Reserve Bank of New Zealand
Te Pūtea Matua

Levy Framework

For the Depositor Compensation Scheme

July 2023

CONSULTATION PAPER

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Executive Summary

The Deposit Takers Act 2023 (the Act) will introduce the Depositor Compensation Scheme (DCS) to New Zealand. The DCS fund is to be set up by collecting levies from deposit takers. A Statement of Funding Approach (SoFA), to be published by the Minister of Finance at least every five years, will set the target size of the DCS fund and the time to reach the target.

Under the Act, the Reserve Bank must provide the Minister of Finance with advice on the DCS levy regulations. Before providing the advice, the Reserve Bank must consult with deposit takers.

This paper focusses on two key aspects of the DCS levy, which are complementary to the SoFA being consulted on by the Treasury:

1. **the protected deposit base** – how to determine the total amount of deposits covered by the scheme and the base on which levies are charged; and
2. **the DCS levy rate** – the approach to setting the levy charged with respect to those protected deposits.

Protected Deposit Base

The paper outlines options for determining the optimal proxy for calculating protected deposit amounts. Ideally, we would look to set levies based on aggregated protected deposits held by each deposit taker but this data will not be available for some time. We propose a preferred solution using Bank Balance Sheet (BBS) and Non-Bank Deposit Takers (NBDT) survey data as a base with appropriate adjustments as a proxy for an interim period before the "Single Customer View" standards are developed and fully complied with.

DCS Levy Rate

This paper outlines both flat-rate and risk-based approaches for the DCS levy itself. The flat rate approach means that levies are paid as a uniform percentage of the amount of protected deposits a deposit taker holds. Under the risk-based approaches levies on an individual (or a group of) deposit takers would also reflect the risk they pose on the DCS (i.e. how likely it is that a payout event may occur for a specific firm).

Under the risk-based approaches, we seek feedback on two options:

- Credit rating approach: relying on credit ratings to assess the risk posed by a specific firm, or
- Composite Risk Indicator approach: using composite risk indicators of capital, liquidity, asset quality, profitability, and concentration of exposures to calculate the aggregate risk score of a firm.

Firms are categorised into 4 different risk buckets, with firms in the riskiest bucket being subject to a different levy rate. In the illustrative examples shown in this paper, we make levy rates four times larger for the riskiest firms, compared to the firms in the least risky bucket.

The Act requires the following three principles to be considered when making levy regulations: the likelihood of the Bank issuing a specified event notice in relation to a deposit taker of that class (i.e. a payout event) and the likelihood of the Bank authorising an amount to be paid out of the fund under subpart 5 of Part 6 (i.e. using DCS fund to contribute to resolution measures) in relation to a deposit taker of that class, and the associated cost;

- the effect that the obligation to pay a levy is likely to have on the soundness of a deposit taker of that class; and
- The desirability of predictability in levies.

We assess that the flat rate approach would provide no ability to mitigate moral hazard problems associated with DCS, though the approach is straightforward and easy to implement. Risk-based approaches are better placed to mitigate moral hazard problems and can potentially provide an incentive for deposit takers to improve their risk management and performances. However, risk-based approaches have their limitation in accurately reflecting the likelihood of a payout event, because of the selection of risk measures and the challenge of making the measures for banks and non-bank deposit takers directly comparable. Moreover, risk-based approaches may lead to higher levies for some small banks and non-bank deposit takers, especially if credit ratings are used for risk grading.

The potential impact of different levy options is assessed in detail in two dimensions: how the profitability of deposit takers will be affected if the cost of the DCS levy is fully absorbed by deposit takers, and how the deposit interest rates offered by deposit takers will be affected if deposit takers fully pass on the cost to depositors. Some major findings include:

- Under the composite risk indicator approach, more than half of the deposit takers (including 13 banks and four NBDTs) are categorised into Bucket 1 (the least risky bucket) and the other firms evenly spread across the other buckets.
- For the Big Five banks, the levies charged appeared similar irrespective of approach taken, since they take a large enough share of deposits in the system. By contrast, levy differences are more noticeable across different approaches for other banks and NBDTs.
- Using a flat rate approach, we estimate the annual levies would be around 0.1% of protected deposits for all deposit takers. If a risk-based approach is adopted, and for example a four-times difference in the levy rate across different risk buckets is applied, then the levy rates could range from 0.1% to 0.4% for deposit takers across risk buckets. This is under the assumption of building toward a target fund size of 0.8% of total protected deposits within 15 years, which are the median numbers as suggested by the SoFA consultation paper.

This consultation paper should be read alongside the Treasury's consultation paper on the SoFA. The SoFA will set out the overall costs of the DCS that are to be recovered by a levy on deposit takers and the levy framework will set out how the DCS's costs are allocated amongst deposit takers.

The first round of consultation on the levy framework will help Reserve Bank develop its advice to the Minister on the levy regulation. A second round of consultation, intended for late 2023/early 2024, will reflect any change to the target fund size and timeline to achieve the target shown in the second round of consultation of SoFA, as well as the feedback received from the first round of consultation on the levy framework.

What Do You Think?

We are seeking views on the issues and questions set out in this consultation paper. There will be further consultation on the recommended method of calculating or ascertaining the amount of levies, before the levy regulations are confirmed. The specific questions are contained throughout the document. You can send us your views by email to dta@rbnz.govt.nz (with the subject line "**DCS levy approach submission**"), or via 'hard copy' to:

David Hargreaves, Manager, Policy Projects team
Prudential Policy Department
Reserve Bank of New Zealand – Te Pūtea Matua
Wellington 6140

The deadline for submissions is 5pm on 25 September 2023.

We will share your submissions with the Treasury, as it is currently publicly consulting on the matters related to Statement of Funding Approach under DCS.

You can also choose to make a submission to the Reserve Bank directly on both this *Levy Framework for the Depositor Compensation Scheme* consultation paper and the Treasury's *Statement of Funding Approach* consultation paper which we will then pass to the Treasury. Please make this clear in your submission.

