NZFBF
NEW ZEALAND
FINANCIAL BENCHMARK
FACILITY

TE POU HERENGA PŪTEA O AOTEAROA

Bank Bill Benchmark Rate (BKBM)

Consultation Two: Viable Replacement Option

23 February 2024 – Submissions due 3 May 2024

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NEW ZEALAND FINANCIAL BENCHMARK FACILITY

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PART ONE: INTRODUCTION

Background

New Zealand Financial Markets Association (NZFMA), the Industry Association for wholesale financial markets and the facilitator of the provision of financial benchmarks, and its subsidiary New Zealand Financial Benchmark Facility Limited (NZFBF), as benchmark administrator, are evaluating options for establishing a new interest rate benchmark as a potential replacement to BKBM.

NZFBF formed the BKBM Working Group in 2022, consisting of BKBM price-makers and benchmark users, to explore whether a suitable replacement benchmark might be developed that will comply with the Financial Markets Authority's (FMA) regulations for Benchmark Administrators (FMC Regulations 2014; Schedule 28), align with the International Organization of Securities Commissions (IOSCO) Principles for Financial Benchmarks and global benchmark developments.

The drivers for this initiative are:

I. Traded volumes in the BKBM rate-set window have been in gradual decline for several years, increasing the requirement to use executable bids and offers in the BKBM determination process. While this practice is consistent with the IOSCO Principles for Financial Benchmarks, the reduction in transaction volumes is not desirable. While New Zealand's interest rate markets are smaller than their international counterparts, New Zealand would ideally have an interest rate benchmark that has higher transaction volumes underpinning the determination of the benchmark than those currently seen in BKBM.

II. Internationally, many jurisdictions, including the US and the UK, have moved to overnight risk-free or near risk-free benchmark rates which are determined using a market that has large transaction volumes. There might be merit in any new benchmark aligning with the new risk-free or near risk-free benchmarks that have been implemented in other key jurisdictions.

NZFBF conducted Consultation One between June and August 2023. A copy of Consultation One can be found here. Since that time NZFBF has been evaluating the responses, in consultation with the BKBM Working Group, and the NZFBF and NZFMA Boards.

Consultation Two provides a summary of responses to Consultation One, the viable option to potentially replace BKBM, development of a term forward-looking benchmark, and matters related to benchmark administration, methodology, conventions, and fallback rate if the viable option is to be adopted. Consultation Two also considers BKBM reform either to cover the long transition timeframe, if a new benchmark is adopted, or for the retention of BKBM.

No decision has been made at this point regarding cessation of BKBM. The current focus is on exploring what viable replacement benchmarks might be available, with Consultation Two forming part of the process.

How can you contribute?

Submissions on this consultation document can be provided by:

- Emailing us:

  submissions@nzfbf.co.nz
  Subject line: BKBM Benchmark – Consultation Two on Viable Replacement Options

- Sending a letter to:

  John Groom
  General Manager
  New Zealand Financial Benchmark Facility Limited
  PO Box 641
  Wellington 6011

The closing date for submissions is **3 May 2024**.

NZFBF welcomes responses to this consultation and will consider all comments received. This consultation document contains several questions. Responses to these questions are most useful if they contain a clear rationale and, where applicable, suggest an alternative. Please comment on any or all the questions that are relevant to you and your organisation.

NZFBF encourages recipients of this consultation document to share this information more broadly within their organisations, with clients and other interested parties, to help ensure as much as possible the widest engagement, reach and resulting responses.

Question number	*Question*
1.	*Did you consult with all the relevant areas of your organisation when compiling your feedback? If you answered yes, please list the areas.*

Submission Results

NZFBF will keep all individual submissions confidential. It will however publish an anonymised summary of the submissions in line with the timetable provided in Part Eleven: Next Steps.

PART TWO: SUMMARY FEEDBACK CONSULTATION ONE

A summary of the responses received for Consultation One is provided below. The entire anonymised summary of responses can be found in appendix one.

NZFBF, in consultation with NZFBF's BKBM Working Group (WG), has assessed feedback from the recent consultation. Ten institutions responded to the consultation. The institutions were represented by five local banks, one local buyside participant, two NZ government related entities, and two overseas entities.

Main points to **note**:

1. **Criteria:** Consultation respondents (CR) noted that none of the potential replacement options fully met the stated criteria.
2. **Viable options:** Seven of ten CRs favoured the OCR to potentially replace BKBM. Interest on Reserves also had some support. The remaining options were discarded for various reasons.
3. **Overnight/Term:** CRs and the WG agreed that ideally there would be an overnight benchmark for inter-bank derivatives, and a forward-looking term benchmark for some client derivatives and cash products, noting that the forward-looking term benchmark's use should be limited.
4. **Price Alignment Interest Rate (PAI):** CR supported the retention of the OCR for PAI.
5. **BKBM:** There was support from six CRs to improve the BKBM process. Four CR's supported retention of BKBM either for all, or certain products. The two remaining CR's support was based on improving the current BKBM process for transition to a new benchmark, which is expected to take a considerable amount of time.
6. **Other matters:**
    - Transition costs, implications and timeframes would require a large amount of resource. The WG assessed the transition timeframe could be a minimum of four years.
    - Transition would need to be industry led with strong support from the regulator/s to ensure success.
    - Regulatory reviews such as the RBNZ Liquidity Policy Review and the recent IOSCO statement on credit sensitive benchmarks may have a bearing on whether BKBM remains a viable benchmark moving forward.

Question number	***Question***
2.	*Do you have any comments related to the responses to Consultation One noted above and in appendix one?*

PART THREE: PROPOSED VIABLE OPTION

RBNZ Official Cash Rate (OCR)

Consultation One feedback indicated a clearly preferred viable option, the RBNZ's Official Cash Rate (OCR). Nearly all respondents also agreed that if a viable replacement benchmark is decided upon, this should be a risk-free rate and have an overnight tenor. All the other potential options stated in Consultation One are no longer being considered as viable alternatives.

