



**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

**Response to submissions received on review  
of bank capital adequacy requirements for  
housing loans (stage one).**

April 2013

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## Introduction and summary

1. On 26 March 2013 the Reserve Bank issued a consultation paper: “Review of bank capital adequacy requirements for housing loans (stage one)”. The consultation paper set out the Reserve Bank’s view that bank losses on high loan-to-value (LVR) loans are more highly correlated than the Basel equation that internal models banks use to calculate their regulatory capital assumes. The paper set out two sets of alternative housing correlation factors that incorporated higher correlations for higher LVR categories.
2. Submissions on the consultation paper closed on 16 April 2013. This paper contains a summary of the main issues raised in submissions and sets out the Reserve Bank’s response.
3. The consultation paper sought views on whether the Basel correlation factor of 15 percent accurately reflects the true correlation for New Zealand housing portfolios. Some submitters were comfortable that the Basel equation housing correlation factor of 15 percent was appropriate. However, in general, most submitters did not argue strongly against our proposition that the Basel housing correlation of 15 percent is not fit for New Zealand conditions, nor against our proposition that there is more systemic risk in high LVR loans. However submitters (mainly internal models banks) did express several concerns with the proposal.
4. After taking into account the submissions received and how the concerns raised could be addressed, the Reserve Bank has decided to implement one of the alternatives set out in the consultation paper. In particular the following new housing correlation factors will apply to internal models banks:

	Current	New
Correlation for LVR under 80%	15%	15%
Correlation for LVR 80-89%	15%	20%
Correlation for LVR 90% and over	15%	21%

5. The new requirements will apply from 30 September 2013 and will be implemented through changes to the Reserve Bank’s Banking Supervision Handbook and the internal models banks’ conditions of registration.
6. Submissions from the banks directly affected by the proposals (internal models banks) included capital impact information. The assessed capital impact of the proposal is close to that anticipated by the Reserve Bank. Further information about the capital impact is contained in the *Regulatory Impact Statement* (published as a separate document).

# The Basel correlation factor

## *Introduction*

7. The consultation paper sought views on whether the Basel correlation factor of 15 percent accurately reflects the true correlation for New Zealand housing portfolios.

## *Submissions received*

8. Some submitters considered that while 15 percent may be appropriate for the overall portfolio, it should be set higher for high LVR loans. Another submitter considered that the correlation was unlikely to be 15 percent across an entire housing portfolio, while another noted that the existing correlation factor of 15 percent does not take into account the underlying risk of the borrower.
9. Some submitters considered that 15 percent was appropriately conservative, although this was in part taking into account other adjustments the Reserve Bank had made to the Basel equation for housing risk. One submitter presented some alternative correlation factors based on New Zealand data that were well below 15 percent although acknowledged the data had limitations (for instance it did not reflect a severe economic downturn).
10. One submitter noted that the Basel correlation of 15 percent was based, in part, on the economic capital of internationally active banks prior to the global financial crisis (GFC); that the reason these banks had insufficient capital was due to their subprime lending; and that this is an issue that is not likely to be relevant for New Zealand banks.
11. One submitter considered that New Zealand bank housing exposures are nationally diverse compared to the exposures of banks in some other countries, and that the housing correlation factor used for New Zealand banks should reflect this diversity.

## *Reserve Bank's response*

12. The Reserve Bank concluded that there was no consensus or compelling argument from submitters that the Basel correlation factor of 15 percent is best fit for New Zealand conditions. The Reserve Bank therefore remains of the view there is a case to alter the correlation factor for housing.
13. The Reserve Bank accepts the appropriate correlation for New Zealand may differ from that which should apply in other countries due to differences in lending standards. However the reason we do not consider the pre-GFC economic capital models of overseas banks are appropriate, as a basis for setting capital requirements in New Zealand, is not solely based on the subprime mortgages that were included in some of these portfolios. We note that pre-GFC, the internal models of some New Zealand banks generated substantially less capital than we consider appropriate notwithstanding the absence of subprime mortgages in these banks' portfolios.

14. The Reserve Bank also accepts that the appropriate correlation for New Zealand may differ from that which should apply in other countries due to different levels of geographic diversification. However, we note that a relatively large portion of housing risk in New Zealand is located in a single city (Auckland).

