20 March 2018

# NZ Bank Bill-OIS and FRA-OIS Spreads – An Update

- **Increases in US Libor-OIS and the Australian equivalent have filtered through into wider NZ FRA-OIS spreads over the past few weeks and a higher 2 year swap rate.**
- **As yet, there has been only a modest impact on the NZ 3m bank bill-OIS spread (which remains much lower than in the US and Australia).**
- **The NZD FX basis has also widened aggressively, meaning NZ bank bill issuance is now much cheaper for NZ banks than swapped USD commercial paper issuance.**
- **While banks may tilt short-term issuance towards the domestic market in the future, we don't believe NZ bills-OIS mechanically needs to follow the moves offshore (unless funding pressures really intensify in the US). We suspect there are constraints around 'arbitrage' between NZ and US markets.**
- **To the extent that wider NZ bills-OIS spreads means higher borrowing costs for the real economy there could, in principle, be implications for OCR expectations. However, retail fixed mortgage rates have been falling recently and we think funding conditions would need to deteriorate significantly to materially affect OCR expectations.**

**Higher USD Libor-OIS spreads but only a modest increase in NZ bills-OIS to date…**

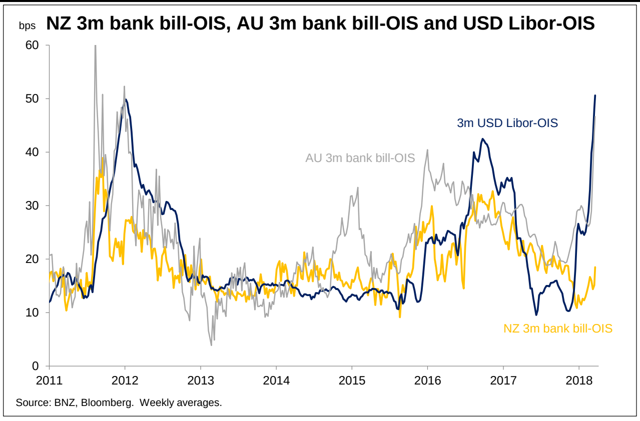
USD 3 month Libor-OIS has risen sharply over recent months, from a low of around 10bps in November to above 50bps now. The increase in USD Libor-OIS appears to have been driven by:

- An increase in US Treasury bill issuance, as the US Treasury rebuilds its cash balance after the suspension of the debt ceiling. The subsequent increase in Treasury bill yields has flowed through to higher rates on other cash money market instruments, as well as Libor.
- US tax reform, which incentivises US multi-nationals to repatriate offshore profits. Multi-nationals have been buyers of USD fixed income offshore in recent years (reinvesting profits), but the tax reform raises the prospect of reduced demand for US short-end paper going forward (and some may indeed be sellers of short-dated bonds to raise cash for repatriation).

The rise in Libor-OIS spreads does not appear to be related to an increase in the perception of bank credit risk, as bank CDS spreads remain at relatively low levels, but rather a funding issue.

Australian bank bill-OIS spreads have also widened sharply in recent weeks, catching up with the moves in the US. In contrast, the NZ spot 3 month bank bill-OIS spread (bills-OIS) has remained relatively contained; it has widened modestly to 19bps but it remains significantly below the levels in the US and Australia.

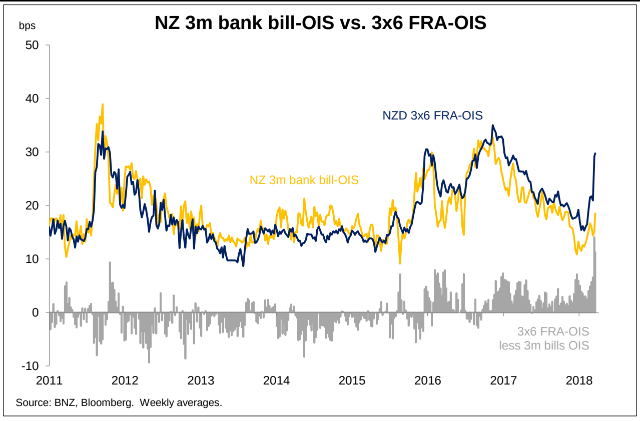
USD Libor-OIS and AUD bills-OIS have widened sharply




