



**RESERVE
BANK**

O F N E W Z E A L A N D
T E P Ū T E A M A T U A

Review of mortgage bond collateral standards

PART B

Residential Mortgage Obligations

November 2017

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PART B: Residential Mortgage Obligations (RMO)

1. Part A of this consultation document outlined some ideal characteristics for the mortgage bond collateral the Reserve Bank uses in its liquidity operations, including the quality of the underlying assets, liquidity, scalability and various non-distortionary features. The Reserve Bank noted that most of the existing mortgage bond instruments in the domestic markets would not feature these characteristics to any significant degree. And it proposed the introduction of a new collateral standard that would eventually replace internal RMBS.
2. Part B of this consultation document thus presents a prototypical model for a less risky, potentially more liquid and scalable mortgage bond standard. It is organised in two sections: Section 3 provides an introduction to the RMO mortgage bond collateral standard. Section 4 describes an incentive scheme to phase the standard into markets.

Section 3 – The RMO Standard

3. The Reserve Bank believes that a viable mortgage bond framework should set the highest possible reference standard for the domestic markets in terms of the quality of the underlying portfolios, the safety and liquidity of the financial instruments issued, and their reliability and versatility across most domestic liquidity and funding operations. Furthermore, the standard should broadly align with international guidelines such as the 'simple-transparent-comparable (STC) guidelines by the International Organisation of Securities Commissions (IOSCO) and the Basel Committee on Banking Supervision (BIS) or the Australian Prudential Regulation Authority (APRA) securitisation standards.
4. The Reserve Bank considers that a good reference standard is one that combines the strength of existing mortgage bond products (such as Covered Bonds or RMBS), while avoiding the weaknesses inherent in these instruments as much as possible. The Bank has evaluated a number of options to improve mortgage bond standards. One promising option is to enhance the structure, quality and documentation of mortgage bonds through the introduction of a tradable domestic 'covered mortgage bond' standard in 'Residential Mortgage Obligations (RMO)'.
 5. In relation to Covered Bonds or RMBS, RMO would be standardised, offer consistent loan portfolio quality combined with high loss resilience, allow for economies of scale and help to reduce liquidity premiums. A comparison of key features is given in figure 1:

Figure 1: Key features of Residential Mortgage Obligations (RMO)

| KEY FEATURES | COVERED BONDS | RMO | RMBS |
|--------------------|-------------------|-----------------|----------------------|
| FRAMEWORK | Statutory | Standardised | Bespoke |
| LOAN QUALITY | LVR <= 80% | LVR <= WA 60%** | LVR <= 100% |
| LOSS RESILIENCE | Issuer dependent* | >= 10% Capital | 5% to 8%**** Capital |
| ECONOMIES OF SCALE | Medium | High*** | Low |
| LIQUIDITY VALUE | Medium | High | Low |

- * Over-Collateralisation of mortgage bond notional with loan notional can differ among covered bond issuers
 ** Weighted average LVR, where the LVR of each mortgage loan contributes to a notional weighted portfolio LVR
 *** RMO can include a replenishment of loan portfolios subject to replenishment criteria
 **** Range of market observations, individual RMBS can show higher or lower enhancements

Source: RBNZ

6. The remainder of this paper is as follows. Section 3 introduces the RMO Standard and the principles behind it. Section 3.1 provides an overview of the framework. Section 3.2 describes the governing principles. Section 3.3 lays out the operational requirements. Section 3.4 defines how RMO become repo-eligible. Section 3.5 summarises the costs and benefits of RMO as a new collateral class and potential asset class in the markets.

3.1 Overview

7. At this point in time, the RMO standard should be thought of as a prototype for industry feedback. To make such a standard successful, the Reserve Bank believes there needs to be an alignment between regulators, investors and issuers regarding the characteristics of the mortgage bonds created in respect of their safety, risk versus return, and cost.

Safety

- 7.1. **Simple, transparent and comparable features (STC)** – improving mortgage bond quality up to a point where liquidity providers or investors would have very high confidence in the standard performing in a range of adverse environments.
- 7.2. **High quality liquidity substitutes (HQLS)** – designing a capital structure which is safe enough to lift part of senior securities to the level of ‘liquidity substitutes’ that could be used in repurchase agreements (repo) or be traded.
- 7.3. **Availability and scalability** – striking a balance between the loan quality required under the standard and, the volume of loans available held by a majority of mortgage lenders in New Zealand that would be compliant.
- 7.4. **Limited distortions** – incentivising lenders to self-insure against liquidity squeezes, limiting externalities arising from higher secured funding volumes (encumbrance), and reducing contingency and systemic risks.

Risk versus return

- 7.5. **Safe asset returns** – providing market participants with a relative value to other safe assets (such as cash or Treasury bills) and, an additional option to limit concentration risks of holding unsecured funds with a limited number of issuers.
- 7.6. **Term investment returns** – providing potential investors with a relative value to existing term investment opportunities (such as Government Bonds, corporate bonds and Covered Bonds), to diversify Strategic Asset Allocations.
- 7.7. **Bankruptcy remoteness** – providing the Reserve Bank and investors with high confidence that the value stored in the collateral is sufficiently protected in the event of the Originator’s default.

Costs

- 7.8. **Impact on profitability** – providing Originators and issuers with reasonable incentives to engage in RMO, giving certainty about the scenario for replacing I-RMBS for RMO, and, to allow adequate time for pricing conditions in debt capital markets to adjust.

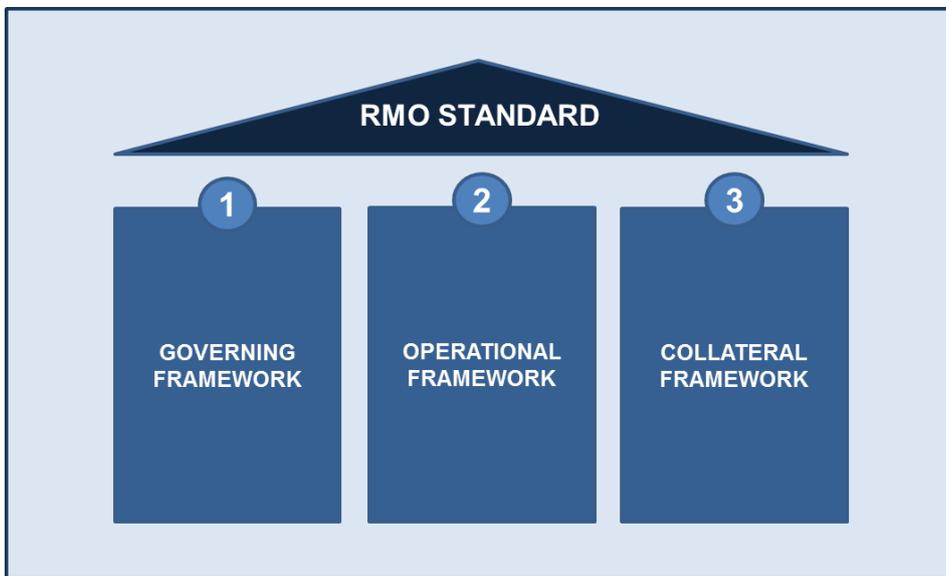
7.9. **Regulatory liquidity value** – providing banks with certainty around the treatment of RMOs as liquidity assets in Reserve Bank domestic market operations.

7.10. **Regulatory capital value** – providing banks with relative value from capital relief depending on the repayment speed and the performance of the loan pools.

Question B1: Do you agree that safety, risk versus return, and cost are the most important considerations when appraising a mortgage bond standard? Are there other aspects of mortgage bonds that should also be considered?

8. To deliver on the above requirements, the Reserve Bank believes the RMO framework should rest on three main building blocks, comprising a governing, an operational and a collateral framework (figure 2).

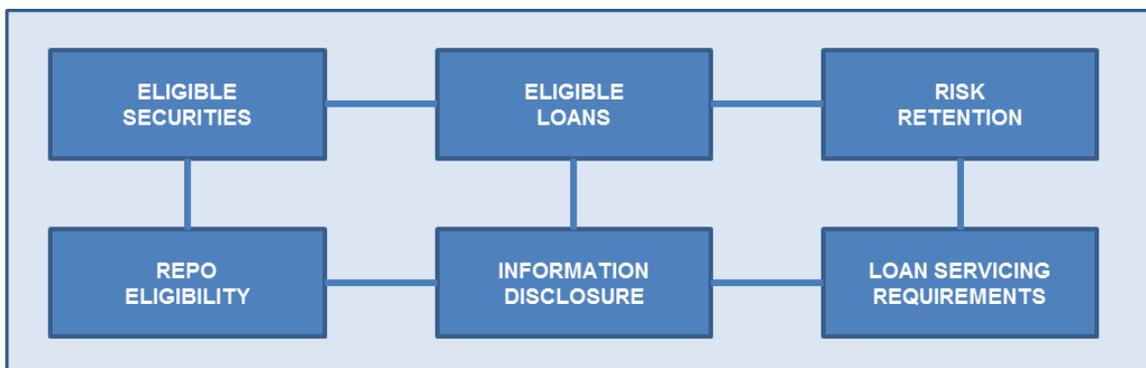
Figure 2: The RMO Standard



Source: RBNZ

8.1. **The governing framework** can be summarised in the form of a rule book. These rules would document how to structure RMO securities (figure 3).