## **Systemic risk and high loan-to-value loans**

### ***Introduction***

15. The consultation paper sought views on whether there is more systemic risk in higher LVR loans.

### ***Submissions received***

16. Several submitters agreed there is more systemic risk in higher LVR loans. However, some submitters noted that in considering systemic risk the Reserve Bank should also take into account other factors, particularly the debt servicing ratio (DSR).
17. One submitter considered that systemic risk could potentially reduce with high LVR loans, to the extent that such loans are subject to tighter lending criteria.
18. Some submitters noted that other parameters in the Basel equation (e.g. loss given default) can incorporate systemic risk and it would be better for internal models banks to incorporate this risk into their modelling and estimates of such parameters (rather than have the Reserve Bank adjust the Basel equation).
19. One submitter noted that although New Zealand bank data showed higher loss rates on high LVR loans during the recent mild economic downturn, the same effect may not occur in future mild economic downturns to the extent banks tighten their underwriting standards.

### ***Reserve Bank's response***

20. The Reserve Bank concluded that most submitters agree there is more systemic risk in higher LVR loans.
21. The Reserve Bank agrees that DSR is also an appropriate measure of systemic risk. Our modelling suggests that correlation increases with systemic risk as measured by both LVR and DSR. At this stage we do not plan to prescribe different correlations for different DSR categories mainly because there is no consistent measure of DSR across the internal models banks. (The Reserve Bank is working with banks to improve the measurement and consistency of DSR across the industry.)
22. As noted in the consultation paper, the alternative correlation factors the Reserve Bank developed did take into account the most likely distribution of DSR within each LVR category based on data we received from the internal models banks earlier in 2013. This means that if data from a particular LVR category (say 80-89 percent LVR) was

populated with mainly low DSR loans, then the correlation factor would be set lower than it would be if that LVR category was populated with high DSR loans.

23. The Reserve Bank accepts that in theory systemic risk could potentially reduce as LVR increases, to the extent that tighter lending criteria reduce other drivers of systemic risk such as DSR. The Reserve Bank's modelling suggests that losses on loans that are 'medium LVR and very high DSR' are more highly correlated than losses on loans that are 'high LVR and very low DSR'. However, as noted above, we have calibrated the correlation factor taking into account the likely distribution of DSR within each LVR category, and this DSR distribution has not had the effect of reversing the positive relationship between correlation and LVR.
24. We also note that during the first two to three years of Basel II implementation in New Zealand the internal models banks did not generally incorporate DSR into their models. The Reserve Bank required better recognition of DSR within the internal models, and progress has been made by the internal models banks. This means that internal model banks' regulatory capital is generally sensitive to DSR. While this sensitivity to DSR does not feed into correlation, it does mean that borrowers considered lower risk because they have a lower DSR can be assigned a relatively low risk weight compared to other borrowers in the same LVR category.
25. We agree that, in theory, other parameters in the Basel equation can be adjusted to properly capture systemic risk. The Reserve Bank's preference is to maintain the correlation factor within the equation internal models banks use to calculate their capital, and to adjust this factor directly rather than via calibration of other parameters. That said, we accept that the boundaries between the risk that correlation capture, and the risk that loss given default capture, are not necessarily fixed, and we plan to take this into account in stage two of the review.
26. While the Reserve Bank agrees that in theory tighter underwriting standards could result in lower loss rates in the next mild economic downturn, bank capital adequacy requirements are calibrated for severe rather than mild economic downturns. We cannot assume that in the event of a severe economic downturn the housing loans on banks' balance sheets would have generally be issued during a period of tight underwriting standards.

## **Proposed changes to capital adequacy requirements**

### ***Introduction***

27. The Reserve Bank document "Capital Adequacy Framework (Internal Models Based Approach)" (BS2B) sets out how internal models banks are required to calculate their minimum capital adequacy requirements. The consultation paper sought views on

some proposed changes to this document (i.e. views on how to change the housing correlation factor requirement within BS2B).

### ***Submissions received***

28. Some submitters considered that if the Reserve Bank departs from the Basel equation 15 percent correlation factor for high LVR loans then consideration should also be given to whether 15 percent is appropriate for the medium/low LVR loans.
29. One submitter noted there is a need for greater consistency of interpretation and application of the Reserve Bank's definition of LVR.

