Economic Note

04 April 2018

Should we be worried by the widening in Bank Bill-OIS spreads?

Summary and implications

What are Bank Bill –OIS spreads?

Bank Bill or Libor-OIS spreads are widely regarded as a measure of how expensive or cheap it will be for banks to borrow relative to a risk-free rate.

Why are they important?

- *They provide a handy signpost for credit conditions and emerging pressures in funding markets.* At first blush, the sharp widening in USD Libor-OIS spreads and the similar widening in Australian Bank Bill OIS spreads since February look to be symptomatic of increased stress in USD and AUD funding markets.
- *This could have far-reaching implications.* More than four times global GDP worth of financial assets and derivatives are pegged to Libor. Libor interest rates are used as the baseline for many bonds, business loans, and mortgage loans. Accordingly, it understandable that market participants are considering the risks from a large and protracted blowout in spreads.

What's happening in NZ markets?

NZD Bank Bill-OIS spreads have only lifted modestly thus far, but our reliance on offshore funding suggests there is a risk NZD spreads widen further. Other NZD spreads have also widened and suggest costs for offshore funding could rise. Wider Libor-OIS spreads are also likely to be an enduring feature in USD markets, which will have long-lasting implications for markets.

Could this be the GFC again?

To date there is only mixed evidence that the recent widening in US Libor to OIS spreads signals should cause longer-term concerns. The widening USD spread likely reflects a shift in the supply and demand of short-term debt, with large volumes of non-government funding required at a time of additional US Government debt issuance. Libor and bank bill rates (and spreads to OIS rates) remain significantly below levels reached during the worst of the global financial crisis (GFC). Libor-OIS spreads in some non-USD markets have not blown out thus far and other proxies for financial market volatility and risk remain mild in relation to GFC peaks.

Ok maybe not the GFC but should we be wary?

With global financial markets on edge, domestic private sector debt high in relation to incomes and with a number of tail risks on the horizon, developments in credit markets will need to be closely monitored over the coming months.

Implications for NZ retail interest rates and the OCR

If it was to occur, a large and persistent increase in NZD bill-OIS spreads could filter through into higher NZD borrowing costs. Increasing retail deposit rates would be a telltale sign of pressures in the NZD market, but retail term deposit rates and fixed mortgage rates have eased of late. Our banking system is considerably less reliant in short-term funding than it was prior to the GFC, which creates resilience. *Our view is that funding conditions would have to significantly worsen from current levels for an OCR cut to be contemplated by the RBNZ.*

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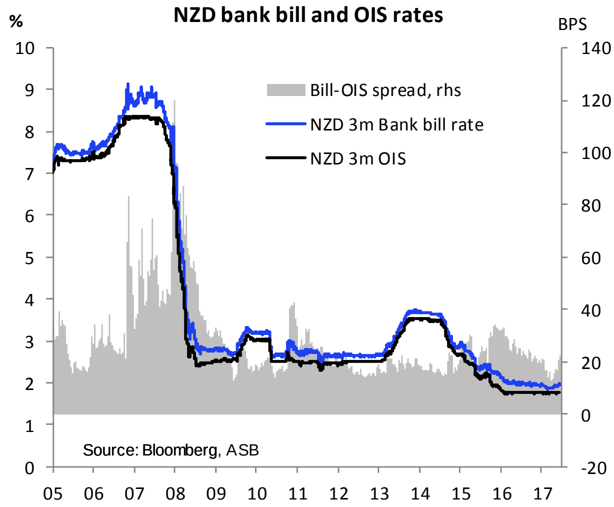
What is the Bank Bill OIS spread?

