

**NZFBF**

NEW ZEALAND  
FINANCIAL BENCHMARK  
FACILITY



# Official Cash Rate Compound Index and Realised NZONIA Operating Principles and Methodology

November 2022

**NEW ZEALAND FINANCIAL BENCHMARK FACILITY**

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## Change Control

<b>Date</b>	<b>Author</b>	<b>Update</b>
December 2020	John Groom	Document created and finalised for NZFMA
June 2021	Warren Stroebel	Document transferred and formatted to NZFBF stationary
November 2022	Jack Sutton	Operating principles added to Methodology.

# Official Cash Rate Compound Index & Realised NZONIA

## *Operating Principles and Methodology*

### 1.0 INTRODUCTION

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

- Compliance with the New Zealand benchmark administration licensing regime overseen by the FMA.
- Alignment with the IOSCO Principles for Financial Benchmarks (to the extent applicable).
- Conformance with global best practice.

The Official Cash Rate (OCR) compound index simplifies the calculation of compound interest rates providing a standardised basis that is published by a recognised benchmark administrator. The OCR compound index is equivalent to a series of daily data representing the returns from a rolling unit of investment earning compound interest each day at the OCR. The change in the OCR Compound Index between any two dates can be used to calculate the interest rate payable over that period.

The interest rate payable over that period would be realised New Zealand Overnight Index Average (NZONIA) which is a term risk free rate. Realised NZONIA is a backward-looking rate based on the OCR, compounded daily in arrears over the relevant period.

The OCR is one of the tools the Reserve Bank of New Zealand (RBNZ) uses to implement monetary policy and meet its statutory requirements in terms of the Policy Targets Agreement it signs with the New Zealand Government. The RBNZ reviews the OCR approximately six times a year and provides an advanced calendar of announcement dates. For more information on the OCR please see <https://www.rbnz.govt.nz/monetary-policy/about-monetary-policy/what-is-the-official-cash-rate>.

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

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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 New Zealand's Financial Benchmarks. 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, 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 OCR Compound Index and Realised NZONIA, as well as the 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, in consultation with relevant NZFBF committees and/or working groups.

### 2.2.1 NZFBF Board

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. These 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 with financial markets experience, 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 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.

## 2.3 Code of Conduct

The 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 (OTC) 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 agenda item at 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 Conflicts of Interest.

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 New Zealand benchmark administration licensing regime overseen by the FMA and the IOSCO Principles for Financial Benchmarks (to the extent applicable). Staff training is governed by the NZFBF Recruitment and Workplace Policies. Training 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**

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## **3.1 Benchmark design**

The OCR Compound Index and Realised NZONIA are subject to ongoing monitoring by the Administrator in consultation with NZFBF Committees and/or working groups, and the NZFBF Board. Should there be any significant developments to these market dynamics, a review process will be conducted to determine if the 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 OCR Compound Index process (upon recommendation from NZFBF) in accordance with IOSCO Principle 5 (Refer 3.2 for more detail).

## **3.2 Periodic Review**

Any recommendations following each review will be forwarded to the NZFBF Board for consideration and approval. The Board will also review all methodologies and the Operating Principles and Methodology on an annual basis. If any changes are required, the Board will determine if a consultation is needed (see section 4.2).

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**

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## **4.1 Content of Methodology**

The methodology is outlined in the Methodology section 6.0 for the OCR Compound Index and Realised NZONIA. The methodology documents include the following:

- a) Definitions of key terms;
- b) All criteria and procedures used to develop the Benchmark;
- 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**

NZFBF, in consultation with 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, NZFBF and the appropriate committee/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.

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 NZFBF, in consultation with NZFBF committees and/or working groups, and the NZFBF Board before being implemented. These non-material changes would be implemented via a market notice, with a minimum two-week notice period.

The above processes may not apply if the Financial Markets Authority (FMA) has given written notice that a change is required.

#### **4.4 Transition**

When a possible cessation event has been identified, or at any other time by the NZFBF Board, be that due to the Benchmark no longer being representative or where NZFBF and NZFMA can no longer act as the Benchmark Administrator, the process in section 6.7 of the methodology below is to be followed.

## **5.0 ACCOUNTABILITY**

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### **5.1 Complaints Procedures**

NZFBF has a complaints procedure by which Stakeholders may submit complaints.

Where a complaint involves a request for a review and possible re-publication of the OCR Compound Index and Realised NZONIA, the complaint will be handled in accordance with the NZFBF's Complaints Policy and the following procedures:

- Any user can request a review if it believes that the rate is materially incorrect, such requests will be investigated by the NZFBF;
- A request to review the Index must be lodged by phone or email to the NZFBF before 3:00pm NZ time. Please call 0800 693 282 or email [helpdesk@nzfbf.co.nz](mailto:helpdesk@nzfbf.co.nz);



- NZFBF will take steps to verify the basis of the complaint. If it is identified that a re-calculation is warranted, a recommendation will be made as per the procedures of the methodology documents, available on the NZFBF website; and,
- NZFBF will maintain a log of all reviews of the Index, including the entities which requested it, the investigations undertaken, and the reasons for the decision taken by the NZFBF.