The OCR is one of the tools the RBNZ uses to implement monetary policy and meet its statutory requirements in terms of the remit for the Monetary Policy Committee which is signed with the New Zealand Government. [1]

While the OCR meets nearly all the benchmark criteria stated in Consultation One it was noted that the OCR is not transaction based, is not internationally comparable and compatible (no other country has yet adopted an untraded central bank rate as its benchmark) and could lack resiliency as a benchmark given it is susceptible to the RBNZ changing the way it implements monetary policy in the future.

The FMAs' licencing regulations, clause 18 (b), states that a benchmark "is based on active market data if suitable market data is available". The pricing for many transactions is based on or influenced by the OCR, or expectations of the future level of the OCR. The OCR has also been the benchmark for Overnight Indexed Swaps since 2002 which implies the OCR is already embedded in New Zealand's financial markets, its documentation, and systems. This would make the transition more straightforward for financial markets as the requirement to update ISDA documentation, business conventions, product conventions and other related documentation impacted by the potential change of benchmark will be greatly reduced compared to the other options evaluated in Consultation One.

Question number	***Question***
3.	*Do you support the outcome of consultation one that the OCR is the only viable option to potentially replace BKBM?*
4.	*Do you believe that the criterion not met (not transaction based, not internationally comparable and compatible and could lack resiliency) is a significant hurdle to use the OCR as the key interest rate benchmark?*

PART FOUR: BENCHMARK ADMINISTRATION

If the decision is made to implement the OCR as the key interest rate benchmark, primarily for wholesale market derivatives, the Reserve Bank of New Zealand (RBNZ) would be the benchmark administrator. The RBNZ already performs this role as the OCR has been used as the floating rate benchmark for Overnight Indexed Swaps (OIS) since 2002.

As a benchmark administrator the RBNZ would be expected to operate a benchmark framework that consists of governance, quality of benchmark, quality of methodology and accountability processes in line with the IOSCO principles for financial benchmarks. Given the OCR is one of the RBNZ's Monetary Policy tools, which operates within a rigorous and transparent framework, it could be argued that the four pillars of the framework are already

[1] For more details on OCR please refer to the RBNZ website [The official cash rate (OCR) - Reserve Bank of New Zealand - Te Pūtea Matua (rbnz.govt.nz)]

being met. Details of the RBNZ's monetary policy framework can be found in their Monetary Policy Handbook.

Central Banks have also been exempted from meeting the various domestic regulations and global principles applied to benchmark administrators and their benchmarks. For example:

i. ***The Financial Market Authority's market services licence for service of acting as a benchmark administrator*** – The licence is opt-in, that is benchmark administrators are not required to become licenced, it is at their discretion.

ii. ***EU BMR*** - The Regulation exempts certain kinds of providers and indices from the scope of the Regulation. In particular, there are exemptions for central banks and public authorities (both EU and non-EU) that provide indices for public policy purposes. *However, the new Regulation is designed to cover a very wide range of indices including indices linked to interest rates, currencies, securities, commodities and even factors such as the weather. An index will be regulated as a "benchmark" where it determines amounts payable under or sets the value of financial instruments or financial contracts or is used in investment funds.*

iii. ***IOSCO Principles for Financial Benchmarks*** **(scope)** – Benchmark Administration by a National Authority[2] used for public policy purposes (e.g., labour, economic activity, inflation or consumer price indices) is not within the scope of the Principles. However, Benchmarks where a National Authority acts as a mechanical Calculation Agent are within the scope of the Principles.

Central Banks in some other jurisdictions that act as benchmark administrators have established a framework with a governance structure and have publicly published compliance with the global principles. They are however acting as a mechanical calculation agent. Examples of this are the Federal Reserve Bank of New York's SOFR benchmark and the Bank of England's SONIA benchmark.

Question number	***Question***
5.	*Do you agree that the RBNZ would be the benchmark administrator for the OCR? If not, would you support the outsourcing of the benchmark administrator role and which organisation would you support?*
6.	*If your answer to 4. is yes, what expectations would you have of the RBNZ's role as benchmark administrator, noting the points above, in terms of:* • *If the RBNZ was to become benchmark administrator, would you foresee them playing any different role than they do currently for the Overnight Indexed Swap (OIS) market?* • *Should they establish a benchmark oversight committee?* • *Is any further benchmark documentation required (beyond the monetary policy handbook)?* • *Should the RBNZ apply to become a licenced benchmark administrator in NZ?*

[2] National Authority: Refers to a relevant governmental authority such as a central bank, which might not be a Market or Regulatory Authority, but which has responsibility for or a governmental interest in Benchmark policies.

	• *Should the RBNZ publish compliance with local regulations and/or the IOSCO Principles for Financial Benchmarks on a regular basis?* • *Do you have any other expectations of how the RBNZ would operate as the benchmark administrator?* *Please provide an explanation for each point.*

PART FIVE: BENCHMARK METHODOLOGY

The method the RBNZ uses to set the OCR is available in the RBNZ's Monetary Policy Handbook. Given the OCR is a policy rate its methodology is not similar to standard benchmarks in terms of there being a mechanical calculation. The handbook however may not contain all the information required for a benchmark. For example, the handbook does not discuss non-publication and/or cessation of the benchmark for obvious reasons.

Question number	***Question***
7.	*Does the RBNZ's Monetary Policy Handbook provide all the necessary information relating to the OCR's methodology that you would require as a benchmark user? If not, what is missing? Please provide an explanation.*

PART SIX: PROPOSED BENCHMARK CONVENTION

Globally, where an overnight risk-free benchmark has been implemented, benchmark administrators and/or market participants have adopted benchmark conventions largely based on individual financial products. Three points to consider in terms of a benchmark convention:

1. **Tenor -** Risk-free benchmarks adopted in other jurisdictions have an overnight tenor and use a compounded rate in arrears to determine interest payments.
2. **Simple or compound interest** - Globally, compound interest has been adopted as it more accurately reflects the time value of money.
3. **Term rates in advance or arrears** - Following the LIBOR scandal, regulators have encouraged the use of term rates in arrears. An overnight rate in arrears will reflect what actually happens to interest rates over the period and will therefore fully hedge interest rate risk in a way that LIBOR or a risk-free forward-looking term rate will not. However, term rates in advance have been adopted for a limited number of financial products.