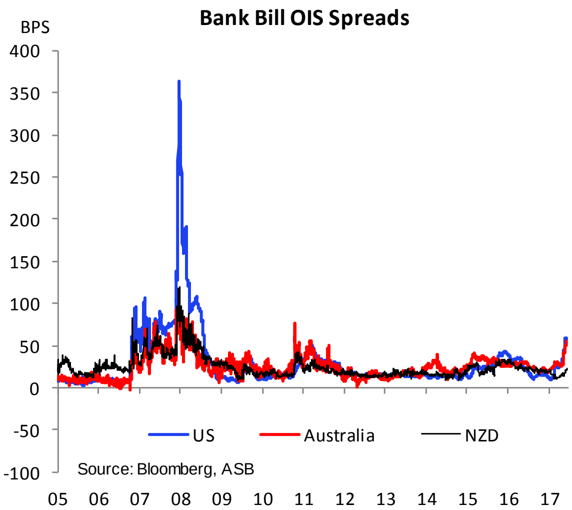
Bank Bill **or** Libor-OIS spreads are widely regarded as a measure of how expensive or cheap it will be for banks to borrow relative to a risk-free rate, **providing a handy signpost for credit conditions and emerging pressures in money market funding**. Viewing the relationship between the 90 day NZD Bank bill rate and the 3-month OIS rate shows that both tend to closely track each other closely over time. There have been occasions, however, when market rates have spiked up, such as over the 2007/09 period, where concerns over the credit worthiness have seen bank bill rates spike higher.



What is happening now?

The USD Libor-OIS spread has widened dramatically following a Congressional deal on the US budget and debt ceiling on Feb. 8. Initial optimism that more calm would return to credit markets once markets digest the impact of the March Fed rate hike has not yet resulted in a narrowing in spreads. The USD Libor-OIS spread has widened from 25 basis points at the start of February to close to 60bps at the time of writing. US Ted spreads (the difference between 3 month contracts for US Treasuries and 3 month Eurodollar futures) have also blown out of late to around 55bps, suggesting that the increase in spreads is not Libor-specific.

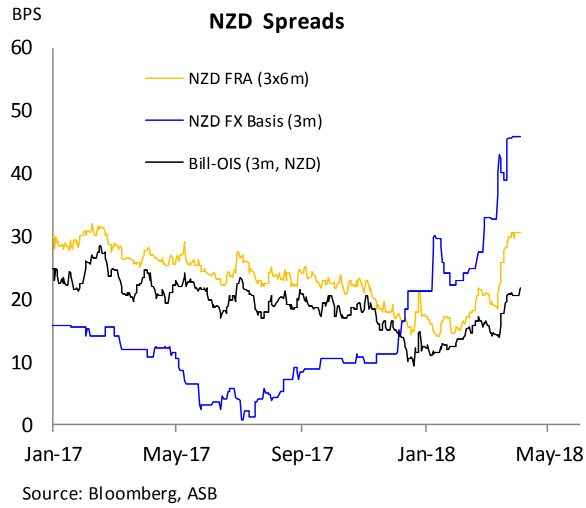
The firming in money market rates have triggered a climb in bank bill spreads to OIS rates, even in the US, where OIS rates have climbed as the Fed have hikes rates in March. Australian bank bill rates have firmed approximately 25bps to their highest level since July 2016, when the RBA cash rate was 25bps higher at 1.75%. Australian bank-bill OIS spreads have widened to 56bps, the highest in nine years. NZ bank bill to OIS spreads have widened by close to 10bps since the start of the year, but remain at post 2003 averages. NZ and Australian OIS rates have been broadly stable since the start of the year, with no immediate change expected for policy rates. **The lift in spreads has been mild compared to the Global Financial Crisis (GFC),** where concerns over the credit worthiness of financial instituitions triggered a sharp increase in spreads. The table also shows that spreads are considerably wider for the USD, AUD and CAD markets than they are for GBP and EUR counterparts.



	3 Month Bank Bill OIS spreads (BPS)				Correlation with spreads	
	Current	Start Feb	Largest	2003-average	USD	NZD
USD	59	25	364	26	1.00	0.86
AUD	56	27	93	22	0.73	0.70
CAD	42	38	128	25	0.64	0.56
NZD	23	14	120	23	0.86	1.00
GBP	13	5	299	27	0.91	0.85
EUR	3	1	207	24	0.84	0.78

Source: Bloomberg, ASB

The relationship between Bill-OIS spreads of different markets typically depends on the degree of substitutability between the markets and the extent that arbitrage can narrow the movements in spreads. NZ bill-OIS spreads are more closely correlated with USD Libor OIS spreads, given that NZ banks have traditionally borrowed in USD with the potential for arbitrage keeping the movements between the two close. NZ Banks can either fund domestically or offshore, with more expensive USD offshore funding encouraging substitution towards other offshore funding sources or to more domestic funding. While USD funding is now relatively more expensive, there are limits to how much arbitrage can go on. The domestic funding market is small and NZ banks are constrained on how much USD investing they can do. Given the strong reliance on offshore funding, NZ banks would be keen to maintain a presence in the USD market to keep it as a potential funding source.

