



Bank Bill Benchmark Rate (BKBM) and the BKBM Trading Window Operating Rules and Principles

June 2021

NEW ZEALAND FINANCIAL BENCHMARK FACILITY LIMITED

Level 12, ANZ Centre, 171 Featherston Street, Wellington, 6011
Phone: 04 499 9169 | Email: info@nzfbf.org | Website: www.nzfbf.co.nz

Bank Bill Benchmark Rate (BKBM) & the BKBM Trading Window

Operating Guidelines and Principles

1.0 INTRODUCTION

The Operating Rules and Principles outlined in this document have been derived with the objective of ensuring:

- The alignment with the IOSCO Principles for Financial Benchmarks.
- A transparent BKBM determination process is maintained.
- Conformance with global best practice.

This service provides a Benchmark (BKBM) that represents the mid-rates for Prime Bank eligible securities that are traded in the local New Zealand market. BKBM represents the rates at which banks are willing borrow from, or lend to, one another for terms of one to six months. As such the rate includes a credit premium to the comparable risk-free interest rate curve.

BKBM is set using transaction based data or executable bids & offers, for one, three and six month tenors, in a two-minute trading window held at 10:20am each business day. Two, four and five month tenors are set via interpolation (see section 7.6).

This document should be read in conjunction with the following NZFBF publications, all of which can be found on the NZFBF website:

- NZFBF Board Charter;
- NZFBF Constitution;
- NZFBF Code of Conduct & Conflicts of Interest;
- NZFBF Conflict Management Plan;
- NZFBF Complaint Process; and,
- NZFBF Whistle Blowing Process.

2.0 GOVERNANCE

The New Zealand Financial Benchmark Facility Limited (NZFBF), a subsidiary of the New Zealand Financial Markets Association (NZFMA), is the Administrator and Calculation Agent for the BKBM Benchmark ("Benchmark"). NZFBF provides transparent governance, oversight and accountability procedures for the Benchmark determination process. This includes an identifiable oversight function accountable for the development, issuance and operation of the Benchmark process to protect the integrity of the Benchmark and to address any conflicts of interest.

2.1 Overall Responsibility of the Administrator

As Administrator, the NZFBF maintains responsibility for all aspects of the capture and calculation process and overall governance surrounding the Benchmark. This includes the following:

- a) Development: The definition of BKBM and BKBM determination methodology (as outlined in this document);
- b) Determination and Dissemination: Accurate and timely compilation, publication and distribution of the Benchmark;
- c) Operation: Ensuring appropriate transparency in respect of significant decisions affecting the compilation of the Benchmark and any related determination process, including contingency measures in the event of absence of or insufficient inputs, market stress or disruption, failure of critical infrastructure, or other relevant factors; and
- d) Governance: Establishing credible and transparent governance, oversight and accountability procedures for the Benchmark determination process, including an identifiable oversight function accountable for the development, issuance and operation of the Benchmark process.

2.2 Internal Oversight

NZFBF governance, which includes policies and processes for the calculation and control of the Benchmark, as noted above, is coordinated through its NZFBF Board with assistance from relevant sub-committees.

2.2.1 NZFBF Board

The NZFBF has an oversight function via the Board (i.e., the board of directors of NZFBF) to review and challenge all aspects of the Benchmark determination process. The NZFBF's Constitution and Board Charter details the Board's oversight function and are available on the NZFBF website.

The NZFBF Board consists of three independent Directors, two of which fill the Chair and Deputy Chair roles, two non-independent Directors from Price-making organisations and two non-voting observers from the Government sector.

2.2.2 NZFMA Board

The NZFMA Board is made up of the Heads of Markets of the Association's Financial Markets member banks, the Head of Financial Markets of the Reserve Bank of New Zealand, and Head of Portfolio Management at New Zealand Debt Management. The latter two positions in an observer capacity. The NZFMA Board meets regularly to identify issues relating to the New Zealand markets, review market initiatives, develop strategic policy, monitor changes to the regulatory environment and manage the Association's affairs.

The NZFMA Board will confirm the appointment of representatives forming the NZFBF Board, following the NZFBF's Constitution and Charter, to oversee the capture, calculation and publishing methodology of the Benchmark and other New Zealand official financial market closing rates.

The NZFMA Board also appoints member representatives with specialist knowledge to sit on Committees and Industry Working Groups that share and develop market ideas and strategies to enhance the New Zealand financial markets. These Committees and Working Groups provide Stakeholders with active input into the operations of the wholesale markets and provide recommendations and support to the NZFMA Board.

2.2.3 NZFMA Rates Committee

The Rates Committee is responsible for reviewing the operational management of the Benchmark capture and calculation process noting, however, that the governance of this and other NZFBF generated benchmarks will be the responsibility of the NZFBF Board.

The Rates Committee will provide recommendations to the NZFBF Board concerning the overall operation of the Benchmark. The Rates Committee members are drawn from banks operating in the NZ domestic rates market including participants and non-participants in the BKBM Trading Window. Each paid up Financial Markets member of the NZFMA may provide a member to the Committee. The Reserve Bank of New Zealand and New Zealand Debt Management are invited to attend all committee meetings as an observer.

2.3 Code of Conduct

NZFMA requires that NZFMA member banks included in the Benchmark determination process agree to comply with the NZFMA Code of Conduct & Principles. This Code sets out ethical principles for acceptable standards of behaviour in the over-the-counter financial markets and promotes responsible decision-making by Participants.

For further information, please refer to the NZFMA Code of Conduct & Principles.

2.4 Conflicts of Interest

Identifying and disclosing existing and potential conflicts of interest is a standing item at the NZFBF Board meetings. Employees and contractors of the Administrator must disclose any existing or potential conflicts of interest to the Chair of the NZFBF Board as soon as they arise in line with the Conflict Management Plan and the Code of Conduct and Conflict Management. There will also be an annual attestation that Board members and staff of NZFBF comply with all of NZFBFs' policies.

Once disclosed, it is the responsibility of the Chair (or, where the Chair has the conflict, the Deputy Chair) to ensure that conflict does not inappropriately influence the calculation of the Benchmark.