**…but NZ FRA-OIS spreads and FX basis have moved wider**

In contrast to the relative stability of the spot 3 month bills-OIS spread, NZ bank bill futures and FRA-OIS spreads

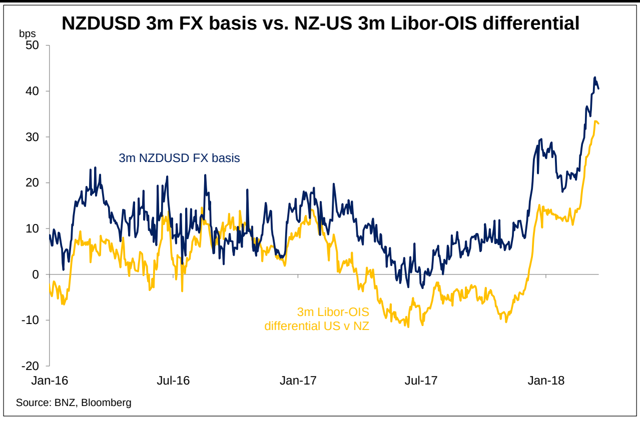
NZ 3x6 FRA-OIS has risen much more than 3m bills-OIS



widened sharply last week. The 3x6 FRA-OIS spread (i.e. the 3m bills-OIS spread in 3 months' time) is around 31bps at present, 12bps above the 3 month spread. In effect, the market prices the NZ bills-OIS spread to rise to levels more in-line with (but still lower than) those in Australia and the US in the coming months.

The NZD-USD 3 month FX basis has also widened sharply this year, from around 10bps to around 40bps now, a post-GFC wide. The increase in the FX basis has coincided with the widening in US Libor-OIS relative to NZ bills-OIS – see chart below. The recent experience in Australia suggests that the FX basis will narrow if NZ bills-OIS catches-up to US Libor-OIS.

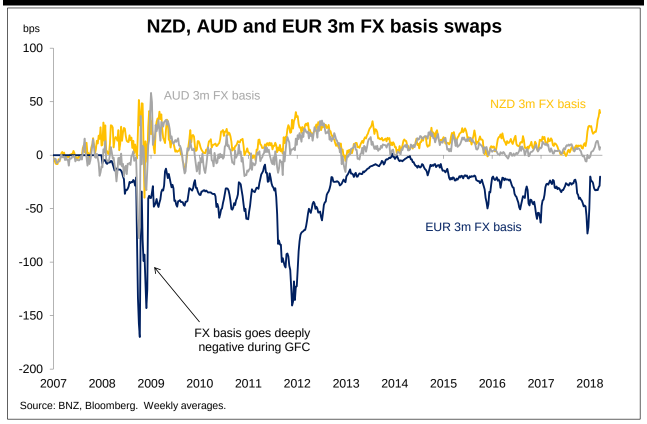
**NZ 3m FX basis and FRA-OIS spreads have widened**



Source: BNZ, Bloomberg

The widening in the NZD FX basis is in sharp contrast to the period around the GFC, when USD funding markets locked up, forcing banks to borrow domestically (and pushing the FX basis very negative). The widening in the NZD 3m FX basis, alongside similar moves in other major currencies, suggests that recent moves in USD Libor-OIS are not indicative of broader USD funding stress.

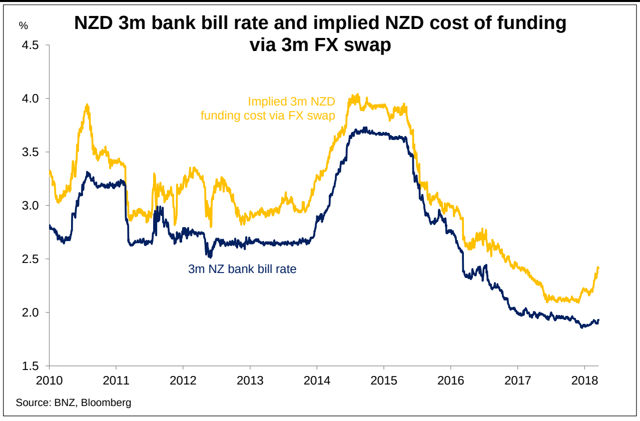
**NZD FX basis is positive, in contrast to the GFC period**



Source: BNZ, Bloomberg. Weekly averages.