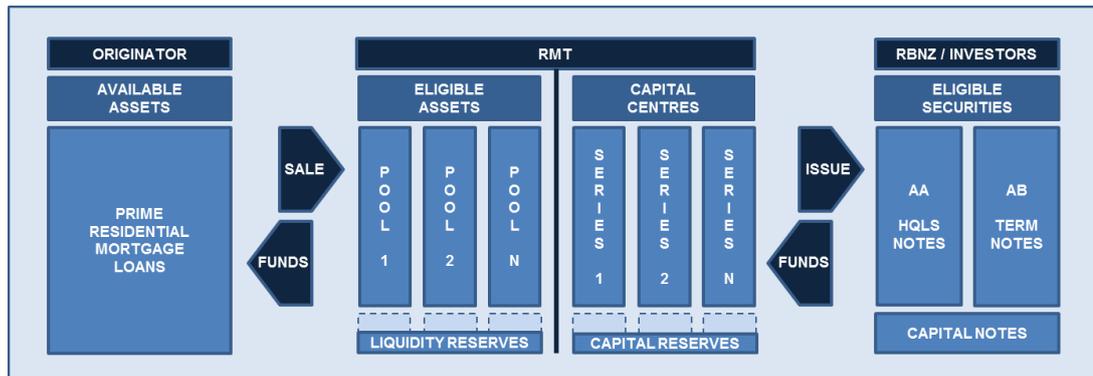
Figure 3: The RMO rule book



Source: RBNZ

8.2. **The operational framework** would be a special purpose trust that would function as a bankruptcy-remote funding platform (figure 4). This 'Residential Mortgage Trust (RMT)' would fund the purchase of eligible mortgage loans by issuing eligible securities. Eligible securities would be limited to two types of 'notes'. The first type would be a 'high quality liquidity substitute' (HQLS), the second would be a 'term note'. These notes would be protected from credit losses through capital notes. The entitlements for each series would be separated into loan pools and capital centres.

Figure 4: The RMT operational framework



Source: RBNZ

8.3. **The collateral framework** would regulate the process for RMOs to become repo-eligible in domestic market operations of the Reserve Bank (figure 5). This process would ensure a disclosure of relevant information about the mortgages included in a loan pool and would include a thorough assessment of the features of any new RMO series or replenished note offerings. As is the case for Kauri Bonds, the Reserve Bank would support markets with an 'in-principle' eligibility confirmation.

Figure 5: The RMO collateral framework



Source: RBNZ

9. The Reserve Bank believes that based on the RMO Standard, the domestic mortgage bond market could be developed to provide issuers with an additional funding channel and investors with an additional market. Furthermore, the high quality of the collateral would enable RMOs to be used in the Reserve Bank's lender of last resort function and provide the Reserve Bank with a versatile instrument to assist with the implementation of monetary policy. While a standard naturally limits the variety of options available to issuers and investors, the RMO concept would still offer limited flexibility to accommodate the differences in business models, funding profiles or strategic asset allocations of investors.

3.2 Governing framework

10. The Reserve Bank believes a standardised mortgage bond framework would suit the New Zealand context, where capital markets are less developed than in some countries. The RMO Rule Book would cover six areas to ensure simple and safe implementation. The following sub-sections explain these requirements.

3.2.1 Eligible securities

11. This section describes the nature of the securities that would be eligible under the standard including the payment priorities (waterfalls) that ensure the RMO capital structure remains simple, transparent and comparable. We start by outlining the main two motivations for holding mortgage bonds: liquidity and return. We then describe the features that would be required in the context of a safe mortgage bond standard.

Common requirements

12. There are broadly two types of financial market investors who each seek different features in the financial assets they choose to store their value in:

12.1. Those investors who need or wish to store value for a limited period of time (for instance up to one or two years) and would not want to commit these funds for long terms. These investors usually require a moderate return on their investment with a high degree of risk protection; temporary underperformance of the investment cannot be overcome through time.

12.2. Other investors who do not need their funds for a long period of time or who have future commitments that are due over the coming decades (such as pension funds). These investors usually require a higher return on their investment and a lower degree of risk protection; temporary underperformance of the investment can be managed through time.

13. The Reserve Bank believes the attractiveness of mortgage bonds could be increased if issuers were able to supply mortgage bonds that addressed these features:

13.1. For those market participants more interested in the liquidity features of a mortgage bond it would be important that the market viewed these instruments as safe and vanilla. This would require the bonds to be highly standardised, so that no complex analysis was necessary and a standard credit limit was available. If these securities could not be traded, their features would still make them safe to pledge as collateral against liquidity.

13.2. For those market participants more interested in the return features of a mortgage bond, it would be important for a bond to be safe enough to warrant a long term investment. While their appetite to analyse the specific features of a given bond offering could be somewhat higher, these investors would be mindful that issuance volumes would need to be large enough to allow them to invest repeatedly. Such economies of scale would require these bonds to be standardised.

Structural implications

14. Based on these requirements, the Reserve Bank would ideally want a mortgage bond structure to be perceived as a 'simple, transparent and comparable' security. The Reserve Bank believes that to accommodate a high quality liquidity asset or at least a high quality liquidity 'substitute' (HQLS), some changes to the traditional way mortgage bonds are structured would be beneficial.
15. Traditional mortgage bonds are built on an estimate of the expected losses that derive from stress testing a pool of mortgage loans that adhere to certain criteria. To shield investors in the securities from such losses, a 'credit enhancement' is provided. This credit enhancement can have different forms - for example a guarantee given by a third party to pay for the losses - or, it can be capital held in a legally separated entity like a trust.
16. Although most residential mortgages could be regarded as safe assets, there are some challenges, making this approach less likely to be suitable for a broader range of investors:
 - 16.1. One of the challenges is quantifying the credit risk of the mortgage pool over the life of the mortgage bonds. This is especially true for longer-dated mortgage bonds, where the uncertainty around mortgage holders' ability to repay is higher.
 - 16.2. Another challenge would be estimating the prepayment rate of mortgage loans in the mortgage pool. Households as mortgage borrowers can change their periodic repayment amounts, and can potentially make lump sum prepayments up to the total outstanding mortgage balance.
 - 16.3. As economic and financial conditions change, it could become necessary for investors to change their asset holdings, eventually selling some of the mortgage bonds to hold cash or to invest in another asset class. But to do so, would require some mortgage bonds to be turned into cash through sales or repo transactions.
17. These examples highlight that there would always remain some uncertainty around the assumptions taken to estimate the expected losses and price these bonds. Also if the capital and legal standards employed for a mortgage bond differ each time, this would almost certainly be reflected in a lower product demand from some investors. The Reserve Bank believes there could be alternatives to the traditional approach that would have the benefit of requiring less detailed knowledge and make it easier to price mortgage bonds.
 - 17.1. The presence of a standardised, high quality mortgage bond standard could facilitate the pricing of the bonds. Even if only a fraction of mortgage bonds was issued using this high standard, other mortgage bonds could benefit from becoming easier to evaluate and priced in relation to that benchmark. This phenomenon can be observed in the market for government bonds where the bonds of lower rated countries can be priced in reference to the bonds of higher rated countries.

- 17.2. Apart from a standard, the presence of a 'safe asset' could help to address uncertainties over expected losses. For instance, a central question to determine what market participants regard as 'safe' could be what fractional amount they would be willing to lend on a short-term basis against a prime residential mortgage without knowing any details about the borrower or the property included as security.
- 17.3. Investors could then base their investment decisions on more widely available information: the current state of the economy, the general state of the labour market and the prospective state of the residential housing market. They could apply a wider security margin that would determine the size of a safe tranche (similar to the process of estimating the safe residual value for a car when providing a car loan).
18. Such a simple and safe asset could then be reflected in a 'liquidity note' which would represent the amount of capital in the structure that was considered as safe under almost any circumstances.
19. More technically speaking a liquidity note would be 'upgraded' if it fulfilled a number of conditions to make it financially safe:
- 19.1. A reasonably high annual repayment rate allows the notional amount of a liquidity note outstanding to be paid back from collected principal over a short time period.
- 19.2. A high ranking in the priority of principal payments received would reduce the time required for full repayment.
- 19.3. A credit enhancement in the form of issued capital notes would provide a buffer against potential losses.
20. Based on these considerations the Reserve Bank proposes to split the traditional bulk senior tranche into a liquidity note (representing a potentially liquid asset or HQLS with a shorter maturity) and into a term note (representing an asset with a longer maturity that would be paid back after the liquidity note had expired).

Question B2: Do you agree with the considerations underlying the merits of a high quality liquidity substitute? Are there other considerations that should be included?

Default capital structure

21. Figure 6 describes how such a capital structure and respective support mechanisms could look in more detail. The capital structure would be reasonably simple and comprised of a senior tranche with notes of different maturities and a capital tranche. The key features of the notes and the payment priorities (waterfalls) would be highly standardised. The waterfalls to allocate cash flows or losses would be highly transparent, and the notes would be comparable with respect to their capital support and liquidity value (in the case they had to be used as collateral with the Reserve Bank).