2.5 Staff Training

NZFBF ensures staff have the necessary skills and ongoing training to perform their duties to the highest standard and ensure benchmark outputs comply with the IOSCO Principles for Financial Benchmarks. Staff training is governed by the NZFBF Staff Manual. This will consist of in-house training and the use of external providers in relevant fields. Topics covered will be benchmark administration, NZ Financial markets and securities law & market regulation. Staff will also be required to be familiar with the contents of the NZFMA's Accreditation programme.

3.0 QUALITY OF BENCHMARK

3.1 Benchmark design

Factors such as the adequacy of the sample, the number of willing and available Price-makers, the size and liquidity of the relevant market, any market concentration issues surrounding the distribution of trading, and the relative size of the market in relation to the volume of trading in the market that references the Benchmark

are subject to ongoing monitoring by the NZFBF via the Rates Committee and NZFBF Board. Should there be any significant developments to these market dynamics, a review process will be conducted to determine if the Benchmark determination process remains appropriate and produces a robust representation of the interest that it seeks to measure.

The NZFBF Board shall also review the design of the Benchmark determination process (upon recommendation from the NZFBF and Rates Committee) in accordance with IOSCO Principle 5 (Refer 3.5 for more detail).

3.2 Data Sufficiency

The Benchmark determination process is anchored by observed transactions conducted in the Trading Window, entered into at arm's length between buyers and sellers in the market and having been formed by the competitive forces of supply and demand. As an adjunct or supplement to these transactions, deal-able bid and offer quotations extracted from broker pages may be relied upon. These different forms of data will be used depending on the conditions in the market on any given day to determine the Benchmark.

As New Zealand's domestic money markets are relatively small in size, the BKBM calculation operates on a waterfall methodology as described in section 7.6 to cater for low liquidity in the market. In times of market stress, the previous day's determination may be used as noted in section 7.7. The NZFBF and its Board monitor this activity closely and regularly engage with market participants to monitor changes in this activity and developments in other jurisdictions.

3.3 Hierarchy of Data Inputs

The NZFBF adheres to the following hierarchy of inputs in order to determine the Benchmark (full details are available in section 7.6):

- A trade weighted average of all trades and volumes completed within the Trading Window.
- Where there are no trades completed during the Trading Window – the system uses any/all executable bids and offers for each tenor.
- Interpolation is used to calculate those tenors where bids and offers have not been quoted.

If the above process is not able to determine the benchmark, for example due to market stress, the NZFBF can use the previous day's Benchmark determinations, as described in section 7.7.

The process is not dependent on submissions.

3.4 Transparency of Benchmark Determinations

NZFBF provides full transparency regarding the setting of the Benchmark on each business day. That is:

- How the benchmark was set – Traded, executable or interpolation;
- Details of any trading that occurred – Counterparties, volume, rate and tenor;
- Details when executable bids and offers are used – Counterparties, volume, rate and tenor.

This information will be available to Benchmark subscribers at 10:41am and will be publicly available with a 24 hour delay. The Benchmark determination process will be conducted in a manner that complies with the details specified in this document and the NZFMA Code of Conduct. Any deviation will be investigated and, if necessary, escalated to the NZFBF Board for further consideration.

3.5 Periodic Review

The NZFBF regularly reviews both the inputs and outputs of the BKBM process. If any issues arise it will raise the concerns directly with the BKBM Price-makers and the Rates Committee who meet approximately six times a year. This review of the methodology and these Operating Rules & Principles will be undertaken on an annual basis and includes whether the two-way quotations:

- Have undergone any structural changes that may necessitate changes to the design of the methodology;
- Have diminished or are non-functioning such that they can no longer function as the basis for a credible Benchmark; and/or
- Have undergone any change which makes the Benchmark no longer representative of its intended interest and may result in the possible cessation of the Benchmark.

Any recommendations following each review will be forwarded to the NZFBF Board for consideration and approval. If any changes are required, the NZFBF Board will determine if a consultation is required (see section 4.2).

The NZFBF will publish or make available a summary of such reviews where material revisions have been made to the methodology, including the rationale for the revisions with appropriate time frames for implementation.

4.0 QUALITY OF METHODOLOGY

4.1 Content of Methodology

The methodologies are outlined in the Appendices and include the following:

- a) Definitions of key terms;
- b) All criteria and procedures used to develop the Benchmark including the input selection and source, prioritisation of certain data types, quorums and calculation methods;
- c) The procedures which govern a Benchmark determination in periods of market stress or disruption, including technology issues;
- d) Information regarding the frequency of internal and external reviews of methodologies – as specified in section 3.5; and,
- e) The circumstances in, and procedures under, which, the Administrator will consult with Stakeholders.

4.2 Changes to the Methodology

The NZFBF, with guidance from the Rates Committee and the NZFBF Board, will publish or make available the rationale of any proposed material change in its Methodology. A material change would be defined as, but not limited to, any change to the methodology that would alter the definition or representativeness of the Benchmark, the calculation of the Benchmark, the format in which it is released and/or the timing of that release.

Material changes to the methodology will be communicated to subscribers and stakeholders via a consultation with adequate time for response. Following the consultation's close, the Rates Committee and/or a NZFBF Working Group will consider the feedback. A summary of the feedback and proposed next steps will be published following this process, for further comment before a final decision is made by the NZFBF Board.

The NZFBF will provide, at a minimum, one month's notice, via a market notice, for the implementation of the change which would be guided by consultation feedback.

Minor changes that do not meet the material change definition above will be discussed by the NZFBF, the Rates

Committee and the NZFBF Board before being implemented. The change would be implemented via a market notice with the required notice period.

The above processes may not apply if the Regulator has given written notice that a change is required.

4.3 Internal Controls over Data Collection

As the NZFBF collects data from an external source, appropriate internal controls have been put in place over its data collection and transmission processes. These controls address the process for selecting the source, collecting the data and protecting the integrity and confidentiality of the data.

A Master Services Agreement has been signed by the NZFMA with Bloomberg Finance LP which outlines the terms and conditions of the data license between the two entities. Permission has been obtained from the Brokers to access and use the quotation information that they publish on the relevant Bloomberg pages. Participating banks have agreed to disclose relevant trading information provided to the Brokers and subsequently used in the calculation of BKBM.

