

MEMORANDUM FOR

MFC

COPIED TO

FROM

Macro-financial Policy (Principal author: Chris Bloor)

DATE

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SUBJECT

**EFFECTIVENESS OF A TIGHTER
INVESTOR LVR LIMIT**

FOR YOUR

Discussion

A memo to the 11 February MFC meeting proposed macro-prudential policy options to address financial stability risks stemming from current strength in the Auckland housing market (#6016630). It was subsequently decided that the option of tighter LVR restrictions on property investors warranted further investigation.

This paper discusses this policy option in more detail, specifically the risk of avoidance activity, some design and calibration issues, and the likely impact on house price growth.

While some avoidance channels are likely to be more prevalent for property investors, such as collateral spreading strategies and non-bank borrowing, we do not see a strong case to suggest that overall avoidance will be significantly larger than for owner-occupiers.

Tighter LVR restrictions on investors could be imposed within the existing high-LVR speed limit, or a separate speed limit could be applied to investors. There are differences in the distributional impacts of these options, with the first option leading to a significant tightening in lending standards to owner occupiers if no policy offset was undertaken.

Our favoured policy calibration is a 10 percent speed limit on investor lending of 70 percent or above. Our central estimate is that such a policy would reduce national house price inflation by 1.7 percent over the next year, with the impact about 50 percent larger in Auckland than the rest of the country.

1. Who would be affected by tighter investor LVR restrictions?

Around half of lending to property investors is at LVRs of 70 percent or more, and it will be this group who are directly affected by a tightening of restrictions. We do not have granular data on the regional impact of a restriction, or the type of buyer who would be most affected. However, we do have some circumstantial evidence based on corelogic data and market intelligence.

Corelogic data identifies where a property is purchased by a buyer whose name appears elsewhere on the property register, and categorises buyers based on the number of properties on which they appear on the title. It is not able to identify the purpose of a purchase – for example any given investor purchase could be their own principal dwelling or holiday house. The corelogic data is able to identify whether a mortgage has been lodged on the property.

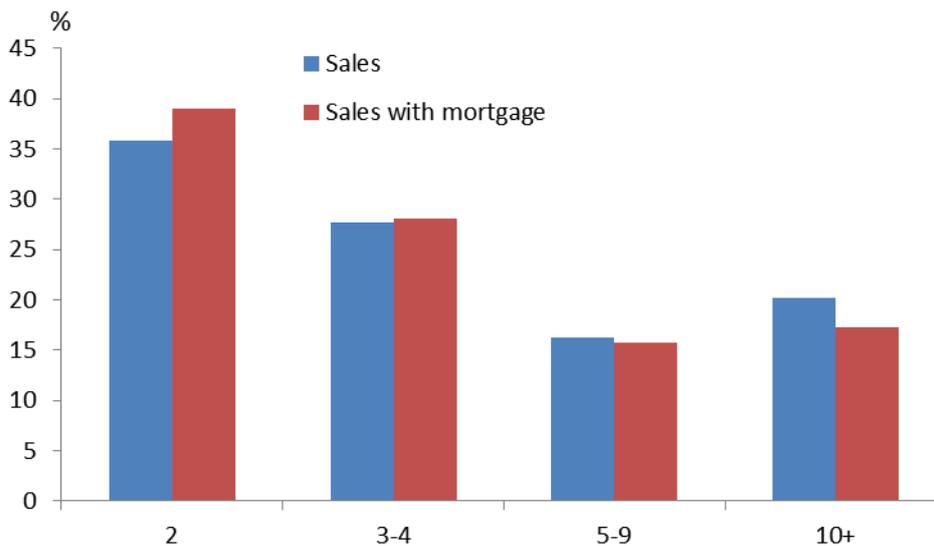
Currently 30 percent of investor purchases are cash purchases, with this share rising for larger investors. We suspect in some cases that these ‘cash purchases’ actually reflect investors

drawing down on existing mortgage facilities without adding the new property into the collateral pool. The cash buyer share is significantly lower in Auckland, at 20 percent.

