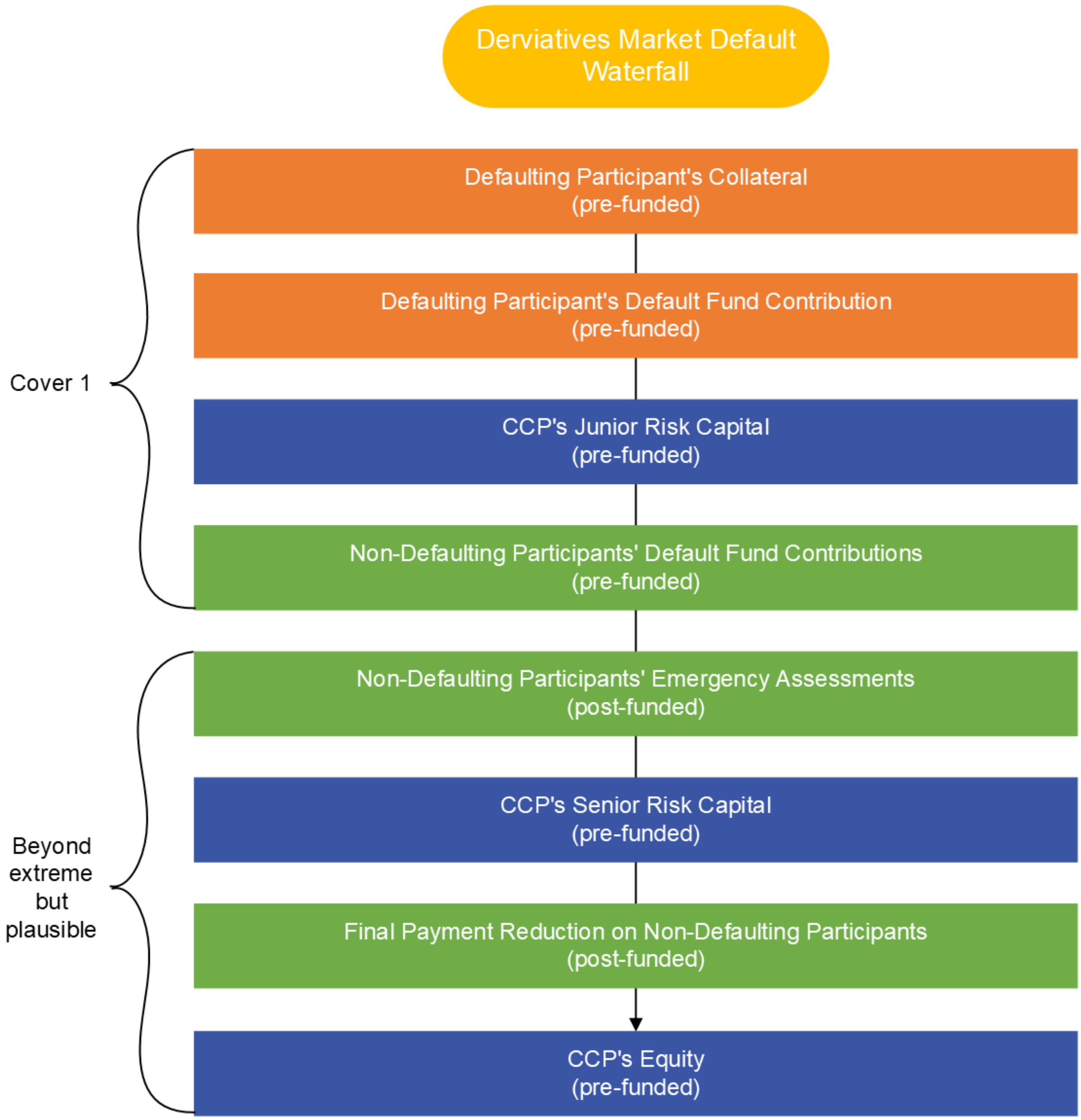
The clearing houses contribution to the waterfall is split into two tranches, with the Junior Risk Capital set as $10m. At this stage, this amount provides sufficient contribution, with less than 5% of extreme scenarios requiring more than $5m of Risk Capital. A wider review of the sizing of tranche 1 of the capital provided by the clearing house will be completed in future, as part of a review of the entire default waterfall.

Tranche two (the Senior Risk Capital) has been aligned in both waterfalls to sit at the end of the waterfall before the final settlement haircut. This order ensures both participants and the clearing house bear risk, to spread loss across the market. It is designed for the purposes of financial stability of the markets, by ensuring the clearing house can continue to operate to close-out positions.

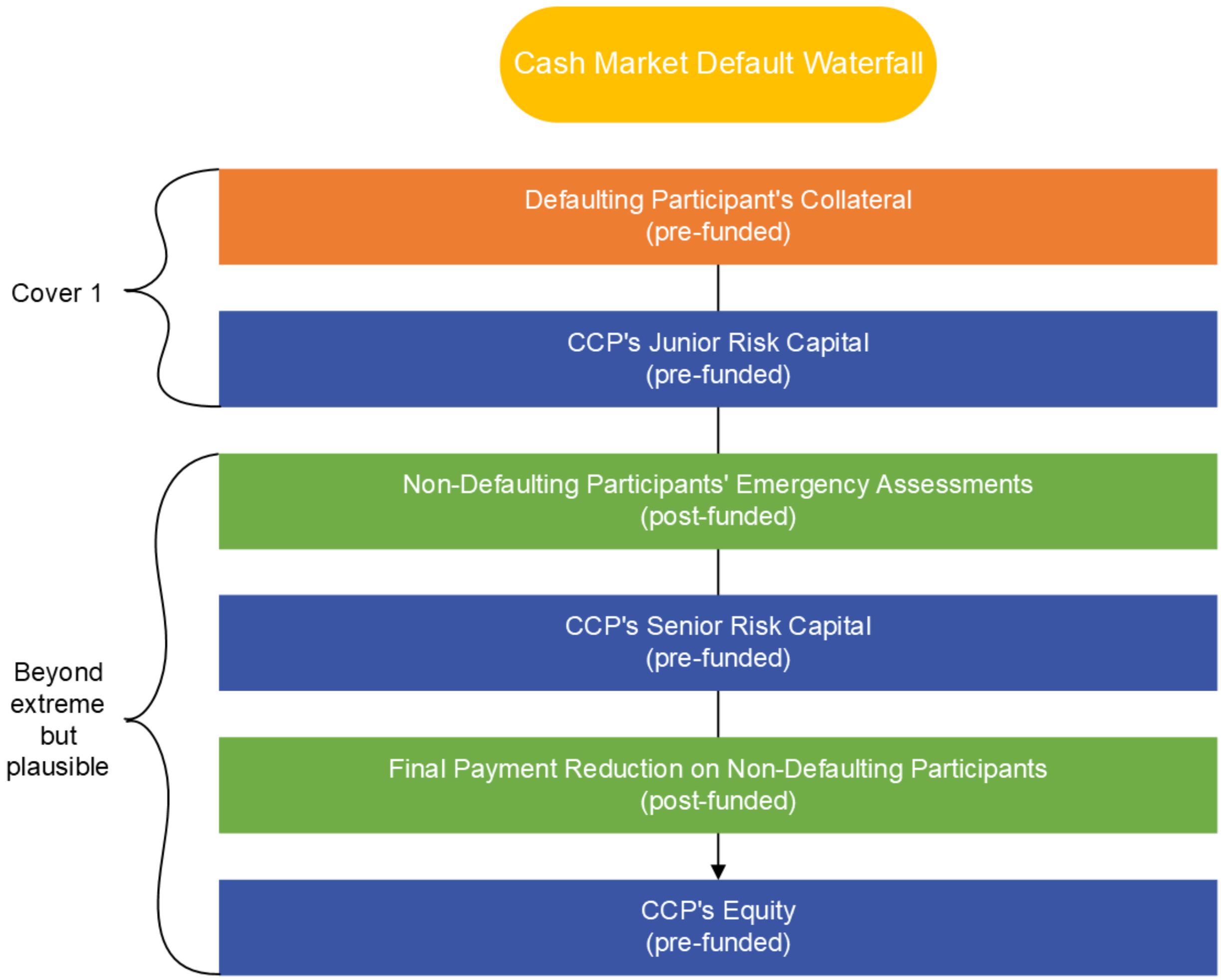
How the waterfalls operate

NZX Clearing models to a “cover 1” scenario. This means it models to hold sufficient resources to manage the default of the largest participant in the market. The waterfalls operate together, noting:

- If the default of a clearing participant uses the capital in the default waterfall capital, it will no longer be available until it is recapitalised by the clearing house or clearing participants (for the default fund)
- Collateral submitted by non-defaulting clearing participants cannot be used to manage the default
- The default fund contributions from non-defaulting derivatives clearing participants, are only available to be used against any derivatives exposures of a defaulting participant
- Where a defaulting participant clears both the derivatives and cash market, its resources (including collateral submitted against margin obligations and any settlement monies) will be available to manage the exposures across both markets. Its default fund contribution will be able to be used for its exposures on the derivatives market first, with any residual amounts available to manage its cash market exposures
- Similarly, any emergency assessments called will be limited to only be used to manage exposures for the market they are called against (i.e. emergency assessments called from cash market participants can only be used against exposures in the cash market)
- The Junior Risk Capital for each market is currently set at $10m. The Senior Risk Capital will be made up of the remainder of the clearing houses $20m of Risk Capital
- If the defaulting clearing participant clears both cash and derivatives, there may be less Senior Risk Capital available, depending on the amount of Junior Risk Capital required.