The Administrator does not actively monitor Bloomberg's arrangements for the collection and dissemination of the data because the data consists of live deal-able two-way quotations and therefore is of a mechanical nature.

4.4 Transition

When a possible cessation event has been identified during the periodic review process specified in section 3.5, or at any other time by the NZFBF Board, be that due to the Benchmark no longer being representative or where the NZFBF and NZFMA can no longer act as the Benchmark Administrator, the processes in section 8.0 of this document will be followed.

5.0 ACCOUNTABILITY

5.1 Complaints, Restatement & Penalties Procedures

The NZFBF has a complaints procedure by which Stakeholders or any other person may submit complaints relating to the BKBM process. This is covered in the NZFBF's Complaints Process which can be found on the NZFBF website. This document provides information on laying a complaint directly with NZFBF or externally to the Conduct Regulator.

Where a complaint involves a request for a review and possible republication of BKBM or in the event the NZFBF identifies a system generated or other error in the calculation post publication of BKBM the process will be handled in accordance with the following procedures.

- In determining the parameters for a refix, the NZFBF considers the following:
 - Global best practice¹;
 - Exposure of market participants to unnecessary basis risk;
 - The time and effort required to amend transactions in the event of a refix;
 - Transparency of error reporting; and,
 - Ensuring the rate is robust, reliable and reflective of the underlying interest.

¹ For example the IOSCO Principles for Financial Benchmarks

- A material error is an error that would have a half a basis point or greater impact on the final BKBM rate for that tenor;
- A request to review a non-material error for a BKBM rate must be lodged by phone or email to the NZFBF before 11:41am NZ time or 60 minutes post publication. To dispute the calculation of BKBM please call 0800 693 282 or email helpdesk@nzfbf.org;
- The NZFBF will accept requests to review material errors up until 3:00pm on the same business day;
- The NZFBF will post a message to all subscribers via email communicating either a non-material or material error of BKBM is under review;
- NZFBF will take steps to verify the basis of the error. If it is identified that a recalculation is warranted, then a recommendation will be made as per the procedures of section 7.6.
- In the event that an intraday refix is required, the NZFBF will republish the amended rate for a non-material error to vendor screens, along with email notification to all BKBM subscribers by 12:30pm NZ time;
- The NZFBF will follow a similar process for material errors and will look to publish the intraday refix within 60 minutes of the error notification; and,
- NZFBF will maintain a log of all requests to recalculate a BKBM rate, including the entities which requested it, the investigations undertaken, and the reasons for the decision taken by the NZFBF. This information will be published to the market, one month in arrears, on the NZFBF website.

Potential penalties for non-compliance by BKBM participants are as follows:

- 5.1.1 Rules for Participation are integral to the integrity of the calculation of the BKBM rates. Repeated Failure by an Approved Financial Institution to operate in accordance with these Rules may result in review of the institution's Participant status.
- 5.1.2 Following a Repeated Failure, the NZFMA Rates Committee shall ask the NZFBF Board to formally warn the offending Participant that it may be suspended if there is a further Repeated Failure during the following calendar month.
- 5.1.3 If that Participant has a one Repeated Failure during that following calendar month, the NZFBF may, on the recommendation of the NZFMA Rates Committee, suspend that Participant for a period of four weeks. If that Participant has a Repeated Failure after completion of the suspension, it shall receive another formal warning.
- 5.1.4 In the event that Participant has two further Repeated Failures after completion of the suspension, the NZFBF, on the recommendation of the NZFMA Rates Committee (and without formal warning), may (a) suspend that Participant for a period of 12 weeks, or (b) if those Repeated Failures were, in the majority opinion of the NZFMA Rates Committee members, a blatant breach of the Rules and Principles, permanently remove that Participant.
- 5.1.5 The offending Participant shall be given the opportunity to be heard fully before its suspension or removal as a Participant is ordered. The offending Participant shall be able to consent to suspension or removal before or after being heard.
- 5.1.6 The offending Participant shall have the right of appeal to the full Board of the NZFMA in the event of suspension or removal as a Participant.

5.2 Reporting and Audits

Daily data integrity checks will be conducted pre-publication and retrospective reviews undertaken to ensure the methodology remains robust. This integrity check will be performed by the NZFBF as part of its obligations as Administrator. Breaches of tolerance will be identified on the NZdata market monitor platform with Price-makers and NZFBF management notified accordingly.

From time to time, the NZFBF Board may appoint an independent external auditor with appropriate experience and skill to review and report the NZFBF's adherence to its stated Operating Rules & Principles.

5.3 Audit Trail

Written records will be retained by the NZFBF for a minimum of seven years. These will include:

- All market data, any other data and information sources relied upon for Benchmark determination;
- Details surrounding deviations from standard procedures and methodologies;
- Any queries and/or complaints with appropriate responses relating to the Benchmark determination process.

Record Keeping:

The NZFBF will retain auditable records of all data relating the daily calculation of BKBM and any changes to the methodology. Physical and electronic records shall be kept for at least seven years. Records of telephone conversations or electronic communications shall be kept for a period of three years. The following information will be retained:

- All data inputs including details of the source;
- The calculated rates;
- Evidence of any NZFBF intervention;
- Relevant compliance reports including the NZFBF approval process;
- Any other reporting related to the calculation of BKBM;
- Relevant communication relating to the inputs or published BKBM rates;
- Any queries or complaints received in relation to BKBM and the NZFBF's response;
- Incident reports in relation to any issues or errors that occurred, including the proposed resolution;
- The identification of any conflicts of interest and how they were managed; and,
- Findings of any external audits.

The above information will be available to Regulatory Authorities on request.

5.4 Confidentiality

Subject to section 5.5, data provided by Price-makers and used in the Benchmark determination process will not be disclosed to any party, outside of the data noted in section 3.4, other than the NZFBF and its employees, officers and the NZFBF Board for the purpose of carrying out its duties as Administrator.