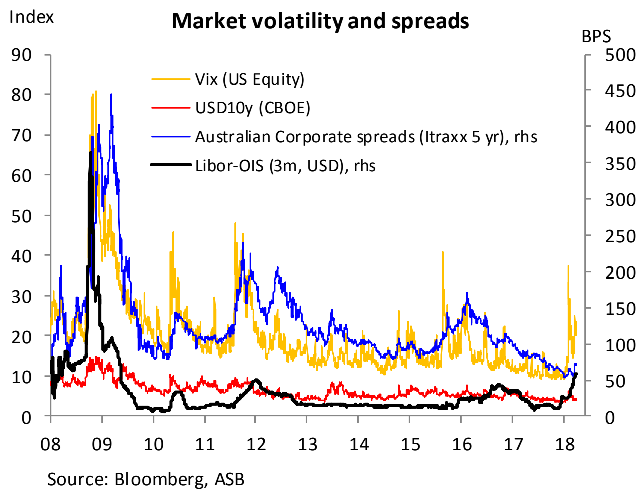


Other NZD spreads have widened

While moves in spot NZD Bill-OIS spreads have been moderate to date, pressures on offshore credit markets have led to a significant widening in NZD FX basis (premium paid to borrow in USD in exchange for NZD), which have widened to around 46bps, a post GFC high. This has increased the relative costs to NZ banks of funding in USD markets versus funding domestically[1]. NZ Bank bill futures and 3-6 month FRA-OIS spreads[2] have also firmed, albeit not to the same extent as USD and AUD rates. Higher FRA's could influence the rate at which banks are willing to transact in the 3-month rate set and will likely influence rates. Short-dated swap rates had been on an upward trajectory, but the recent bout of risk aversion has been local yields retrace.

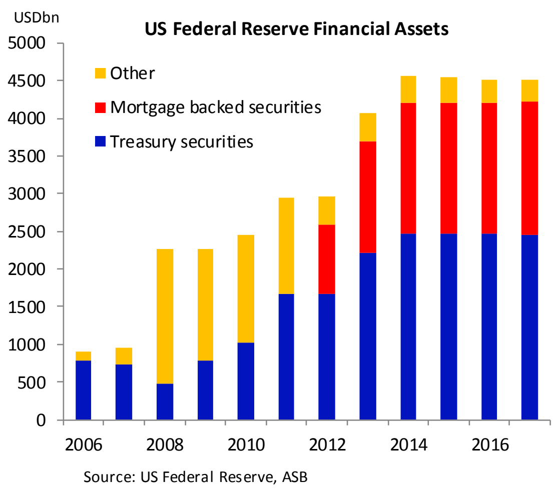
Why has the bill-OIS spread risen?

One possibility is that pressures in funding markets and wider financial system stress has increased, resulting in the climb in spreads. However, banks in general have been building up capital buffers, with the 2016 implementation of the Basel III capital standards framework aiming to increase the quality and quantity of the regulatory capital base that financial institutions are required to hold. **Viewing various proxies for volatility and risk in the accompanying chart shows only mixed signs to date, in contrast to the generalised spike around the GFC.**



The other possibility is that the climb in Libor-OIS spreads could be attributable to large volumes of funding needing to be done at a time when additional US debt issuance is climbing. There are several major drivers here:

- Higher Treasury-bill issuance since the US debt ceiling was raised in February. Since then, the US Treasury has been replenishing its cash balance and that has meant more debt sales, particularly of shorter-dated securities. With an abundance of short-term debt set to be issued, higher issuance is likely to be around for a while yet.
- Tax legislation passed by the US Congress in December may also have played a role. The recently enacted 2017 tax reform act imposed a new "base erosion and anti-abuse tax" or BEAT on large corporations, which offered incentives to bring money back to the US that was previously invested in US libor.
- The Federal Reserve is steadily shrinking its USD $4.4 trillion balance sheet, via unloading Treasury securities plus mortgage-