Figure 6: RMO capital structure and credit support mechanisms

| Class of Notes | Size | | Legal Maturity | Expected Life | Call Rights | Income Payable | Principal Payable |
|----------------|---|----------|----------------|-----------------|-------------------------|-----------------------|-------------------|
| | Minimum | Maximum | | | | | |
| Liquidity (AA) | 20/100 * | 45/100 * | <= 30y | 1y <= AA <= 2 y | not callable | fixed | soft bullet |
| Term (AB) | 45/100 * | 70/100 * | <= 30y | AB <= 10 y | callable if pool <= 10% | fixed or floating *** | pass through |
| Capital (C) | 10/100 | 35/100 | Last Payment | C >= 10 y | not callable ** | floating | pass through |
| Waterfall | separated for interest, principal, charge off, termination; strictly sequential; pro-rata trigger 20% | | | | | | |

* AA and AB Notes proportional risk sharing; ** conditional on termination; *** fixed-rate share conditional on moderate balance principle

| Class of Notes | Risk Category | Capital Support | Seller Risk Retention | Liquidity Reserve | Liquidity Ranking | Haircut on Repo | Liquidity Value |
|----------------|--|-----------------|-----------------------|-------------------|-------------------|-----------------|-----------------|
| Liquidity (AA) | Senior Secured | >= 10% | - | 1% | Primary | 3% to 7% | <= 97% |
| Term (AB) | Senior Secured | >= 10% | - | | Primary | 5% to 9% | <= 95% |
| Capital (C) | Capital Secured | 0% | 100% * | - | - | - | 0% |
| Loss Buffer | excess cash trapped up to 1% of single series invested amount; further excess cash trapped as joint series trust reserve | | | | | | |

Source: RBNZ

Senior secured liquidity notes (RMO AA-Notes)

22. The most senior secured note (AA-Note) would be a high quality liquidity substitute (HQLS) which would benefit from a superior credit quality and liquidity status, provided by
 - 22.1. a minimum of 10% in capital support;
 - 22.2. a first ranking position in the principal waterfall, and;
 - 22.3. a high liquidity value if pledged with the Reserve Bank or alternative providers.
23. The loss buffer provided would be high enough that the likelihood of any credit losses would be largely negligible. For example, given the shorter term of AA-Notes, realised losses in a mortgage pool would have to exceed 10%, say, in just two years for AA-Noteholders in order to lose their capital. As a further protection mechanism, the stated value of the notes that would participate in any charge-offs would be written down immediately dependent on the principal collected in each period. That would ensure the principal collected would be protected from any future losses (if any).
24. All principal would be held in the trust until the date the AA-Notes became due for repayment. To ensure a RMT cannot default even in a severe downturn scenario where not enough principle could be collected, AA-Notes would be issued with a 'soft-bullet' repayment profile. This guarantees AA-Noteholders would receive the maximum amount of principal at any of the following payment dates. AA-Notes would not be callable.
25. The Reserve Bank considers that the size of a liquidity tranche should not exceed 45 percentage points and that it should be supported by sufficient amounts of fixed-rate loans with similar maturities. The Reserve Bank would be interested in a reasonable amount of such lower risk assets to be issued, and would propose a share of not less than 20 percentage points of AA-Notes in the capital structure with a minimum maturity of one calendar year at the time the notes were issued.

Senior secured term notes (RMO AB-Notes)

26. The second senior secured note (AB-Note) would share the same capital support as the AA-Notes. However, its maturity would be significantly longer as it would not receive any principal payments before the AA-Notes were fully redeemed. The duration of the AB-Note would depend on whether an issuer chose to replenish the mortgage pool and re-issue AA-Notes (which could lengthen the AB-note maturity by an additional number of years), or whether the Originator exercised its option to call a transaction at the call date.
27. The duration (or WAL) of the AB-Note would remain sensitive to the prepayment speed of the mortgage pool. If the prepayment speed fell, the duration of the notes could become longer. AB-Notes thus behave like a traditional Covered Bond until they start to amortise and behave like a traditional pass-through senior RMBS thereafter. This provides issuers or investors with longer durations for the funds or the income available from these notes.
28. A 'moderate balance principle' would be applied to avoid larger mismatches that could arise for a trust when the interest or the principal received from the loans would underscore the coupons or principal payable on AB-Notes. The Reserve Bank considers that this could be achieved if the amount of floating rate notes issued by a trust was reasonably consistent with the amount of floating rate loans held. Alternatively the amounts and maturity of fixed-rate notes issued should be reasonably consistent with the amounts of fixed-rate loans in the pool. Remaining mismatch risks would be hedged.
29. The Reserve Bank believes RMO AB-Notes could provide a number of benefits to market participants and to the economy. As opposed to AA-Notes, the investor base would be composed of mainly 'buy and hold' investors. These investors would likely seek a much higher yield than investors in AA-Notes, due to the potential for negative convexity generated by the volatility in the prepayment behaviour of mortgage borrowers.

Secured capital notes (RMO C-Notes)

30. Capital Notes (RMO C-Notes) would be issued and sold by the RMT to the Originator of the mortgage loans. This would ensure that an Originator would hold a relevant interest in the performance of the mortgages and would be incentivised to service these loans well. Otherwise the Originator would face the losses realised up to the notional amount of the capital notes.
31. The capital-notes would be backed by residual floating and fixed rate mortgage loans and pay a floating rate coupon. The notes would not be callable and have a maturity depending on the longest dated legal maturity of any mortgage loan in the pool. Only if an Originator were to exercise the option to call the RMO AB-Notes of a certain series, and would hold the majority of the C-Notes in that series, a winding up became possible.
32. The Reserve Bank believes that the incentives created by these features for RMO C-Notes would be very strong. Furthermore, the issuance of capital shares in the trust through RMO C-Notes ensures a more transparent process and the function of capital notes in the Residential Mortgage Trusts would be similar to common equity. Once issued and paid in, the capital cannot be withdrawn until the transaction is wound-up to ensure it protects senior note holders until their notes mature and are fully paid back.

Re-Issuance of AA-Notes

33. The Reserve Bank is aware that a higher degree of safety is sometimes paired with a higher cost. Some of the costs involved in supporting the RMO Standard beyond being a collateral function would arise from issuing and supporting liquidity AA-Notes on a continuous basis. These costs could potentially be reduced if issuers were allowed to replenish the mortgage pool in order to re-issue AA-Notes and lengthen the life of a mortgage portfolio including the expected life of AB-Notes. This allows a more efficient use of available loans and also reduces encumbrance on an Originator's balance sheet.
34. The Reserve Bank believes that, subject to investor acceptance, it could be possible to re-issue or roll-over AA-Notes once or twice with accompanying mortgage pool replenishment. This implies the volume and timing available for replenishment could potentially be linked with the notional and maturity of AA-Notes. However, to replenish underlying loan pools would require that the risk positions of investors or the Reserve Bank were not worsened, and that the moderate balance principal was still adhered to.

Question B3: Do you agree that the proposed RMO default capital structure could help to address current impediments to develop safer assets and a deeper market?

Payment priorities and waterfalls

35. As part of the capital structure the Reserve Bank would like to reduce uncertainty around the priority of payments and the cash flow allocations to a class of notes. To achieve this, the Reserve Bank would see advantages in breaking payments down into a distinct number of waterfalls, with each waterfall being very simple to understand and calculate. For instance, the waterfalls could better differentiate between:
- 35.1. Sources and allocation of any cash flows for coupon payments;
 - 35.2. Sources and allocation of any cash flows for principal payments;
 - 35.3. Treatment and allocation of charge-offs to each note class;
 - 35.4. Sources and allocation of cash flows at legal final maturity or at call exercise date.
36. To ensure transparency, the allocation of cash flows according to these waterfalls could be organised in a strictly sequential manner which would avoid any uncertainty or optionality with regard to the entitlements among any RMO note classes outstanding.
37. The Reserve Bank proposes four distinct and sequential waterfalls for RMO: The first two waterfalls would reflect conservative and sequential income and principal allocation rules. The second pair of waterfalls would ensure full transparency about charge off processes and about cash flow allocation in the case of a termination. In addition the waterfalls would describe liquidity and capital buffers built into the bond standard which allow comfort regarding the integrity and resilience of cash flows from RMO. These waterfalls are integral to the STC characteristics as illustrated in more detail in Part C.

Question B4: Do market participants agree with the principles used to align the capital note structure and waterfall payment priorities? Are there any further considerations to include?

3.2.2 Eligible loans

38. The credit quality of the mortgage pool is a critical ingredient in the performance and sustainability of the RMO Standard. The Reserve Bank believes that a lack of explicit rules could result in moral hazard, along with the possibility that the required volume of mortgage loans of a sufficiently high quality would not be available when needed. It is also important that mortgage loan pools remain reasonably representative of the quality of the stock of mortgages held by mortgage lenders operating in the domestic markets.

39. There are two main drivers of credit risk within a mortgage pool:

39.1. The first would be the nature of the mortgage loans that are eligible to enter the mortgage pool. These can be grouped into quantitative characteristics (such as portfolio limits) and qualitative characteristics (such as underwriting standards).

39.2. The second would be the oversight and control that is established over the actual composition of the mortgage pool. The portfolio management process would need to allow the Reserve Bank or investors an amount of control over the loan pool.

Portfolio limits

40. An RMO compliant mortgage pool would be defined by quantitative criteria (limit types) that ensure the mortgage pool is well diversified and of a high credit standard (figure 7).