### ***Reserve Bank's response***

30. While our objective for the review is to ensure that banks' capital requirements for housing loans properly reflect risk, our focus has been on high LVR loans given this is where much of the risk in banks' housing portfolios typically resides. However the Reserve Bank agrees, in theory, there could be a graduated scale of correlations, with the highest correlation assigned to very high LVR loans and the lowest correlation assigned to very low LVR loans if we were confident about how correlation changed across the medium to low LVR categories.
31. Our modelling does not produce results for low LVR loans, but it does imply that the correlation factor increases gradually from about 15 percent for medium LVR loans to over 20 percent for the highest LVR categories. While we have not proposed any change to the correlation for medium LVR loans (which for some we assess to be above 15 percent), we have also not proposed any change to the correlation for low LVR loans (which could be below 15 percent).
32. The Reserve Bank accepts there are issues of consistency of interpretation and application of the Reserve Bank's definition of LVR, and we plan to address these issues in stage two of the housing review.

## **Conservativeness of the Reserve Bank's requirements**

### ***Submissions received***

33. Some submitters considered that the Reserve Bank requirements for housing loan capital are already very conservative and that such conservatism is sufficient to compensate for any shortfall in the housing correlation factor. Some submitters also considered that if correlation was to be increased then other Reserve Bank adjustments for housing risk should be reduced or at least reviewed in stage two of the review (for example the Reserve Bank requirements relating to housing loss given default estimates).

### ***Reserve Bank's response***

34. The new housing correlation factors that the Reserve Bank has set are based on our best estimate of the 'true' correlation for high LVR loans, and the supporting arguments set out in the consultation paper. The Reserve Bank has not added an additional margin of conservatism to the new correlation factors. It does not therefore follow that other Reserve Bank adjustments such as those relating to loss given default estimates should be adjusted downward to compensate for the new correlation factor settings.
35. As noted in the consultation paper, the Reserve Bank had calibrated other parameters of the Basel equation to compensate for the low correlation factor. However, we noted in the consultation paper that we have reservations about the sufficiency of these calibrations. Over time there have been changes in banks' models and estimates, and significantly, since the Reserve Bank implemented Basel II, the global financial crisis has provided lessons that need to be taken account of in our housing capital calibrations.
36. Stage two of the housing review will consider the overall calibration of bank capital requirements for housing loans. It is worth noting that the Reserve Bank does not expect that this further work will result a reduction in capital requirements to offset stage one, nor in any reduction in the overall level of capital requirements for housing loans.

## **Process issues**

### ***Submissions received***

37. Some submitters considered the consultation period of three weeks was too short, partly because other Reserve Bank consultations were taking place at the same time. Some submitters were also concerned about the staged approach to the review of housing and considered it would be more efficient to undertake the review in a single stage.
38. Some banks noted it would be difficult to embed the proposed changes to capital adequacy requirements in a short period of time and requested that sufficient time be allowed for any such changes to be made.

### ***Reserve Bank's response***

39. The Reserve Bank acknowledges all of the issues noted above. In response, the Reserve Bank plans:
  - A longer consultation period for stage two of the housing review.
  - A reasonable implementation timetable, with the changes arising from stage one taking effect from 30 September 2013.
  - An in-principle alignment of stage one and two implementation (i.e. we plan that any changes arising from stage two will also take effect from 30 September 2013).

# Relationship to macro-prudential policy

## ***Submissions received***

40. One submission queried whether the objectives of the review should be met by adjustments to micro-prudential requirements for housing loans (as planned) or through the use of macro-prudential tools.

## ***Reserve Bank's response***

41. In addition to the review of bank capital adequacy requirements for housing loans, the Reserve Bank has also recently consulted on the development of macro-prudential tools. These tools do not replace conventional (micro-prudential) regulation but may be used from time to time to help manage the risks associated with the credit cycle.
42. The Reserve Bank's objective is to review its micro-prudential capital adequacy requirements for housing loans, to ensure these are set appropriately. In this sense this review is independent from macro-prudential policy. That said, in implementing macro-prudential policy, the Reserve Bank will always assess whether the micro-prudential settings are appropriate, so in this sense, it is important to undertake periodic reviews to make sure the baseline policy settings are appropriate.

# Miscellaneous

## Alternatives to adjusting the correlation factor

### ***Submissions received***

43. One submitter suggested alternatives to adjusting the housing correlation factor, which could also allow capital to be more sensitive to LVR risk. For instance, increased (more granular) sensitivity of loss given default requirements to LVR above 80 percent.