5.5 Co-operation with Regulatory Authorities

Where required by law, data audit trails and other documents subject to these Operating Rules & Principles shall be made readily available by the NZFBF to any relevant Regulatory Authority.

6.0 Appendix I

Eligibility, Rules and Current Price-Makers

6.1 Price-Maker Eligibility Criteria

A Price-Maker means a financial institution approved by the NZFBF to quote prices and transact during the BKBM Trading Window.

The BKBM Trading Window is currently 10:20am to 10:22am on every business day including Wellington and Auckland anniversary .

To be accepted as a Price-Maker to the Benchmark process, an entity must:

1. Be approved in writing by the NZFBF Board;
2. Be a paid-up member of the NZFMA;
3. Be an active participant in the bank bill market and a recognised Price-Maker in all maturities in the market amount and spread. At the time of writing, this requires Price-Makers to provide a three-point price in \$20 million parcels in the one-to-six-month maturities during NZ market hours – currently 8.30am to 4.30pm NZ time;
4. Provide the NZFBF with proof that the entity has RWT-exempt status;
5. Provide the NZFBF with a Company Extract issued by the NZ Companies Office showing that the entity is registered in NZ and listing the company directors and the registered office;
6. Provide the NZFBF with a signed copy of the NZFBF standard “Fixed Establishment Warranty” on an annual basis;
7. Provide the NZFBF with written acceptance of these Rules and Principles on an annual basis;
8. Display professionalism in market practice and adhere to the NZFMA Code of Conduct and Code of Ethics;
9. Provide written authority for Brokers to release details of volumes and rates relevant to BKBM settings to either the NZFBF and/or an independent reviewer (whichever is decided), upon request; and,
10. Provide written authority to NZFBF, consenting to the publication of trade details relevant to the BKBM capture and calculation process.

6.2 Rules for Price-makers

1. To be eligible to participate in the BKBM Trading Window a Price-Maker must meet the **Price-maker Eligibility Criteria** above and must be confirmed by the NZFBF Board as a Price-maker in the BKBM Trading Window, thereby being bound by these Operating Rules and Principles;
2. Price action must display the intention to transact;
3. This means that a price entered by a Price-maker into the market must enable the market sufficient time to transact on that price;
4. Gapping of prices is not permitted. A Price-maker must enter the first price at the Broker MID and then may only move the bid or offer 1 basis point at a time. Each move must give sufficient time for the market to transact. Brokers will not accept a price in breach of this rule;
5. Sellers that issue Prime Bank Bill Paper must be willing to offer their own paper. Sellers that do not issue Prime Bank Bill Paper must be able to offer three lines of Prime Bank Bill Paper at all times throughout the BKBM Trading Window in order to take a market either choice or inverse (i.e. offer at the same level or at a higher level than the lowest bid);
6. To be a valid offer, the paper that is being offered must be able to be bought by a minimum of three other Price-makers in the BKBM Trading Window at all times throughout the BKBM Trading Window. Sellers who hold non-valid paper under this rule may give bids during the BKBM Trading Window once they have ascertained the buyer has available a line for the paper being offered and, providing they do not take the market inverse in doing so;

7. Buyers must be able to buy a minimum of four lines of Prime Bank Bill Paper at all times throughout the BKBM Trading Window. For the sake of clarity, a Price-maker needs to be able to accept a minimum of three lines of Prime Bank Bill Paper plus their own. Buyers who have insufficient lines available may pay offers during the BKBM Trading Window once they have ascertained they have available line on the paper being offered, and providing they do not take the market inverse in doing so;
8. The minimum parcel of bills during the set is \$20 million in the 1- to 6-month maturities;
9. Price-makers shall not initiate a non-valid BKBM trade during the BKBM Trading Window; and,
10. Price-makers commit to providing two-way pricing in the 1-, 3- and 6-month tenors via the broker venue.

6.3 Eligible Prime Bank Paper

The NZFBF Board will consider applications for Prime Bank Paper that meet the following criteria.

- 6.3.1 The bank paper issuer is a Registered Bank in New Zealand;
- 6.3.2 The bank paper issuer is a participant in the New Zealand wholesale financial markets as demonstrated by a commitment to offering a range of wholesale financial products to a wide range of users and counterparties;
- 6.3.3 The issuer's bank paper should be broadly fungible with the paper issued by other prime issuers from both a credit standing and liquidity perspective such that the market in general is willing to trade the prime issuer's paper at rates equivalent to those generally pertaining to other prime bank paper in normal market conditions;
- 6.3.4 The bank paper issuer is a paid up Financial Markets member of the NZFMA;
- 6.3.5 The bank paper issuer is a Price-maker in the BKBM Trading Window; and,
- 6.3.6 The NZFMA Rates Committee will recommend a list of eligible prime bank paper to the NZFBF Board. This will be reviewed annually, or earlier if required. The list of eligible prime bank paper will be published on the NZFBF website.

The current list of Prime Bank Paper eligible to be traded during the BKBM Trading Window is

- ANZ Bank New Zealand Ltd
- ASB Bank Ltd
- Bank of New Zealand
- Kiwibank Ltd
- Westpac New Zealand Ltd

6.4 Current Price-makers

- ANZ Bank New Zealand Limited
- ASB Bank Limited
- Bank of New Zealand
- Kiwibank Ltd
- Westpac Banking Corporation – New Zealand Branch

7.0 APPENDIX II

Broker Obligations

7.1 Operational

- 7.1.1 Provide accurately communicated timely data for the rate calculation purposes by electronic connection through a specified vendor (Bloomberg) connection. The NZFBF is authorised to publish benchmark rates derived from the supplied data;
- 7.1.2 Ensure prices are updated promptly² and are an accurate reflection of the market information available;
- 7.1.3 Have adequate measures in place to reduce the likelihood of erroneous pricing entering the market (noting that clearly erroneous pricing may result in exclusion from the BKBM Trading Window and Rate Calculation Process);
- 7.1.4 Clear down (remove pricing from) the Bloomberg pages at 9:00am each Business day;
- 7.1.5 Provide timely information in relation to any outages or delays to the NZFMA;
- 7.1.6 Operate at all times in accordance with the BKBM Operating Rules & Principles;
- 7.1.7 Ensure that gapping of prices does not occur. The Broker will ensure that a Price-maker enters the first price at the Broker MID and then may only move the bid or offer one (1) basis point at a time, with each move providing sufficient time for the market to transact;
- 7.1.8 Achieve prompt cancellation and amendment of good orders where sought;
- 7.1.9 Time stamp all orders, amendments and transactions, log all activity and keep records for seven (7) years;
- 7.1.10 Only allow firm orders (no indicative orders) that do not have restrictions on their validity (for example it is not acceptable for orders to have restrictions as to their type of counterparty – the usual ‘subject to credit’ condition is acceptable);
- 7.1.11 Allow cancellation of trades for reasons of credit or genuine error only; and,
- 7.1.12 Have standard settlement instructions for all orders as per Market Conventions.