Publication of Submissions

All information in submissions will be made public unless you indicate you would like all or part of your submission to remain confidential. Respondents who would like part of their submission to remain confidential should provide both a confidential and public version of their submission. Apart from redactions of the information to be withheld (i.e. blacking out of text) the two versions should be identical.

Respondents should ensure that redacted information is not able to be recovered electronically from the document (the redacted version will be published as received). Respondents who request that all or part of their submission be treated as confidential should provide reasons why this information should be withheld if a request is made for it under the Official Information Act 1982 (OIA). If an OIA request for redacted information is made, the Reserve Bank of New Zealand will make its own assessment of what must be released taking into account the respondent's views.

We intend to publish an anonymised summary of the responses received in respect of this consultation paper.

1 Background

As well as modernising and enhancing the prudential regulation of deposit-taking institutions, the Deposit Takers Act 2023 (the Act) will significantly improve New Zealand's financial system 'safety net' through the introduction of a Depositor Compensation Scheme (DCS).

The DCS will protect eligible depositors' protected deposits up to $100,000 New Zealand dollars per depositor per licensed deposit taker. Protected deposits[1] are likely to include New Zealand dollar deposits in current accounts, savings accounts and term deposits (and products whose economic substance is substantially similar to these products) issued by licensed deposit takers. The Act sets the broad parameters of what will be covered under the DCS with regulations (to be made) detailing the precise deposit products that will be covered by the DCS.

The DCS will be funded by levies collected from deposit takers, with any deficiency covered out of public money provided from the Crown to the DCS fund, with the terms and conditions set by the Minister. The target fund size (which may be a proportion of protected deposits) and the time to achieve the target will be set out in a Statement of Funding Approach (SoFA), published by the Minister of Finance at least every 5 years.

Section 239 of the Act sets out the principles to which the Minister must have regard before making a recommendation for levy regulations:

- the DCS should be fully funded by licensed deposit takers;
- the amount of levies for each class of deposit takers should take into account (1) the likelihood of a compensation event (or using the DCS fund to contribute to resolution measures) occurring to a deposit taker of that class, (2) estimated costs to the DCS fund, and (3) the likely impact of the DCS levy on the soundness of a deposit taker of that class; and
- the desirability of predictability in levies.

The Reserve Bank must give advice to the Minister on levy regulations (Section 241 of the Act). The Reserve Bank must consult licensed deposit takers and other relevant industry bodies before providing the advice (Section 242 of the Act). The purpose of this paper is to seek industry and public feedback to inform the advice on the DCS levy framework, although there will be another consultation prior to the advice being given.

1 Regulations will be made about the detailed definition of protected deposits.

2 Proxy for Protected Deposit Amounts

The protected deposit amounts (also called "the DCS levy base") need to be calculated on a "customer-based" approach by aggregating deposits held by a depositor with a deposit taker. However, existing surveys and other data collections do not provide the insights needed to enable the calculation in a fast and reliable way. Single Customer View (SCV) standards, which are to be developed, will set detailed requirements on how those files should be prepared and shared with the Reserve Bank. Once SCV files are being collected, the protected deposit amounts will be calculated by aggregating protected deposits that are owned by an eligible depositor. The amount will be capped to $100,000 if the aggregated amount exceeds $100,000.

Once developed the SCV standards will be consulted on. A transitional period will be provided with all licensed deposit takers building the capacity to comply with the SCV requirements. Therefore, a proxy for protected deposit amounts is needed for the transitional period before the SCV standards are finalised and fully complied with.

2.1 Exploration of Different Proxies

We have identified several options to use as the proxy for protected deposit amounts, including using information from existing surveys or data with appropriate adjustments, or conducting a one-off data collection for the levy purposes.

Using Existing Survey Data or Collected Data

Bank Balance Sheet Data and NBDT Surveys

The Bank Balance Sheet (BBS) Survey is used to survey all banks on a monthly basis. The collection includes a full breakdown, by account type and deposit size. While there are some differences between the coverage in the BBS and the DCS, these are not material[2]. The main constraint to using BBS data as a proxy for protected deposits is that the BBS only shows the value and number of accounts without aggregating the accounts that may belong to the same customer. We propose applying the following method to get the estimates by aggregating the following items:

- for account values of less than $100,000, use the value as reported in the BBS; and
- for account values of equal to or larger than $100,000, use $100,000 multiplied by the number of accounts

The Non-Bank Deposit Takers (NBDT) Survey collects an aggregate figure for the value and number of deposits held by each NBDT. However, it is significantly less detailed than the BBS and does not provide a breakdown of deposits by size.

Using data collected in the BBS and NBDT surveys as the proxy is likely to result in an over-estimation of actual coverage levels where depositors have multiple accounts totalling over $100,000. However, this method may also potentially underestimate the protected amounts where accounts are jointly held, or held on behalf of a group of customers (e.g. conveyancers' client accounts).

2 For example, banks, insurers, non-bank deposit takers and financial market infrastructures are not eligible depositors under the DCS coverage.

Liquidity Stress Testing Data

Ten locally incorporated banks complete regular stress-testing exercises. The exercise requires participants to have deposit amounts aggregated on a customer-based approach. However, the stress tests do not fully align with the DCS definition of protected deposits with two significant issues: (1) the liquidity stress testing data does not consolidate deposits held by a depositor for on-call and term deposits; and (2) the number of depositors with balances over $100,000 are not included in the liquidity stress testing data. Another concern is that the liquidity thematic review (results published by the Reserve Bank in 2021) observed methodological inconsistencies among banks in preparing related data. In addition, if this data is used as the proxy, the data is only available for ten banks, so another proxy is still needed for other banks and non-bank deposit takers.

Conducting a One-Off Survey

If the existing data collections cannot provide sufficient information needed to estimate the protected deposit amount, then one option is for the Reserve Bank to conduct a one-off survey to inform the estimation. However, this would be a resource-intensive option for both deposit takers and the Reserve Bank. Moreover, there may be quality issues associated with a one-off survey, since most deposit takers do not yet have the systems in place to provide information on a customer-based aggregation of covered deposits, and detailed regulations about eligibility rules are still under development. For example, the regulations on complex accounts that might be subject to 'look-through' treatment, like a lawyer's client accounts, and bank sponsored PIE funds, are yet to be finalised.