### ***Reserve Bank's response***

44. As noted in the consultation paper, the Reserve Bank considers that to address correlation risk it is better to adjust the correlation factor directly rather than through the calibration of other parameters. That said, the Reserve Bank will further consider the suggestion of more granular loss given default risk buckets in stage two of the housing review.

## The relativity between standardised and internal models banks

### ***Submissions received***

45. Some submitters expressed concern that the housing review will cause capital requirements for internal models banks to increase towards those for standardised banks (i.e., that the 'gap' is closing). These submitters considered the gap should be

maintained so that the incentive to invest in risk models, systems and controls is maintained.

46. One submitter considered that the housing related capital requirements for some non-bank deposit takers (NBDTs) are higher than the corresponding requirements for banks that that this difference disadvantages NBDTs.

***Reserve Bank's response***

47. Internal models banks are generally better placed than standardised banks (and NBDTs) to measure risk and accordingly their capital adequacy requirements are more risk sensitive. This is an advantage for internal models banks. A balance still needs to be struck on the degree of capital reduction (below that of standardised bank requirements) to reflect greater risk sensitivity. The Reserve Bank does not accept the proposition that the 'gap' between internal models and standardised banks cannot narrow – the key issue is the adequacy of capital, not the relativities between these two types of banks. Moreover, as banks are required to maintain systems and controls that are adequate for their operations, the Reserve Bank would be concerned if internal models banks reduced investment in risk management and controls simply because the gap in regulatory capital requirements between standardised and internal models banks changed.
48. As part of stage two of the review, the Reserve Bank intends to consider the relativity between standardised and internal models banks.

**Level of home ownership**

***Submissions received***

49. Two submitters expressed concerns about the effect of increasing capital for high LVR loans on the level of home ownership (one submitter was concerned about the effect on first home buyers, while another noted that mortgage-free housing ownership is an important contributor to the adequate living standards among older New Zealanders).
50. One of these submitters did note that while a potential purchaser's access to credit could be affected by increased capital requirements, this may not be a bad thing if over the longer term new house prices begin to gently trend downwards and if purchasers are less likely to take on unsustainable levels of debt.

***Reserve Bank's response***

51. The Reserve Bank's objective for the housing review is to ensure that bank's capital requirements for housing loans properly reflect risk in the sector. This is consistent with The Reserve Bank's statutory objective to promote the maintenance of a sound and effective financial system.
52. As noted in our *Regulatory Impact Statement* we consider that in the short term there could be a small increase in the cost of borrowing as a direct result of the increased capital requirements for housing loans. There could also be fewer high LVR loans written. Over the medium term these effects could in turn reduce demand for housing

and place some downward pressure on house prices. In practice, we expect any direct impact of the increased capital requirements on house prices to be small given the relatively small expected increase in lending costs.

## The Reserve Bank's model

### ***Submissions received***

53. One submitter queried whether the Reserve Bank's model (and proposed new correlation factors) incorporated any distinction between fixed rate and floating rate mortgages.

### ***Reserve Bank's response***

54. The Reserve Bank's model does not take account of potentially different correlation factors for fixed versus floating rate mortgage. The model assumes all mortgages are floating rate and runs economic scenarios over a three year period. As noted in the consultation paper, floating rate mortgages accounted for 60 percent of total mortgage (by value) in 2012, while fixed rates of less than two years accounted for a further 36 percent of the total. So almost all New Zealand mortgages would reset over a three year period. Internationally much longer fixed rate mortgages are more common and we expect such durations would lower correlation risk.
55. We do not consider excluding short-term fixed mortgages from our modelling has a large effect on the modelled correlation. The fact that the model does not include fixed rate mortgages contributed to the Reserve Bank decision to adopt the smaller of the two alternative correlation sets included in the consultation paper.

## Different approach from APRA

### ***Submissions received***

56. One submitter considered there was a lack of evidence in the consultation paper on why the Reserve Bank should take a different approach to the Australia Regulation Authority (APRA) for the housing correlation factor.

### ***Reserve Bank's response***

57. The Reserve Bank's capital adequacy requirements are closely aligned to the international Basel II standards and to APRA's requirements in almost all areas, although we always reserve the right to depart both from the international standards and from APRA's requirements, on the grounds of tailoring to New Zealand conditions. The areas where this has happened largely relate to housing and farm lending risks, given that both sectors represent a significant portion of New Zealand banks' balance sheets. In addition the Reserve Bank has had particular concerns about the housing models of internal models banks and has undertaken a significant amount of analysis in this area that supports our new requirements.