7.2 Governance

- 7.2.1 Certify that they have at least two active *bona fide* market Price-makers connected to (or in the case of voice brokers contractually ready to participate in) the venue;
- 7.2.2 Report data specifically referencing Prime Bank Paper only and on a homogenous basis as defined by the NZFMA Conventions from time to time, noting that the NZFMA will give sufficient notice where possible as agreed before any relevant changes to these Conventions;
- 7.2.3 Give notice to the NZFBF of plans for the introduction of features that may impact the BKBM Trading Window and Rate Calculation Process;
- 7.2.4 Monitor the markets for compliance with the relevant regulatory requirements and adopt sound compliance standards;
- 7.2.5 Maintain the confidence of the NZFBF Board that the broker venue is suitable for inclusion in the BKBM Trading Window and Rate Calculation Process; and,
- 7.2.6 Operate and maintain a functioning Disaster Recovery Plan.

² For voice brokers – to update prices on electronic representations of their market in well under 10 seconds.

7.3 Termination of Participation in the BKBM Trading Window and Rate Calculation Process

- 7.3.1 Broker participation in the BKBM Trading Window may be suspended or terminated at the sole discretion of the NZFBF where actions of the Broker would adversely impact on the NZFBF's confidence in the integrity of the supplied data. In the event of a suspension or termination of the Broker's participation due to a decision by the Rates Committee, the NZFBF will provide a reason for such decision to the Broker. The Broker will have the right to appeal such decision to the NZFBF Board for their consideration; and,
- 7.3.2 Give one month's notice before termination of participation in the BKBM Trading Window.

7.4 Trade Reporting

- 7.4.1 Contribute records for transactions executed on <BROKER VENUE>'s trading platform (representing trades of Prime Bank Paper between 10.20 to 10.22am) on a daily basis by 10.40am via the NZdata website. To authorise the provision of this trading information to Regulatory Authorities and the publication of this information on a delayed and cross-venue and counterparty aggregated basis as determined by the NZFMA Rates Committee from time to time;
- 7.4.2 Provide evidence of trading activity that meets the minimum defined threshold for relevance for inclusion in the BKBM Trading Window and Rate Calculation Process initially and from time to time as requested by the NZFBF and described in the Operating Rules & Principles of the Bank Bill Benchmark Rate (BKBM) and BKBM Trading Window.

7.5 Source of Data

7.5.1 Collection from Broker Feeds

The collection of real-time BIDS and OFFERS across all Bank Bill tenors from predefined broker pages are performed using dedicated data feed handlers (Bloomberg).

There are two data feed handlers; a Production Feed Handler and a Disaster Recovery Feed Handler. Both are active and available should one feed/connection become unavailable.

The BKBM market (NZdata system) will make a web service request for the Bank Bill broker data at a randomised time within the Trading Window of 10:20- 10:22am each business day (See 11.0 Appendix V for Good Business Day definition).

7.5.2 Collection from Broker TRADES

In addition to BID and OFFER collection for each BKBM tenor each broker is obligated to enter all TRADES with their respective VOLUMES that have been executed/transacted during the Trading Window, into the NZdata system. If no trades occur in the one, three or six month tenors each broker is obligated to enter all bid & offer information with their respective VOLUMES at the close of the Trading Window.

This is performed using their specified broker logons via a secure webpage All broker TRADES and VOLUMES must be entered into the system by 10:40am each business day by each broker venue.

7.6 Calculation Methodology

BKBM is set in accordance with these BKBM Operating Rules and Principles using a rate set process based on a two-minute trading window commencing at 10.20am. Pricing and trading occurs via two broker venues. Shortly after 10.22am, the NZFBF's system (NZdata) collects data from the broker venues via Bloomberg using two feed handlers (production & disaster recovery). The NZFBF and the NZdata system complete checks on the data before the calculation process commences at 10.41am, with publication soon after.

BKBM is calculated using either arms-length transactions and/or executable bids/offers in the one, three- and six-month tenors. The two, four- and five-month tenors are set from the one, three- and six- month tenors using straight line interpolation between the two nearest points.

BKBM Waterfall

The three steps of the BKBM waterfall are as follows:

Step one: Traded or executable bids/offers in one-, three- and six-month tenors

The primary method for calculating BKBM is using the one, three- and six-month tenors that are set from arms-length transactions or executable bids and offers that can be transacted during the two-minute rate-set window. Price-makers in the BKBM rate-set window agree to provide executable bids and offers for a minimum volume of NZ\$20 million, and with a maximum spread of five basis points. The NZdata Helpdesk monitors the two-minute rate-set window to ensure participants obligations are met.

Brokers report the tightest spread on their Bloomberg pages and any transactions that occur during the two-minute window are recorded. If there are only transactions in some tenors, or there is no trading in any tenor, the executable bids and offers will be used to calculate the benchmark tenors.

At 10.23am the NZdata system scrapes the closing (10.22am) bids and offers from the brokers' Bloomberg pages. Brokers will report any transactions that have occurred in the window via email and load the information into NZdata. The NZdata Helpdesk complete several checks to ensure all data is valid using the Bloomberg screens and broker emails. If brokers are unable to access the NZdata system, for whatever reason, the NZdata helpdesk can load the information noted above into NZdata.