2.2 Proposed Solution

Considering the pros and cons of relying on existing data and the cost of carrying out a one-off data collection, we propose a solution to finding an observable and appropriate proxy—by applying adjustment factors on the data collected from the existing BBS and NBDT surveys, informed by liquidity stress testing data and the analysis on average deposit size of an entity. For banks, comparison with previous granular deposit data[3] shows that estimated single customer insured deposits (using data obtained from stress testing) are on average around 30% lower than the total covered amounts calculated using BBS data. We therefore propose that, for banks, we apply a 70% adjustment factor to eligible deposits, as reflected in the BBS, to determine a proxy for protected deposit amounts.

Since the NBDT survey data does not provide a breakdown of deposits by size, we propose to instead take a look at the average size of deposits in order to determine the optimal adjustment factors for credit unions and building societies. The average account balance with credit unions varies from $1000 to $5000 and is much smaller when compared with banks. This indicates that deposits with credit unions are likely to be almost fully covered under DCS. We propose using an 80% adjustment factor[4] to the retail deposits held by credit unions (as reported in the NBDT survey) as the proxy for protected deposit amounts held by credit unions. By contrast, we observe from the NBDT Survey data that building societies generally have much larger average account balances, varying from $25,000 to $50,000. This means a larger proportion of the depositors with building societies would not be able to be fully covered under the $100,000 DCS limit. Therefore,

3 See the Joint Report published in 2021 about the granular data collection.

4 This proportion is also aligned with the previous granular deposit data collection undertaken in 2020, when we crosscheck the retail deposit amount against the one-off data reporting by credit unions.

we propose to use a 40% adjustment factor[5] to retail deposits held by building societies as the proxy.

Applying adjustment factors to existing survey data is our preferred solution for determining a proxy for protected deposit amounts. It allows us to adjust for the fact existing regular survey collections (BBS and NBDT surveys) will tend to overestimate protected deposits. It uses data available for all deposit takers. It also avoids the additional compliance burden of carrying out a one-off survey which may not provide desirable and reliable results before all deposit takers build the systems and capacity to comply with SCV standards.

We do acknowledge that those suggested adjustment factors might not be able to reflect any potential change in depositors' behaviours (e.g. splitting deposits and spread in different deposit takers after the DCS is in place). We would like to test with industry the appetite for reviewing the proxy one to two years after the DCS is in place.

In the next section of exploring the levy approaches, the proposed proxies are used for calculating the DCS levy base for illustrative purposes.

1

Consultation question

Do you think there are any other options for estimating the protected deposit base which are not explored above?

2

Consultation question

Do you agree with our preferred approach to estimating the protected deposit base?

3

Consultation question

Do you have any comments on the proposed solution?

4

Consultation question

Do you think the proxy should be reviewed one or two year(s) after the DCS is in place?

5 The 40% adjustment factor is in line with the proportion of protected deposit in total deposits held by big 4 banks, which have similar average deposit balances compared to building societies. This proportion is also aligned with the results when we crosscheck against the previous granular data collection from building societies in 2020.

3 DCS Levy Approach

The DCS will be fully funded by levies collected from licensed deposit takers, with a Crown backstop to meet payout requirements when the DCS fund is deficient. The DCS fund will be built to reach a target size over a certain period, which is being consulted on by the Treasury in the first round of consultation on the SoFA. In this section, we discuss the options for calculating the levy deposit takers will pay on their protected deposits.

Note that the following analysis:

- does not include deposit takers that are not locally incorporated in New Zealand (i.e. branches of overseas banks), since the risk matrix of those firms is not (or not fully) available6.
- uses the assumption that the target fund size is to be 0.8% of protected deposit amounts and the target fund size is to be reached within 15 years. This is in line with the median proposed by the consultation paper of Statement of Funding Approach published by the Treasury.
- uses data of banks and non-bank deposit takers from Q1 to Q4 2022, if not otherwise mentioned.

3.1 Flat Rate Approach

A flat rate approach means deposit takers pay levies based exclusively on a percentage of the total value of protected deposits they hold. Under the flat rate model, the levy would be calculated by multiplying the contribution rate (which would be the same for all deposit takers) by the value or estimated value of a deposit taker's protected deposits.

The following factors will affect the levy rate:

- Target fund size
- Time left to reach the target
- Expected growth in protected deposits
- Expected return of DCS fund investment
- Income tax on the fund (both on levy and the fund investment yield)
- Expected DCS operational expenditure (BAU and potential payout operational cost)

Annex A provides an example of how the flat rate levy would be calculated based on the assumption of building up a fund over 15 years to cover 0.8% of protected deposits (using the medium numbers as suggested in the SoFA consultation paper). This would result in an **annual** levy rate of roughly 0.1% of protected deposits for 15 years.

6 For example, branches do not report capital adequacy and liquidity measures to the Reserve Bank of New Zealand, because those measures are gauged on a group level, rather than for each branch of a bank.

3.2 Risk-Based Approach

Under risk-based approaches, the levy charged on individual (or a group of) deposit takers would reflect the risk they pose to the DCS fund, (i.e. how likely a payout event occurs). Risk would be measured using Aggregate Risk Component (ARC).

The calculation for a risk based approach would be:

$$C_i = CR \times ARC_i \times CD_i \times \mu$$

$C_i = Annual\ levy\ contribution\ from\ member\ institution\ 'i'$

$CR = Contribution\ Rate\ (identical\ for\ all\ member\ institutions\ in\ a\ given\ year)$

$CD_i = Covered\ deposits\ for\ institution\ 'i'$

$ARC_i = Aggregate\ risk\ component\ for\ member\ institution\ 'i'$

$\mu = Adjustment\ coefficient\ (identical\ for\ all\ institutions\ in\ a\ given\ year)$

The number of premium categories (i.e. how many different ARC we would like to include in the approach) is an important feature of a risk-based levy approach. It should reflect the number and variation of deposit takers (e.g. differences in business models and risk profiles) in a jurisdiction. Following the IADI guidance[7] and also the EBA Guidelines[8], we group deposit takers into four different risk buckets and use an indicative 4-times difference of risk weights across different groups (i.e. ARC equals 100% for the lowest risk bucket, 200% for the second one, 300% for the third, and 400% for the riskiest bucket) to analyse the potential impact on deposit takers.