## **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 NZFBF as part of its obligations as Administrator.

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 Principles and Methodology.

## **5.3 Audit Trail**

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

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

The above information is available to the FMA on request.

## **5.5 Co-operation with Regulatory Authorities**

Where required by law, data, audit trails and other documents subject to these Operating Principles and Methodology shall be made readily available by NZFBF to the FMA.



## 6.0 Calculation Methodology

### 6.1 Background

Following recommendations from the Financial Stability Board (FSB) report in 2014 entitled “Reforming Major Interest Rate Benchmarks”<sup>1</sup>, work has been ongoing to strengthen LIBOR<sup>2</sup> and to identify, and transition to, alternative reference rates. LIBORs have adjusted methodologies to make them more grounded in transactions, as well as strengthening regulatory frameworks and supervision. Despite these changes, the FSB members consider the transition away from LIBOR is required on the assumption that these LIBORs will not be sustainable. The use of LIBOR for most derivatives ceased at the end of 2021, with certain LIBOR tenors being published until June 2023 for certain other products.

Some of the major jurisdictions have identified, and implemented, overnight risk-free rates (RFR), for example SOFR in the US and SONIA in the UK. New transactions are being written against the new RFR benchmarks, and volumes have been increasing.

Benchmark Administrators have also commenced calculating the compound index of the risk-free rates and in some cases publish realised risk-free rates, compounded in arrears, from the overnight risk-free rates that have been implemented. Examples of this include the ASX’s AONIA and the ICE’s realised SOFR. Regulators, such as the FCA in England, have encouraged the use of these realised risk-free rates for pricing some financial market instruments now as they direct financial markets to transition away from the IBORs<sup>3</sup>.

### 6.2 New Zealand Interest Rate Benchmarks

In the New Zealand context, the New Zealand Financial Benchmark Facility (NZFBF), the Benchmark Administrator of New Zealand’s interest rate benchmarks, continues to favour a multiple rate approach, similar to Australia, by retaining BKBM and implementing robust risk-free benchmarks in line with international developments. As a result, the NZFBF has developed the OCR Compound Index and will calculate and publish the index each business day. The NZFBF, along with NZFMA will provide a history of the OCR Compound Index, back to 17 March 1999, on its website along with a calculator to determine a term risk free rate in arrears (NZONIA).

### 6.3 OCR Compound Index conventions

Component	Detail
Data input	The Reserve Bank of New Zealand Official Cash Rate as published on Refinitiv page RBNZ02 and Bloomberg page <RBNM3> each business day at 9.00am. The rate is applicable to the current business day (T+0). The index will have a base of 100 as of 17 March 1999.
Tenors	The OCR Compound Index is calculated and published, via email, each business day and is an overnight index. Term risk free compound rates in-arrears can be calculated for any period using the calculator provided in the daily email or on the NZFMA website.

1 [http://www.fsb.org/wp-content/uploads/r\\_140722.pdf](http://www.fsb.org/wp-content/uploads/r_140722.pdf).

2 LIBOR is set daily in five currencies (USD, Euro, GBP, JPY & SWF) and represents the interest rate at which banks offer to lend funds to one another in the international interbank market for short-term loans.

3 <https://www.fca.org.uk/news/speeches/libor-preparing-end>

Business day	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. Wellington and Auckland Anniversary days are considered public holidays as per NZFMA OIS conventions.
Day count	Actual/365
Start date	The start date for the OCR compound Index will be the previous 'good' business day.
End date	The day on which OCR compound index is calculated and published. The end date will always be a good business day.
Settlement convention	The settlement convention will be T+0.
Rounding	OCR Compound Index is rounded to 12 decimal places.
Publication	OCR Compound Index will be published at 10.41am NZST/NZDT via email to existing BKBM subscribers from 01 December 2020. The OCR Compound Index will be free to air with a 24 hour delay on the NZFMA's website.

#### 6.4 OCR Compound Index methodology

The OCR Compound Index will be calculated as:

$$\text{OCR Compound Index}_i = \text{OCR Compound Index}_{i-1} \times \left(1 + \frac{\text{OCR}_i \times a_{i-1}}{365}\right)$$

Where:

OCR Compound Index<sub>i</sub> = The index for the date i, calculated and published on date 1, published to 12 decimal places (OCR Compound Index<sub>i</sub> = 100.000000000000 on 17 March 1999)

OCR Compound Index<sub>i-1</sub> = The OCR Compound Index for the business day i-1, calculated on business day i-1, rounded to 12 decimal places

a<sub>i-1</sub> = The number of calendar days for which OCR<sub>i</sub> applies. This is equal to the number of calendar days between business day i and business day i-1

Calculating compounded term OCR rates in arrears (NZONIA) from the index

The NZFMA has chosen, at this point, not to publish tenor based NZONIA rates, preferring instead to provide a calculator that can be used to calculate NZONIA in-arrears across any user defined tenor.