Figure 7: RMO Portfolio Limits

| Limit Type | Pool-Level (weighted average) | Loan-Level (not weighted) |
|------------------------------|--|---------------------------------------|
| Nature of Pool | Discrete or Replenishing | Verified NZ Residential Borrower Unit |
| Loan to Value Ratio | <= 60.0% | <= 80.0% |
| Borrower Concentration Ratio | Top 10 / 50 obligors: <= 5.0% / <= 15.0% Minimum Number of Loans: 500 | <= \$1.0 million |
| Interest Only Loan Ratio | <= 20.0% | - |
| Investment Loan Ratio | <= 20.0% | - |
| Fixed Rate Loan Ratio | >= 45.0% | - |
| Remaining Loan Term | <= 240 Calendar Months | <= 360 Calendar Months |
| Loan Seasoning | >= 720 Calendar Days | >= 90 Calendar Days |

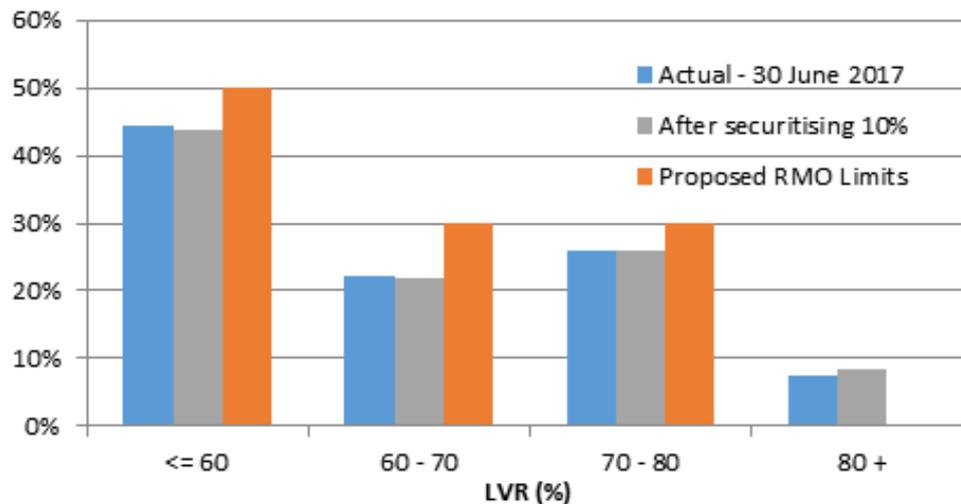
Source: RBNZ

40.1. The nature of the pools should be discrete or, if replenishing, dependent on certain replenishment criteria being fulfilled at the time of a replenishment. The key considerations and conditions around replenishment are expanded further below.

40.2. All borrower units (that is the household and third parties contributing to the repayment of a loan) should be permanent New Zealand residents. The work out process for non-residents is more time consuming and costly than for residents.

40.3. The mortgage pool should have a notional-weighted average LVR of 60.0% or lower. Furthermore, any individual loan in the pool would have a LVR of 80.0% or lower. The Reserve Bank believes the imposition of a LVR distribution would help to reduce any 'barbelling' of loans within the mortgage pool, and ensure lenders' risk profiles would not be significantly altered through a securitisation. This means that for the initial mortgage pool loan notional, 50% would have a LVR less than or equal to 60%, less than 30% would have a LVR between 60% and 70%, and less than 30% would have a LVR between 70% and 80%. These requirements reflect that LVRs are a key determinant of whether write-offs result in a realised loss. The proposed limits also leave some flexibility in relation to current LVR levels (figure 8).

Figure 8: Distribution of current LVRs and proposed RMO LVR limits



Source: RBNZ

40.4. To ensure a high rating stability for the senior tranches the mortgage pool should be granular and provide sufficient protection against borrower concentration risk. The Reserve Bank believes the largest ten and the largest fifty borrower units in the pool should not contribute more than 5% and 15% respectively of initial mortgage pool loan notional. A pool should consist of 500 or more loans. Any single loan amounts should be limited to NZD 1 million.

40.5. Interest-only mortgage loans should not contribute more than 20% of initial mortgage pool notional. Interest-only loans defer principal payments which increases credit risk through higher future scheduled payments or roll-over risks.

40.6. Investment loans should not contribute more than 20% of initial mortgage pool notional. The Reserve Bank believes that investment loans are likely to perform worse than owner-occupier loans in a downturn.

40.7. Fixed-rate loans should not contribute less than 45% to the initial mortgage pool. As fixed rate loans provide for the bulk of fixed AA-note coupons. AA-notional and fixed-rate loan notional amounts should be largely consistent.

40.8. The 'remaining loan term' of the initial mortgage pool notional would not exceed a weighted average of 240 calendar months and 360 calendar months for any single loan. This ensures the pool can support AB-Notes with sufficiently long loan terms.

40.9. The 'loan seasoning' of the initial mortgage pool notional should not be less than a notional-weighted average of 720 calendar days and 90 calendar days for any single loan in the pool. In general, more seasoned loan portfolios have lower default probabilities, while ensuring individual loans have been paid for at least 90 days.

Question B5: Do you agree the above portfolio limits strike a balance between being conservative enough while providing enough depth in eligible mortgage loans? Are there any technical hurdles to access data or select loans based on the criteria above the Reserve Bank should be aware of? Should any additional limits be incorporated to reduce risks?

Underwriting standards

41. Apart from the portfolio limits, the Reserve Bank would want to be satisfied that the originated loans were based on consistent underwriting standards (figure 9).

Figure 9: RMO underwriting standards

| | |
|------------------------|--|
| Homogeneity | • First ranking and performing residential mortgages originated in New Zealand |
| Consistency | • Originated by a single seller based on consistent and robust lending standards |
| Performance | • Full loan level information and performance history provided |
| Documentation | • Documented and sustainable employment or self-employment income |
| Jurisdiction | • All loans documented in accordance with NZ law and conditions of registration |
| Transferability | • Transferability of financial claims and security titles under New Zealand law |
| Experience | • Issuer /originator / warehouse with >= 5 years experience in mortgage lending |
| Currency | • All claims receivable or payable denominated in New Zealand Dollar |

Source: RBNZ

42. The nature of the loans should generally meet the following attributes:

42.1. The loans should be reasonably homogeneous in being first ranking and performing residential mortgages originated in New Zealand.

42.2. The loans should be originated by a single Originator based on consistent and robust lending standards (or if from different Originators be originated at similar standards).

42.3. A performance history should be available for a reference portfolio of loans with reasonably similar features to allow a judgement on their regular performance.

42.4. All loans should be documented based on sustainable income from employment or self-employment and on sufficient income buffers available after loan payments.

- 42.5. All loan contracts should be documented in accordance with New Zealand law and any relevant conditions of registration applying to the mortgage lender.
- 42.6. All loan contracts should allow for the transferability of any entitlements or financial claims as well as the security titles in the mortgages under New Zealand law.
- 42.7. Any issuer, loan Originator or warehousing entity involved should have demonstrable commercial experience in mortgage lending of more than 5 years.
- 42.8. All financial claims arising from any mortgage contracts utilised as collateral under the RMO Standard must be denominated in New Zealand Dollars.

Question B6: Do you agree with the proposed underwriting standards? Are the guidelines flexible enough to support a safe and robust collateral standard?

Mortgage loan portfolio management

43. As highlighted above, the way in which a mortgage loan portfolio is managed can influence the performance of the securities with respect to the losses eventually realised and the stability of the market value of the securities. There are different portfolio management principles observable in the context of mortgage bond cover pools: the revolving pool, the discrete pool and the replenishing pool. Their suitability for a mortgage bond standard depends on whether they allow control of the pool composition.

Revolving pool

- 43.1. A revolving pool is a mortgage loan portfolio that ensures each series of securities issued is supported by an identical mortgage loan quality. This feature may make revolving pools an attractive option to an issuer as it becomes possible to issue repeatedly against revolving mortgage loan portfolios. However, revolving pools tend to expose investors and markets to a number of risks which, on balance, could outweigh the lower costs involved for an issuer in managing a portfolio continuously. For example, if a mortgage pool was discrete (static), the Reserve Bank or an investor could analyse, value and price the risks at the time of the mortgage bond offer, based on the actual loan quality in the pool. If a mortgage pool is revolving (dynamic), it can be difficult and more costly to assess, control and monitor the continuous changes.
- 43.2. If an Originator of the mortgage loans manages changes to the portfolio composition at their own discretion, there is a risk that the portfolio quality might not be maintained over time as the Originator effectively remains in control of the loan selection. While a security trustee can monitor formal compliance of any portfolio management actions, its ability to quantify if the new composition is of a similar nature and quality compared to an existing one may be limited in practice. To manage these incentives, revolving pools would thus require that there is recourse and claw-back options to an Originator (as is the case under most covered bond acts and transactions). However, even these rules would not shield the Reserve Bank from the risk of a negative selection bias for loans in the pool around the time of the default of an Originator.

Discrete pool

43.3. A discrete pool is a mortgage loan portfolio that is fixed at the time of issuing a series of securities collateralised from it meaning that the loan pool cannot be substituted or added to during the life of the transaction. A discrete pool could be analysed thoroughly ex-ante, be firm in the number and quality of the loans it contains at the pool cut-off date and thus helps to reduce risks from managing or servicing a pool. The risk from a discrete pool is also in general lower as principal would be passed-through continuously to reduce the outstanding notional of the mortgage bonds.