In addition, an adjustment coefficient μ is used to ensure the total levies collected in a given year is in line with a pre-set annual target level.[9] For example, if the total levy calculated from $C_i = CR \times ARC_i \times CD_i$ is $80m and the fund to be collected for that year is $60m, then the adjustment coefficient for the year will be $\frac{60M}{80M} = 0.75$ for all deposit takers in that year. This means the levy amounts to be collected from each deposit taker will be 0.75 times of what is calculated based on the composite risk indicators for that year.

Using Credit Ratings As Risk Measures

Credit ratings could be used to capture the risks posed by an individual institution to the DCS fund and to compare deposit takers with notably different business models.

Credit ratings are predominantly provided by three main rating agencies, Standard and Poor's (S&P), Moody's Investors Services (Moody's), and Fitch IBCA (Fitch). In New Zealand some NBDTs receive ratings from Equifax. The rating agencies adopt different rating scales but there is equivalence across the scales.

7 International Association of Deposit Insurers. (2011). General Guidance for Developing Differential Premium Systems.
8 European Banking Authority. (2023). Guidelines on methods for calculating contributions to Deposit Guarantee Schemes.
9 See page 18 of the EBA Guidelines on methods for calculation contributions to deposit guarantee schemes about how the coefficient is used.

Table 1 shows the risk groups that individual deposit takers would be placed into based on ratings as at June 2022. For deposit takers that receive ratings from multiple agencies, the more conservative ratings will be adopted for the levy purpose. Those NBDTs, which are currently exempted from obtaining a credit rating due to their small size, are disadvantaged under this approach.

Table 1: Credit rating groups

Bucket	S&P	Moodys	Fitch	ARC (4 times difference as an example)
1	(AAA to A-)	(Aaa to A3)	(AAA to A-)	100%
2	(BBB+ to BBB-)	(Baa1 to Baa3)	(BBB+ to BBB-)	200%
3	(BB+ to BB-)	(Ba1 to Ba3)	(BB+ to BB-)	300%
4*	(B+ to D)	(B1 to C)	(B+ D)	400%

*Unrated deposit takers are treated as Bucket 4.

Using Composite Risk Indicators

As an alternative to relying on credit ratings, using composite risk indicators would enable us to design the levy approach we consider most fit for purpose to measure the risk that each deposit taker poses to the DCS fund. International guidelines and examples[10] provide the detailed measures and weightings commonly used by other jurisdictions:

- Capital adequacy: whether an entity has a sufficient capital cushion to absorb loss
- Quality of assets: likelihood of an entity incurring losses
- Liquidity: whether an entity has the ability to generate and obtain sufficient funds in a timely manner and the stability of an entity's funding
- Business model and management: this includes
  - Profitability: capacity of an entity to retain earnings to build a larger cushion against loss
  - Concentration of exposures: diversification of a bank's asset portfolio and potential impact of a (or a group of) counterparty's performance on an entity's overall performance

Additionally, some jurisdictions include qualitative measures (e.g. supervisory judgement about the risk management of an entity), including the nature of a deposit taker. Some jurisdictions (e.g. Canada) also include adjustment factors to the levy framework to reflect entities' readiness of complying with resolution planning requirements and deposit insurance reporting requirements.

10 International Association of Deposit Insurers. (2011). General Guidance for Developing Differential Premium Systems & European Bank Authority. (2015). Guidance on methods for calculating contributions to deposit guarantee schemes.

In a New Zealand context, the mutual sector (building societies and credit unions) has shown an ability to manage distress in the sector through mergers and acquisitions. A risk-based model could apply a qualitative overlay to reflect this characteristic. We welcome industry's feedback on whether or not to include (and if yes, what aspects should be included) any qualitative measures in the levy framework. The analysis shown below does not contain any qualitative measures at this time.

We propose using the following risk indicators for banks, as set out in Table 2.

Table 2: Risk indicators for banks

Indicator (weighting)	Measure (sub-weighting within category)	Formula	Sign	Min Boundary	Max Boundary
Capital Adequacy (25%)	Total capital ratio (100%)	$\frac{\text{Total capital}}{\text{Risk Weighted Assets}}$	-	9%	20%
Asset Quality (25%)	NPL ratio (100%)	$\frac{\text{Nonperforming loans}}{\text{Total lending}}$	+	0%	3%
Liquidity (25%)	One month mismatch ratio (25%)	$\frac{\text{1 month mismatch}}{\text{Total funding}}$	-	0%	20%
	One week mismatch ratio (25%)	$\frac{\text{1 week mismatch}}{\text{Total funding}}$	-	0%	20%
	Core funding Ratio (50%)	$\frac{\text{One year core funding}}{\text{Loans and advances}}$	-	75%	100%
Business model and management (25%)	Return on Assets (50%)	$\frac{\text{Net income after tax}}{\text{Total assets}}$	-	0%	2%
	Top 5 credit exposures (50%)	$\frac{\text{Top 5 credit exposures}}{\text{CET1 \%}}$	+	20%	100%

Table 3 shows the risk indicators for NBDTs. Those are taken from the Reserve Bank NBDT Survey to align with the indicators used for banks as far as possible. Annex 2 shows the differences between the measures for banks and NBDTs.