The use of compound interest in arrears provides little notice for payments to occur and as a result there are a few conventions that can be applied to overcome this issue. They are:

1. **Compound rate in arrears –** The OCR for any given day would be applied to calculate the interest for that business day. As noted above, payment would also occur on the same day, which may not be operationally possible.
2. **Compound rate in arrears with payment delay –** This convention uses the OCR as noted in 1. But interest payments and the final payment are delayed for one or two business days. This is the convention currently used for OIS, which also uses the OCR as its benchmark. Final payment occurs on a T + 2 basis.

3. **Compound rate in arrears with a look-back without an observation shift –** The lookback is for a fixed number of days, typically between two and five days. For every day of the interest period the interest rate for a fixed number of days prior to each business day is applied. This allows the final payment to occur on T + 0.
4. **Compound rate in arrears with a look-back with an observation shift –** This option is similar to that in 4. However, an Observation shift reflects the weightage for the daily applicable rate within an interest period using the number of days in the observation period rather than interest period. For example, if the lookback rate observation period is five days, say over a long weekend holiday, then that rate is applied for five days from T + 0.

NZFBF are seeking feedback on the preferred convention if an overnight, risk-free benchmark was adopted. NZFBF considers the most applicable convention for wholesale derivatives would be a compounded rate in arrears with a payment delay, as is currently used for OIS. As noted above this would be consistent with other jurisdictions where they have transitioned to an overnight risk-free benchmark, such as SOFR in the US. The benchmarks and conventions used for other financial products will be determined later.

The proposed convention for wholesale derivatives would align with existing ISDA and NZFMA definitions:

Component	Detail
Data input & publication	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).
Tenors	The OCR Benchmark will be published each business day and is an overnight risk-free rate.
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 conventions.
Day count	Actual/365
Start date	The start date for the OCR Benchmark will be the previous ‘good’ business day.
End date	The day on which OCR Benchmark is calculated and published. The end date will always be a good business day.
Settlement convention	The settlement convention will be T+2.
Rounding	The OCR Benchmark will be rounded to 5 decimal places.

The OCR will be calculated as:

$$\text{OCR} = \left[\prod_{i=1}^{d_b}\left(1+\frac{r_i \times n_i}{N}\right)-1\right]\times\frac{N}{d_c}$$

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Where:

d_b = the number of business days in the interest period

d_c = the number of calendar days in the interest period

r_i = the interest rate applicable on business day i

n_i = the number of calendar days for which rate r_i applies

N = The number of days in the year.

An example for this convention can be found in appendix two.

Potential conventions for other financial products and the proposed forward-looking term benchmark (for use with limited financial products), will be developed as and when the overnight benchmark is implemented.

Question number	Question
8.	*Is the proposed convention above, the use of a compounded rate in arrears for the OCR with a payment delay, suitable for wholesale derivative transactions? If not, please provide an explanation and which convention you would support.*
9.	*Do you have any views on the conventions that should be applied to other financial products?*

PART SEVEN: TERM FORWARD-LOOKING BENCHMARK

Consultation One respondents supported a term forward-looking benchmark for limited products, namely loans and some client derivatives, if the OCR is adopted as the overnight risk-free-rate for wholesale interest rate derivatives. This is consistent with benchmark development in other jurisdictions such as the United States.

Some consultation respondents supported the retention of BKBM on the basis that the BKBM process is reformed to increase the number and volume of transactions that determine the benchmark each business day (see part eight).

Other respondents favoured a new term forward-looking benchmark, developed from a derivative market that would evolve if, and when, transition to the OCR was complete. This development would need industry and regulatory support. BKBM would be retained in the interim until a new term forward-looking benchmark was fully developed. One consultation respondent did question if such a derivative market would fully develop given the small size and low liquidity of New Zealand's Financial Markets.

Based on developments in other jurisdictions a preliminary timeline for transition to the OCR, if adopted, and the development of a term forward-looking benchmark based on a derivative market would be:

Year 0	Years 1 & 2	Year 3	Year 4	Year 5
• Decision to transition to new overnight interest rate benchmark (OCR) for wholesale derivatives. • Term forward-looking benchmark to be developed.	• Transition to OCR commences (systems, documentation etc.). • OCR derivative market (e.g., futures) established.	• Transition to OCR completed. • OCR derivative market continues to develop, and term forward-looking benchmark developed (administrator, methodology, systems, documentation etc.).	• OCR derivative market continues to develop, and term forward-looking benchmark developed (administrator, methodology, systems, documentation etc.).	• Term forward-looking benchmark implemented. • Possible cessation of BKBM.

Question number	***Question***
10.	*Do you support the use of a term forward-looking benchmark for limited products and if so, which products should reference this benchmark? Please provide an explanation.*
11.	*Do you favour using a derivative market, which would need to be developed, or BKBM as the forward-looking term benchmark? Please explain your preference.*
12.	*Are there any impediments to a derivative market developing from an OCR benchmark, that could be used as the term forward looking benchmark? Please explain.*
13.	*Do you think using BKBM as the term forward-looking benchmark would hinder the transition of wholesale derivatives to the OCR benchmark? Please explain.*
14.	*Do you agree that the timeline above provides a reasonable representation of the time required to establish both the overnight risk-free rate and a new forward-looking benchmark? If not, please provide an explanation of the time required and the factors that support your response.*

PART EIGHT: BKBM REFORM

A number of Consultation One respondents requested that BKBM be retained primarily for two reasons. Some respondents thought that BKBM should be retained as New Zealand's interest rate benchmark, and not replaced. Other respondents noted that there would be a long transition timeframe to implement a new benchmark, as noted in part seven, and BKBM would need to be retained until this transition had been completed. All the respondents suggested that BKBM could be reformed to increase the number and volume of transactions that are used to set the benchmark, and this reform was required as soon as possible to ensure BKBM could continue for a minimum of five years, if not longer.