Derviatives Market Default Waterfall
Defaulting Participant's Collateral (pre-funded)
Defaulting Participant's Default Fund Contribution (pre-funded)
CCP's Junior Risk Capital (pre-funded)
Non-Defaulting Participants' Default Fund Contributions (pre-funded)
Non-Defaulting Participants' Emergency Assessments (post-funded)
CCP's Senior Risk Capital (pre-funded)
Final Payment Reduction on Non-Defaulting Participants (post-funded)
CCP's Equity (pre-funded)
Cover 1
Beyond extreme but plausible



Q2: Do you have feedback on the order in which the clearing house will use resources to manage a default, as outlined in the default waterfalls?

4. The Default Period

Definition of Default Period in Exposure Draft of Rules

The tools can only be used in a declared default of a Participant. The declaration of a default will start the "Default Period".

The default period will be 15 trading days from the day a default is declared (with the day of the default being day 1). We will aim to complete the default management process within the Default Period. Replenishment of capital will not start until after the end of the Default Period (see Section 7: Replenishment).

More than one default event may happen during a Default Period. If other defaults happen within a Default Period, the Default Period will then be extended by an additional 10 business days. Any other defaults which happen after the end of an existing Default Period will be considered as a trigger for the commencement of a new Default Period.

This definition of a Default Period will ensure participants are clearly aware of their financial obligations and rights in terms of loss allocations, resignation from the market as well as the replenishment of capital following the default.

A non-defaulting clearing participant may be exposed to different amount of assessment requirement if significant loss is caused by a single default or arises from multiple defaults.

Separately, any clearing participants who do not want to participate in the replenishment process shall resign at least 5 business days prior to the end of the default period and satisfy all the conditions as specified in the Resignation section below. No replenishment will occur during a Default Period.

How has Participant's feedback been addressed?

The default period has been shortened based on feedback that such a long period created uncertainty regarding the financial stability of the clearing house.

The default period originally proposed in the first consultation was up to 66 business days.

Feedback was that a long Default Period would result in significant financial pressure for the clearing house to uninterruptedly provide the critical services, given the regulatory capital requirement on the outstanding exposures.

The default period has therefore been shortened to 15 business days, which provides sufficient time to manage the default, while ensuring the extended period did not create extra pressure on the market.

Q3: What is your view of the length of the Default Period?

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5. Liability and resignation

All clearing participants will be required to participate in the resolution for any defaults in the market they clear (i.e. cash or derivatives) if they are a clearing participant at the point the default is declared, and the Default Period begins. Any clearing participant at the start of the default period will be liable for any other defaults that occur in that Default Period.

For the derivatives market, you will be required to participate in any capital replenishment of the default fund at the end of the Default Period, unless you have:

- Applied to resign and that resignation has completed before capital replenishment begins; or
- Applied to resign, and if that resignation has not completed, have made an exclusion request, and had this accepted, before capital replenishment begins.

An accepted exclusion request will mean you do not have to participate in any future defaults, beyond the Default Period, or replenishment even if your resignation has not completed, although the default tools will apply to you for the current Default Period.

You can apply during the Default Period to be excluded from any future Default Periods. You can also apply to resign at any point during a Default Period. However, even if the exclusion or resignation is accepted, you will still be required to participate in the current default process, and the tools that are used will apply to you.

How has previous feedback been addressed?

The feedback requested a clear understanding of how clearing participants can avoid liability for future defaults.

The resignation regime remains a regulatory process. We propose to introduce an “exclusions request” regime. This will allow clearing participants to be excluded from liability for future defaults, before such time as they have completed the regulatory resignation process.

The exclusion request process requires a participant to have no outstanding positions and settlement obligations.

Exclusion Requests and Resignation

An exclusion request should be made in writing from you to us. You must satisfy the following conditions and confirm this to us in your written application:

- You must be a non-defaulting Clearing Participant
- You must have no outstanding positions and no outstanding settlement obligations with us (we have the discretion if there are obligations that cannot be closed out due to factors outside of your control)

- You have been operationally and technically prohibited from further trading, clearing or performing any other transactions in the clearing and settlement system (other than transactions required as a part of any default you are liable for)
- You have met all your financial settlement obligations to the clearing house, including any obligations to pay money or deliver securities according to Clearing and Settlement Rules and Procedures
- You have made a resignation request to NZ RegCo.

You must submit the exclusion request and satisfy the conditions satisfied at least five business days before the end of the Default Period. We will analyse whether you have met the conditions and provide a response to you on your exclusion request within five business days from receipt of the request. We will provide reasons if we decide to decline the exclusion request. An acceptance of the exclusion request will waive your capital replenishment obligation, and participation in the tools used for any future default periods.

> Q4: What challenges do you foresee with the proposed exclusion request process?

Our formal resignation process will remain the same, with applications to be made to NZ RegCo Participant Compliance. They will manage any resignation. According to the current Clearing and Settlement Rules and Procedures, the resignation will take effect 3 months or 12 months from receipt of notification for an individual clearing participant or a general clearing participant respectively, unless the clearing house and the clearing participant agree an earlier date.

6. Recovery Tools

There are five key recovery tools, four of which are applicable to the cash market and four of which are applicable to the derivatives market. While most of the tools are new concepts for the New Zealand Market, one tool, the termination tool, is already included in the New Zealand Clearing Rule book. This tool is included in this consultation to clarify how this tool can be used, so there is an understanding between Clearing Participants and the clearing house, before the event occurs.

Recovery Tools	
Cash market	**Derivatives market**
Offsetting transactions	Variation Margin Gains Haircut
Termination (partial or complete)	Termination (partial or complete)
Emergency Assessment Power	Emergency Assessment Power
Final Termination Haircut	Final Termination Haircut

The processes on the following pages specify the operational features for each tool.

How has previous feedback been addressed?

The below processes provide detail requested by respondents on the operations of the tools.

Detail has also been included on what must occur before each tool is used (the trigger point) to clarify how the decision may be made to use the tool.

Detail has also been included for each tool on:

- The process for each tool
- The communication participants can expect
- The timeline for using each tool

A summary of the impact on Capital Adequacy has also been included under the Emergency Assessments.

Q5: What feedback do you have on the operation of the recovery tools? Do any questions remain?

Q6: We have not identified any Rule changes required to the Participant or Derivatives Rules. Please let us know if you consider any are required.

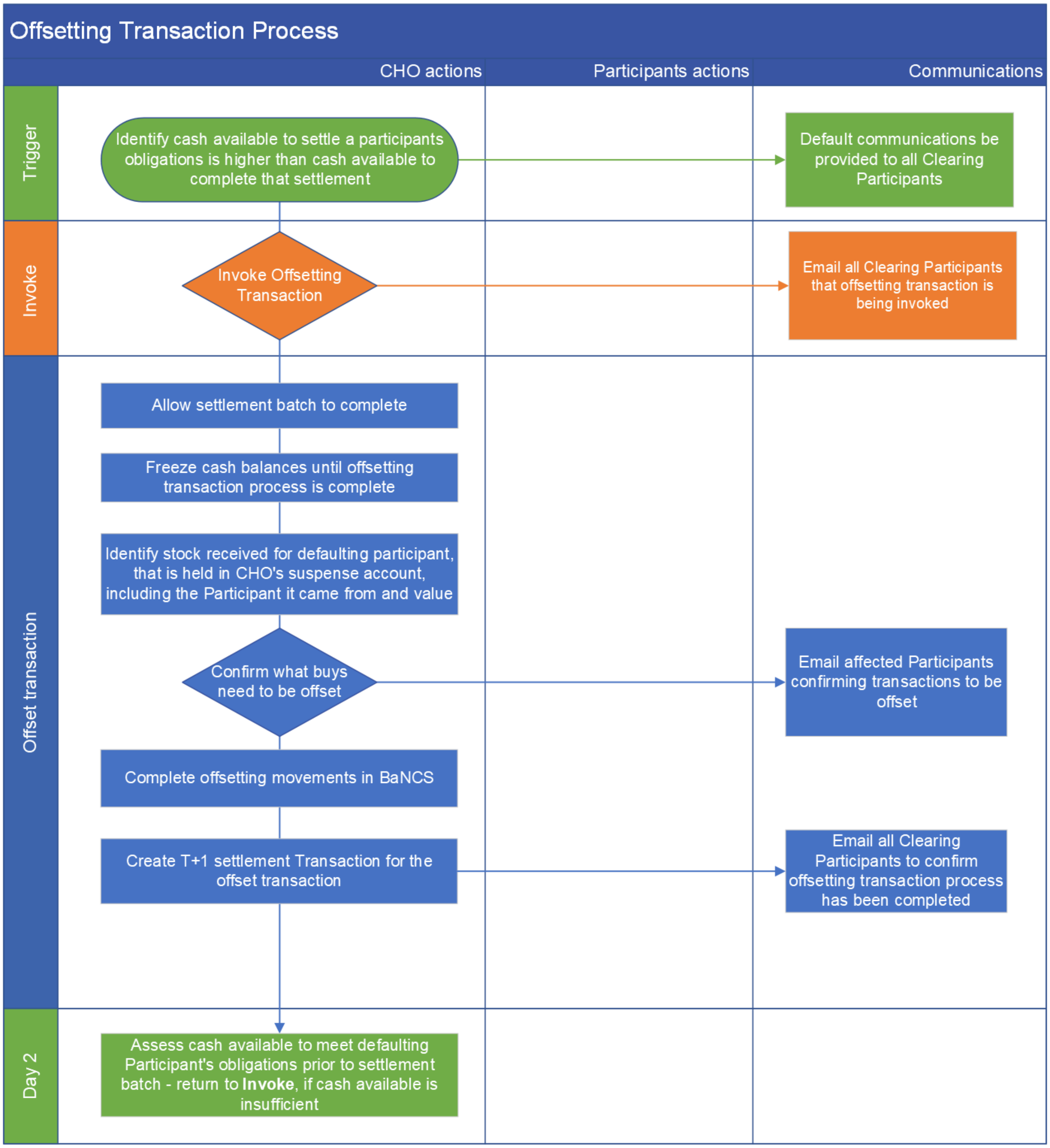
6.1 Offsetting Transactions

Section 11.2 of Exposure Draft of Rules

An Offsetting Transaction allows the clearing house to manage a liquidity scenario where it does not have enough money to pay settlement obligations owing on the cash market, due to a clearing participant failing to provide cash to the clearing house.