NZ banks are structural borrowers in offshore capital markets, partially funding NZ's current account deficit (and accumulated stock of net foreign liabilities). The widening in the FX basis increases the relative cost to NZ banks of funding via USD commercial paper (and swapping the proceeds to NZD) vs. funding domestically via 3 month bank bill issuance, as shown in the chart below.[1]

**NZ 3m bank bill rate is much lower than 3m USD swapped**



Source: BNZ, Bloomberg

### Should NZ bills-OIS follow USD Libor-OIS?

Historically, NZ bills-OIS has been correlated with USD Libor-OIS (as shown in the chart on the first page), although the relationship is far from perfect. The relationship between NZ bills-OIS and USD Libor-OIS depends on a degree of substitutability between the two markets and the ability of some market participants to exploit the 'arbitrage'.[2]

In theory, domestic banks could react to the increased relative cost of USD short-term funding by running down USD CP issuance and boosting funding in bank bills – this switch in issuance patterns could push up NZ bills-OIS and narrow the FX basis.

The stock of short-term 'market' funding (i.e. with residual maturity shorter than 1 year) sourced from offshore investors has been declining over the past year, which would be consistent with domestic banks running down their offshore CP programmes to some extent.[3] However, there is probably a limit to which banks would want to reduce their USD CP outstanding, as they are likely to want to retain a regular presence in the market to keep it open as a funding source in the future. And as yet, there has been no real increase in short-term domestic market funding to take advantage of the relatively low cost of NZ bank bill issuance.

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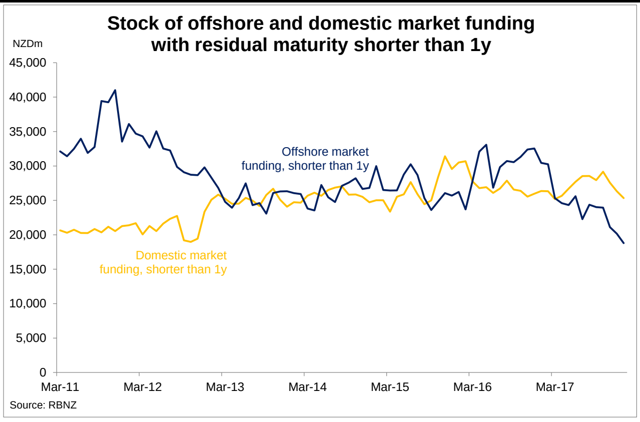
[1] The implied NZD funding cost via FX swaps assumes a NZ bank funds in USD CP at the same rate as 3m Libor.

[2] The FX basis itself is an example of an arbitrage that exists in the market, related to a structural mismatch between the supply and demand for NZD vs. USD funding (NZ banks are structurally borrowed in USD). But there should exist market participants that can take advantage of extreme dislocations in investment or funding opportunities across borders.

[3] The decrease in the stock of short-term (<1 year debt) could be related to older bank bonds maturing rather than a decrease in CP issuance. In general, banks have become progressively less reliant on short-term funding since the GFC, aided by bank regulations such as the core funding ratio (CFR). See https://www.rbnz.govt.nz/regulation-and-supervision/banks/prudential-requirements/liquidity-core-funding-ratio for more detail.

Stock of short-term 'market' funding – offshore v domestic




### Limits around arbitrage

The current levels of NZ bills-OIS, USD Libor-OIS and the FX basis imply arbitrage opportunities to market participants with access to domestic funding markets and USD (or AUD) cash markets for investment.[4]

Domestic banks are the obvious candidates who could in theory raise NZD liquidity and swap the proceeds into USD to invest in CP or lend via depos. But NZ banks may be constrained by the size and availability of credit lines to invest in USD. The relatively small size of the domestic funding market is another constraint (for instance, trading volumes in the daily bank bill rate set have averaged around $50m since early 2016).