43.4. It follows that discrete pools work better for smaller lenders or new market entrants as investors will be better placed to ascertain what is in the pool and have to rely less on the actual market standing or expertise of an Originator. This may be a key reason why discrete pools are the most common form of portfolio management in traditional mortgage backed securities transactions. However, in the context of the RMO Standard the continuous redemptions would trigger a more continuous re-issuance activity. While this could accommodate the development of a frequently serviced and liquid primary market, it could create problems in finding enough loan portfolios that are compliant with the RMO Standard on a continuous basis.

Replenishing pool

43.5. A replenishing pool is a mortgage loan portfolio that ensures each bond series is supported by an equivalent portfolio quality. At the date a series is issued a portfolio would be fixed (as under the discrete pool principle). However, as mortgage loan portfolios can amortise relatively quickly, the portfolio could be replenished (or "topped up") with new eligible mortgage loans from time to time. These purchases could then be funded through the issuance of a new note series. However, to avoid negative incentives from an Originator adding lesser quality mortgages to an existing mortgage pool, the process of replenishment needs to be kept under tighter control.

43.6. One approach could be to require that the analysis and purchase decision was not made by an Originator but by qualified independent staff who could ensure the additional loans are better or equal to those they are replacing. In the context of the proposed RMO Standard and the RMT platform, an RMT could accept new mortgage loans to be added to the existing portfolio of mortgage loans subject to conditions. A RMT could then issue the required amount to fund the new purchase. Such a process would allow lenders as Originators and the RMT as a facilitator of the funding to add loans to the existing portfolio whenever a suitable bundle of new mortgage loans had been ramped up that would fully comply with some stricter replenishment criteria.

Replenishment criteria

44. If the RMO Standard would permit offering securities backed by replenishing loan portfolios this could alter the risk and lengthen the maturity of the available securities. In order to make this option feasible for investors, the Reserve Bank, or other liquidity providers, a number of conditions would need to be met:

- 44.1. The loan quality placed into the mortgage pool at the replenishment date would have to be equivalent or better than the existing loan quality in the pool at the replenishment date. This would require principles that could be monitored and confirmation through the Reserve Bank that no changes to repo-eligibility apply.
- 44.2. To allow investors or liquidity providers to calculate the duration risk correctly, issuers would have to inform market participants before issuing a new RMO-series if and how often they want to re-issue RMO AA-Notes against respective replenishments of the underlying mortgage loan portfolio.
- 44.3. If the performance of a loan portfolio was not satisfactory, the replenishment of a portfolio and re-issuance of liquidity notes could become difficult to execute. An Originator would then have to retain re-issued AA-Notes.
- 44.4. If the option could not be exercised and AB-Notes accelerated in their repayment investors would still receive the higher coupons based on the expected duration at the time of issuance. This would have to come at the sole cost to an Originator.
- 44.5. To avoid moral hazard from holding replenishing loan portfolios as collateral with the Reserve Bank alone, a replenishment would require that the majority of notes had been placed, so their features had been accepted by market participants in general.
45. The Reserve Bank believes that, for the New Zealand market, discrete pools could be considered a simpler, more transparent and comparable version than their replenishing counterparts. To lift replenishing structures to an STC level would require a higher level of independence, qualification and control to be effective from a risk governance perspective.

Question B7: Do you agree that discrete pools are the most transparent way to guarantee transparency or enforce control over a mortgage pool when necessary? Would you consider replenishing pools as an alternative conditional on the necessary amount of risk governance and control could be undertaken? Would you regard the cost involved in establishing replenishment criteria and monitoring processes as feasible in that context?

3.2.3 Risk retention

46. The Reserve Bank would wish to avoid creating unintended incentives for an Originator to utilise RMO to 'originate and distribute' mortgage loans without holding a relevant share in the loans' default risk and a fair economic interest in the loans' and notes' performances.
47. The Reserve Bank believes that a full C-Note retention provides the strongest signal to liquidity providers or term investors about an Originator's incentives. The Reserve Bank further believes that there should be consistency between the amounts of risk retained and the credit support provided to senior investors.
48. To ensure sound incentives from risk retention:
- 48.1. The level of risk retention should be consistent with the minimum credit enhancement provided for senior note holders. Accordingly, Originators should hold 100% of the Capital-Notes outstanding.

48.2. The amount of Capital-Notes retained and held by the Originator should remain unchanged until such time that the portfolio has amortised down to the 'pro-rata' threshold.

49. The Reserve Bank is aware the current regulatory capital rules imply an Originator would have no immediate capital relief from issuing RMO but also no capital surcharge as the capital requirements would still be calculated based on the consolidated loan portfolio held. The amount of risk capital would reduce subsequently with the pool factor. This implies an Originator could achieve limited capital relief as the portfolio amortises.

Question B8: Do you agree with the incentive scheme outlined above? Should there be any compulsory risk retention in senior notes? Is there a need to support regulatory capital relief beyond the capital relief mechanism described above?

3.2.4 Repo-eligibility

50. As part of the RMO framework the Reserve Bank considers that RMO senior securities should in general be repo-eligible in domestic market operations. The Reserve Bank believes such repo eligibility would help foster confidence in the senior notes and anchor expectations around valuations and liquidity access in a downturn. The process and terms and conditions to make RMO repo-eligible are summarised in section 4.

51. The Reserve Bank further believes that the marketability of senior securities in normal times is a key requirement to reduce risks for the Reserve Bank or alternative liquidity providers from holding these securities outright or as collateral to eventually trade them in secondary markets. It would foster market discipline, and reduce distortions if transactions were structured in a way that was acceptable to both the Reserve Bank and the market.

52. To increase transparency over the liquidity value and set positive incentives to market RMO collateral instruments, the Reserve Bank considers to rank RMO along three liquidity categories and potentially apply different liquidity premiums for RMO reflecting their risks:

52.1. Tradable RMO – that have been successfully placed in domestic or offshore markets and where only a minor fraction of the issued notes is retained by an Originator.

52.2. Marketable RMO – that have passed a 'market-test', in principle demonstrating their acceptability to domestic market participants other than the Originator.

52.3. Retained RMO – that have been issued but not placed in markets and are retained as collateral for repo operations with the Reserve Bank or an alternative provider.

53. To foster market discipline, RMTs should also comply with the following conditions when offering and issuing RMO:

53.1. Any market placement would be based on an arms-length process including a public offering, disclosure and auction process. As such, private placements between Originators would not qualify as market placements.

53.2. To ensure senior note holders would have their credit protection effective at the time of issuance, a RMT would issue AA- or AB-Notes only after all C-Notes are sold, any capital owed is fully paid into a trust account and retention requirements are met.

53.3.RMTs would execute any swap agreements based on ISDA standards and at market rates to mitigate interest rate risk and to simplify the process of novating interest rate swaps in the case of the default of an Originator who was also the swap provider.

Question B9: Do you agree that repo eligibility would support RMO to become in principle accepted financial instruments in domestic markets? What would markets be able to accommodate as an initial market placement?

3.2.5 Information disclosure

54. As part of introducing RMO as a new collateral asset class the Reserve Bank would like to improve the availability of information about the mortgage pools and ensure all interested parties had access to this information.

Initial disclosure requirements

55. Achieving this information disclosure would require all Originators of mortgage loans to comply with a minimum disclosure requirement and the RMT to provide regular information as follows either directly or through the data repository:

55.1.An Originator would be obliged to provide all information required to allow an independent assessment of the mortgage pool quality and of all contractual, legal, economic, and financial aspects for a series of RMO offered.

55.2.The information provided would have to meet high standards and be identical for all parties accepting RMO as collateral or purchasing such notes in an auction process. An Originator would have to certify through the information memorandum that there is no information withheld.

55.3.If an interested party asked for information additional to the information memorandum and an Originator agrees to provide information in due course, the information would be made available to all parties and would be made publicly available on the RMT's or the data repositories website.

55.4.If information becomes available to the Originator or a contractor of the Originator in relation to loans securitised through a RMT before the issuance date, the Originator would disclose such information in the same manner.

Ongoing disclosure requirements

56. Subsequent to the issuance date, the Originator would provide information to allow an adequate performance assessment of a transaction:

56.1.RMTs would supply information given to it by the Originator or any provider of credit enhancement or credit administration services on a regular basis publicly on their website as well as to the data repository.

56.2.RMTs would provide a monthly investor report listing information that allows an assessment related to all asset criteria, delinquencies, defaults, allocated losses, recovery amounts and realised losses.

Central data repository

57. Any information would be supplied to the Reserve Bank or any other investor through a central data repository assuring the quality and correctness of the information:

57.1. The data repository would be charged with the collection, harmonisation, cleansing and validation of loan level data as well as other RMO related information.

57.2. The data repository would be an independent entity not controlled by an Originator or an affiliated party nor would it be controlled by the RMT as issuer.

57.3. RMTs would supply any data to its creditors or any party with an eligible interest in such data only after consideration of New Zealand privacy laws.

58. The Reserve Bank recognises that central data repositories are successfully applied in a number of countries (such as in the Euro area, the US or the UK). However, a data repository creates initial set up and ongoing operating costs. The Reserve Bank believes these costs could be shared among market participants interested in issuing RMO or using them as collateral. Such cost sharing could take place in the following ways:

58.1. Market participants agree on an operating model and service level agreement including a key of how the costs for usage of the data repository would be shared.

58.2. The Reserve Bank would take responsibility itself, or tender the services required out to a qualified third party and charge issuers a respective ongoing fee for these services.