To calculate the compounded OCR in arrears rate for any tenor, the following formula should be used:

$$\text{Compounded OCR rate between } x \text{ and } y = \left(\frac{\text{OCR Compound Index}_y}{\text{OCR Compound Index}_x} - 1\right) \times \frac{365}{d}$$

Where:

x = start day of the reference period

y = end day of the reference period

d = the number of days in the calendar period

This calculation methodology can also be used to calculate a lookback using observation shift should it be required. The index does not support simple lookback calculations.

## 6.5 Calculation Scenarios

OCR value date	OCR rate	OCR Compound Index
Mon 20 July 2020	0.25%	242.262243793520
Tues 21 July 2020	0.25%	242.263903123957
Weds 22 July 2020	0.25%	242.265562465759
Thurs 23 July 2020	0.25%	242.267221818926
Fri 24 July 2020	0.25%	242.268881183459
Mon 27 July 2020	0.25%	242.273859311154
Tues 28 July 2020	0.25%	242.275518721149
Weds 29 July 2020	0.25%	242.277178142510
Thurs 30 July 2020	0.25%	242.278837575237

*Example one – start and end date for the period 23 July 2020 to 30 July:*

$$\begin{aligned}
 \text{NZONIA} &= \left( \frac{\text{OCR Compound Index}_y}{\text{OCR Compound Index}_x} - 1 \right) \times \frac{365}{d} \\
 &= \left( \frac{242.278837575237}{242.267221818926} - 1 \right) \times \frac{365}{7} \\
 &= 0.2500044031\%
 \end{aligned}$$

*Example two – start and end date for the period 23 July 2020 to 30 July with a two-day observation shift (21 July to 28 July):*

$$\begin{aligned}
 \text{NZONIA} &= \left( \frac{\text{OCR Compound Index}_y}{\text{OCR Compound Index}_x} - 1 \right) \times \frac{365}{d} \\
 &= \left( \frac{242.275518721149}{242.263903123957} - 1 \right) \times \frac{365}{7} \\
 &= 0.2500044031\%
 \end{aligned}$$

## 6.6 Publication

The OCR Compound Index and Realised NZONIA information will be published in accordance with the following protocol:

- Display of OCR Compound Index and Realised NZONIA on NZdata pages will be distributed via NZdata email.
- Calculated OCR Index will be disseminated to all participating Information Vendors by no later than 10:41am NZST on the Business Day to which they apply.

The data is distributed to subscribers via:

- An XML feed to the information vendors. Vendors are obligated to display the NZSW Closing rates on their vendor screens upon immediate receipt of the XML data;
- Spreadsheet distribution for subscribers to the OCR Compound Index service.
- The data noted above is also available free-to-air with a 24-hour delay on the NZFBF website.
- OCR Compound Index and historic reference rates are available on the NZFMA website.

## 6.7 OCR Compound Index Cessation Procedures

These procedures concern the actions that will be taken by NZFBF, in the event of cessation of a benchmark, in this case OCR Compound Index and Realised NZONIA.

Various factors, including external factors beyond the control of NZFBF, might necessitate material changes to the OCR Compound Index. Subscribers and stakeholders of the OCR Compound Index should have robust fall-back provisions in place in the event of material change or cessation of this benchmark rate. For example, cessation can be invoked by NZFBF if they believe they are no longer in a position to calculate and publish the Index and/or the benchmark is no longer representative.

Other entities within New Zealand can also invoke the cessation of the Closing Rates if they believe NZFBF is not in a position to calculate and publish OCR Compound Index and/or the benchmark is no longer representative. For example, the Financial Markets Authority (FMA) or RBNZ. These procedures do not refer to their actions or procedures.

Prior to cessation, notice will be provided to the necessary stakeholders and subscribers that there were issues pertaining to the calculation and publication of the OCR Compound Index. However, if cessation was to occur, NZFBF would notify:

- NZFBF Board;
- NZFMA Board;
- Financial Markets Authority;
- Reserve Bank of New Zealand; and,
- Subscribers and other stakeholders of the OCR Compound Index.

Such notice would include:

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

## 6.8 Voluntary discontinuation

If 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.

NZFBF would work with stakeholders to identify expressions of interest from other administrators in publishing the OCR Compound Index and NZFBF would be prepared to work with the successful administrator to transition the benchmark.

## 7.0 APPENDIX I<sup>4</sup>

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### 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 Benchmark Administrator is NZFBF.

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

**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.

**‘Good’ Business Day:** 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.

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<sup>4</sup> Source: IOSCO Principles for Financial Benchmarks July 2013 and NZFBF internal documents.

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

**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.

**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.

**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.