Applicable Market	Cash market only.
Affected Participants	Non-defaulting clearing participants who have security delivery obligations for instruments for which the clearing house has an outstanding cash payment obligation, due to the defaulting participant which the defaulting participant having an outstanding cash payment obligation.
Tool trigger point	The amount of money required for settlement is higher than the sum of: - The money currently available from the defaulter (including any money available through liquidating its collateral), - All pre-funded resources currently available to be used by the clearing house, and - NZX Clearing's liquidity facility (where it is available to be used). It will only be employed in a participant default and when the position termination process has not started.
Timeline	Up to **3** business days. From the day offsetting transactions are first used, it can be used for a total of three business days in a row. Offsetting transaction can be used once for each default period.
Allocation method	Pro-rata to affected participants, according to all affected participants' settlement quantity of the relevant instrument. Instruments chosen for offsetting transactions will be determined based on the market liquidity. The clearing house will generally settle liquid instruments first with available financial resources so that these instruments can be sold quickly into more cash for managing other components of the defaulting portfolio. Illiquid instruments or large quantity of the same instrument will more likely be offset at the clearing houses' discretion.
Communication to Participants	Emails will be sent to affected participants whose settlement obligations are delayed for settlement. Emails will include information on: 1. Affected settlement obligations – instruments, volume, value, original settlement date

	2. The potential new settlement date. Emails will be sent out if there are any changes to the above information. Emails will be sent out again when part or all the related settlement obligations are settled.
Client impact	You may choose to settle with your clients, or you may offset your settlement obligation with them and replace this with a settlement obligation for T+1 (similar to with a security delivery failure.) This will depend on your clearing and settlement agreement, and the trading participants client agreements.


Offsetting Transaction Process
CHO actions
Participants actions
Communications
Trigger
Identify cash available to settle a participants obligations is higher than cash available to complete that settlement
Default communications be provided to all Clearing Participants
Invoke
Invoke Offsetting Transaction
Email all Clearing Participants that offsetting transaction is being invoked
Offset transaction
Allow settlement batch to complete
Freeze cash balances until offsetting transaction process is complete
Identify stock received for defaulting participant, that is held in CHO's suspense account, including the Participant it came from and value
Confirm what buys need to be offset
Email affected Participants confirming transactions to be offset
Complete offsetting movements in BaNCS
Create T+1 settlement Transaction for the offset transaction
Email all Clearing Participants to confirm offsetting transaction process has been completed
Day 2
Assess cash available to meet defaulting Participant's obligations prior to settlement batch - return to Invoke, if cash available is insufficient

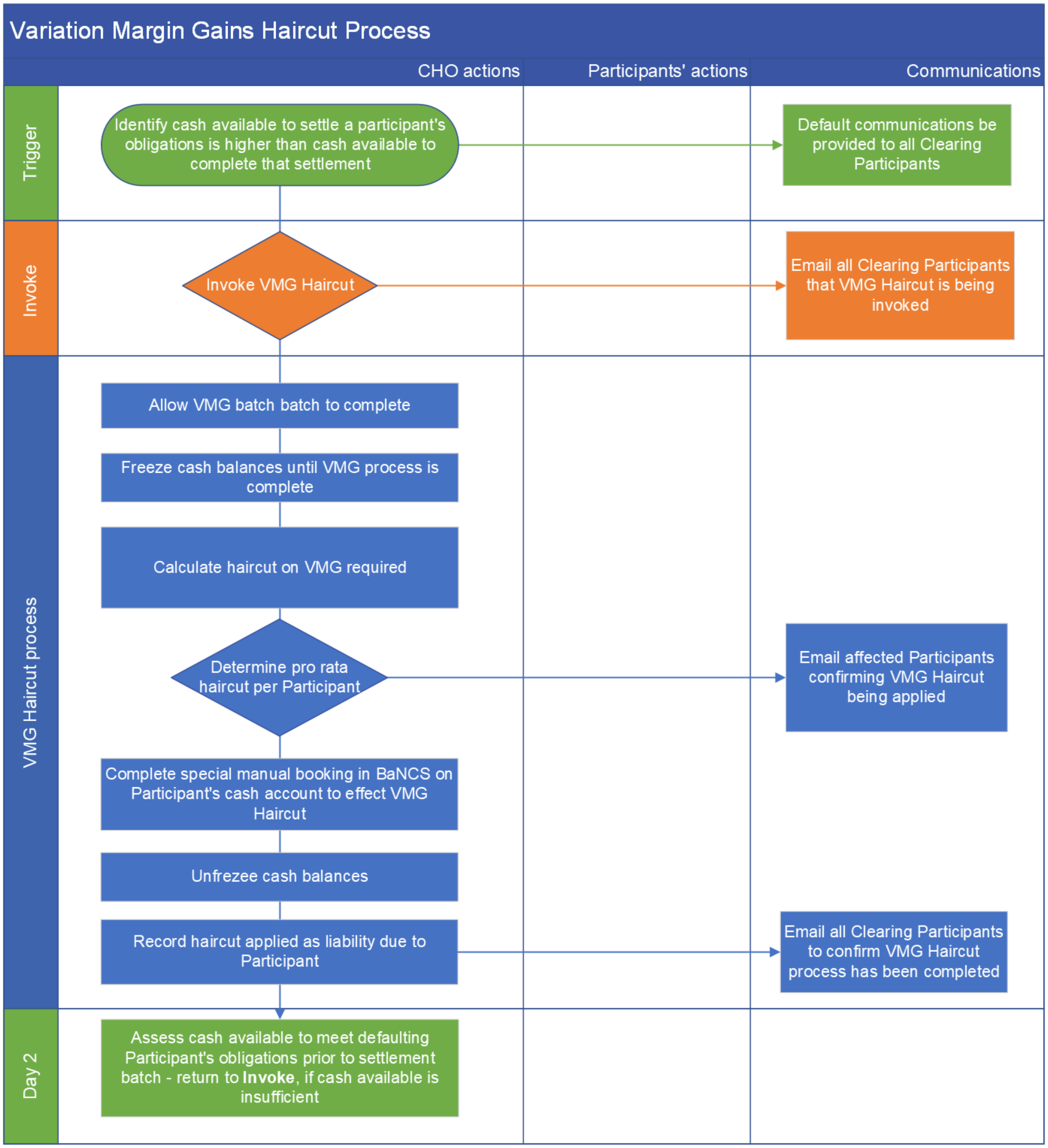
6.2 Variation Margin Gains Haircut

Section 11.3 of Exposure Draft of Rules

Variation Margin Gains Haircuts allows the clearing house to manage a liquidity scenario where it does not have enough money to pay mark to market settlement obligations owing on the derivatives market, due to a clearing participant failing to provide cash to the clearing house.

Applicable Market	Derivative market
Affected Participants	Non-defaulting Clearing Participants who are due to receive variation margin gains.
Tool trigger point	The amount of money required for settlement is higher than the sum of: - The money currently available from the defaulter (including liquidating its collateral) - All pre-funded resources currently available to be used by the clearing house. It will only be employed in a clearing participant default and when the position termination process has not started.
Timeline	The haircut can be used for maximum of three settlement days consecutively. If the recovery has not been resolved, termination will then be initiated.
Communication	Emails are sent to all affected participants who are subject to the variation margin gains haircut, advising the haircut decision and the amount and the maximum duration of applying the haircut.
Allocations	Pro-rata allocation of the haircut amount is calculated according to the total cash shortfall and every affected participant's mark to market gains. This tool will only be used to cover the liquidity shortfall and will not be regarded as a part of the default waterfall. The haircut amount represents the mark to market gains that have not been cash settled. These amounts will be included in the following day's mark to market gains or losses calculations. The allocations of the market-to-market gains for the following day will therefore be based on the accumulated mark to market gains and losses that are not settled. The aggregated haircut amount during this process will be considered as the amount NZC owes to the affected non-defaulting participant and will be then added to the calculation of the final settlement amount.
Client impact	The variation margin gains haircuts will be applied at the account level. These are allowed to be passed to clients if it is practically possible and

	is allowed within the terms of your clearing and settlement agreement and the trading participants client agreements.



How has previous feedback been addressed?