Consultation One respondents and subsequent discussions with the BKBM Working Group have focussed on reforming BKBM's determination process to align more closely with BBSW in Australia. That is:

- Widen the eligible BKBM transactions from interbank only to interbank and interbank/client transactions.
- Lengthen the BKBM window from two minutes to ninety minutes to assist with the capture of more transactions.
- Continue to use voice brokers for interbank transactions and move to an electronic platform (request for quote) for interbank/client transactions for ease of use, transparency and to ensure benchmark determination can occur in a short time frame once the BKBM window closes (e.g., 15 to 30 minutes).

In the latter part of 2023, NZFBF gathered data from the BKBM price-makers on their bank bills transactions that occurred outside the BKBM window. The data included tenor, volume and traded rate for the nine-months ended September 2023. No counterparty details were requested or provided. The data has been discussed with the BKBM Working Group and highlighted the following:

- Average daily transaction volumes increased from $40 million to circa $80 million.
- Average daily transaction numbers increased from 1.4 to circa 2.4.
- The percentage of days where BKBM would have been set using arms-length transactions increased from around 50% to circa 80%.
- Some transactions were also evident in the 2-, 4- and 5-month tenors.
- There was increased volatility (average approximately 4 basis points above or below where BKBM set) in where BKBM would set using the data when compared to where it actually set over the nine months to 30 September 2023.

NZFBF will continue to assess the data, in consultation with the BKBM Working Group and consider how to progress this reform. Other matters to address include:

- Seeking feedback in Consultation Two on the proposed reform of BKBM.
- Liaise with wholesale institutions who currently transact in BKBM eligible securities but are not currently BKBM participants regarding the inclusion of their transactions in the rate-set.
- Assess electronic platforms.
- Consider changes to the BKBM determination process (e.g., length and timing of rate-set window, benchmark documentation and methodology etc.).

Question number	***Question***
15.	*Do you support work to assess changes to the current BKBM framework? If not, please provide an explanation.*
16.	*Do you consider there are any other changes that could be made to BKBM? Please explain.*

17.	*If your institution is not a prime bank and you sell/purchase bank bills, would your institution be willing to participate in the benchmark rate-set window if client transactions were included?*
18.	*If the answer to 17 is no, what changes/upskilling would need to be enacted for your institution to be comfortable participating in the BKBM benchmark rate-set window.*
19.	*If the reforms stated above can be achieved, do you consider that BKBM will be viable for 10+ years? Please provide an explanation for your answer.*
20.	*If the suggested reforms cannot be implemented, for whatever reason, would you support the retention of BKBM as New Zealand's interest rate benchmark? Please provide an explanation.*

PART NINE: FALLBACK BENCHMARK RATE

Benchmark fallback rates are contingency rates that would apply to transactions referencing a particular benchmark. These will take effect if the relevant benchmark becomes unavailable or is ceased while market participants continue to have exposure to that rate. Globally, Regulators are encouraging all benchmark administrators and users to ensure they have rigorous fallbacks in place.

BKBM's current fallback rate is the OCR. If the decision is made to transition to the OCR, then a different fallback rate would be required. While no decision is required on fallbacks at this stage in the process, NZFBF is seeking Consultation recipients' views on potential fallback rates to the OCR.

Question number	***Question***
21.	*If the decision was made to use the OCR as a benchmark, what options do you consider are available as the fallback benchmark rate? Please provide an explanation.*

PART TEN: SUMMARY

This consultation considers transitioning New Zealand's interest rate benchmark from BKBM to the OCR for wholesale derivatives, and to establish a new term forward-looking benchmark for limited financial products. There is support for the retention of BKBM based on the reforms noted in part eight. Based on the feedback to date NZFBF believes the following options exist:

I. Retain BKBM (status quo).
II. Retain a reformed BKBM.
III. Transition to an overnight risk-free rate, the OCR, and retain a reformed BKBM for a limited set of financial products.
IV. Transition to an overnight risk-free rate, the OCR, and implement a new risk-free term forward-looking benchmark for a limited set of financial products. Reform BKBM for transition and cease once new benchmarks have been established.

Question number	Question
22.	*Do you agree with the options noted above, are there any other options? Please provide an explanation.*
23.	*Which of the above options do you consider will best serve New Zealand and all benchmark users over the next 10+ years? Please provide a full explanation.*
24.	*A number of risks to either retaining BKBM or moving to new risk-free benchmarks were identified by respondents to consultation one (see appendix one). Are there any additional risks or unintended consequences from pursuing either scenario? Please provide a full explanation.*
25.	*Are there any additional matters you would like to raise that have not been addressed in this consultation?*

PART ELEVEN: NEXT STEPS

Step	Description	Tentative Date/s
One	*Consultation Two: - Anonymised summary of responses - Proposed viable option, OCR - Benchmark administration - OCR benchmark methodology - Proposed benchmark convention for wholesale derivatives - Term benchmark development & transition timeframe - BKBM Reform - Fallback benchmark rate*	*23 February to 3 May 2024*
Two	*Consultation two submissions collated and analysed by NZFBF in consultation with the BKBM working group*	*May 2024*
Three	*NZFBF Board for review, feedback and recommendations*	*6 June 2024*
Four	*NZFMA Board for noting and feedback*	*20 June 2024*
Five	*Anonymised summary of responses to Consultation Two and announcement of next steps*	*July 2024*