If transactions are available, the weighted average volume is taken to determine the BKBM rate. The formula for traded tenors is as follows:

$$\text{BKBM Wavg}_y = ((\text{Volume}_{\text{broker1}} \times \text{Rate}_i) + (\text{Volume}_{\text{broker2}} \times \text{Rate}_i)) / \sum \text{Broker volumes}$$

For example:

Tenor	Broker one	Broker two
1 month		
Yield (%)	0.28000	0.28000
Volume (NZ\$)	40.0	20.0
3 months		
Yield (%)	0.30000	0.295
Volume (NZ\$)	20.0	30.0

$$\text{Wavg}_i = ((40 \times 0.28000\%) + (20 \times 0.28000\%)) / 60$$

$$= 0.28000\%$$

$$\begin{aligned} Wavg_3 &= ((20*0.30000\%) + (30*0.29500\%))/50 \\ &= 0.29700\% \end{aligned}$$

If executable bids and offers are used to set any of the one, three- or six-month tenors then the midpoint is taken. The formula for executable bids/offers is as follows:

$$BKBM \text{ Mid}_y = (\text{Bid}_y + \text{Offer}_y)/2$$

For example:

One month bid offer is 0.28%/0.27%

$$\begin{aligned} BKBM \text{ Avg}_1 &= (0.28\% + 0.27\%)/2 \\ &= (0.55\%)/2 \\ &= 0.27500\% \end{aligned}$$

The two, four- and five-month tenors are set from the one, three- and six- month tenors using simple straight-line interpolation between the two nearest points. The formula for two-month BKBM is as follows:

$$BKBM \text{ Avg}_2 = (BKBM \text{ Avg}_3 - BKBM \text{ Avg}_1)/2 + BKBM \text{ Avg}_1$$

For example:

$BKBM \text{ Avg}_1 = 0.27500$ and $BKBM \text{ Avg}_3 = 0.29000$

$$\begin{aligned} BKBM \text{ Avg}_2 &= (0.29000 - 0.27500)/2 + 0.27500 \\ &= 0.00750 + 0.27500 \\ &= 0.28250 \end{aligned}$$

The formulae for four- and five-month BKBM are as follows:

Four-month formula

$$BKBM \text{ Avg}_4 = (BKBM \text{ Avg}_6 - BKBM \text{ Avg}_3)/3 + BKBM \text{ Avg}_3$$

Five-month formula

$$BKBM \text{ Avg}_5 = ((BKBM \text{ Avg}_6 - BKBM \text{ Avg}_3)/3)*2 + BKBM \text{ Avg}_3$$

Step two: Traded or executable bids/offers in two valid tenors (one/three months, one/six months & three/six months)

If the BKBM process produces only two valid tenors, then the following methodology will be used to calculate the BKBM curve.

$$BKBM_x^{T+0} = BKBM_x^{t-1} + ((BKBM_y^{t+0} - BKBM_y^{t-1}) + (BKBM_z^{t+0} - BKBM_z^{t-1}))/2$$

Where: x = invalid tenor
y = first valid tenor
z = second valid tenor

For example, the following calculation would be made if only the one- and six-month tenors were available on T + 0:

	1 month	3 months	6 months
Yield (%) _{t-1}	0.28000	0.30000	0.29000
Yield (%) _{t+0}	0.29000	N/A	0.30500

$$\begin{aligned}
BKB M_3^{T+0} &= 0.30\% + (((0.29\% - 0.28\%) + (0.305\% - 0.29\%))/2) \\
&= 0.30\% + ((0.025\%)/2) \\
&= 0.31250\%
\end{aligned}$$

Two-, four- and five-month tenors would be set using the straight-line interpolation as used in step one.

The full BKB M curve for ^{t+0} would be:

Tenor	1 month	2 months	3 months	4 months	5 months	6 months
Yield (%)	0.29000	0.30125	0.31250	0.31000	0.30750	0.30500

Step three: Traded or executable bids/offers in one valid tenor (One, three or six months)

If the BKB M process only produces one valid tenor (in one-, three- or six-month tenors) then the following methodology will be used to calculate the BKB M curve.

The valid tenor (BKB M_y) will calculate the difference between today's (t+0) rate set and that of the previous business days (t-1). The formula to calculate the difference is:

$$(BKB M_y^{t+0} - BKB M_y^{t-1})$$

Once the difference has been calculated this will be added to all other tenors using.

$$BKB M_x^{T+0} = BKB M_x^{t-1} + (BKB M_y^{t+0} - BKB M_y^{t-1})$$

For example:

Today, three-month BKB M is the only tenor that has set at 0.31000%. The previous business days BKB M curve set at:

Tenor	1 month	2 months	3 months	4 months	5 months	6 months
Yield _{t-1} (%)	0.28000	0.29000	0.30000	0.29667	0.29333	0.29000
Yield _{t+0} (%)	n/a	n/a	0.31000	n/a	n/a	n/a

The difference is calculated as 0.31000% - 0.30000% = 0.01000%

The one-month calculation would be:

$$BKBM_1^{T+0} = 0.28000\% + (0.31000\% - 0.30000\%)$$

$$= 0.29000\%$$

The difference is applied to all the tenors to calculate today's BKBM curve:

Tenor	1 month	2 months	3 months	4 months	5 months	6 months
Yield (%)	0.29000	0.30000	0.31000	0.30667	0.30333	0.30000

7.7 Revert to previous day's BKBM

In the extreme event that the three steps above do not calculate BKBM then the previous day's BKBM will be used to calculate the BKBM tenors.

The use of this step is immediately reported to the NZFBF Board, with follow-up notification to the Conduct Regulator.

Reliance on this method to calculate BKBM will not extend beyond five consecutive business days. This timeframe reflects:

- The use of previous day's BKBM data will become less representative of the underlying market over time;
- This will likely occur in a stressed market environment where interest rates are volatile;
- The practice in other jurisdictions; and,
- The time required to assess the issue, consider an alternative benchmark rate and implement.

If BKBM becomes operational again within the five-day period (for example, a period of market volatility passes) NZFBF will revert to the BKBM process as noted in 7.6, with notification to the stakeholders noted above.