Question B10: Do you agree the information disclosure as outlined would be sufficiently comprehensive? Are there other disclosure requirements that should be included? Would an external data repository as outlined above provide an adequate solution for NZ markets?

3.2.6 Loan servicing requirements

59. Loan administration and servicing arrangements can be decisive for the ongoing performance of a mortgage loan portfolio and therefore support the value of collateral. Furthermore, the Reserve Bank would wish to ensure any moral hazard that could arise if an Originator had lost the full amount of the Capital-Notes is mitigated as much as possible. Ultimately the Reserve Bank would like to reduce operational risks arising if an Originator and Servicer were to default, requiring conditions of a transfer of loan portfolios to another Servicer would be transparent from the start.

60. Loan administration and servicing arrangements would therefore have to comply with the following standards:

60.1. A RMT could carry out loan administration and servicing itself through qualified staff or enter into a respective service level agreement with a third party. This party would be the Originator or another party reasonably qualified to supply and deliver the services at a high quality standard.

- 60.2. The broad scope of activities under the service level agreement would be to administer the loan portfolio on behalf of the RMT, as well as provide services such as processing of claims, credit administration, debt collection and work out services.
- 60.3. Any activity of a Servicer would have to be executed in the best possible interest of the majority of the note holders of a series of RMO. It would need to be undertaken by experienced staff with similar qualifications and abilities that the Originator or Servicer would require for operations in its own name.
- 60.4. A RMT may require an Originator to separate the servicing of loans in the mortgage pool to ensure the servicing was delivered free of any conflict of interest. If an Originator was not able to separate the services internally due to operational or other limitations or considerations, the services may be delivered by a qualified third party.
61. A RMT may require, if conditions were to warrant it, that a Servicer of a mortgage pool be replaced with a qualified Back-up Servicer.
- 61.1. The Reserve Bank or other creditors would have to be confident the conditions triggering the replacement of a Servicer would be unambiguous and explicit enough to allow for fast decision making (usually within a couple of days).
- 61.2. As part of a service level agreement it would be necessary to 'name' a contractual Back-up Servicer. The Back-up Servicer would be either a qualified mortgage lender or a facilitator with demonstrable ability to accomplish all services as necessary.
- 61.3. The Back-up Servicer would have contractual access to operate systems and processes allowing it to undertake required servicing operations. It would have arrangements in place to access qualified personnel at short notice as required.

Question B11: Do you agree the above Servicer requirements strike a balance in protecting creditors' interests and allowing for cost efficiency in the required operations?

3.3 Operating framework

62. The Reserve Bank would want to ensure that the RMT platform used for issuing RMO was based on a robust legal and organisational framework.

Organisational requirements

63. All operations in RMO would comply with the governing framework in section 3.2 and be facilitated through a Residential Mortgage Trust. A RMT would be either a special purpose trust (SPT), a portfolio investment entity (PIE) or a special purpose entity (SPE).
64. RMTs would have to be operated based on the highest standards of corporate and risk governance principles.
- 64.1. Regardless of the type of incorporation, the respective charter and governance structure would have to ensure that a majority of beneficiaries in a trust could exercise control either directly or through their qualified representatives based on unambiguous rulings.

64.2. The decision making processes would be designed to keep an investor, the Reserve Bank or alternative liquidity providers confident that they could execute any rights and access any assets owned through the trust, unaffected by an Originator or third party.

64.3. To achieve that, the majority of voting rights in the RMT would have to be allocated based on the notional outstanding of all notes, regardless of their rank, and allow senior note holders to exercise control subject to conditions.

Separation of loan pools and capital centres

65. A RMT would have to effectively separate all assets owned or liabilities owed from an Originator's direct or indirect legal, economic or financial interests and be a bankruptcy-remote and non-recourse separate legal entity operating on its own accounts.

66. Within the RMT each RMO series would have to be financially and legally separated into a 'capital centre'. A capital centre would define all assets and liabilities as well as liquidity and capital reserves and joint reserve entitlements held for that capital centre's creditors.

67. Assets purchased by a RMT would be effected through a "true sale" of the assets or via an assignment that ensures the legal ownership in the mortgage loans could be transferred and including any titles assigned to it, upon occurrence of certain title perfection events.

68. RMTs would have to ensure that any funds received from the mortgage pool would only be attributed to a RMT trust account for the relevant series and the monies thereof be held in a trust bank account that would be held separated from a bank's regular assets.

Operational requirements

69. RMTs would only be operated for the sole purpose of facilitating an RMO platform:

69.1. Purchasing, offering, issuing or administering such assets and liabilities as defined under the RMO rule book.

69.2. Other operations designed to ensure the fulfilment of any legal or contractual obligations under asset purchase agreements or RMO bond documentations.

69.3. Engaging with any third party contractors to supply services such that the services provided fully adhere to the RMO Standard including ISDA swap agreements.

70. RMTs would establish day to day operations through a limited amount of reasonably experienced personnel (if any), or otherwise, appoint a "Trust Manager" charged with the administration and operations of the trust. The Trust Manager may be the Originator.

71. If a RMT was to issue RMO based on replenishing mortgage pools, a review of the re-eligibility through the Reserve Bank would be compulsory before any replenishment date.

72. RMTs would operate bank accounts including a reserves account with the Reserve Bank and security settlement accounts, controlled by a Trustee or Paying Agent (if required).

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| Question B12: Do you agree these operations could be established at reasonable cost? |
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3.4 Collateral management function

73. This section describes the collateral management functions that would be required to assess whether a security could be registered as eligible collateral and be listed. It is the Reserve Bank's understanding it would apply the catalogue of criteria in the RMO Rule Book in conjunction with the practice guide provided in Part C of this consultation paper.
74. The Reserve Bank is mindful that the skills and systems required to assess structured loan portfolios and support the marketing process of RMO with an in-principle assessment of repo-eligibility are likely to be important factors in supporting market development. The Reserve Bank would want to ensure its processes are effective and that it could handle applications in a timely manner.
75. The process for assessing and listing RMO securities would comprise of five steps:
- 75.1. All data outlined in the information disclosure criteria would be provided by the Originator through the external data repository. The data would only enter the external data repository if it passed relevant and robust data validation checks by it.
- 75.2. To limit uncertainty for the Reserve Bank that could arise from the quality of the data provided and increase efficiency, the Reserve Bank would only access data from the external data repository and would not accept data from any other sources.
- 75.3. The Reserve Bank would assess any new RMO applications against the RMO Rule Book. To ensure the integrity of RMO it would employ qualitative and quantitative analysis including a valuation of the entire capital and waterfall structure offered.
- 75.4. The Reserve Bank would send a confirmation to the applicant as to whether their application for 'in-principle' repo-eligibility of an RMO series was successful or not. If successful, the RMO would be listed on the RBNZ website as eligible collateral.
- 75.5. If an Originator exercises on its replenishment option and wishes to re-issue or re-offer AA-Notes, the Reserve Bank would review the proposed new loan collateral and confirm the RMO series would in-principle remain repo-eligible.

Question B13: Do you consider a more active role for the Reserve Bank as beneficial? Would there be other functions the Reserve Bank would need to consider to support the creation of lower risk assets and a future market development effectively?

3.5 Benefits and costs

76. In earlier sections we emphasised the requirements for sound collateral, including for RMO in particular. The Reserve Bank believes that ultimately RMO would introduce a new asset class of domestic mortgage bonds which would sit 'between Covered Bonds and RMBS'.
77. This implies it would combine certain positive elements found in these structures while avoiding elements that would be less attractive for domestic markets (figure 10):

Figure 10: Value proposition for RMO

| | COVERED BONDS | RMO | RMBS |
|------------------|------------------------|-------------------------|------------------------|
| ISSUER | Lending Institution | RMT (Facilitator) | Single Purpose Vehicle |
| LEGAL FRAMEWORK | Statutory | Standardised | Bespoke |
| ASSET QUALITY | Minimum LVR | Comprehensive | Variable |
| NATURE OF POOL | Revolving | Discrete / Replenishing | Mostly Discrete |
| LOSS BUFFER | Over Collateralisation | Capital | Subordination |
| LIQUIDITY VALUE | Medium | Medium to High | Low |
| REPO ELIGIBILITY | Limited | Regulated | Uncertain |

Source: RBNZ

Benefits

78. There can be benefits from separating assets from a lender's balance sheet if this can be done on a sustainable and safe asset basis and the process does not introduce new credit risks but mainly transforms the liquidity and market risks based on a robust transformation mechanism.
79. The 'dis-aggregation' of loans that is implied by this process can help to reduce systemic risks that can arise from concentration risks in financial markets or from contagion risks not being mitigated through capital. The RMO framework would allow such transfer of liquidity and funding risks to be more flexible among certain actors in domestic markets. This could help to address such risks more effectively through a realignment of positions.
80. The Reserve Bank believes that for a market like New Zealand the benefits of standardisation would outweigh benefits from competing product and market segments. This is largely due to the size of New Zealand's financial market. If the market is small, the benefits from standardisation can be very high when compared to a large market which can accommodate different product standards without losing efficiency.
81. To create the ongoing trust of market participants in a standard requires limiting the variations that are possible and increasing the transparency of what the standard actually stands for. This implies RMO as a reference standard would be more 'descriptive'. As a lender of last resort the Reserve Bank believes its role includes being transparent about what ultimately qualifies as a good quality standard to lend against on behalf of the tax payer and that the Bank will retain full discretion over the terms and conditions thereof.
82. The analysis the Reserve Bank has undertaken so far has brought to light that the lack of safe and more liquid assets is currently a global phenomenon, not just a New Zealand phenomenon. Addressing this issue effectively implies a reallocation of the costs and benefits some market participants enjoy from the current structure. The simple, transparent and comparable RMO bond structure avoids many of the uncertainties that are inherent in Covered Bonds and RMBS, particularly how much capital there really is to protect note holders in the case of an Originator's default.