Table 3: Risk indicators for NBDTs

Indicator (weighting)	Measure (sub-weighting within category)	Formula	Sign	Min	Max
Capital Adequacy (25%)	Regulatory Capital Ratio (100%)	$\frac{\text{Net regulatory capital}}{\text{Risk Weighted Assets}}$	-	9%	20%
Asset Quality (25%)	NPL ratio (100%)	$\frac{\text{Non-performing loans}}{\text{Total lending}}$	+	0%	3%
Liquidity (25%)	Simple Coverage Ratio[11] (100%)	$\frac{\text{Liquid assets}}{\text{Total assets}}$	-	5%	50%
Business model and management (25%)	Return on Assets (50%)	$\frac{\text{Net income after tax}}{\text{Total assets}}$	-	0%	2%
	Top 6 credit exposures (50%)	$\frac{\text{Top 6 credit exposures}}{\text{CET1 \%}}$	+	25%	100%

To design the minimum and maximum boundaries for each indicator, both regulatory requirements (e.g. capital adequacy ratio requirement) and historical data (e.g. performance of profitability over the last 5 years) are considered. Positively signed indicators reflect higher risk at higher values (e.g. Non-performing Loan ratio) while negatively signed indicators reflect lower risk at higher values (e.g. total capital ratio). The minimum and maximum boundaries are designed to span the data across banks and NBDTs. In some cases a different concept has to be used for data availability reasons, and in that case the boundaries are also different.

An entity with a negatively signed risk indicator value equal to (or larger than) the maximum boundary scores 0. For example, any entity that has a total capital ratio larger than 20% will score 0 (indicating being very safe compared to others). By comparison, an entity with a total capital ratio equal to (or less than) the minimum boundary, will receive a score of 100 (indicating the highest level of risk). Annex C shows details about how this sliding scale measure is calculated for any value sitting between the boundaries.

Deposit takers are categorised into four risk buckets according to their risk scores. The choice of four risk buckets is to be comparable with the credit rating approach and is also to be aligned with the common practices of other jurisdictions that adopt similar composite risk indicator approach[12]. The aggregated risk score range for each bucket is shown in Table 4.

11 Since currently there is no "one-for-all" measure applied to NBDTs regarding liquidity, we adopt the "simple coverage ratio" that is introduced in the Liquidity Policy Review Consultation paper for illustrative purposes. The measure will be ultimately aligned with the decision of the liquidity policy review. Simple coverage ratios for NBDTs are calculated using the existing NBDT survey data. Liquidity assets are the sum of "Cash", "bank deposits and securities", "Government securities", "claims on public sector entities", and "other assets with an approved agency credit rating 1,2 and 3". Since the NBDT survey does not collect more granular data by maturity, those data are only used for illustrative purposes.

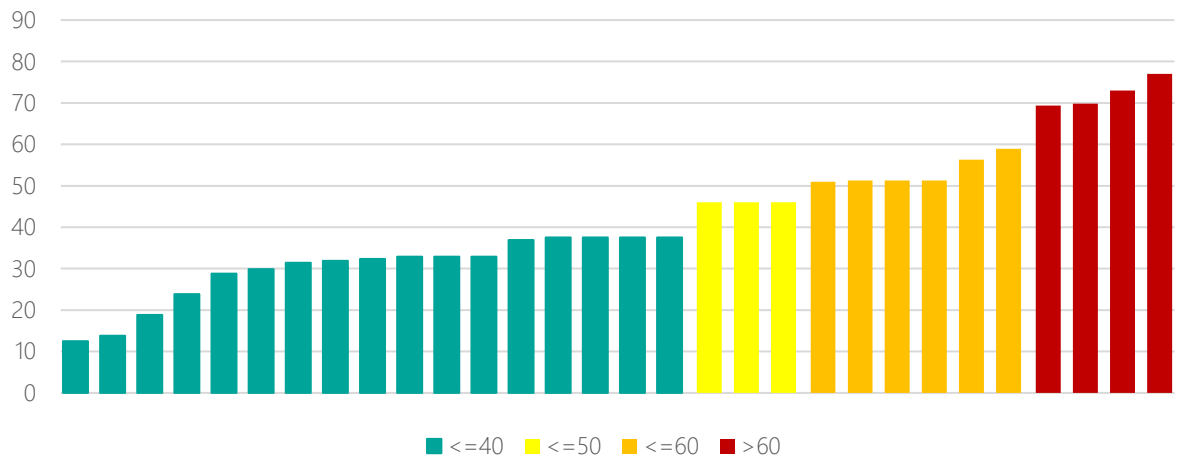
12 For example, Canada uses four categories for their deposit insurance premium framework; European Central Bank also suggests using four buckets in their published "Guideline on methods for calculating contributions to deposit guarantee schemes".

Table 4: Risk buckets using composite risk indicators to calculate aggregate risk scores

Bucket	Range of aggregated risk scores	ARC (4 times difference as an example)
1	0-40	100%
2	40-50	200%
3	50-60	300%
4 (riskiest)	60-100	400%

Applying the risk scoring system calculated on the proposed risk matrices to deposit takers would result in the following distribution (as shown in Figure 1) across four different risk buckets. In the chart below, we have anonymised each deposit taker.

Figure 1 Distribution of deposit takers under the composite risk indicators approach (risk scores)



5

Consultation question

Do you have any specific feedback on the design of the risk-based approaches? For example,

a. Do you agree with the design of four risk buckets? Do you agree a four-times difference in the levy rate across buckets is appropriate given the objectives of the levy? Would a higher multiplier more accurately reflect risk? If so, what should the multiplier be?

b. Do you agree with selection of the quantitative risk indicators and the boundaries for each matrix?

c. Do you think the composite risk indicator approach should also include qualitative measures? If yes, what factors do you think should be included?

3.3 Impact of Different Approaches on Deposit Takers

The DCS levy will impose a cost on deposit takers. Ultimately, it is a commercial decision for each deposit taker to determine how to digest the cost. The cost might be transferred to depositors through lower deposit interest rates. The cost might also be transferred to other customers in other ways (through fees or higher loan interest rates to maintain a deposit taker's margin), or be absorbed by deposit takers' profits.