PART TWELVE: SUMMARY OF QUESTIONS

Question number	Question
	Introduction
1.	*Did you consult with all the relevant areas of your organisation when compiling your feedback? If you answered yes, please list the areas.*
	Summary Feedback Consultation One
2.	*Do you have any comments related to the responses to Consultation One noted above and in appendix one?*
	Proposed Viable Option
3.	*Do you support the outcome of consultation one that the OCR is the only viable option to potentially replace BKBM?*
4.	*Do you believe that the criterion not met (not transaction based, not internationally comparable and compatible and could lack resiliency) is a significant hurdle to use the OCR as the key interest rate benchmark?*
	Benchmark Administration
5.	*Do you agree that the RBNZ would be the benchmark administrator for the OCR? If not, would you support the outsourcing of the benchmark administrator role and which organisation would you support?*
6.	*If your answer to 4. is yes, what expectations would you have of the RBNZ's role as benchmark administrator, noting the points above, in terms of:* • *If the RBNZ was to become benchmark administrator, would you foresee them playing any different role than they do currently for the Overnight Indexed Swap (OIS) market?* • *Should they establish a benchmark oversight committee?* • *Is any further benchmark documentation required (beyond the monetary policy handbook)?* • *Should the RBNZ apply to become a licenced benchmark administrator in NZ?* • *Should the RBNZ publish compliance with local regulations and/or the IOSCO Principles for Financial Benchmarks on a regular basis?* • *Do you have any other expectations of how the RBNZ would operate as the benchmark administrator?* *Please provide an explanation for each point.*
	Benchmark Administration
7.	*Does the RBNZ's Monetary Policy Handbook provide all the necessary information relating to the OCR's methodology that you would require as a benchmark user? If not, what is missing? Please provide an explanation.*
	Proposed Benchmark Convention
8.	*Is the proposed convention above, the use of a compounded rate in arrears for the OCR with a payment delay, suitable for wholesale derivative transactions? If not, please provide an explanation and which convention you would support.*

9.	*Do you have any views on the conventions that should be applied to other financial products?*
	Term Forward-Looking Benchmark
10.	*Do you support the use of a term forward-looking benchmark for limited products and if so, which products should reference this benchmark? Please provide an explanation.*
11.	*Do you favour using a derivative market, which would need to be developed, or BKBM as the forward-looking term benchmark? Please explain your preference.*
12.	*Are there any impediments to a derivative market developing from an OCR benchmark, that could be used as the term forward looking benchmark? Please explain.*
13.	*Do you think using BKBM as the term forward-looking benchmark would hinder the transition of wholesale derivatives to the OCR benchmark? Please explain.*
14.	*Do you agree that the timeline above provides a reasonable representation of the time required to establish both the overnight risk-free rate and a new forward-looking benchmark? If not, please provide an explanation of the time required and the factors that support your response.*
	BKBM Reform
15.	*Do you support work to assess changes to the current BKBM framework? If not, please provide an explanation.*
16.	*Do you consider there are any other changes that could be made to BKBM? Please explain.*
17.	*If your institution is not a prime bank and you sell/purchase bank bills, would your institution be willing to participate in the benchmark rate-set window if client transactions were included?*
18.	*If the answer to 17 is no, what changes/upskilling would need to be enacted for your institution to be comfortable participating in the BKBM benchmark rate-set window.*
19.	*If the reforms stated above can be achieved, do you consider that BKBM will be viable for 10+ years? Please provide an explanation for your answer.*
20.	*If the suggested reforms cannot be implemented, for whatever reason, would you support the retention of BKBM as New Zealand's interest rate benchmark? Please provide an explanation.*
	Fallback Benchmark Rate
21.	*If the decision was made to use the OCR as a benchmark, what options do you consider are available as the fallback benchmark rate? Please provide an explanation.*
	Summary
22.	*Do you agree with the options noted above, are there any other options? Please provide an explanation.*

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23.	*Which of the above options do you consider will best serve New Zealand and all benchmark users over the next 10+ years? Please provide a full explanation.*
24.	*A number of risks to either retaining BKBM or moving to new risk-free benchmarks were identified by respondents to consultation one (see appendix one). Are there any additional risks or unintended consequences from pursuing either scenario?* *Please provide a full explanation.*
25.	*Are there any additional matters you would like to raise that have not been addressed in this consultation?*

PART THIRTEEN

APPENDIX ONE

Consultation One Summary of Responses

Background

1. NZFBF released Consultation One: Viable Benchmark Replacement Options on 26 June 2023 and requested responses by 18 August 2023. The consultation's focus was to determine if there are viable benchmark replacement options for BKBM. The consultation document provided:
    a. Background related to BKBM, international benchmark developments and reform, and the criteria applied to the viable options.
    b. Benchmark design factors such as risk-free and benchmark tenor, proposed viable options, and the options that had been discarded.
    c. Next steps.

2. NZFBF received feedback on the consultation from ten institutions, across four industry categories. Eight institutions were based in New Zealand and two offshore. The quality of the feedback was high, and it was apparent most of the ten respondents had put the necessary resources into the preparation of their responses.

3. The following sections provide a summary of the responses received and the final section contains "Next Steps" stating NZFBF's proposal for the way forward.

Benchmark Criteria

4. CR's largely thought all the benchmark criteria had been considered. Individual comments received suggested:
    a. Calculation transparency should be added.
    b. Transaction based criteria should be removed (for OCR).
    c. Impacts from an operational, systems and contractual perspective should be added.
    d. Benchmarks should be forward looking.

5. CRs noted that none of the proposed viable options met all the stated criteria, although some of the viable options met more than others. The favoured replacement option, OCR, did not meet the following criteria:
    a. Transaction based – While it could be argued that numerous financial market transactions are influenced by the OCR, the OCR itself is not calculated from a transaction base.
    b. Resilient – Subject to changes in RBNZ Monetary Policy framework.
    c. International comparability – there is no international evidence of a Central Bank's Monetary Policy rate being adopted as a countries interest rate benchmark.

Benchmark Design

6. Eight CRs noted that that if a replacement benchmark for derivatives is chosen, the benchmark should be a risk-free rate (RFR) and have an overnight tenor. CRs noted the benefits of an overnight RFR were international compatibility and comparability, while also enabling consistency with product conventions and ISDA definitions that have been developed offshore. One CR did not agree that the benchmark should be risk-free.