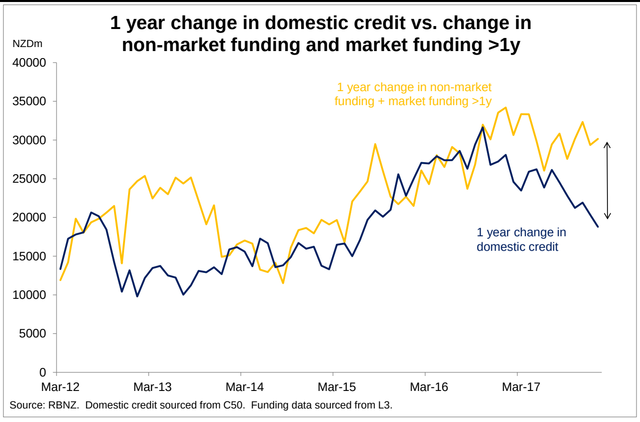
Outside of the domestic banks, holders of NZ money market instruments have an incentive to sell or not roll-over short-end NZ bank paper and invest in USD (or AUD) bank CP. However, mandate restrictions may not allow some participants to take advantage of the arbitrage.

Finally, offshore market participants funding NZD assets via FX swaps would be incentivised to fund onshore, perhaps via repo (again, to the extent mandates allow).[5] But NZGB repo rates have not widened relative to OIS, unlike in Australia, and indeed a number of bonds on the curve currently trade 'special' in repo.

### Domestic banks in healthy liquidity position

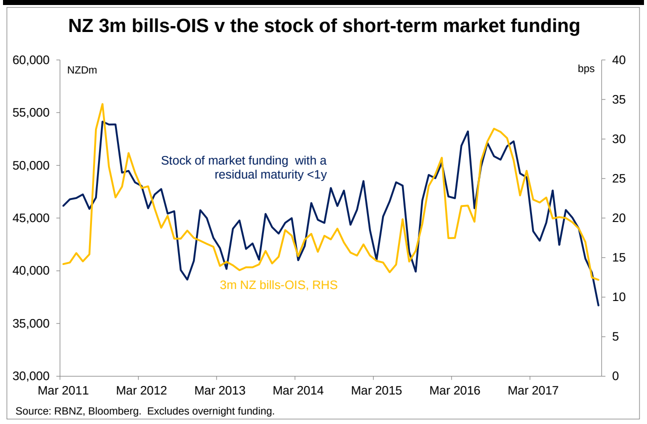
One explanation for the relatively low level of NZ bills-OIS is that domestic banks appear to be in a surplus liquidity position. Unlike previous years, deposit growth kept pace with lending in 2017 and, in addition, banks increased their long-term market funding. The chart below shows that domestic credit growth has been lower than the growth in non-market funding (largely deposits) and longer-term market funding (with a maturity longer than 1 year). The decline in retail fixed mortgage rates and term deposit rates recently are suggestive of banks wanting to encourage more net lending.

Domestic credit growth slowed in 2017




The surplus liquidity generated by the NZ banking system appears to have been partially recycled into NZ fixed income instruments, helping to keep NZ bank bill rates relatively low. The stock of short-term market funding has also declined over the past year (see chart below), which could be interpreted as reduced demand from NZ banks for short-term funding.

The stock of short-term market funding has declined




### The outlook for NZ bills-OIS

The key question is whether NZ bills-OIS should converge to the levels implied by the futures/FRA markets or vice versa.

It is conceivable that the rise in NZ FRA rates could influence the rates at which banks are willing to transact in the 3 month rate set. This would be one mechanism by which NZ bills-OIS could gravitate towards FRA-OIS levels.

It's also possible that the proximity of quarter–end, and a reluctance to gross up balance sheets, is deterring domestic banks from increasing domestic funding to swap

[4] The arbitrage trade would be to issue, or sell, NZ bank bills, swap the proceeds into USD or AUD, and invest in NZ bank CP denominated in those currencies.