Currently around 17 percent of mortgaged investor transactions are to larger investors who own 10 or more properties. In general, these larger investors will be commercially managed by banks and subject to tighter lending criteria. Market intelligence suggests that banks generally prefer to keep LVRs at under 70 percent for these investors, although higher LVR loans will be granted in some situations.

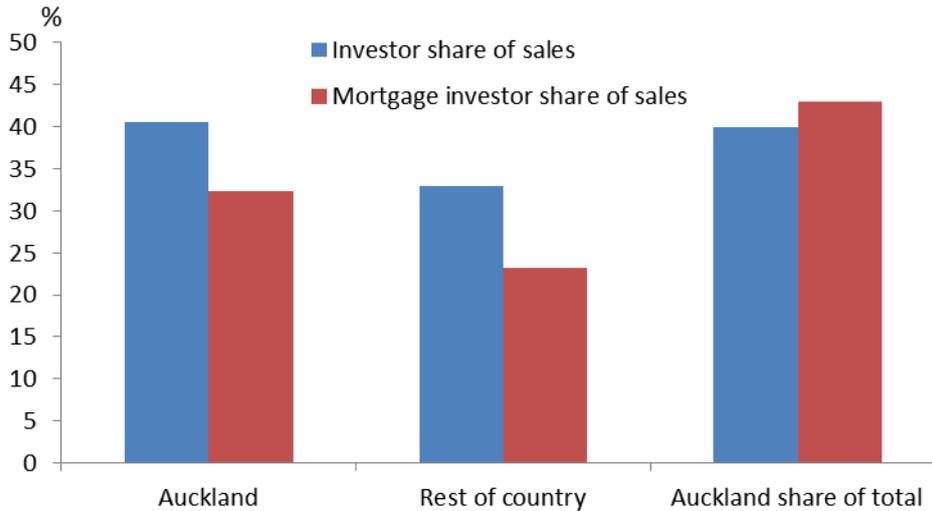
We would therefore expect the share of higher LVR loans to be higher for smaller property investors, where banks are perfectly willing to lend at LVRs of 80 percent, and a significant proportion are leveraging to the maximum extent possible to grow property portfolios.

Figure 1: Composition of investor sales by buyer portfolio size



Overall, the policy is likely to affect more borrowers in Auckland than the rest of the country. Currently 32 percent of all sales in Auckland are to investors with mortgage finance, compared to 23 percent in the rest of the country (figure 2). This reflects both a greater predominance of investors in the Auckland market, and a lower share of cash buyers. We do not have any data on whether LVRs are different by region, and have no particular reason to think that they are higher in Auckland.¹ By number, we expect around 42 percent of affected buyers to be in Auckland, which is higher than Auckland's 35 percent share of total sales and 25 percent share of the housing stock. Given substantially higher house prices in Auckland, it is likely that around 60 percent of the reduction in the value of lending would be in Auckland.

¹ The only snapshot we have of LVRs by region is from the 2014 stress tests, which showed that the existing stock of mortgage loans in Auckland had a similar profile across LVRs as lending in the rest of the country. Ref #6159715 v1.0

Figure 2: Investor proportion of sales

2. Avoidance risks

A key question underlying an assessment of the effectiveness of an investor LVR is the ease at which it would be able to be avoided. The biggest question is whether a significant proportion of investors who show up in the new commitments survey as having LVRs of above 70 percent actually have a much lower LVR at a whole of portfolio level once all possible collateral and lending are taken into account. Any borrowers in this position would be able to easily avoid the restriction by reshuffling debt between existing facilities or by adding additional collateral.

We have investigated the scope for property investors to do this by referencing previous bank consultation materials, previous discussions with banks on how LVR is calculated in the new commitments survey, and discussions with a mortgage broker with a heavy emphasis on property investment. Based on these materials, we believe that relatively few investors who are taking out loan commitments at LVRs of greater than 70 percent have significant scope to avoid the restriction in this way.