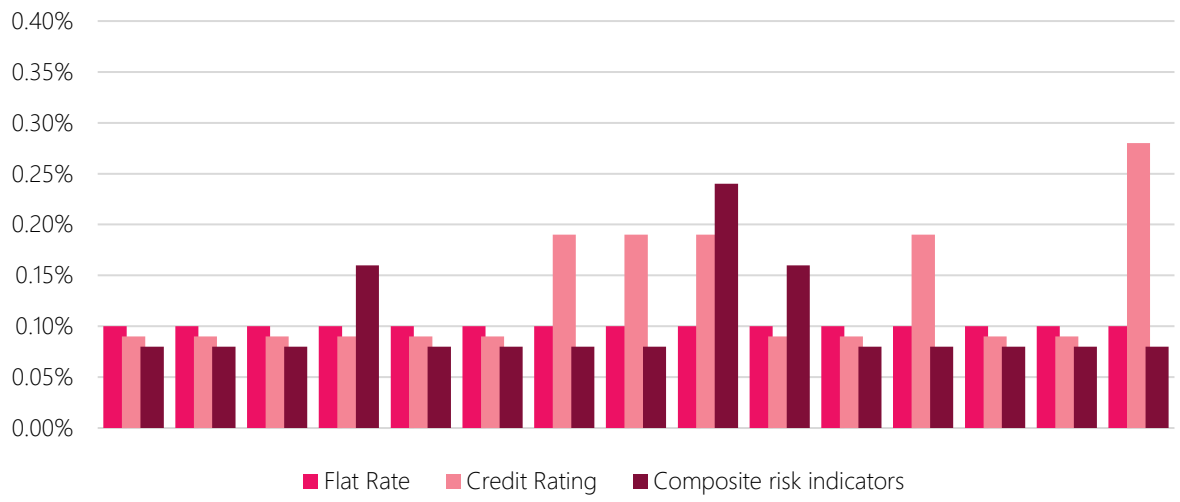
The next section will discuss the principles for assessing the different approaches, among which the impact on the soundness of deposit takers is an important aspect. The analysis about risk-based approaches is based on the assumption of having four times difference across different risk buckers. The analysis below is for illustrative purpose only. It does not represent the final decision, but is only to facilitate the selection and the development of the optimal levy approach.

Potential Impact on Deposit Interest Rate of Protected Deposit Products

The levy may have an impact on the deposit interest rates of protected deposit products, if the cost is partly or fully transferred to interest rates offered on deposits. Interest rates offered by small domestic banks for term deposits with a maturity of 12 months are generally around 10 basis points higher than comparable rates offered by the major banks. Interest rates offered by credit unions and building societies are also around 10 basis points higher than those offered by major banks. Finance companies, by comparison, offer a much higher premium—often around 50 basis points higher than those offered by major banks. The DCS levy—if the differential premium rates are adopted—is expected to narrow, but not fully close, those gaps for firms covered by the scheme.

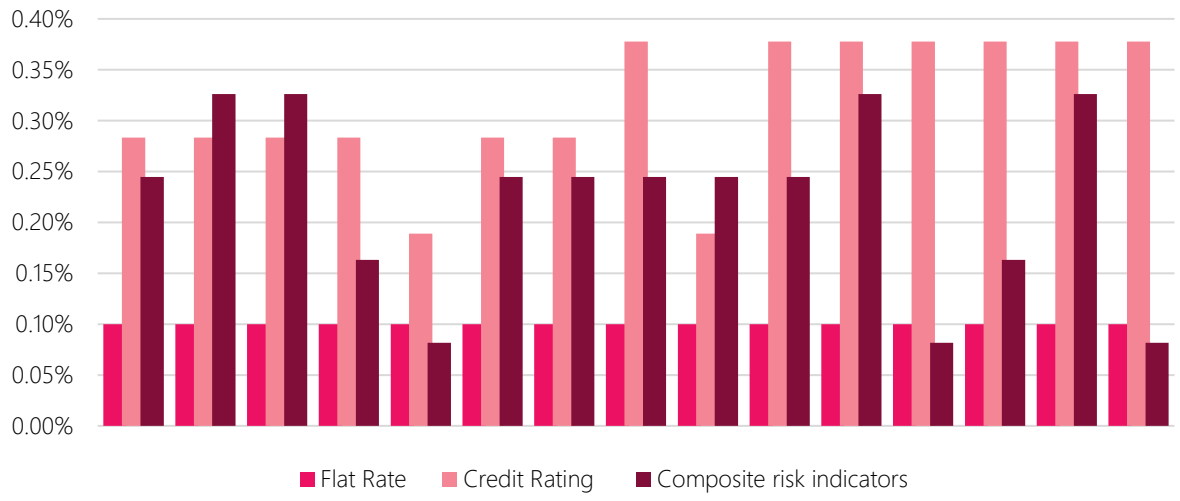
Figure 2 and 3 show the estimated levy as a percentage of the protected deposits under different levy approaches. Using the flat rate model, the annual levy is the same proportion of protected deposits for all deposit takers (i.e. 0.1%). The credit rating approach is more likely to have a significant adverse impact on NBDTs, and small international and domestic banks compared with the composite risk indicator approach.

Figure 2 Estimated annual levy as a percentage of covered deposits (banks)



Note: X-axis refers to each locally incorporated bank. The names of banks have been removed from the graph.

Figure 3 Estimated annual levy as a percentage of covered deposits (non-bank deposit takers)