The length of time variation margin haircuts can be used for has been clarified and limited to three days, to clarify the impact of this tool

6.3 Emergency Assessment Power

Section 11.6 of Exposure Draft of Rules

Emergency Assessments allow the clearing house to manage scenario where the clearing house does not have enough money to complete settlement, and either needs to deliver cash to the market or buy securities to meet market obligations.

As Emergency Assessments will be used to cover outstanding obligations, no interest will be earned on Emergency Assessments. Any reimbursement is covered in section 9.

Failure to meet an assessment will be a credit event. This is important so that non-defaulting Participants can have confidence that other non-defaulting participants will meet the assessment obligation.

Capital adequacy and emergency assessments

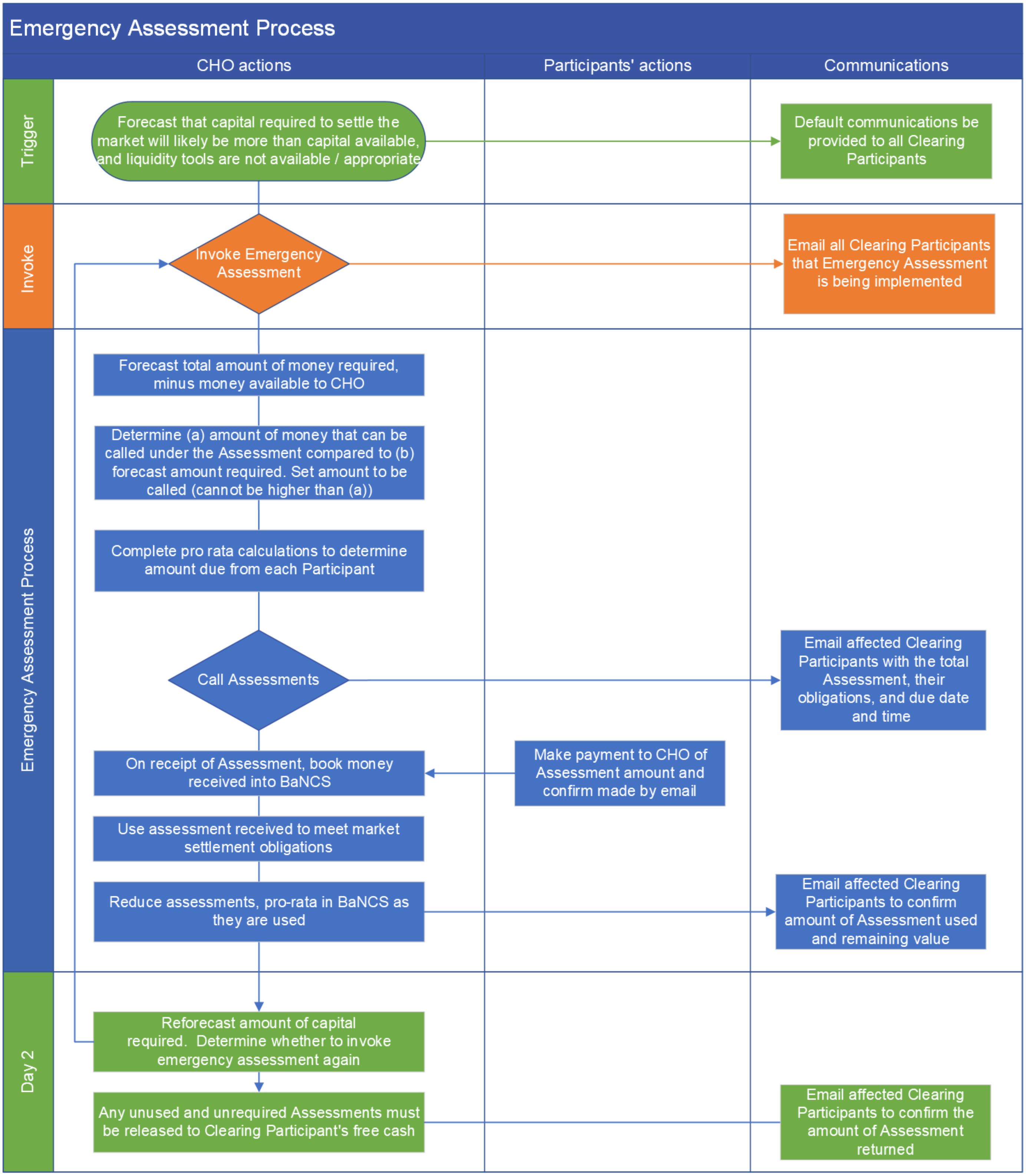
Clearing participants are not expected to account for future possible Emergency Assessments in their capital adequacy calculations.

Should it become likely that an Emergency Assessment may be called, CHO may require Participants to include a Market Risk Requirement in its Total Risk Requirement, in accordance with Rule 9.12.

In determining whether to call an Emergency Assessment, NZX Clearing will work with Participant Compliance to understand whether the Emergency Assessment may trigger any Clearing Participant to breach the capital adequacy requirements. This may impact the size of the Assessments made, or CHO may work with Participant Compliance to consider temporary rule relief, at that time.

<table>
<tr><td>Applicable Market</td><td colspan="2">Cash market or Derivative market. However, Emergency Assessments called from one market cannot be used against losses arising from the defaulter’s positions in the other market.</td></tr>
<tr><td>Affected Participants</td><td colspan="2">All non-defaulting clearing participants in the market where the default event occurs.</td></tr>
<tr><td rowspan="2">Tool trigger point cash market</td><td>Cash market: Money required to manage the default is expected to be higher than the sum of defaulter's collateral and the clearing houses’ $10m junior risk capital.</td><td>Derivatives market: Money required to manage the default is expected to be higher than the sum of defaulter's collateral, the clearing houses’ $10m junior risk capital and default fund.</td></tr>
<tr><td colspan="2">The capital requirement is based on forecast losses that may occur during the process of managing the defaulting portfolio, including any actual losses that have been realised up to this point.</td></tr>
</table>

	Given the potential difference between the expected losses and actual losses, the clearing house may call the emergency assessment more than once, but the total called amount for non-defaulting clearing participants cannot exceed the specified cap for managing a single or multiple default.	
Timeline	The clearing house can make a notification that it is using the Emergency Assessment tool at any point during the default period. The Emergency Assessment may be called more than once in a default period, but only up to the total cap per default period. The Emergency Assessment call must be met within the timeframe specified. This will likely be prior to settlement the following trading day.	
Communication	Emails are sent to all affected clearing participants advising the decision to call the emergency assessment power and the assessment requirement for the whole market as well as the specific clearing participant.	
Allocations	**Cash market:** Total: $5m single default or $10m multiple defaults in one default period. Allocation: Pro-rata allocation calculated according to all affected cash clearing participants' average daily initial margin requirement over the 22 business days prior to the commencement of the Default Period.	**Derivatives market:** Total: 1x default fund contribution for single default or 2x default fund contribution for multiple defaults in one default period. Allocation: Pro-rata allocation calculated according to all affected derivatives clearing participants' latest default fund requirement.
Client impact	The Emergency Assessment is a liability on the Clearing Participant and client funds are not able to be used to meet this.	


Emergency Assessment Process
CHO actions
Participants' actions
Communications
Trigger
Forecast that capital required to settle the market will likely be more than capital available, and liquidity tools are not available / appropriate
Default communications be provided to all Clearing Participants
Invoke
Invoke Emergency Assessment
Email all Clearing Participants that Emergency Assessment is being implemented
Emergency Assessment Process
Forecast total amount of money required, minus money available to CHO
Determine (a) amount of money that can be called under the Assessment compared to (b) forecast amount required. Set amount to be called (cannot be higher than (a))
Complete pro rata calculations to determine amount due from each Participant
Call Assessments
Email affected Clearing Participants with the total Assessment, their obligations, and due date and time
On receipt of Assessment, book money received into BaNCS
Make payment to CHO of Assessment amount and confirm made by email
Use assessment received to meet market settlement obligations
Reduce assessments, pro-rata in BaNCS as they are used
Email affected Clearing Participants to confirm amount of Assessment used and remaining value
Day 2
Reforecast amount of capital required. Determine whether to invoke emergency assessment again
Any unused and unrequired Assessments must be released to Clearing Participant's free cash
Email affected Clearing Participants to confirm the amount of Assessment returned

How has feedback been addressed?

The amount of capital required to manage a default beyond the risk model is unknown. Therefore, before the position is closed out, it is not possible to be determine the amount of capital that will be needed through the “assessment” process. Uncapped calls are considered more comprehensive as a tool, however, we continue to favour a capped amount, so that clearing participants can understand their possible liability.

The assessment caps have been defined by the amount of risk each participant has to the market.

In the derivatives market, the default fund is used as an indicator of the risk the clearing participant brings to the market. Clearing participants are required to match their default fund contribution in the assessment, so those with higher contributions (and therefore greater risk) will be required to provide greater assessments.

In the cash market, margin is used as an indicator of the risk the participant brings to the market. There is a capped amount the market is required to provide in totality as an assessment, and each participant’s proportion of this will be based on their proportion of the total amount of margin provided by the market over the previous 22 days. Following feedback, this has decreased from the originally proposed 66 days, to better reflect the more recent risk the participant has brought to the market.

The cap for the total market assessment is based on analysis completed by the clearing house of a reasonable amount for the current number of participants to share as a total contribution, noting the amount the clearing house is currently contributing to manage the risk of the market.