There is little scope to avoid LVR restrictions by switching debt between facilities at the same bank

In most cases, banks calculate LVR on a whole of customer basis. That is, LVR will be calculated on the basis of all lending that is secured on residential property divided by the total value of residential property used as collateral. This holds true where there are multiple borrowing and ownership structures where cross guarantees exist. So when an investor loan is written at an LVR of 80 percent, there is usually no scope to rearrange lending across facilities within the same bank in order to reduce the LVR on a new commitment.

However, complex lending arrangements could present issues...

However, there are some differences between banks in how they calculate LVR in more complex lending arrangements. The main difference between banks is how they treat cross guarantees of loans that are secured by commercial property or unsecured business loans, and whether non-residential collateral is included in the denominator.

Withheld: OIA s18(c)(i), refer RBNZ Act s105

[REDACTED]

Overall, however, this avoidance channel is not likely to be overly large. Banks suggest that between 2-5 percent of their housing exposures involve complex structures.

Withheld: OIA s9(2)(d) and OIA s9(2)(k)

[REDACTED]

[REDACTED]

[REDACTED]



Overall, industry feedback suggests that the proportion of active investors who would be able to exploit any of these strategies would be relatively small. It is generally thought that most investors who are financing house purchases with 80 percent LVR loans are leveraging themselves to the maximum possible extent, and would be unlikely to have spare unencumbered equity.

Avoidance risks may not be materially different than for owner occupiers

We estimate that 21 percent of borrowers who would otherwise have borrowed at high LVRs have been able to adjust their behaviour in some way so as to transact at an LVR of below 80 percent. Mostly, this is likely to reflect loans and gifts from family members to help first home buyers into the market. There has also been significant growth in personal lending, which may have funded some house deposits as well.

It is unlikely that intra-family loans would be a significant avoidance opportunity for investors, aside perhaps for the apocryphal first home buying investor. However, investors may well be more financially savvy than typical house purchasers, so may be more likely to find alternative sources of funding. There are two main avenues that property investors could pursue.

Withheld: OIA s9(2)(d) and OIA s9(2)(k)

3. Design and calibration issues

A future paper will discuss the full technical details of how an investor LVR would be implemented. However, there are two details that are worth discussing here. The first is whether there should be separate speed limits for investor and owner occupied lending, or

² There's a slight wrinkle in that BS19 currently prohibits second mortgages if the sum of the two mortgages would be in excess of 80 percent. This could possibly be amended to reflect the lower LVR limit for investors. Ref #6159715 v1.0

whether they should be treated under the same speed limit. The second is the calibration of the investor limit (and any re-calibration of the owner occupied limit).

Two options for setting up investor LVR

There are two ways in which a tighter LVR restriction for investors could be operationalised. Option A is to retain all lending under a single speed limit, but have different thresholds at which the speed limit kicks in. This is how Ireland has handled different LVR thresholds for first home buyers compared to other owner occupiers. The default option would be to retain the current 10 percent speed limit, but there would be scope to relax it somewhat if we wished.

Option B is to completely segregate owner occupied and investor lending, and to apply speed limits separately to each group. With this option, the opportunity exists to apply both different speed limits and different thresholds. Ireland has applied separate speed limits for investor and owner occupied lending.

There are advantages to both approaches. Option A is simpler, and would be easier for compliance as banks will only need to manage one speed limit. It also gives banks more flexibility as to how to allocate lending within the speed limit.

Option B would provide us with more policy flexibility, as we would have two speed limits and two thresholds that we can adjust. It also allows us to more tightly target policy, as the flipside of the extra flexibility for banks under option A is that we have less control over how banks allocate their lending. The complexity of having to meet two speed limits under this option would probably mean that banks would have to maintain a larger buffer to the 10 percent limit.

Table 3 summarises how lending would likely change under each of these options, assuming that a threshold of 70 percent is used for investor lending and the speed limit is maintained at 10 percent. There are a number of key assumptions that have been used to generate this table:

1. 25 percent of investor lending at LVRs of above 70 percent would avoid the restriction, and show up in the sub-70 percent buckets.
2. Investors make proportionate use of the construction and refinancing exemptions, but do not use other exemption categories.
3. Banks tighten up on all lending classes proportionately in order to meet the new limits.
4. Banks target a speed limit of 7 percent under both option A and option B. This matches the average of the past five months.
5. Lower LVR investors enter the market to offset 25 percent of the reduction in higher-LVR investor purchases.