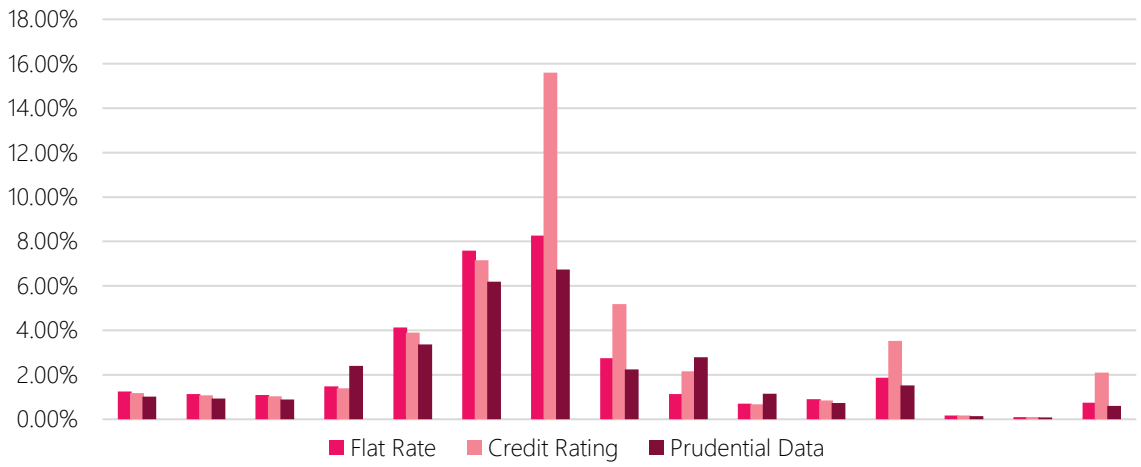
Note: X-axis refers to each registered non-bank deposit taker. The names of those entities have been removed from the graph.

Impact on Profitability of Deposit Takers

The impact of the DCS levy on the profitability of deposit takers (if the cost is fully absorbed by profits) depends on the levy base (value of protected deposits a deposit taker holds), the levy rate applied to that deposit taker, and the existing profitability of the deposit taker. The financial system in New Zealand has shown a steady pattern in the last decade: big banks have relatively stable profit performance, while small banks and NBDTs have a more mixed performance.

The impact on banks' profitability, as shown in Figure 4, is generally not significant even if the cost is fully absorbed by firms' profits. Two banks' profits will be affected larger than 5%.

Figure 4 Annual levy amount as a percentage of annual profit (banks)



Note: X-axis refers to each locally incorporated bank. The names of banks have been removed from the graph.

For 60% of NBDTs, using a composite risk indicator approach appears to lead to levies that are less than 10% of annual profits. However, a number of other firms have low profits or recent losses, so levies will be more material to their profitability outlook.

3.4 Assessment of Different Approaches

To assess different levy approaches, we identify the following three aspects as the most relevant and appropriate criteria:

The Approach Should Reflect the Likelihood of a Compensation Event for a Deposit Taker

The principles to which the Minister must have regard when making the levy regulations include that the amount of the levy should take into account the likelihood of a compensation event occurring to different deposit takers and estimated costs to DCS fund. This principle helps to mitigate "moral hazard" problems. Moral hazard refers to "the incentive for increased risk-taking"[13]. Depositors (if they are fully covered under the DCS coverage limit) would have little incentive to monitor the performance of deposit takers. As a result, funds may flow to weak institutions for high-risk ventures at lower cost. Unless effective steps are taken, the deposit insurance system may face the possibility of increased losses and the economy as a whole may suffer as a result.

An approach which seeks to mitigate any 'moral hazard' risk is more consistent with the principle of proportionality referred to in the Act's decision-making principles (Section 4) and the Government's desired outcomes for the financial system under the Financial Policy Remit. In addition, it is the advocated best practices by the International Association of Deposit Insurers (IADI) by "providing financial incentives for member banks to be more prudent in risk management and minimising cross-subsidisation among member banks."[14]

The Approach Should Consider the Impact of DCS levies on the Soundness of Deposit Takers

When designing the levy approach, the right balance needs to be sought to provide sufficient incentives for deposit takers to improve their risk management while also considering the soundness of deposit takers. One of the principles to which the Minister must also have regard when making the levy regulations is to consider the impact on the soundness of deposit takers. It is important to avoid unintended consequences on the soundness of deposit takers and as a result having an adverse impact on the diversity of, and maintaining competition in, the deposit taking sector. This aligns with the matters set out in the Act's decision-making principles (Section 4) and the Financial Policy Remit.

The Approach Should be Predictable, Transparent and Practical for Implementation

The desirability of predictability is one of the principles to which the Minister must also have regard when making the levy regulations. It is also in line with IADI core principles[15] about building a

13 Federal Deposit Insurance Corporation. Options for Addressing Moral Hazard. Retrieved 29 March, 2023, from fdic.gov/deposit/deposits/international/guidance/
14 International Association of Deposit Insurers. (2009). Funding of Deposit Insurance Systems—Guidance paper.
15 International Association of Deposit Insurers. (2014). IADI Core Principles for Effective Deposit Insurance Systems.

transparent levy framework. This principle also indicates that ease of implementation and understanding of the selected levy approach should be taken into consideration.

Principles	Flat rate	Risk-base: credit ratings	Risk-based: composite risk indicators
Reflect the likelihood of a compensation event occurs to an entity	Cannot reflect the different likelihood of a compensation event occurs to different deposit takers, since the levy would not be proportionate to risk.	Measure the risk of entities depending on the credit ratings published by credit rating agencies. May have limitations in accurately reflecting the likelihood of a payout event.	Measure the risk of entities according to selected matrices. May have limitations in accurately and comprehensively reflecting the likelihood of a payout event.
Impact on soundness of entities	Levies are relatively small compared to profits for most firms.	Levies might be large compared to the profits of some small banks and NBDTs. NBDTs that are currently exempted from getting credit ratings may be more adversely affected.	Levies might be large compared to the profits of some small banks and NBDTs, but the impact would be less significant than using credit ratings.
Predictability, transparency, and practicality to implement	Straightforward, fully predictable and transparent, easiest to implement	Credit ratings are not updated at regular intervals and may therefore provide inconsistent measures of risk to the DCS fund. Not all deposit takers have credit ratings. Independency and objective of credit rating have been challenged in recent years. Credit ratings are seldom used for DCS levy purpose in other jurisdictions.	Complex to design and to implement compared to other approaches. Selection of matrices, the boundaries of each matrix, and weightings for measures are published and transparent to industry. Risk indicators are collected by existing Reserve Bank surveys therefore no additional reporting burdens.

6

Consultation question

Which levy method of calculating or ascertaining the amount of levies do you think is most fit-for-purpose?