6.4 Termination

Section 11.4 and 11.5 of Exposure Draft of Rules

Termination can be used in two ways:

1. Terminating the positions[1] included in the defaulting clearing participants' portfolio (partial termination)
2. Terminating all positions in the market (complete termination).

Termination is when the settlement contract is terminated. So each side to the settlement contract no longer has to meet any ongoing obligation.

Termination can be done voluntarily – where the CCP ask Participants what positions they are willing to nominate for termination at the set price. Or termination can be required - where the CCP gives the Participant notice that the positions will be terminated at the set price.

Termination price

A termination price will be set by the clearing house at its sole discretion. The termination price will aim to reflect the current market value of securities, to reflect the position the participants would be but for termination occurring (i.e. - it will attempt to make up for any gain from the last mark to market to termination, that has otherwise been lost through termination of the contract).

The termination price for the termination process needs to represent a fair market price that reflects the interests of a diverse group of buyers and sellers within a liquid market. The termination price per security line will be based on market factors, including:

i. Volume weighted average of market trading prices during a period of no less than 30 minutes before the time of termination;
ii. A price determined by NZC according to the latest market information such as the latest bid/offer on the market;
iii. A price determined by NZC according to the latest market information related to the same instrument on other markets or similar instruments on the same market;
iv. A theoretical price determined by NZX Clearing to reflect a fair market price.

The latest market price will typically be considered first and will be the preferred price. However, other price information will also be considered, especially if there are insufficient financial

How has previous feedback been addressed?

The framework for determining the termination price has been updated to reflect that the starting point for determining the termination price, will be the price at the point of termination, rather than at the point of default or the trade price. These may also form part of the consideration process.

[1] Being either open derivatives positions or net unsettled cash market transactions

resources for completing the default management process. In these circumstances the original trade price is more likely to be used.

Termination payment and final settlement amount

The payment amount is calculated following the position termination. Each position affected by the defaulting event is valued at the termination price against either the original trading price or the daily settlement price used in the latest mark-to-market gains/losses settlement process.

The termination payment will be added to all other unsettled amounts, including those due to the haircut having been applied to the previous mark-to-market gains settlement, to compute the final settlement amount for each affected participant.

Partial termination (voluntary or required)

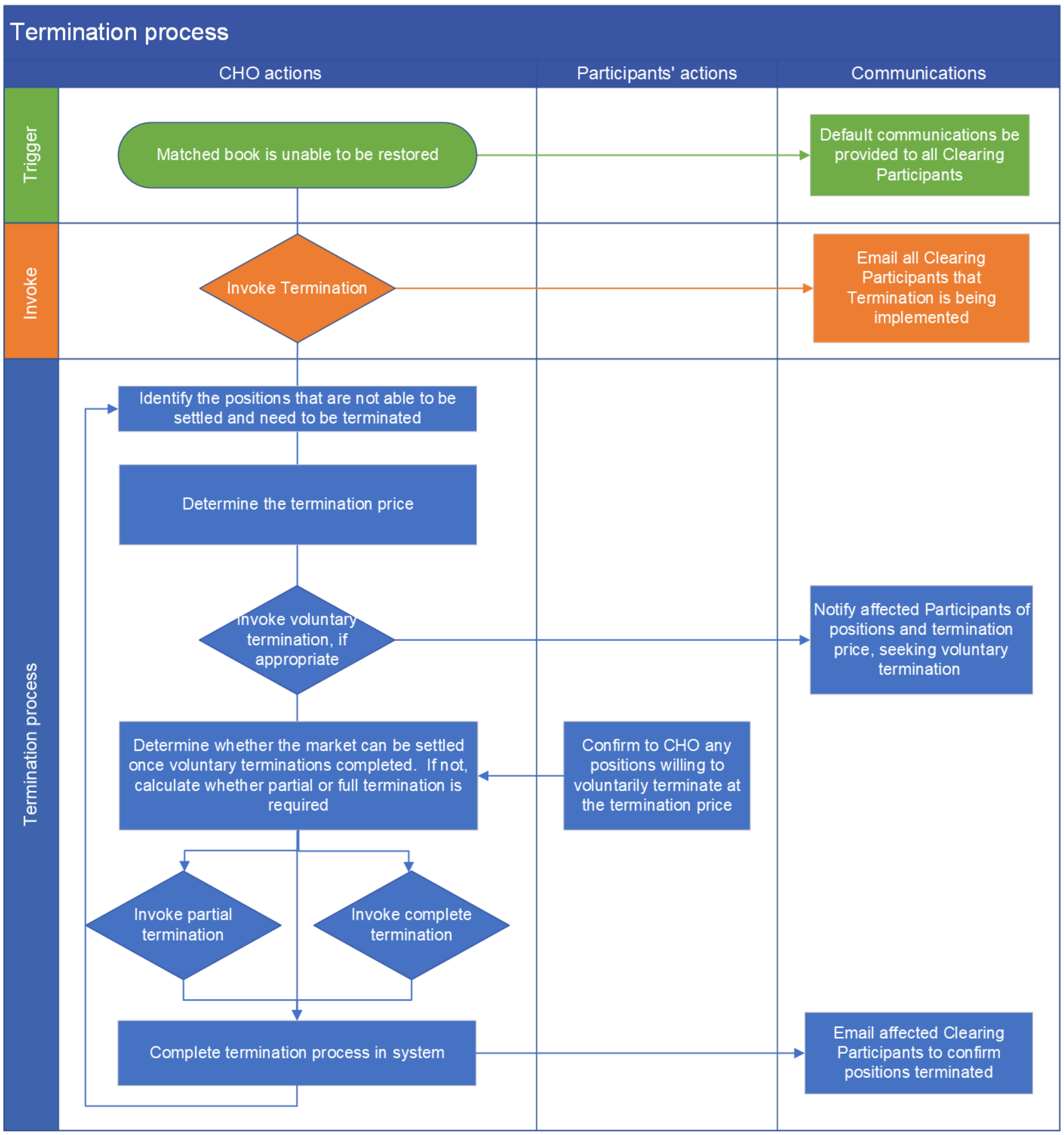
Applicable Market	Cash market or Derivative market.
Affected Participants	Non-defaulting clearing participants who have opposite settlement obligations or positions to the defaulting portfolio.
Tool trigger point	Partial termination will be used when the clearing house believes there is no remaining way to settle the defaulting participant's remaining open positions. This means either the market is totally illiquid or all collateral, risk capital and emergency assessments have been used to complete settlement, and there still remains some outstanding positions. Voluntary termination will be at the clearing house's discretion and will depend on the speed at which termination needs to occur to avoid increasing loss within the market.
Timeline	From the point when clearing house decides to undertake partial termination, it will aim to complete the entire process including settlement within 24 hours. This includes: 1. The clearing house will provide notification to clearing participants of partial termination, and may seek voluntary termination, if appropriate 2. If voluntary termination is an option, clearing participants will be given a short timeframe to respond and following response the clearing house will terminate any voluntary positions 3. The clearing house will then determine what further termination is required. The clearing house will notify clearing participants of what will be terminated, and the price, and then complete the termination process.
Communication to participants	Partial termination notification emails are sent to all affected clearing participants.

	Emails confirm if partial termination is voluntary or mandatory, and include information such as related positions or settlement obligations - instruments, volume, value, settlement date, termination price; If voluntary termination is available, non-defaulting clearing participants who choose to terminate the positions or settlement obligations are required to respond in email with details of voluntarily terminated positions or obligations, including instrument name, settlement date, the quantity for termination. The clearing house will then calculate the terminated positions and final settlement amount for each clearing participant. Confirmation emails will then be sent out to relevant clearing participants notifying the participants of the terminated instrument, quantity, final cash settlement amount and due time for settlement.
Allocation method	Pro-rata allocation according to the outstanding quantity of the relevant instrument with each affected clearing participant. In circumstances where the total amount requested to terminate is higher than the outstanding defaulting positions, pro-rata allocation will be performed according to the outstanding quantity of the relevant instrument (at the point of termination) and the amount requested by each non-defaulting clearing participant.
Client impact	You may choose to settle with your client, through other means, or terminate your own contract. This will depend on your clearing and settlement agreement and the trading participants client agreements.

Complete Termination

Applicable Market	Cash market / Derivative market.
Affected Participants	All non-defaulting derivatives clearing participants who have outstanding settlement obligations in the market where the default event occurs, at the point that it is decided to complete termination.
Tool trigger point	Market based tools and voluntary/partial termination fail to restore a matched book. Complete termination may be moved to immediately, at the clearing house's sole discretion, if the clearing house considers voluntary / partial termination will not restore a matched book and will only delay the implementation of complete termination.
Timeline	From the point when the clearing house decides to complete termination, it will aim to complete the entire process including settlement within 24 hours.