Currently 21 percent of lending is either to owner occupiers at LVRs of above 80 percent, or investors at LVRs of above 70 percent. Once the effects of avoidance, exemptions and replacement buyers are taken into account, total lending volumes would need to fall by 8-9 percent in order for banks to meet the new speed limit. The burden of this adjustment is somewhat different under each of the options.

Table 3: Predicted monthly lending volumes under tighter investor LVR restriction

	Current	Option A	% change	Option B	% change
FHB lending	488	415	-15	463	-5
(of which greater than 80%)	130	57	-56	105	-19
Other owner occupied lending	2878	2756	-4	2838	-1
(of which greater than 80%)	223	101	-55	182	-18
Investor lending	1396	1170	-16	1063	-24
(of which greater than 70%)	707	230	-67	102	-86
Exempt lending	68	86	25	86	25
Total lending	4762	4342	-9	4364	-8
Owner occupier >80% share (after exemptions)	8.9	3.2		7.1	
Investor >70% share (after exemptions)	49.6	17.7		7.1	
Total high LVR (after exemptions)	20.8	7.0		7.0	

With a single speed limit, non-exempt lending that is above the thresholds would be cut by around 70 percent – including current high-LVR lending to owner occupiers. The effect of this would disproportionately fall on investors, with a 16 percent fall in lending volumes. Lending to first home buyers would also fall by 15 percent, while lending to other owner occupiers would fall by 4 percent. This pattern is sensitive to assumption 3, above, that banks will tighten up on all lending classes proportionately. It could be argued that since banks have already significantly tightened lending standards to first home buyers, they may be inclined to disproportionately cut investor lending in response to the restrictions. Therefore, the estimated effect on first home buyer lending is probably an upper bound.

Option B would significantly tilt the effect of the new restriction onto investors, resulting in a 24 percent reduction in lending volumes. However, even under this option there would likely be some tightening in lending standards to owner occupiers. Currently 8.9 percent of lending to owner occupiers is high-LVR, which is probably higher than banks would be comfortable with under a separate speed limit. To reduce this to 7 percent would require a 5 percent reduction in lending to first home buyers, and a 1 percent reduction to other owner occupiers.

There are policy options available to mitigate the tightening of restrictions to owner occupiers if desired.

1. A targeted exemption could be applied to low value owner occupied house purchases.
2. A higher speed limit could be applied for owner occupiers, particularly under option B.

The first of these options is addressed in more detail in David's paper which is also on the agenda for this meeting.

We favour a 70 percent threshold for the investor limit

Under option A, there are two parameters to be calibrated – the overall speed limit, and the threshold for investor LVR. Under option B, we have the option of setting different speed limits for owner occupiers and investors.

As with when we first imposed LVR restrictions, there are few absolute benchmarks that can be used to guide calibration. However, there are some principles that we believe are relevant:

- It is relatively difficult and costly to make changes to macro-prudential policy (particularly for industry), and the high level of public and political scrutiny means that there is significant reputational risk if an intervention is perceived to be

ineffective. This suggests less frequent larger changes in policy should be favoured over incremental moves.

- Borrowers can more easily avoid the policy if their desired LVR is only slightly higher than the LVR restriction. With a significant proportion of borrowing in the 75-80 percent LVR bucket, avoidance activity would likely be significantly higher under a 75 percent LVR threshold than a 70 percent LVR threshold.
- There could be communication challenges if we simultaneously tighten policy along one dimension, while loosening on another (for example by announcing a 20 percent speed limit on investor lending over 70 percent). The expectations channel is an important transmission mechanism, which could be weakened if we don't have a coherent story to tell.
- We should be able to tell a good story for how our intervention addresses financial stability risk, and why the calibration we have chosen is appropriate for this. The work that Daniel has done on GFC housing losses in Ireland and the US help with this, and suggest that investor loans with LVRs of 70-80 percent had a similar loss experience to owner occupied loans with LVRs of 80-90 percent.