7. Seven CRs thought a term forward looking benchmark should be developed for limited products. The following was noted:
    a. Overseas experience has shown demand for a term forward-looking benchmark which could be established from the underlying risk-free O/N benchmark. One CR questioned if a highly liquid futures market would develop in NZ.
    b. The development of a term forward-looking benchmark would require industry intent, with clear regulatory support.
    c. Essential that client derivatives can reference a term forward-looking benchmark, as is the case in the US.
    d. The replacement benchmark would need to be operational prior to the cessation of BKBM.

8. One CR noted that a term forward-looking benchmark should be used for all products and favoured the retention of BKBM, while another CR did not think a forward-looking term market was required at all.

Proposed Viable Options

9. **Official Cash Rate (OCR) & Interest on Reserves (IoR):** Six CRs thought the OCR & IoR meet most or the majority of the stated benchmark criteria. Three CRs thought OCR and IoR meet the stated criteria. The following comments were received:
    a. The six CRs noted the following criteria that may not be met:
        i. Transaction based, resilient, international comparability, and viability.
        ii. One CR noted while OCR is not transaction based, they suspect regulators were trying to avoid the use of submitted rates (similar to LIBOR) with these criteria. The OCR is a central bank rate that is set in a clear and transparent way.
    b. Three CRs noted that while the transaction-based criteria may not be met, the market is currently comfortable using the OCR as a benchmark for OIS. One of the CRs also noted that OCR is used for PAI and as the fallback for BKBM.
    c. One CR felt that while IoR may meet the transaction-based criteria more so than OCR, there are no market dynamics determining the rate other than OCR. On this basis it would seem an unnecessary complication using interest on reserves as opposed to OCR.
    d. One CR felt both options were latent in nature, as they do not require active trading and the rate is set by RBNZ rather than market participants. IoR could be interpreted as being transaction based (tenuously), however this trading only occurs with one party and transaction volumes are low. The respondent

also reiterated their desire for a term benchmark rather than an overnight benchmark.

e. One CR noted that term reference rates developed under the OCR or IoR may not meet the stated criteria or be an improvement on BKBM.

10. In terms of which option was favoured, six CRs favoured the OCR over IoR. One respondent favoured IoR. One CR felt both options were viable and had no preference. Reasoning for the preferences provided:

- OCR pros
  - Meets more of the criteria.
  - More robust and resilient than IoR.
  - Transparency.
  - Already a benchmark for OIS.
  - Embedded in existing documentation.
  - Simpler than IoR.

- OCR cons.
  - RBNZ changes to monetary policy framework.

- IoR pros
  - Possibly transaction based.
  -
- IoR cons
  - Not all participants have access.
  - RBNZ changes to remuneration policy more likely.
  - Benchmark would be more complex.
  - Requires management of basis risk.

11. In terms of market impact the following comments were made:

Positives:

- Increased transparency and liquidity in the interest rate swaps and OIS markets.
- Shift market participants risk exposures from bank credit to an overnight RFR.
- Least amount of market disruption to implement given it would match the current OIS market.

Negatives:

- Reduction in liquidity for products with credit spreads such as floating rate notes (FRNs) and bank bills.
- Lack of credit component will mean there would no longer be a derivative hedging tool to hedge funding exposures.
- Will not signal times of market stress as quickly as BKBM.

Additional comments:

- Would require a new exchange traded futures product to be developed to reference the replacement benchmark.
- Financial markets would need to create official closes for financial products referencing OCR or IoR.

12. **O/N GC Repo:** There was not wide support for this option with seven CRs believing it did not meet the stated criteria. One CR thought it met most criteria except for stability. Comments received included:
    a. Six CRs thought there was not sufficient daily transaction volumes for this to be considered a viable alternative.
    b. Three CRs thought O/N GC repo does not meet the following criteria: minimise misconduct, stable, resilient, simple and ease of implementation.
    c. Three CRs had uncertainty on how data would be collected and whether all traded data would be captured.
    d. Two CRs thought GC repo does not address the concerns around BKBM. Benchmark determination remains with limited number of participants and transactions.
    e. One CR felt that GC repo is not an actively traded market and would create additional basis risk clients/dealers cannot hedge properly.
    f. One CR noted O/N GC repo does not represent the underlying cash market it is meant to represent. It could also create a conflict of interest for price-makers if they execute a small transaction for an entity without an ESAS account that may influence the benchmark.
    g. One CR noted the key advantage of O/N GC Repo over OCR is it is traded and would adjust to any possible future changes in RBNZ Monetary Policy Implementation.
    h. Three CRs noted while volumes were larger than BKBM they are still relatively low.
    i. One CR noted it is no clear how this benchmark would set if there was no trading.
    j. Six CRs noted the level of volatility in O/N GC Repo (+/- 10 basis points) was not acceptable.
    k. Five CRs supported using a moving average to calculate this benchmark but noted it would make the calculation more complex.

13. In terms of market impact the following comments were made:

    Positives:

    - Could lead to further development of NZ's repo market and would more closely align NZ benchmarks to international markets.

    Negatives:

- +/- 10 basis points from the OCR is too large a fixing risk for a benchmark.
- One transaction can have undue influence on the rate due to small nature of NZ market.
- Overnight GC repo market is not transparent enough in NZ and the access to trade it is only available to a few market participants.
- Could possibly reduce liquidity in the OIS market.
- Supply of government bonds could have undue influence on the benchmark rate.
- Market participants may not be comfortable trading GC repo if they were actively contributing to setting a benchmark given the perceived potential for market misconduct, thus decreasing traded volume, and increasing volatility.
- Volatility would be difficult to hedge and thus may reduce the attractiveness of participating in NZD derivative products.
- Additional complexities need to be considered such as creation of a new GC repo index, updating ISDA, fallback rate, new 0x3 basis curve and amending contracts price alignment rate (PAI).