Annex A: Flat Rate Levy Calculation

The following is an example of how a flat rate levy would be calculated.

$$\text{Contribution rate} = \frac{\text{Target fund size}}{\text{Time to target}}$$

To create an estimate for the contribution rate we have made the following assumptions:

Table A1: assumptions

Parameter	Value	Details
Target fund size	0.8% of protected deposits	By the end of the time to build the target fund size, the fund will be equivalent to 0.8% of total protected deposits amount held by all deposit takers under the DCS. The size 0.8% of protected deposits is consistent with the median number as suggested in the SoFA consultation paper.
Time to reach target	15 years	Internationally, an *ex-ante* deposit insurance fund is generally to be (or has been built) over 5 to 20 years. A 15-year-period is consistent with the median number as suggested in the SoFA consultation paper.
Growth in protected deposits	6% p.a.	Estimated using average (before Covid) annual growth rate of total deposits. Note that the historical trend may not reflect the growth rates after the introduction of DCS.
Expected return of DCS fund investment	3% p.a.	It is common practice internationally for deposit compensation funds to be invested in high quality liquid assets. As an illustrative example, approximate recent average returns for 10 year government bonds is used here.
Income tax rate	28% p.a.	No income tax exemption granted to the DCS fund. Therefore, DCS fund must pay income tax for levies received and any return on investment net of expenses.
Expected operational expenditure	1% p.a.	The Reserve Bank is still working on estimating the operational costs of the DCS. For illustration, it is assumed to be 1% of the target fund size per year. The cost includes ongoing operational costs and potential payout costs.

The constant levy rate (under a flat rate model) is calculated as follows:

$$l = Constant\ levy\ rate\ as\ \%\ of\ total\ deposit\ per\ year$$

$$T = time\ to\ build\ the\ target\ fund\ size$$

$$t = year\ since\ the\ start\ of\ levy\ collection$$

$$F_T = required\ fund\ size\ in\ year\ T$$

$B_0 = total\ covered\ deposits\ in\ year\ 0$

$r = return\ on\ DCS\ fund\ investment$

$g = growth\ rate\ of\ protected\ deposits$

$e = operational\ cost\ of\ the\ DCS$

$x = income\ tax\ rate$

$B_t = B_{t-1}(1+g)$ *Growth in deposit base*

Required fund size (assuming 0.8% of protected deposits) by the end of 15 years

$$F_{10} = B_o(1+g)^{15} \times 0.8\%$$

Total fund size built by collecting and investing annual levies:

$$F_T = B_0 l(1-x)\big(1+(r-e)(1-x)\big)^T + B_1 l(1-x)\big(1+(r-e)(1-x)\big)^{T-1} + B_2 l(1-x)\big(1+(r-e)(1-x)\big)^{T-2} + \cdots + B_{T-1} l(1-x)(1+(r-e)(1-x))$$

Equating the two equations above to solve for 'l' – fixed levy rate

$$l = \frac{B_o\ (1+g)^{15} \times 0.8\%}{B_0\ (1-x)(1+(r-e)(1-x))^T + B_1(1-x)\big(1+(r-e)(1-x)\big)^{T-1} + \cdots + B_{T-1}(1-x)\ (1+(r-e)(1-x))}$$

Using these assumptions our modelling suggests the levy rate will be approximately 0.1% of protected deposits.

Annex B: Comparison of Risk Indicators for Banks and NBDTs

Indicators used for NBDTs are taken from the NBDT Survey. The measures are selected to be aligned with those measures for banks as far as possible. However, due to the design of the current NBDT Survey, there are still differences between those two sets of indicators.

Indicator	Bank Indicator	NBDT Indicator	Disparity	Effect
Capital Adequacy	Total capital ratio	Net regulatory capital/total risk weighted assets	Slightly differences between the main components of capital for banks and NBDTs	/
Asset Quality	NPL ratio	NPL ratio	/	/
Liquidity	One week mismatch ratio	Simple coverage ratio	Difference in definitions	Not directly comparable. However, the boundary of the Simple coverage ratio for NBDTs is designed to be comparable with that measure for banks to best reflect how a NBDT performs.
	One month mismatch ratio			
	Core funding ratio			
Business model	Return (before tax)16 on assets	Return (before tax) on assets	RoA published on the Bank Financial Strength Dashboard is calculated as return after tax. To make it more comparable to NBDT survey data, we use "return before tax" for banks as well	/
	Top 5 credit exposures	Top 6 credit exposures	Difference in definition, top 5 vs 6 exposures	The lower boundary for NBDTs is adjusted to 25% (rather than 20%) to acknowledge the difference between the available data

16 Bank Financial Strength Dashboard publishes the RoA by calculating return after tax. To make the measure more comparable to NBDTs, we use "return before tax" for banks as well. This is the only measure with the definitions different from what are used on the Bank Dashboard.

Annex C: Calculation of Sliding Scale Risk Indicators

Under the sliding scale approach, for indicators with a negative sign (e.g. capital ratio, where a higher value indicates a lower risk), the following equation is applied to determine the individual risk scores (IRS) of each risk indicator for a deposit taker. A value above (or equal to) the maximum boundary a_j receive an IRS of 0, while a value below (or equal to) the minimum boundary b_j for a given risk indicator will receive an IRS of 100.

Negative signed risk indicators:

$$\begin{cases} 0 & \text{if } A_j \geq a_j \\ 100 & \text{if } A_j \leq b_j \\ \dfrac{a_j - A_j}{a_j - b_j} \times 100 & \text{if } b_j < A_j < a_j \\ \text{where } j = 1 \ldots n & \end{cases}$$

For indicators with a positive sign (e.g. non-performing loan ratio, where a higher value indicates higher risk), the following equation is applied. Values above (or equal to) the maximum boundary a_j will receive an IRS of 100, while values below (or equal to) the minimum boundary b_j will receive an IRS of 0.

Positively signed risk indicators:

$$\begin{cases} 100 & \text{if } A_j \geq a_j \\ 0 & \text{if } A_j \leq b_j \\ \dfrac{A_j - b_j}{a_j - b_j} \times 100 & \text{if } b_j < A_j < a_j \end{cases}$$