While none of these factors point strongly to any particular calibration, we view that it would be better to set the investor LVR threshold at 70 percent, rather than 75 percent. The predominant reason for this is that we don't view that a tightening of the threshold to 75 percent would be sufficiently effective to justify the intervention. The option also exists to target a lower threshold, such as 60 or 65 percent. Indeed, LVR limits for investors have been set around the 50-60 percent mark in Israel, Singapore and Malaysia. However, it would be harder to make the case that these loans are higher risk than owner occupied loans at an LVR of 80 percent, so it may be difficult to justify such a policy.

With half of all lending to investors at LVRs of over 70 percent, there is a significant range of speed limits that could be considered for investor lending. Under option A, the default option would be to retain the existing 10 percent speed limit. Another plausible alternative would be to combine the tighter investor LVR threshold with a looser speed limit. However, if the speed limit was set at 15 percent, the net tightening in policy would only be half as large as if the speed limit was retained at 10 percent.

Under option B, a speed limit of 15 or 20 percent could be considered for investor lending. A 20 percent speed limit on investor lending would have about 2/3rds of the impact of a 10 percent speed limit. However, this option would present communication challenges, as the combination of a lower threshold and higher speed limit may be incorrectly perceived as a policy loosening by some.

On balance, we favour retaining a 10 percent speed limit, regardless of whether option A or B is chosen.

4. Estimate of effectiveness

At the time that we first implemented LVR restrictions we produced estimates of the effect that they would have on housing market activity.³ The basic framework was to estimate how much house sales would fall by, given assumptions about borrower behaviour in the face of LVR restrictions, and then use this reduction in house sales as a shock in a housing BVAR. Using this methodology we estimated a 5 percent reduction in house sales, which would translate into a 1.5 percent lower house price inflation over the following 12 months. We felt

³ See Bloor and McDonald (2013) "Estimating the effects of restrictions on high LVR lending", Reserve Bank of New Zealand Analytical Note, AN2013/05.

that this methodology probably didn't reflect all of the relevant channels through which LVR restrictions would affect house prices, so assessed the likely impact at 1-4 percent over the first year.

At the time that we made those estimates, data limitations and behavioural uncertainties meant that we had to make educated guesses on a number of key parameters. The most important of these were the share of cash buyers in the market, the effective speed limit (including exemptions and buffers), the rate of avoidance, and the extent to which replacement buyers would enter the market. These assumptions are summarised in table 4.

Table 4: Estimate of effectiveness of 70% investor LVR restriction

	Affected lending	Cash buyer share	Effective speed limit	Avoidance	Replacement buyers	House sale reduction	House price reduction
Initial estimate of LVR effect	30	10	15	25	50	5.0	1.5
Revised estimate	30	20	7	21	0	14.9	4.2
Central estimate of 70% investor LVR limit	14	20	0.4	25	25	6.2	1.7
<i>sensitivity test: higher avoidance</i>	14	20	0.4	50	25	4.1	1.1
<i>sensitivity test: no replacement buyers</i>	14	20	0.4	25	0	8.3	2.2

As it turned out exemption use was significantly lower than expected, and banks ran a larger than expected buffer to the 10 percent speed limit. The average high-LVR share over the first 12 months of the restriction was only 7 percent, meaning that the restriction was about 50 percent more binding than expected.

We also made a conservative assumption that replacement buyers would come into the market half the time, while also assuming that there would be no 'chain' effect (that is, an existing home owner choosing not to transact due to difficulty selling) It is very hard to verify the accuracy of these assumptions. However, based off what we have seen in the buyer share data, as well as the overall reduction in house sales over the first 12 months, we believe that the net offset was around zero, so any replacement buyer effect was roughly offset by the chain effect.

Based on an update of these assumptions, as well as a few others, this methodology produces an estimate of a 14.9 percent reduction in house sales, resulting in a 4.2 percent fall in house price inflation over the first year. This is well within the ballpark of our best counterfactual estimates. These updated estimates can then be used as a basis for estimating the effect of a tighter investor LVR.