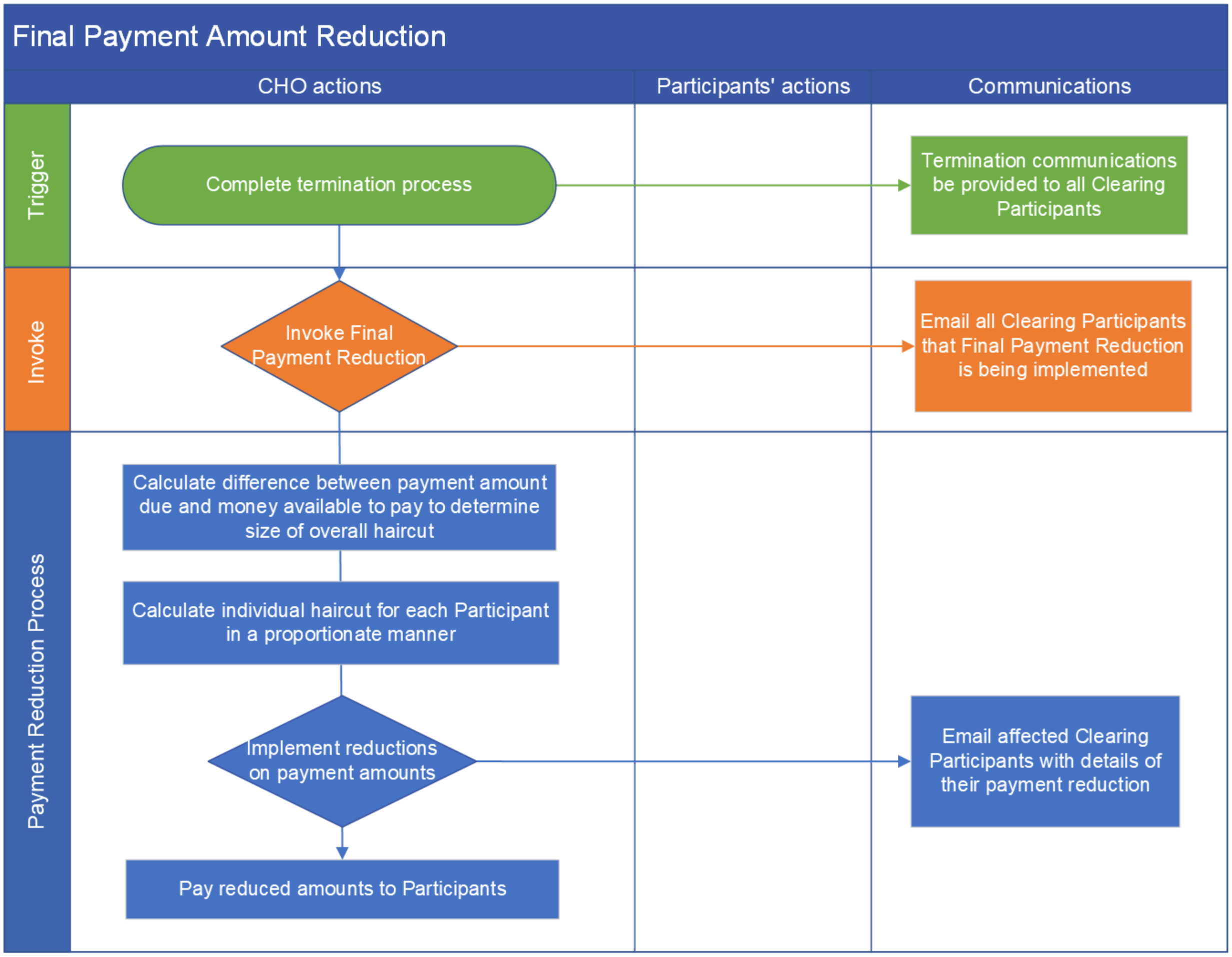
Communication to Participants	Emails are sent to all affected clearing participants. Emails include the clearing house's termination decision, the termination price for any relevant instrument, final settlement amount and date.
Allocation method	No allocation as all the outstanding quantity will be terminated.
Client impact	You may choose to settle with your client, through other means, or terminate your own contract. This will depend on your clearing and settlement agreement and the trading participants client agreements.



6.5 Final Payment Reduction

Section 11.7 of Exposure Draft of Rules

Applicable Market	Cash market and Derivatives market. Can only be used to manage loss against exposures the clearing participant participates in.
Affected Participants	All non-defaulting clearing participants who are due to receive a final cash payment, either in relation to the defaulted portfolio (partial termination) or the complete market termination.
Tool trigger point	Following termination, if there is still not sufficient cash for the clearing house to pay the final amounts to clearing participants. This will generally only be where the termination price has not been able to absorb the market, due to it being based on the market price rather than the original trade price or previous settlement price.
Timeline	Following termination, the clearing house will have 24 business hours to complete final payments and notify clearing participants of any final payment reductions.
Allocations	Pro-rata allocation will be done according to all affected clearing participants' cash receiving amount against each legally segregated account. In a complete termination scenario, all receiving clearing participants in the market will be allocated some of the loss, irrespective of whether they held the opposite side of the defaulting clearing participants positions.
Communication to Participants	Emails are sent to all affected clearing participants who are subject to the final payment reduction advising the clearing house’s decision to apply the reduction. The email will also include the amount of the reduction, the original payment amount, and the final payment amount after reduction.
Client impact	You may choose to settle fully with your client or pass the reduction through to clients. This will depend on your clearing and settlement agreement and the trading participants client agreements.



Managing ongoing exposures in a recovery scenario

In a recovery scenario, the market may continue to trade. To do this, there needs to be sufficient capital to manage the risk of the new exposures being created.

Should the default fund and NZCDC's capital be used in the recovery, this will not be available to manage the risk to the market. In this scenario, the only capital available will be each clearing participant's margin. The clearing house may use its power in the Rules to call additional margin to manage the ongoing risk.

This additional margin will only be called against open risk in the market (i.e. it will not be used to manage the current default), and the margin can only offset losses from the default of the clearing participant that lodged the margin (i.e. it will not be mutualised across clearing participants).

7. Replenishment

Where the defaulting participant's margin and other assets are less than the losses arising from the default event, some or all the default capital may be used to cover the default losses. To continuously provide services, the clearing house will have two options:

> Q7: What feedback do you have on the operation of the replenishment process? Do any questions remain?

i. Impose an Exposure Limit on the outstanding exposures to ensure the risk of the future transactions can be adequately managed through the remaining default capital resources;
ii. Initiate the capital replenishment process to increase the level of the capital available to manage future defaults.

Additionally, the clearing house can wind-down its business if there is no source of further default capital to continue the business. In this scenario, the markets will be unable to continue to operate, unless an alternative clearing service is able to readily be found. Technology interconnectedness of clearing houses, exchanges and participants, makes this difficult.

It is the clearing house's discretion to choose which option to go forward. Prior to making the decision, the clearing house may reach some or all of the non-defaulting clearing participants for their opinions on the above choices.

Participated Parties

If the clearing house determines to replenish the default capital, the parties who may participate in the replenishment include:

1. NZCDC who is subject to the contribution of risk capital;
2. Non-defaulting clearing participants who are required to contribute to a default fund.

Since cash market clearing participants are currently not being required to contribute to a mutualised client default fund, they will also not be requested for any capital contribution during the replenishment process. Only non-defaulting derivative clearing participants, who have not resigned or whose exclusion request have not been accepted by the clearing house at the end of Default Period, will participate in the capital replenishment process.

Replenishment Amount

The capital needs to be replenished where the default losses erode the pool of the default capital available to manage the default event. This is to ensure that the clearing house meets its regulatory capital requirement and the clearing house has sufficient financial resources to meet the potential losses if the largest participant defaults in an extreme but plausible market.

Given the possible structural changes to the market following the default event, the capital replenishment process may not result in the same amount of default capital as prior to the default. The clearing house will determine the required capital replenishment according to the latest market structure, trading activity as well as the composition of the participants.

The replenishment amount will be capped at the higher of the default fund prior to the start of the event and the highest cover 1 requirement since the default.

If there has been significant decline in market participation and the outstanding exposure has shrunk significantly, the clearing house will determine the total size of the default fund required against this reduced market size and risk. However, if there are no significant changes to the market structure in terms of trading activity and number of participants, the clearing house will not significantly change the default fund requirement compared to that required prior to the default.

Note that the replenished capital will only be available to cover losses arising from future defaults and the replenished default fund will be only available to cover losses arising from the relevant market. In addition, the clearing house will continue to review the default capital requirement and make additional calls for capital contribution according to the valid policies.

Communications

The clearing will update the affected clearing participants on its decisions and the details of the capital replenishment process. The clearing house will:

1. Email clearing participants who will participate in the replenishment advising the replenishment decision the type of capital that will be replenished; and the replenishment requirement for the whole market, the clearing house and the actual replenishing requirement for the particular participant;
2. Email all non-defaulting clearing participants, once the replenishment process is completed, the completion of the replenishment process and the revised default waterfall as a result.

Timeline

Considering the requirement of having sufficient capital for ongoing business and the potential financial burden on non-defaulting clearing participants during a stressful time period, the clearing may initiate the capital replenishment at the end of a Default Period. At that time replenishment occurs, the clearing house must have successfully managed the defaulting positions and allocated the defaulting losses in respect to the relevant default event.

Participants who participate in the replenishment process will have 3 trading days to pay the capital and meet their replenishment obligations after the notification is sent out.

8. Reimbursement

During the default management process, NZC and non-defaulting Clearing Participants may experience losses through the use of default capital and/or the employment of recovery tools. Recovery from the defaulting Clearing Participant will be used to reimburse to relevant parties who have experienced default losses.

> Q8: What feedback do you have on the operation of the reimbursement process? Do any questions remain?