7.8 Publication

The data is distributed to subscribers via:

- An XML feed to the information vendors. Vendors are obligated to display the BKBM rates on their vendor screens upon immediate receipt of the XML data;
- Spreadsheet distribution for subscribers to the BKBM service. With this service subscribers also receive a spreadsheet with information relating to any transactions that have occurred. The following information is provided, tenor, counterparties, volume and yield.

The data noted above is also available free-to-air with a 24-hour delay on the NZFBF [website](#). Additionally, if any of the one-, three- or six-month tenors are set using executable bids and offers, the website will also provide the following information: tenor, counterparties, volume and yield.

7.9 Final Stage Methodology

The Final Stage Methodology will be implemented when NZFBF and the Price-makers are instructed by the Conduct Regulator to provide expert opinion. This will require Price-makers to contribute expert opinion on a BKBM tenor or tenors each business day to the NZFBF for a period prescribed by the Conduct Regulator, and no longer than the relevant regulations allow. This will likely occur, but is not limited to, when the BKBM

waterfall has been exhausted and use of the previous day's rate has reached its five day maximum or if the Conduct Regulator determines that BKBM is no longer representative.

Under the Final Stage Methodology, BKBM is defined as the rate at which a Prime Bank could reasonably fund itself in the underlying market for Bank Paper around 10:20am on any NZ business day. Contributors must only submit BKBM rates that solely reflect the above definition of BKBM. Submissions must be provided by 10:30am on any business day. NZFBF will calculate a trimmed mean of the rates provided. BKBM will be published at 10:41am.

Contributors should develop an internal Submissions Guide, formulated in accordance with the BKBM Final Stage Methodology and Code of Conduct when submitting BKBM rates. For clarity, each Contributor is only required to submit rates that are reflective of their own cost of funding for that day.

Guidance on selection and priority of inputs

Expert judgement involves the use of discretion by a Contributor when determining the data inputs to be used in rate submissions and adjusting these inputs where necessary to reflect current market conditions. Contributors must identify a range of data inputs that may be used in determining BKBM submissions as part of their Submission Guide. Where possible, expert judgement should be supported by market data. In developing the Submission Guide, Contributors may have regard to the following:

- Contributor's genuine business purposes (where applicable in the context of submission).
- Trading in Bank Paper by a Market Participant should be based on its genuine business purposes to buy or sell Bank Paper, as determined by the Market Participant.

Without limiting the matters it may have regard to and for the avoidance of doubt, in determining its genuine business purposes to buy or sell Bank Paper, a Market Participant may have regard to:

- balance sheet or prudential requirements for management of liquidity by way of purchases of Bank Paper or similarly satisfying prudential funding requirements with the issuing or sale of Bank Paper;
- credit risk limit management when trading Bank Paper - hedging of derivatives exposure; and,
- price and/or volume discovery.

and extrapolation of values using:

- Transactions in related funding markets (local and offshore, secured and unsecured);
- Contributors aggregate cost of raising wholesale funds for that day;
- Transactions or quotes in local interest rate derivative markets that are independent of BKBM; and,
- Prior or historical BKBM data, accounting for current market conditions. A parallel shift may be applied to the data to reflect recent events/activity.

In addition to quantitative elements such as the above, the Submission Guide should also incorporate the use of qualitative elements (i.e. expert judgement) with sufficient flexibility where quantitative data is limited or unavailable.

In determining the priority of inputs, the below guidance should be observed:

- Transactional based data should be accorded the highest priority with transactional data that meets some or all of the criteria noted in section 7.6;
- Executable quote data should be accorded higher priority than indicative quote data;
- The most recent transactions in Bank Paper should be given higher weighting relative to historical transactions.

In the case where the BKBM has been set off the previous days rate for 5 consecutive days and the Conduct Regulator implements the Final Stage Methodology, the NZFBF will continue to concurrently operate the BKBM process. This will allow a path back to the BKBM process as noted in 7.6, with prior FMA approval should BKBM become operational.

In the case where the Conduct Regulator determines that BKBM is no longer representative and implements the Final Stage Methodology, the NZFBF and Price-makers could continue to calculate BKBM. If the Conduct Regulator's concerns with BKBM were addressed by the NZFBF during the final stage process, BKBM could be reinstated as the Benchmark subject to Conduct Regulator approval. Similarly, if a period of market stress passes and the publication of BKBM recommences, within the period where the Conduct Regulator has implemented the Final Stage Methodology, NZFBF will revert to the BKBM process as noted in 7.6, with prior notification to the Conduct Regulator for its approval.

8.0 BKBM Cessation Procedures

These procedures concern the actions that will be taken by the NZFBF in the event of cessation of BKBM.

Various factors, including external factors beyond the control of the NZFBF, might necessitate material changes to BKBM. Subscribers and stakeholders of BKBM should have robust fall-back provisions in place in the event of material change or cessation of BKBM. For example, cessation can be invoked by the NZFBF if it believes it is not in a position to calculate and publish BKBM and/or the Benchmark is no longer representative.

Other entities within New Zealand, such as the Conduct Regulator or the Reserve Bank, can also invoke the cessation of BKBM if they believe the NZFBF is not in a position to calculate and publish BKBM and/or BKBM is no longer representative. These procedures do not refer to their actions or procedures.

Prior to cessation it is likely that the NZFBF will have exhausted the BKBM waterfall (see sections 7.6 and 7.7). As such, notice would have already be provided to the necessary stakeholders and subscribers that there were issues pertaining to the calculation and publication of BKBM. However, if cessation was to occur the NZFBF Board would notify:

- The Conduct Regulator;
- The Reserve Bank of New Zealand; and
- Subscribers and other stakeholders of BKBM.

Such notice would include:

- A description of the issue;
- When cessation would likely occur;
- The potential to use other benchmarks, be they the fall-back benchmark interest rate or some other benchmark;
- The time required to implement a new benchmark if one is available;
- The NZFBF's ability to continue as the Benchmark Administrator; and
- Options for an alternate Benchmark Administrator, if the NZFBF were unable to continue.

Voluntary discontinuation

If the NZFBF determined it could no longer continue as the Benchmark Administrator, for whatever reason, it would notify the stakeholders noted above. Following this a market notification would be made giving at least six-month's notice.