As noted above, we believe that 25 percent avoidance remains a reasonable working assumption for an investor LVR, while a 20 percent cash buyer share also looks reasonable. However, it is plausible that there may be a somewhat higher propensity for replacement buyers to enter the investor property market, while the chain effect is likely to be somewhat weaker. We have therefore allowed for 25 percent of the house sales reduction to be offset by lower LVR investors entering the market.

Currently 14 percent of lending is to investors at LVRs of 70-80 percent. There is expected to be a minimal rise in exemptions, but otherwise high-LVR lending would need to drop by this full quantum under either option A or option B (although it is likely that some 70-80 percent LVR investor lending still occurs, but this would need to displace existing high-LVR lending). Using the assumptions above, this methodology suggests that a tighter investor LVR policy would reduce house sales by 6.2 percent and house price inflation by 1.7 percent.

The results are reasonably sensitive to the assumptions on avoidance and the effect of replacement buyers. An increase in avoidance to 50 percent would lower the house price effect to 1.1 percent, while assuming no replacement buyers would increase it to 2.2 percent.

Based on uncertainty around these parameters, and previous experience, we believe that a range of 1-3 percent should encompass most of the uncertainty around the estimated house price impact of this policy.

As noted in the first section, we believe the policy will have a larger impact in Auckland than the rest of the country. First, the investor share of transactions is about 6 percentage points higher in Auckland than the rest of the country. Second, a greater proportion of investor purchases are mortgage financed in Auckland than elsewhere. Third, housing turnover is significantly higher in Auckland than the rest of the country currently, which would magnify the impact of any policy tightening. Taking these factors into account, suggests that the impact on Auckland house prices could be 50 percent higher than the rest of the country under option B (2.1% vs 1.5%). The difference would be slightly more muted under option A (1.9% vs 1.5%), given that the decline in activity wouldn't be as concentrated in the investor market.

The policy would have some impact on the investor share of housing transactions. Over the past six months, this has averaged 35.5 percent. We estimate that this would drop to 34.3 percent under option A, and to 32.3 percent under option B. The investor share averaged a little under 33 percent in the months immediately prior to LVR restrictions, so option B would return this to around the pre-LVR level.

The effectiveness of an investor LVR will partly depend on how investors are defined. For this analysis, I have assumed that the definition is in line with the new commitment survey – that is all non-owner occupied property. If an income based test is used, the coverage of the restriction will be reduced somewhat, reducing effectiveness. At this stage we lack sufficient data to be able to judge how large this effect would be. However, we think relatively few property investors would be able to service high-LVR mortgages without relying on rental income. For example, the borrowing threshold for a household on \$100,000 income (likely to be around the median household income for property investors) would be around \$600,000, translating into a property portfolio worth \$750,000 at an 80 percent LVR. It would be difficult to purchase both an owner occupied house and an investment property outside of the provinces. This would suggest that an income test that captures any rental income may not be significantly less effective than an owner-occupation test.

Tighter investor LVRs will also boost bank resilience

As noted in Daniel's paper at the last MFC meeting, international evidence suggests that loans to property investors default more frequently than loans to owner occupiers in severe housing market downturns. In particular, investor loans with LVRs of 70-80 percent appear to have experienced similar losses to owner occupied loans at LVRs of 80-90 percent in recent crises in both Ireland and the US.

The share of bank lending that has been going into the Auckland investor market has been growing over recent years, due to an increasing share of transactions taking place in Auckland, a rising investor share of transactions, and rising house prices in Auckland. A reasonable guess is that investor lending in Auckland accounts for 15-20 percent of new mortgage commitments currently. With Auckland property prices continuing to increase at strong rates, this lending is looking increasingly vulnerable and could be a significant source of risk in a major downturn. By limiting investor lending, this policy would boost bank resilience and also reduce the number of over-gearred investors needing to sell properties in a severe downturn, which could help to avoid a severe downward overshoot in property prices.