Cash Available for Reimbursement

The amount of cash that is available for NZC to reimburse relevant parties is comprised of:

1. Any amounts that NZC subsequently recovers from the Defaulted Participant; plus
2. Any residual amount from Assessments paid by non-defaulting participants to NZC but not used to offset the CCP's losses from the default; less
3. Any amount liable to be set aside under any law relating to insolvency or bankruptcy.

Reimbursable Losses

The amount which may be reimbursed to non-defaulting participants depends on:

1. Total amount of Assessments paid by non-defaulting clearing participants;
2. Amount by which the final settlement amount paid to non-defaulting participants have been reduced.

The actual reimbursement amount paid to a particular participant will be the allocated amount minus the amount required to meet the participants' assessment obligations (if this has not already been met).

Order of Reimbursement

The money will be reimbursed in an order which is the reverse of how the default losses have been allocated during NZCDC's default management process. The later in the default waterfall that the default losses are applied, the earlier in the calculation any reimbursement will be allocated. The cash available for reimbursement will be paid in the following order:

1. To non-defaulting clearing participants whose final settlement amount has been subject to a haircut.

If the amount of cash available for reimbursement is less than the total final settlement amount reduction, the reimbursement will be applied proportionally to the haircut amount to which each non-defaulting Clearing Participant has been subject:

2. To NZCDC for its Senior Risk Capital contribution.
3. To non-defaulting clearing participants who have paid the assessments.

If the amount of cash available for reimbursement is less than the collected assessments, the reimbursement amounts will be in proportion to the assessment amount paid by the relevant participants:

4. For replenishment of the default fund.
5. To NZCDC for its Junior Risk Capital contribution.

9. Close-out netting in default or liquidation of the clearing house

Section 7A of Exposure Draft of Rules

Q9: What feedback do you have on the operation of the closeout netting process? Do any questions remain?

During the recovery or replenishment process, the clearing house may end up in a scenario where it has insufficient resources to continue. In this scenario, the clearing house may default to clearing participants, or enter liquidation.

In this scenario, clearing participant's may wish to terminate their outstanding obligations to the clearing house, to close-out the long-term risk. This can be done through a close-out netting process.

Close-out netting allows a clearing participant to offset the amount payable versus the amount receivable to the clearing house in a clearing house default or liquidation. This reduces a clearing participant's liability, as they may otherwise face an ongoing replacement loss for all receivables. It also provides clearing participants certainty of when they will be able to close-out of positions, in a clearing house default scenario.

When would close-out netting apply?

A non-defaulting clearing participant may exercise its close-out netting rights either:

a. 30 days from the date the clearing house fails to make payment or transfer approved product to the non-defaulting clearing member for settlement of net open positions; or
b. When liquidation proceedings commence, the clearing house enters into voluntary administration or the clearing house enters into statutory administration under the Financial Market Infrastructures Act.

What would the clearing participants' rights be?

By written notification to the clearing house, a clearing participant (the **Electing Participant**) could:

a. Cancel all outstanding positions with the clearing house
b. Liquidate all remaining contracts with the clearing house

The clearing house may then notify other clearing participants that the contracts had been cancelled, and the cancellation date.

On the cancellation date:

- The clearing house would calculate the total gains or losses per contract
- All other remaining obligations between the clearing house and Electing Participant would cease to exist.

The timeframe for close-out netting is outline in the table below.

Day A	Day B	Day B + 30 days	Day C (on or after Day B+30 days)	Day D (On or before Day C + 3 Business Days)	Day E (On or before Day D + 2 Business Days)	Day F (On or before Day E + 3 Business Days)	Day F + 1
CHO fails to make delivery or payment	CP gives notice of missed payment to CHO	CHO Default (as defined event)	CP elects to implement close-out netting	CHO notifies other CPs of what cancelling and elects Cancellation date	Cancellation date.	CHO gives notice to each CP of what is owed	Payments are due

Close-out netting does not apply to any collateral or default fund contributions paid to the clearing house. Separately, in a liquidation of the clearing house, any collateral or default fund contributions are obliged to be transferred back to the clearing participants, once all outstanding obligations have ceased.

Q10: Do you have any other feedback on the operation of the recovery tools or recovery plan?

Appendix A: Questions for response

Q1: Do you agree that auctions are not appropriate for the New Zealand market?	
Q2: Do you have feedback on the order in which the clearing house will use resources to manage a default, as outlined in the default waterfalls?	
Q3: What is your view of the length of the Default Period?	
Q4: What challenges do you foresee with the proposed exclusion request process?	
Q5: What feedback do you have on the operation of the recovery tools? Do any questions remain?	
Q6: We have not identified any Rule changes required to the Participant or Derivatives Rules. Please let us know if you consider any are required.	
Q7: What feedback do you have on the operation of the replenishment process? Do any questions remain?	
Q8: What feedback do you have on the operation of the reimbursement process? Do any questions remain?	
Q9: What feedback do you have on the operation of the close-out netting process? Do any questions remain?	
Q10: Do you have any other feedback on the operation of the recovery tools or recovery plan?	

NZX Clearing

Appendix B: FAQs on the Consultation

Why are we proposing additional recovery tools?

In the International Monetary Fund's Financial Sector Assessment Programme report from May 2017, the IMF reported that New Zealand's Financial Markets Infrastructures required reform to get it on par with international standards.

The IMF recognized that proceeding with the proposed regulatory reforms would make New Zealand better aligned with international standards. These regulatory reforms are being effected through the Financial Markets Infrastructures Act, which is currently in the implementation process. The Act requires financial market infrastructures to have a recovery plan (defined as a contingency plan in the Act) that is comprehensive, adequate and credible and includes financial recovery tools.

The additional recovery tools and clarifications to the deployment of existing Rulebook powers are the outcome of this regulatory requirement. They are by design developed to avoid moral hazard created by the perception of clearing houses being "too big to fail" and the associated government / taxpayer bailouts. The recovery tools have been developed by international regulators with assistance from global clearing houses. Many overseas jurisdictions have already or are in the process of putting in place similar arrangements at their central counterparty (CCP) clearing houses.

Following the global financial crisis, settlement through CCPs was recognised as a key practice to reduce market default risk, improve transparency and avoid potentially serious outcomes that had been experienced through the crisis.

CCPs centralise and reduce systemic risk, through netting and their risk management models. However, there is an expectation that CCPs and their Clearing Participants collectively will bear the risk of an event of default and will not turn to the government in the event of a Participant default scenario that stresses the CCP beyond its extreme but plausible risk modelling.

How do the recovery tools fit into the existing risk management framework for the clearing house?

Risk management frameworks for clearing houses are generally defined in three layers:

1. Accreditation and ongoing compliance of Participants, to reduce the probability of a default;
2. Margin frameworks for the risk of loss from a Participant default in 'normal' market conditions (typically able to withstand adverse price movements 99% of the time); and
3. Default management of a Participant default in extreme but plausible market volatility, (typically supported by CCP capital and the Clearing Participants) and recovery for a Participant default in a beyond extreme but plausible market.

Given the extreme low probability, recovery events were previously often not explicitly covered in detail in CCP Rulebooks although there were many general emergency powers that could be used in such circumstances. Post GFC, international market expectations rose including regulatory requirements that such ‘recovery events’ should be more clearly specified using new tools to reduce the potential for the CCP to default.

In 2018 a Participant funded mutualised default fund was introduced for the NZX derivatives market which strengthened the default management for that market.

The development of the recovery tools is the next step in aligning the clearing house’s risk management model to international regulation and future local regulatory requirements for default management and recovery.

When would the recovery tools be used?

The tools may be used where the losses arising from a Clearing Participant default are likely to exceed the defaulter’s margin, $10m of the paid in capital of the clearing house (i.e. the junior risk capital) and (for the derivatives market only) the default fund contributions (together the **pre-funded resources**).

The clearing house’s risk management model is calibrated to hold sufficient capital to manage the default of the largest Participant in extreme but plausible price volatility. So, for the tools to be used, there would need to be an event where the expected loss is higher than this capital. The two most likely causes of a default recovery event are:

- An adverse price movement in excess of a one in thirty-year probability coinciding with the default of the Clearing Participant; and/or the
- Simultaneous multiple defaults of Clearing Participants.

In this scenario, the event is so significant that either the largest Participant, or multiple Participants, are unable to meet the cash and securities obligations to the clearing house, and the pre-funded resources are insufficient to cover the losses in the market.

For recovery tools to be used:

1. At least one Participant has failed: This means that the Participant’s own assets and financial reserves have already failed to cover its obligations to the market.

    - In a bilateral settlement market, this is the point at which Participants on the other side of the contract would experience loss (for example, Access Brokerage).

2. The Participant’s margin has been used to cover its obligations. Margin covers what is modelled to be ‘normal’ market movements. ‘Normal’ is calibrated to cover at least 99% of historical movements over the previous 20 years. For the margin to be insufficient to meet the outstanding obligations, the price movement is likely to be in excess of this scenario.

    - At least $10m of risk capital put forward by the clearing house has been exhausted, or is predicted to be used. This amount is modelled to be sufficient capital to manage a loss in an extreme but plausible market.

We use a number of stress scenarios to ensure that we hold enough capital to cover a Participant's obligations if they do default. To give an example of how the default would be outside of that modelled risk, one scenario, in the cash market, is where there was a large default and the market moved more than 19.8%.