[1] If more funding is done domestically via bank bills this could push up the NZD bill-OIS spread, but could narrow the FX basis.
[2] A Forward Rate Agreeents (FRA) is an over-the-counter contract between parties that determines the rate of interest, or the currency exchange rate, to be paid or received on an obligation beginning at a future start date.

backed securities (MBS). Fed chair Powell reiterated the Fed's intention to gradually unwind the Fed's balance sheet in the coming years, which will impact libor rates and not OIS counterparts. When these securities mature, the Fed won't actually sell the Treasury securities, but will allow some of the maturing Treasury securities to "roll off" its balance sheet without replacement. As the U.S. central bank pulls back from providing support and injecting liquidity in the system, it increases the competition for funding, pushing up interbank rates.

The climb in In the Australia market is likely attributable to a few reasons, including:

- More bank bills and commercial paper being issued in AUD by Australian banks given the shift higher in US yields, which has eroded the funding advantage from issuing bills in USD.
- Offshore holders of Australian bonds have required more repo funding.
- Australian banks were also reportedly trying to shrink their balance sheets into quarter end to minimise the amount of bank levy payable to the Aussie government (the levy was payable on balances at the end of the March).

What is the impact?

The issue is whether the spike higher in Libor/Bank bill rates is sufficient to trigger a funding crisis, which could impair the functioning of the financial system. **This depends crucially on the magnitude and persistence, as well as how important bank bill rates are for the wider financial system**. The concern is that if the increase in short-term market rates is large and persistent, it is more likely to translate into higher borrowing costs for banks and other borrowers, representing a tightening in financial conditions, which, if significant enough, may have an impact of the policy path for central banks.

The shift higher in Libor/bank bill rates could have more far-reaching consequences:

- **Higher borrowing rates.** If short-dated credit spreads widen significantly and persist, this could flow through into higher borrowing rates. According to RBNZ figures about 21% of New Zealand's mortgage book is secured on variable rates, but with around 64% secured on lending less than 1 year and an average duration of 11 months (the time at which rates roll off). Some business lending rates are either directly or indirectly tied to the 90-day bank bill rate. Around half of agricultural lending is on variable rates. A significant chunk of business and corporate lending will be tied to short-term bank bill rates in one form or another, with the steep NZ borrowing curve making hedging relatively expensive.
- **According to Bloomberg estimates around USD350 trillion worth of assets are pegged to Libor, which is more than four times global GDP.** Libor is the interest rate used as baseline for many bonds, business loans, and mortgages. USD Libor underpins around USD 150 trillion in derivatives as well more than USD 6 trillion in syndicated and corporate loans and commercial mortgages.
- **Higher spreads rates could impact on hedging decisions.** An increase in US Libor rates relative to an overseas counterpart could increase the cost of hedging into USD. If the view is that the increase in US market rates increases the attractiveness of the USD, an additional premium could be demanded, resulted in a higher cross country basis being required to hedge. This could have widespread ramifications for hedging decisions.[3]
- **Rising Libor could also fuel uncertainty surrounding currency pegs,** with the sharp climb in US libor relative to offshore counterparts likely contributing to downward pressure for currencies linked to the USD, such as the Hong Kong dollar. It may trigger action by other monetary authorities to maintain USD pegs. With trade frictions already elevated, a spiral of "competitive currency devaluations" is the last thing the global trading system needs.