83. Last but not least, even if the creation of liquidity substitutes reduces risks, the knock-on effects from contagion among market participants in a liquidity crisis can be large if there is not enough certainty about how liquidity can be accessed and how much liquidity there could be.
84. RMOs would be a more conservative and expensive reference standard than some alternatives. However, they would help to provide guidance to market participants in uncertain times, thereby reducing the potential for temporary or permanent losses from a broader revaluation of financial assets held in domestic markets. Ultimately, RMO could help to provide an anchor and back stop the integrity and size of financial balance sheets.

Question B14: Do you agree with the Reserve Bank's view that the potential benefits from RMO could be high? Are there any other benefits not mentioned in here?

Costs

85. The Reserve Bank is mindful that introducing a safer reference collateral standard would not come without costs. While our informal consultations with issuers and investors have helped develop a good understanding of the various cost drivers, which has helped influence the design of the proposed standard, some of the costs will remain.
86. Such costs could include:
- 86.1. Adjustment costs to introduce the new standard into the operations of Originators; some Originators might need to amend systems and processes and might need to reallocate more staff to secured funding operations than in the past.
 - 86.2. Development costs to incorporate the new standard into the operations of investors; some investors will have to review how the new products emerging could be factored into strategic asset allocations or into fund management products.
 - 86.3. Relative value adjustments arising for existing products from the new standard; some issuers or investors might have to analyse if they have to change certain product features or the pricing structure of existing products in response to RMO.
87. While adjustment and development costs are more difficult to estimate, the Reserve Bank has tried to assess the direct cost impact from RMO as a funding instrument. For example, if a mortgage lender was to fund a certain percentage of total assets through RMO senior notes instead of funding them unsecured that would make it possible to assess the cost differences across a number of scenarios.
88. One scenario could be that the relative prices of funding instruments change because the emergence of a 'secured asset' could impact the risk premiums for 'unsecured assets'. Another scenario could be that the safe asset would initially require a relatively high liquidity risk premium until investors are familiar with it, and such premiums can reduce.
89. Figure 11 illustrates such potential future dynamics in a stylised manner. In the scenarios shown RMO issuance would replace up to 15% of funds assuming a moderate repricing in wholesale funding instruments which could result in a slight increase in the cost of funds.

Figure 11: Stylised funding cost assessment

| FUNDING INSTRUMENT | NOTIONAL | | | COSTS | | |
|----------------------------------|------------|------------|------------|--------------|--------------|--------------|
| | CURRENT | SCENARIO 1 | SCENARIO 2 | CURRENT | SCENARIO 1 | SCENARIO 2 |
| UNSECURED FUNDS (MIN 80%) | | | | | | |
| RETAIL DEPOSITS | 50 | 50 | 50 | 2.00% | 2.00% | 2.00% |
| WHOLESALE DEPOSITS | 20 | 15 | 10 | 1.75% | 2.00% | 2.00% |
| UNSECURED BONDS | 25 | 20 | 20 | 1.25% | 1.30% | 1.75% |
| SECURED FUNDS (MAX 20%) | | | | | | |
| COVERED BONDS | 5 | 5 | 5 | 1.00% | 1.00% | 1.00% |
| RMO AA-NOTES | 0 | 5 | 5 | 0.00% | 0.75% | 0.75% |
| RMO AB-NOTES | 0 | 5 | 10 | 0.00% | 1.75% | 1.25% |
| TOTAL | 100 | 100 | 100 | 1.71% | 1.74% | 1.76% |

Source: RBNZ (stylised costs are expressed as margins over OIS)

90. While some of the cost differences could be expected to remain moderate, the changes in the relative value and risk premiums can have an effect on the ability of lenders to utilise existing funding channels in the same way they had done in the past. The transition to a consistent debt capital market pricing structure including new financial instruments could thus require more time and a careful treatment, based on transparent incentive schemes.

Question B15: Do you agree with the cost components and scenarios above? Are there other costs or risks the Reserve Bank should be aware of in this context?

Section 4 – Phasing in RMO collateral

91. This section explains how RMO could be phased in as a new collateral standard for domestic market issuance, investment or repo activities. Section 4.1 outlines some general requirements in making RMO repo-eligible; Section 4.2 describes the proposed phase-out process for I-RMBS; Section 4.3 lays out a potential incentive scheme and options for eligible counterparties when structuring RMO collateral.

92. Implementing the RMO Standard should best be thought of as a long-term investment into an additional funding and investment infrastructure. The introduction of new financial instruments into the domestic market is likely to have an influence on the relative prices and attractiveness of existing instruments. However, as RMO (initially) would primarily serve as a reference collateral standard, the Bank considers the impact to be moderate.

93. Nevertheless, there are a number of factors to consider:

93.1. The Reserve Bank places an imperative on improving its contingent risk position by replacing I-RMBS with RMO; this may require a transition period where not all RMO created already can become placed into the markets.

93.2. I-RMBS are an important source of liquid assets for banks, with many banks using I-RMBS to satisfy their liquidity regulatory obligations (BS13/BS13A); this implies that the transition needs to consider the impact on financial and regulatory liquidity risks.

93.3. The introduction of RMO would require the establishment of new processes and standards including a new legal documentation standard for issuers, investors and the Reserve Bank; it is worth taking the time to ensure this is done properly.

94. The Reserve Bank believes that an implementation strategy for RMO needs to include:
- 94.1. An evaluation of the process to introduce RMO into the collateral framework.
 - 94.2. A transition period that can accommodate a successful replacement of I-RMBS.
 - 94.3..An incentive scheme and options for the introduction of RMO into the markets.

4.1 General requirements

95. This section summarises the general requirements an eligible party would have to fulfil, the facilities initially available and the principle terms and conditions applicable.

Eligible parties

96. The process for registering as a counterparty for operations in RMO would be identical to any other domestic market operations and is detailed on the Reserve Bank's website. This process involves both parties signing a Global Master Repurchase Agreement (GMRA), which allows (reverse) repurchase transactions of any repo-eligible security. Eligible parties can be lenders and other market participants that would fulfil respective conditions.
97. These conditions are designed to make monetary policy operations as effective as possible. This implies an eligible party would have to fulfil a number of technical conditions. It would ideally represent a substantial share as a regular participant in domestic market operations. And there should be an expectation that dealing with an eligible party would allow the Reserve Bank an effective and instant transmission of liquidity to a very broad range of other financial market participants, corporations, households or public agents.

Eligible facilities

98. The Reserve Bank currently accepts a range of securities as collateral for transactions involving repurchase agreements ('repo-eligible'). The Reserve Bank enters into these transactions either through operations offered as part of its management of liquidity in open market operations (OMO) or through an authorised counterparty utilising the Overnight Reverse Repurchase Facility (ORRF). As the names of these facilities suggest, the transactions in them are usually designed to be overnight or short-term.
99. There are additional discretionary facilities available if monetary conditions required lending operations over a longer term or for extraordinary reasons such as force majeure. If transactions are for a longer term, the risk of credit losses or the liquidity risks from holding such collateral can increase, demanding a different treatment in pricing conditions.

Haircuts

100. The Reserve Bank applies a haircut on the value of the securities presented to it as collateral. This haircut allows the Bank to ensure that if a counterparty fails to deliver funds to the Bank at repo maturity, the Bank can enter the market and sell the collateral to recover its funds (if required below par).

101. These haircuts mainly reflect the credit risk that arises for the Reserve Bank from holding securities beyond repo maturity or from being invested outright in them. The extent of the haircut is meant to reduce the risk of loss for the Reserve Bank to close to zero. That means the Reserve Bank would expect to eventually recover the full transactional amount.
102. However, a haircut does not prevent the Reserve Bank from facing temporary losses from charge offs from holding certain types of securities that can only be recovered through time. It does also not protect the Bank from financial losses that could arise from a revaluation of the trading value of such collateral assets if they had to be held on balance.

Pricing

103. The Reserve Bank holds the view that its operations in managing liquidity on a day to day basis as well as its activities as a lender of last resort should be based on a pricing regime which reduces the financial benefits that can arise from being an eligible party. Moreover, the prices should be set in a way that eligible parties remain incentivised to transact in markets rather than with the Reserve Bank as a first choice of action.
104. The pricing conditions faced by eligible parties should therefore reflect the nature of the facilities and potential maximum maturity of the lending, and should differentiate for the credit risk and liquidity risk involved from holding these collateral assets.

4.2 Phasing out Internal RMBS

105. The Reserve Bank believes I-RMBS should cease to play a prominent role as collateral in its operations. As eligible counterparties use I-RMBS for regulatory liquidity purposes, the introduction of RMO would need to be complemented by rules phasing-out I-RMBS.

Transition period

106. The Reserve Bank considers it is feasible to phase-out I-RMBS within 12 months, and this would create a significant improvement in the Reserve Bank's contingent balance sheet risk. A 12-month period would be long enough for issuers, investors and the Reserve Bank to establish new processes and procedures and build their capability. The transition period would start on the 1 July 2018 and finish on the 30 June 2019.