14. **OCR Compound Index:**

Six CRs agreed that the OCR Compound Index met the necessary benchmark criteria, with three noting it fully meets the criteria and three noting it mostly meets the criteria. Two CRs did not agree that the OCR Compound Index met the necessary criteria. Additional comments:

a. One CR noted if the OCR meets the benchmark criteria, then the OCR Compound Index should also meet these criteria.
b. Two CRs noted the OCR Compound Index meets the criteria, except that of transaction based.
c. One CR felt that while it met most of the criteria, it would not be comparable with other jurisdictions that have mainly adopted overnight RFR rates and would also not meet the ease of implementation as a backward-looking index cannot be used for discount securities, cash, or loan products.
d. One CR did not believe OCR Compound Index met the criteria as a backward-looking benchmark cannot be hedged.
e. One CR noted the implementation of the OCR Compound Index was intended to allow less sophisticated users the ability to calculate the compound in-arrears rate quickly, not as a viable benchmark index. Might support a move to OCR RFR.

In terms of viability, six CRs did not think a backward-looking benchmark is a viable option to replace BKBM. Two CRs felt that while it was a viable option, they favoured other options. One CR thought it was a viable replacement option. Additional comments:

a. Four CRs thought there would be no demand as it could not be used for cash, loan and discount products which required a forward-looking benchmark, which is the markets preference. Two of these CRs also noted there had been no or low uptake of such benchmarks internationally.
b. Two CRs noted that the implementation of this benchmark would be complex and require significant updates to systems and documentation.
c. One CR noted discussions with US counterparts following the transition from forward-looking LIBOR to the backward-looking SOFR. Feedback suggested institutional clients were comfortable with a backward-looking benchmark, however corporate clients prefer a forward-looking benchmark to assist with cashflow.

Comments related to the market consequences of this option becoming the benchmark were:

Positives:

- Increased transparency and liquidity in the OIS markets.
- Term OIS market could increase significantly in size and replace BKBM-linked swap market.

Negatives:

- Lack of credit component will mean there would no longer be a derivative hedging tool to hedge funding exposures.
- Added complexity and not appropriate for cash products.
- This would require using an in-arrears calculation of a rate as an in-advance index for the purposes of interest calculation. This would create an interest mismatch on the floating leg of instruments by one full cashflow period.
- Use of the OCR Compound Index would be a further departure from offshore conventions and add additional complexity to New Zealand dollar derivative products.

Overnight Index Swaps (OIS)

15. Five CRs felt that OIS met most of the benchmark criteria, but highlighted concerns related to liquidity. Four CRs did not think OIS met several criteria. Additional comments:
    a. Five CRs noted traded volumes in the OIS market are very low. One of these CRs also noted low transaction volumes.
        i. Other criteria not met included misconduct, stability, resilience, simplicity, international compatibility and comparability.
    b. Three CRs noted it could be a source of confusion if both term OIS and OCR meeting date tenors are used within the term benchmark methodology.
    c. One CR did not consider the use of a derivative as a benchmark in another derivative to be appropriate.

d. One CR noted under current market conditions there would often not be executable bids or offers to fall back on to establish the benchmark rate.
e. One CR felt that if an RFR index were adopted to replace BKBM for derivative contracts, and an RFR-first approach was taken to transition all new interbank NZD derivative product away from BKBM, that sufficient short-term hedge related trading in the new index would be present to support the calculation of an associated term index based off OIS transactions.
f. One CR felt OIS could be used if a term benchmark was established, however did not feel that a term forward-looking benchmark is necessary.
g. One CR noted that traded volumes, while low at present, could materially increase if OIS were chosen as the new benchmark. At present OIS does not have a sufficiently deep and liquid market.
h. Two CRs noted sourcing the data required to calculate an OIS benchmark could be difficult.

Comments related to the market consequences of this option becoming the benchmark were:

- Six CRs thought it would be positive for the OIS and/or swap market although there were some concerns/caveats attached. One CR thought the impact would be negative from a conduct point of view, although this concern is reduced somewhat if the benchmark was used for cash products.

Positives:

- The entire swap market would benefit in terms of liquidity having just one index to trade.
- Provides a term forward-looking reference rate for the market to transition away from BKBM.
- Market participants already understand the product.
- Possibly increase liquidity while noting low liquidity and days with no trading.

Negatives:

- Illiquidity could become an issue in times of more concentrated positioning.
- Conflicts of interest or potential market misconduct may prevent market participants from freely participating. Particularly for those who use OIS as their primary product for interest rate risk management.
- Less resilient than BKBM currently.

Additional comments:

- Overnight RFR benchmark would need to be developed first to assist with liquidity in the term OIS market.

Price Alignment Rate

16. Six CRs felt that the OCR or NZIONA should be retained as the preferred rate for New Zealand dollar collateral due to:

a. The OCR being the preferred viable benchmark replacement option.
b. Other options would introduce basis risk.
c. Documentation would be difficult to change and a significant body of work.

Discarded options

17. Eight CRs did not believe any of the discarded options, Term Repurchase Agreement, FX Swaps or New Zealand Government Treasury Bills, should be reconsidered. One CR suggested that the Term Repurchase Agreement could be explored further as a fall-back rate to BKBM. The CRs did not provide other options that should be considered.

Viable Replacements for BKBM

18. Seven CRs agreed that of the options proposed in this consultation, OCR is the most viable replacement option for BKBM. Five of the seven CRs also noted other viable options in order of preference. One CR felt BKBM should be retained. Additional comments:

- One CR noted that while the consultation raises some concerns around OCR as a benchmark, in relative terms this is the preferred option and most meets the IOSCO Principles. The other options are derivatives of the OCR or would suffer from similar issues to BKBM.
- One CR stated their preference to be OCR with the options in order of most preferred to least preferred:
  - Official Cash Rate
  - OCR Compound Index
  - Interest on Reserves
  - Overnight GC Repo
  - Term OIS
- One CR stated their preference to be OCR with Term OIS and overnight GC repo not being viable options. Options in order of most preferred to least preferred:
  - Official Cash Rate
  - Interest on Reserves
  - OCR Compound Index
- One CR listed the viable replacement options in order as OCR, IoR, GC Repo and OIS.
- One CR stated their preference for OCR or interest on reserves. They noted overnight GC repo was a weaker option but preferable to staying with BKBM.
- One CR felt the OCR is the most viable alternative to BKBM as it provides a stable benchmark that is well understood and would cause least disruption to markets.
- One CR felt that the use of OCR or IOR would be viable alternatives and favoured the OCR. Given usage and liquidity in the existing NZIONA index this would appear to have clear advantages over the other options. Did not believe that overnight GC repo or term OIS were viable replacements.