If a Participant is unable to meet its obligations to the clearing house, and the margin and risk capital is not sufficient to cover the movement, the clearing house will not be able to meet its obligations to the non-defaulting Participants on the other side of the defaulting Participant. This will create settlement failure in the market which, and without the recovery tools, is unable to be resolved with the Participant's clients.

Such an event may be regarded as very low probability. Regardless of that probability the clearing house must have a recovery plan that addresses all potential default losses as an important element of financial market infrastructure regulation.

How would using the recovery tools differ to what happens today?

Today, if there is a default where a Participant is not able to meet its obligations, the margin and risk capital will be used to cover those obligations (as described above).

Following the use of these resources, if such extreme circumstances happened today, it would be difficult to predict the outcome. Should the default be so severe as to cause the insolvency of the CCP, New Zealand insolvency law would apply. While the outcome cannot confidently be predicted, it is likely that the CCP would go through the insolvency process:

- Some transactions would remain unsettled and losses may accrue until such transactions are settled or terminated by the insolvency practitioners
- The assets and all funds held with the clearing house may be held until otherwise distributed as part of that insolvency.

Alternatively, insolvency may be avoided in the cash market for instance by using the Rulebook's existing termination powers. This means that:

1. Anything that is due for settlement would be terminated prior to settlement
2. Participants who are party to a terminated contract will not be required to put up the cash or securities to meet their settlement obligations
3. Those Participants will lose any gain that they had otherwise made on the trade, from trade date to the point of termination (though Participant's can apply for compensation from the defaulting participant under the Rules).

The new recovery tools would change this by providing greater transparency and additional steps that can be implemented after using the margin and risk capital, but before terminating all market positions or entering into insolvency.

Instead of terminating all market positions, the tools could be used to try and settle the unmatched positions, in full or in part. By trying to settle the unmatched positions, the aim is to recognize the agreed settlement contract, and in turn any gain a Participant would have otherwise experienced through settlement, due to any price movement between trade date and settlement date.

The tools include:

- Delaying cash settlement to provide time for the clearing house to obtain the resources to complete settlement
- Seeking payments from Participants, which are then used to complete settlement and to share any loss across remaining Participants
- Haircutting the gain of Participants, either at the point of variation margin or following termination, so that final payments can be completed albeit with a smaller gain than may have otherwise been experienced
- Termination will remain an option.

The aim in using the tools will be to complete settlement as much as possible, and share loss across Participants, without creating pro-cyclical default scenarios.

What will the impact of the tools be on Clearing Participants?

In a normal market, on a daily basis, there should be no impact of having the tools. No additional capital or margin is required to be paid to the CCP as a result of the proposed introduction of the additional tools. We also expect that there will be no extra regulatory capital obligations as a result of these changes.

In a large market default scenario, Participants will bear the risk arising from the use of the recovery tools. How this risk is borne by each Participant, and the outcome of the risk, will differ for each Participant and will depend on the scenario (including who defaults, how the market movement occurs, and who holds the portfolio opposing the defaulter). The tools are designed to be loss sharing tools and impact of the tools on Participants will increase the further down the default waterfall the recovery scenario goes. This design is intentional, to encourage Participants to participate early in the default (for example, we will need participation in the market to sell a defaulting participants portfolio on market, rather than use the recovery tools).

In summary, the impacts on non-defaulting Participants may be:

- **Offsetting transactions –** (cash market only) Your settlement may have other settlement obligations tied to it. This may mean that your centrally cleared settlement does not fully complete until later than you expected, which may create exposures against other counterparties (e.g. OTC settlements in NZX CSD)
- **Variation margin gains haircut –** (derivatives market only) You may initially have a haircut on variation margin you are due to receive (for the derivatives market only). This will mean you do not receive as much variation margin as you expect
- **Assessment powers –** You may be required to give additional money to settle the market – an assessment. This money is then used to complete settlement of the market. If you have positions relying on the settlement of the defaulting Participant’s positions, you may receive this money as part of the settlement of those positions

- **Termination –** Your settlement contract may be terminated prior to settlement. You will not therefore need to meet your settlement obligation. The likely outcome here is that you may not then be able to realise any gains you otherwise may have received from that settlement (or any gain may be reduced, depending on the termination price)
- **Final Payment Reduction –** You may have your final payment amount due haircut. This will mean you receive less for settlement than you otherwise expected.

Some of these impacts may need to be absorbed by Clearing Participants and some may be passed on to clients. Based on feedback, the Rules will not require where impacts must be passed on to clients – this will depend on your agreements with your clients.

More details on the specific tools and their impacts will be included in the second consultation.

What is the impact of the tools on the clearing house?

The tools provide the clearing house with ways to try to manage and complete settlement in a default. Use of the new tools would increase the likelihood of honouring the original trades that were entered into, which would recognise any gains or losses that non-defaulting Participants have received since that trade date.

Robust and transparent recovery arrangements reduce the probability of the clearing house's insolvency in very extreme scenarios thereby reducing systemic risk to the market as a whole.

The clearing house currently provides $20m in risk capital to cover the risk of default across both the cash and derivatives market. $10m is sufficient to cover against the largest Cash Participant default in an extreme but plausible market, when combined with the margin model.

Until 2016, the clearing house held $10m in cash and $10m in contingent capital funded through a deed of guarantee by NZX Limited. In 2016, NZX Limited converted contingent capital into cash, via the debt arrangements to ensure immediate access in a default. This was undertaken to support derivatives market growth. All $20m is now held as cash.

The tools will not:

- reduce this amount of risk capital put forward by the clearing house to manage the market; or
- refund any amount of risk capital exhausted by the clearing house in managing a default

What are the alternatives to the tools?

As noted above, the tools are a regulatory requirement which will form part of the new legislation. Therefore, not implementing financial recovery tools is not an option.

The new tools are part of international practice for CCPs. Alternatives include:

- different ordering of the tools
- varying the operations and timelines
- the relative sizing / caps for the tools
- rules for passing on of losses.

There is no single correct means of combining and implementing these tools. The intention is to attain a fair distribution of risks and any associated costs amongst stakeholders. In practice, solutions need to take into consideration the characteristics of the market structure and cleared products, together with the current distribution of risks and providers of capital.

How can the likelihood of using the tools be impacted?

To reduce the likelihood that the tools are used, the clearing house could increase its margin requirements. Increasing margins would in theory further reduce the already extremely low probability of the recovery tools being used. More margin would provide greater pre-funded capital to use for a Participant default and is a more “user-pays” model (i.e. all users fund greater amounts of margin to be used in their own default).

More margin would reduce the likelihood of using tools which will mutualise loss across Participants. It may also have cost implications that may negatively affect market efficiency. The additional cost of funding margin from all Participants appears much more significant than the potentially small reduction in the risk of the recovery tools being used. Whatever margin approach is adopted, it will still need to be supported by new, robust recovery measures.

We consider to hold more initial margin is an inefficient response in that:

- The risk model already models to protect the market against a default in the normal market and an extreme but plausible market
- The clearing house holds enough pre-funded capital based on that modelling to manage such a default, through the margin Participants already put forward plus the NZX risk capital
- Beyond the model, the level of loss is potentially infinite, in terms of the size of portfolio of any defaulting Participant and size of movement that impacts that portfolio. It is not possible to hold pre-funded capital to protect against loss that cannot be modelled
- Pre-funding against risk is capital intensive. There is a balance of protecting the market, and providing capital efficiency. The regulation has determined that balance to be to protect up to the largest participant default in an extreme but plausible market, based on modelled historical data
- As pre-funding has limits, there will always be the possibility that a loss will go beyond the pre-funded capital. Therefore, there may always be a scenario where the tools are required.

How do the recovery tools compare to those used by other clearing houses?

The proposal is based on international practice and regulatory expectations. Overseas clearing houses have either already implemented similar measures or are in the process of doing so. Clearing houses are not allowed to compete on risk management, and all clearing houses are expected to align to the international standard.

Different market characteristics generate different use of the recovery tools. In particular, varying product ranges, client account structures and default fund contributors drive recovery plan design.

We have considered the international standards in determining the ratio of capital put forward by the clearing house compared to Participant's promissory resource obligations (through the assessment payments). The amount of money put forward by Participants will be capped. You are able to provide feedback on these caps and the ratio in the consultation.

Currently, the core difference between the clearing houses' risk management model and international standards is that there is no cash market mutualised default fund. A default fund would require cash market Participants to pre-fund money to be held in a mutualised fund which could be used to manage a default.

Does the clearing house have sufficient capital?

The introduction of the recovery tools does not replace the risk capital otherwise funded by the clearing house to manage a default scenario. The risk capital funded by the clearing (along with the default fund for the derivatives market and the defaulter's margin), provides sufficient capital for the modeled default of the largest participant in an extreme but plausible market.

The amount of capital required for these circumstances is modelled daily, using 31 different scenarios covering market wider, sector and individual stock risk scenarios. Based on this:

- The daily average risk capital required is $1.9m
- Less than 5% of extreme scenarios require risk capital of more than $5m.

The risk capital provided by the clearing house remains the first line of defense, following the defaulting participant's pre-funded resources, for a participant default. The sufficiency of the clearing house's risk capital is reviewed annually, both internally and through an independent risk assessor. The result of this review is provided to the Joint Regulators.

The recovery tools are a separate risk management approach. Irrespective of the mount of pre-funded financial resources the clearing house holds, the recovery tools are still required to manage the risk a default goes beyond the amount of prefunded capital. This forms part of an expected, integrated risk management framework.