Eligibility of I-RMBS

107. I-RMBS will maintain their current repo-eligible status and haircut treatment for this 12-month period. This means I-RMBS will be treated under the existing framework as single-name non-traded securities and will be assigned a minimum haircut of 19%. From the start of the transition period respective Category 3 administrative fees would apply.
108. There would be no option to pledge further I-RMBS before, during or after the transition period. The maximum notional to be repo-eligible from I-RMBS collateral will be capped at the notional that was repo-eligible on 30-Sep-2017. At 30 June 2019, I-RMBS will cease to be a repo-eligible security in Reserve Bank operations.

Question B16: Do you agree that a period of 12 months would be sufficient to restructure existing legal documentations for non-tradable I-RMBS?

4.3 Incentive scheme for RMO collateral

109. The Reserve Bank believes that less-marketable securities impose a larger contingent balance sheet cost. A more marketable security:
- 109.1. Allows a continuous process of price discovery and increases the ability of a counterparty to source liquidity from the market, rather than from the Reserve Bank.
 - 109.2. Reduces exit risks for the Reserve Bank if the security was taken onto the Reserve Bank's balance sheet in the event of a counterparty's default, as it could be sold on.
 - 109.3. Allows the Reserve Bank to employ these securities across other monetary policy operations as might be required in a more prolonged downturn or financial crisis.
110. However, while the Reserve Bank regards the replacement of I-RMBS with RMO and the mitigation of market distortions arising as of today as imperative, the intention would not be to impose a certain supply of RMO to be placed with third parties in the market. Eligible parties remain in principle flexible to the extent they wish to employ RMO.

Pricing regime

111. The Reserve Bank currently believes that implementing a pricing regime which would factor in credit risks, liquidity risks and a fee would help to neutralise any competitive advantage that could arise from counterparties transacting with the Reserve Bank rather than with another counterparty in the market and incentivise trading in lower risk assets.
112. The Reserve Bank would in general treat RMO within the current Reserve Bank pricing regime which allows the Bank to differentiate between credit risk and liquidity risk related haircuts and surcharges. This implies RMO would face haircuts reflecting their lower credit risks and liquidity surcharges depending on assessments of their market liquidity.
113. To mitigate the financial benefits that can arise from holding retained liquidity assets, the administrative burden involved in the ongoing collateral management and monitoring for RMO and potential cost for a data repository, the Bank is considering implementing a fee schedule as part of the overall pricing regime. Figure 12 summarises a potential incentive scheme that could be applied for RMO including some transitional exemptions.

Figure 12: Pricing regime for RMO

| CATEGORY | MIN. HAIRCUT * | | | ADMINISTRATIVE FEE ** | |
|---|-----------------|-------------|----------|-----------------------|-------------------|
| | Up to 1y | 1y up to 5y | 5 y plus | Base Fee | Liquidity Premium |
| 1 RMO-SERIES (HIGH LIQUIDITY) | | | | | |
| >= 80% auction based market placement | | | | | |
| listed & quoted in market systems | 3 % | 5 % | 7 % | Flat | Low |
| regular secondary market activity | | | | | |
| 2 RMO-SERIES (LIMITED LIQUIDITY) | | | | | |
| >= 10% auction based market placement | | | | | |
| listed & quoted in market systems | 5 % | 7 % | 9 % | Flat | Medium |
| infrequent secondary market activity | | | | | |
| 3 RMO-SERIES (LOW LIQUIDITY) | | | | | |
| < 10% market placement or retained | | | | | |
| not listed & quoted in market systems | 19 % (10 %) *** | | | Flat | High |
| limited secondary market activity | | | | | |

* Haircuts reflect the credit risk related discount factor on the notional value of a security presented

** Base Fees cover administrative and data repository costs; liquidity premiums could become part in a future pricing regime

*** Maximum haircuts during transition would be 10%, thereafter a haircut of 19% would be applied only on the retained fraction

114. The haircuts applied to RMO AA and AB securities would reflect the overall risk assessment by the Reserve Bank with respect to the standardised features of these securities. The Reserve Bank would further conduct an in principle assessment of the liquidity of the securities offered. Depending on the liquidity of a certain RMO-Series and maturities being offered, differentiated haircuts and administrative fees would apply.

114.1. RMO Series with a high in principle liquidity assessment would reflect the lower credit risk and liquidity risk involved in them when compared to Covered Bonds or other RMBS.

114.2. RMO Series with a limited in principle liquidity assessment would be ranked in line with covered bonds. If a counterparty demonstrates it increases the floating share of RMO placed in markets in a particular RMO series by not less than 10% points per year, the respective RMO-Series would be treated as Category 1 RMO.

114.3. RMO Series with a low in principle liquidity assessment would be ranked equivalent with I-RMBS today, reflecting the uncertainty about their acceptability to other market participants. For a transition period of 12 months from replacing the respective I-RMBS Series, Category 3 RMO benefit from a 10% haircut.

115. The administrative fees applied would reflect two components:

115.1. An administrative base fee would be collected which would be based off the notional value of RMO collateral outstanding as registered collateral. This fee would enable the Reserve Bank to provide markets sustainably with an option to pledge RMO as collateral and recover potential future costs from providing a data repository.

115.2. Depending on the liquidity category of an RMO series an additional liquidity risk premium could be applied. This liquidity risk premium could be reflective of the difference in cost an eligible party would likely face when auctioning RMO securities in the domestic markets instead of retaining them on balance sheet. So it would neutralise a potential cost advantage.

Other requirements

116. The Reserve Bank considers the following differences would apply to RMO collateral:

116.1. Haircuts for RMO AA- and AB-Notes would be based off the weighted average life of the notes. The weighted average life is a more appropriate measure of the duration risk, and the Reserve Bank will calculate this at its sole discretion.

116.2. The Reserve Bank would assess the repo-eligibility of RMO securities independently. This means there would be no formal requirement for a credit rating from an external credit rating agency for RMO notes to be approved as repo-eligible.

116.3. The Reserve Bank may require issuance of capital notes in RMO to be greater than 10% of aggregate invested amounts, dependent on the composition of the mortgage pools, the mortgage underwriting quality and the economic environment.

116.4. Following the end of the transition period, mortgage bond types other than NZD denominated RMO or covered bonds would cease to be eligible collateral in Reserve Bank domestic market operations.

116.5. The Reserve Bank would provide market participants with a model legal documentation for RMO securities. This documentation would be developed based on the RMO Standard and would be compulsory to achieve eligibility status.

Question B17: Do you agree with the proposed incentive scheme? Are the incentives sufficient to encourage market development and to reduce distortions?

List of Questions

| Section | | Question |
|---------|-----|--|
| 3.1 | B1 | Do you agree that safety, risk versus return, and cost are the most important considerations when appraising a mortgage bond standard? Are there other aspects to consider? |
| 3.2 | B2 | Do you agree with the considerations underlying the merits of a high quality liquidity substitute? Are there other considerations that should be included? |
| | B3 | Do you agree that the proposed RMO default capital structure could help to address current impediments to develop safer assets and a deeper market? |
| | B4 | Do you agree with the principles used to align the capital note structure and waterfall payment priorities? Are there any further considerations to include? |
| | B5 | Do you agree the above portfolio limits strike a balance between being conservative enough while providing enough depth in eligible mortgage loans? Are there any technical hurdles to access data or select loans based on the criteria above the Reserve Bank should be aware of? Should any additional limits be incorporated? |
| | B6 | Do you agree with the proposed underwriting standards? Are the guidelines flexible enough to support a safe and robust collateral standard? |
| | B7 | Do you agree that discrete pools are the most transparent way to guarantee transparency or enforce control over a mortgage pool when necessary? Would you consider replenishing pools as an alternative conditional on the necessary amount of risk governance and control could be undertaken? Would you regard the cost involved in establishing replenishment criteria as feasible in that context? |
| | B8 | Do you agree with the incentive scheme outlined above? Should there be any compulsory risk retention in senior notes? Is there a need to support regulatory capital relief beyond the capital relief mechanism described above? |
| | B9 | Do you agree that repo eligibility would support RMO to become more widely accepted financial instruments in domestic markets? What would markets be able to accommodate as an initial market placement? |
| | B10 | Do you agree the information disclosure as outlined would be sufficiently comprehensive? Are there other disclosure requirements that should be included? Would an external data repository as outlined provide an adequate solution for NZ markets? |
| | B11 | Do you agree the above Servicer requirements strike a balance in protecting creditors' interests and allowing for cost efficiency in the required operations? |
| | B12 | Do you agree these operations could be established at reasonable cost? |
| 3.3 | B13 | Do you consider a more active role of the Reserve Bank as beneficial? Would there be other functions the Reserve Bank would need to consider to support the creation of lower risk assets and a future market development effectively? |
| | B14 | Do you agree with the Reserve Bank's view that the potential benefits from RMO could be high? Are there benefits not mentioned in here? |
| 4.1 | B15 | Do you agree with the cost components and scenarios above? Are there other costs or risks the Reserve Bank should be aware of in this context? |
| 4.2 | B16 | Do you agree that a period of 12 months would be sufficient to restructure existing legal documentations for non-tradable I-RMBS? |
| 4.3 | B17 | Do you agree with the proposed incentive scheme? Are the incentives sufficient to encourage market development and to reduce distortions? |