The NZFBF would work with stakeholders to identify expressions of interest from other administrators in publishing BKBM and the NZFBF would be prepared to work with the successful administrator to transition the Benchmark.

9.0 APPENDIX III

Fixed Establishment Warranty /Acceptance of Rules

SAMPLE

[date]

The New Zealand Financial Markets Association
P. O. Box 641
Wellington
New Zealand

Dear Sirs,

FIXED ESTABLISHMENT IN NEW ZEALAND

[Company name] confirms and represents and warrants that, on each date on which it enters into a sale and purchase of New Zealand dollar denominated certificates of deposit, it is engaged in business through a fixed establishment in New Zealand.

[Company name] will promptly advise the New Zealand Financial Markets Association (“NZFMA”) of any change in circumstance that would or could potentially result in [Company name] to be not engaged in business through a fixed establishment in New Zealand for New Zealand income tax purposes.

[Company name] acknowledges that NZFMA and its members rely on the representations made in this letter in entering into the sale and purchase of certificates of deposit between [Company name] and members of NZFMA from time to time.

OPERATING RULES & PRINCIPLES OF THE BANK BILL BENCHMARK RATE (BKBM) AND THE BKBM TRADING WINDOW

[Company name] confirms that it has read, understands and agrees to comply with the **Operating Rules & Principles of the Bank Bill Benchmark Rate (BKBM) and the BKBM Trading Window** and further permits NZFMA to publish daily transactional data information relating to the BKBM Trading Window.

Yours faithfully

[sign off]

© NZFMA April 2017

BKBM Contributor Fixed Establishment Warranty

10.0 APPENDIX IV³

Key Definitions

Administration: Includes all stages and processes involved in the production and dissemination of the Benchmark, including:

- a) Collecting, analysing and/or processing information or expressions of opinion for the purposes of the determination of the Benchmark;
- b) Determining the Benchmark through the application of a formula or another method of calculating the information or expressions of opinions provided for that purpose; and
- c) Dissemination to users, including any review, adjustment and modification to this process.

Audit trail: For the purposes of the Benchmark determination process, the documentation and retention of all relevant data, submissions, other information, judgments (including the rationale for any exclusions of data), analyses and identities of Submitters used in the Benchmark setting process for an appropriate period.

Benchmark: The Benchmark in scope of this document are prices, estimates, rates, indices or values that are:

- a) Made available to users, whether free of charge or for payment;
- b) Calculated periodically, entirely or partially by the application of a formula or another method of calculation to, or an assessment of, the value of one or more underlying Interests;
- c) Used for reference for purposes that include one or more of the following:
 - determining the interest payable, or other sums due, under loan agreements or under other financial contracts or instruments;
 - determining the price at which a financial instrument may be bought or sold or traded or redeemed, or the value of a financial instrument; and/or
 - measuring the performance of a financial instrument.

Benchmark Administrator (“Administrator”): An entity or legal person that controls the creation and operation of the Benchmark Administration process, whether or not it owns the intellectual property relating to the Benchmark. In particular, it has responsibility for all stages of the Benchmark Administration process, including:

1. The calculation of the Benchmark;
2. Determining and applying the Benchmark methodology; and
3. Disseminating the Benchmark.

The initial Benchmark Administrator is the NZFBF.

BKBM Trading Window: Two minute period between 10:20am and 10:22am being the trading period used for the capture and calculation of the BKBM Benchmark.

Bloomberg: A third party platform that provides a real time source of market data, pricing information and news.

Bona fide: Refers to data where the parties submitting the data have executed, or are prepared to execute, transactions generating such data and the concluded transactions were executed at arm’s-length from each other.

‘Good’ Business Day:

³ Source: IOSCO Principles for Financial Benchmarks July 2013 and NZFMA internal documents.

A 'good' business day is defined as a day on which banks in New Zealand are generally open for business, or a day other than one on which banks in New Zealand are obliged or permitted to close - specifically excluding Saturday and Sunday.

Essentially, good business days are weekdays (Monday to Friday) other than public holidays.

In general, NZFMA recommends that transactions should not be negotiated for settlement or price fixing (rollover) on a non-business day. Other conventions can be utilised, if agreed upon at the time of dealing.

Calculation Agent: An entity with delegated responsibility for determining the Benchmark through the application of a formula or other method of calculating the information or expressions of opinions provided for that purpose, in accordance with the methodology set out by the Administrator.

Conduct Regulator: A governmental or statutory body (not being a self-regulatory organisation) with responsibility for licensing benchmark administrators in New Zealand. Namely, the Financial Markets Authority.

Contribution(s): Prices, estimates, values, rates or other information that is provided by a Price-maker to the Administrator for the purposes of determining the Benchmark with mandatory post-trade transparency requirements.

Methodology: The written rules and procedures according to which information is collected and the Benchmark is determined.

Over-the-Counter: Financial instruments that are bought and sold and privately negotiated directly between two counterparties, without the use of an exchange or other intermediary.

Participants: Legal entities involved in the production, structuring, use or trading of financial contracts or financial instruments used to form the Benchmark, or which reference the Benchmark.

Price-maker: A financial institution approved by the NZFBF to supply two-way quotations via a third party platform for the calculation of the BKBM Benchmark.

Publish or make available: Refers to the expectation that a party such as an Administrator should provide a document or notice to Stakeholders. The means by which such notice is made should be proportionate to the breadth and depth of the Benchmark used by Stakeholders, as determined by the Administrator on a "best efforts" basis. Ordinarily, posting a document or notice on the Administrator's website will meet this expectation.

Regulatory Authority: A governmental or statutory body (not being a self-regulatory organisation) with responsibility for securities and/or commodities and futures regulation in New Zealand.

Repeated Failure: More than one breach of the Rules in a calendar month.

Stakeholder: Refers to Subscribers and other persons or entities who own contracts or financial instruments that reference the Benchmark.

Subscriber: A person or entity that purchases Benchmark determination services from the Administrator.

Two-way: A price that has a bid price (yield) and an offer price (yield). The bid offer spread is the difference between the bid price and offer price.