[5] Our colleagues in Rates Strategy in NAB believe some Japanese investors have switched to funding AUD bond positions via repo, given the increased cost of doing so via FX swaps, and the subsequent rise in AUD repo rates has contributed to pushing up 3m bills-OIS there.

into USD to take advantage of the arbitrage. Once quarter end passes, it's possible we could see more such activity, which would put some upward pressure on NZ bills-OIS.

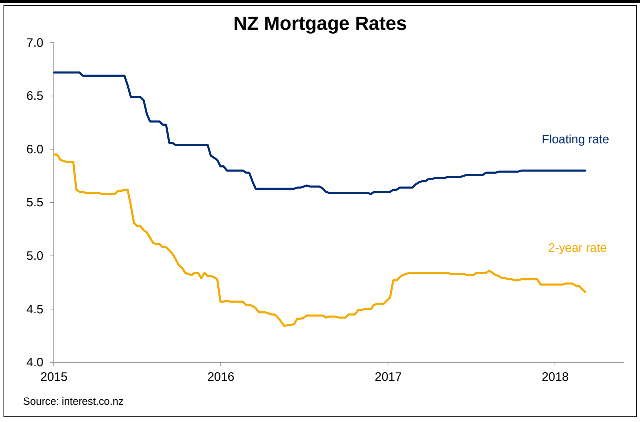
Overall, we suspect it will take a more material shift in domestic banks' issuance patterns (towards short-term NZD funding) or an increase in domestic credit growth to cause a large increase in NZ bills-OIS. It's also not obvious to us that there are many unconstrained market participants who can access NZD funding to take advantage of the arbitrage and bring NZ bills-OIS into line with the US.

Of course, if US funding pressures intensify significantly, this will put upward pressure on other funding avenues for NZ banks, including domestic bank bills. But such a US funding squeeze would probably be associated with widespread increased demand for USD via FX swaps, something we haven't seen as yet.

**Implications for monetary policy**

To the extent that wider NZ bills-OIS spreads mean higher borrowing costs for the real economy there could, in principle, be implications for OCR expectations. However, retail fixed mortgage rates have been falling recently, symptomatic of domestic banks being in a strong liquidity position.

Retail fixed mortgage rates have been falling of late



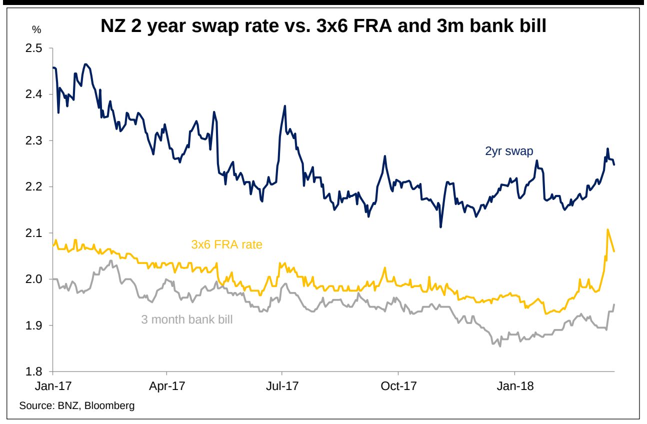

Moreover, there has only been a modest increase in NZ bills-OIS and swap rates to date, so the monetary policy implications are fairly limited at present (and very much secondary to broader macro developments). In our view, funding pressures would need to worsen significantly to have material implications for monetary policy (i.e. to bring rate cuts into play).

**Implications for short dated NZ swap rates**

NZ short-dated swap rates have risen over recent weeks, in line with the increase in FRAs (RBNZ expectations have been broadly unchanged over this time). Last week, the 2 year swap rate increased to its highest level since July, although it remains well within broader trading ranges.

Given our expectation that the OCR will be on hold this year, we expect that movements in the 2 year swap rate will continue to be driven by funding pressures (FRA-OIS spreads) in the near-term. One potential risk is that funding pressures intensify, NZ FRA-OIS spreads widen further, and this leads to an unwinding of received positions at the short-end of the curve, further pushing up swap rates.

Higher NZ FRAs have driven up the 2 year swap

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