- One CR stated their preference for BKBM to be retained as benchmark for all products, and steps undertaken to increase BKBM volumes.

The table below summarises the responses noted above. A CR's strongest preference scores five, down to one point for their fifth choice. The maximum score for any option is 40:

RESPONDENT	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	TOTAL	Potential score
OPTIONS												
OCR	5	-	5	-	5	5	5	0	5	5	35	40
IOR	4		3		0	4	0	0	4	4	19	40
O/N GC	3		2		0	0	0	0	0	3	8	40
OCR CI	0		4		0	3	0	0	0	0	7	40
OIS	0		5		0	0	0	0	0	2	7	40

BKBM

19. There was support from six CRs to improve the BKBM process. Four CR's supported retention of BKBM either for all, or certain products. The two remaining CR's support was based on the improvements being required given the long transition timeframe to implement a replacement benchmark.
20. NZFBF's preliminary discussions with the WG have focussed on increasing the traded volumes in BKBM primarily with the addition of buy-side transactions. Some CRs noted that they trade regularly with clients, outside of the current BKBM rate-set. This would suggest that we could consider making changes to BKBM that more closely reflect ASX's BBSW process. That is:

    a. Having a longer rate-set window. BBSW's rate-set window is open for 90 minutes.
    b. Include buy-side transactions as well as inter-bank. ASX has indicated that over 90% of their traded volume is bank/client.
    c. The use of an electronic platform. BBSW uses Yieldbroker's "Request for Quote" system for bank/client transactions and voice brokers for interbank. This would be a different IT proposition to the one investigated by NZFBF in 2022, which was to implement a bespoke interbank trading system.

21. Work would be required to:
    a. Assess the bank bill volumes that are traded between banks and client, and how often these transactions occur (i.e., daily) to understand if the addition of these

transactions would make a meaningful improvement to the current BKBM process.

b. Assess if banks' clients are comfortable that their transactions will be used to establish the BKBM benchmark.

c. Assess the cost and implementation timeframes for an electronic platform. Given our experience in 2022, NZFBF would only recommend pursuing this option if we are going to use an off-the-shelf product with little or no changes to the system.

22. Other options to improve BKBM may also be possible, and this will be discussed further with the WG over the remainder of 2023.

23. However, there are risks associated with any work to improve BKBM. There are local regulatory reviews and a recent statement by IOSCO that could impact the retention of BKBM in any form. They are:

    a. The RBNZ's Liquidity Review (due December 2025).
    b. The RBNZ ESAS Access Review (due December 2023).
    c. IOSCO's recent statement[3] on US credit sensitive rates highlighting the risks they see with this type of benchmark and questioning if they comply with the IOSCO Principles for Financial Benchmarks.

Other Matters

24. CRs also raised some other points which are relevant. They are:
    a. Any transition would be industry led and would require the full support of the RBNZ and other regulators to ensure its success. A recent article[4] by the Bank of England on the SONIA transition provides excellent information relating to a benchmark transition and highlights the importance of the industry and the regulators working together. Other areas covered are communication, credibility, and regulatory oversight.
    b. There would be cost and implementation challenges (e.g., documentation, systems etc) with any transition to a new benchmark which would require a long implementation timeframe. Existing RBNZ regulatory changes are already resource intensive so careful planning would be required to ensure this process did not place undue pressure on banks. The CoFR Regulatory Initiatives Calendar highlights the number of regulatory consultations/changes currently underway.
    c. A thorough understanding of the underlying conventions, definitions and pricing characteristics involved in the move to a new benchmark would be needed.

[3] The full IOSCO statement can be found at Statement on Credit Sensitive Rates (iosco.org)

[4] The full article can be found at The end of the (Libor) world as we know it – remarks by Arif Merali | Bank of England

APPENDIX TWO

Example OCR Convention for Wholesale Derivatives

The below example provides the Compounded In-Arrears Rate for wholesale derivatives on a one-week OCR Benchmark loan of $1 million on 22 May 2023:

The OCR will be calculated as:

$$\text{OCR} = \left[\prod_{i=1}^{d_b}\left(1+\frac{r_i \times n_i}{N}\right)-1\right] \times \frac{N}{d_c}$$

Where:

d_b = the number of business days in the interest period

d_c = the number of calendar days in the interest period

r_i = the interest rate applicable on business day i

n_i = the number of calendar days for which rate r_i applies

N = The number of days in the year.

Date	OCR Rate	# of Days	Effective Rate	Principal+ Interest	Interest Charged
Monday 22 May	5.25	1	=0.0525/365 = 0.000143836	$1,000,000	$143.84
Tuesday 23 May	5.25	1	=0.0525/365 = 0.000143836	$1,000,143.84	$143.84
Wednesday 24 May	5.25	1	=0.0525/365 = 0.000143836	$1,000,287.68	$143.84
Thursday 25 May	5.50	1	=0.0550/365 = 0.000150685	$1,000,431.52	$150.68
Friday 26 May	5.50	3	=3*0.0550/365 =0.000452055	$1,000,582.20	$452.05

$$\text{Benchmark Rate} = \left(\frac{365}{7}\right)\left[\left(1+\frac{0.0525}{365}\right)\left(1+\frac{0.0525}{365}\right)\left(1+\frac{0.0525}{365}\right)\left(1+\frac{0.0550}{365}\right)\left(1+\frac{3\times 0.0550}{365}\right)\right]$$

= 5.39489%

Methodologies for other potential benchmarks, such as a new forward looking term benchmark, will be developed as and when the overnight benchmark is implemented.