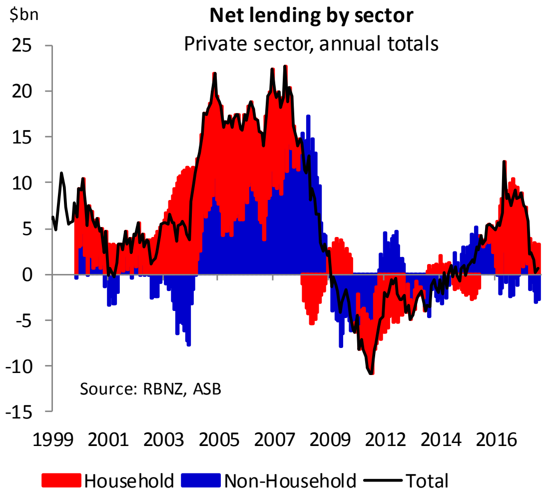
[3] As was signposted in our Q4 ASB NZD Barometer, the narrowing in NZD interest rate differentials has had an impact of hedging duration for exporters and importers, with lower NZD interest rates relative to USD rates had encourage shorter hedging duration for exporters but longer duration for importers.

Will it impact NZD funding and will it get worse?

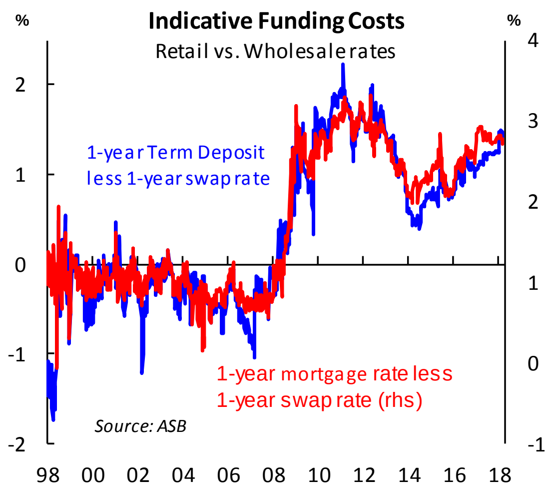
This is the $64,000 question. The close correlation between NZ Bill-OIS and USD Libor-OIS and the widening in spreads for AUD rates suggests it may be a matter of time before NZD spreads widen. As was mentioned previously, the longer spreads remain elevated, the larger the potential impact on credit markets and the wider economy.

There are a multitude of reasons why Bill-OIS spreads have widened. Most of the influences impacting USD funding look like they will have a long-lasting impact, whilst some of the Australian influences may have a more temporary impact. The concern is that the Libor blowout may have more room to run, presenting considerable challenges for borrowers and policy makers.

However, this is unlikely to have an immediate impact on local lending rates. The November 2017 RBNZ Financial Stability Report did note that bank lending standards had tightened and the domestic banking sector was vulnerable to volatility in international funding markets, However, capital ratios from locally incorporated banks had been climbing and the banking system was adjudged to have adequate capital buffers over minimum capital requirements. **High liquidity within the banking system also looks to be a factor keeping NZD bank bill rates low**. This may be linked to the recent slowdown in the demand for credit. Viewing RBNZ figures for net lending (system lending minus deposits) shows a significant deceleration in net borrowing compared to a year or so ago. This is being mostly driven by a deceleration in household credit, with the household sector constituting about 60% of total system deposits.



Another consideration is that even if short-term rates did move, the structure of bank funding has changed considerably since the GFC, with banks in New Zealand and abroad less reliant on short-term wholesale funding. US has seen an increase in deposit funding (driven by strong demand for "less risky" customer deposits and efforts by banks try to reshape their liabilities) and the shift to lower short-term wholesale funding, with banks issuing longer-dated (and more expensive) wholesale funding. Similar moves have occurred in NZ, with banks beginning to shift their funding composition towards more stable (and costly) sources of funding, such as deposit and long-term wholesale markets. This shift was encouraged by the RBNZ, which in 2010 introduced minimum requirements on banks' funding composition via its core funding ratio (CFR). The result in NZ has been less reliance on short-term wholesale funding, with the stock of total funding sourced from these markets falling from above 50% in 2008 to around 30% currently, according to current RBNZ estimates. **Funding may have been more stable, but it has been more costly.** The spread between the OCR and mortgage rates is wider than what it was prior to the GFC, partially reflecting the additional costs involved with deposit and long-term wholesale funding.



Be that as it may, our high levels of indebtedness and reliance on offshore funding still leave the NZ economy vulnerable to a blow-out in funding costs. We are closely watching NZD deposit rates as a barometer of emerging stresses in funding markets. Households are particularly exposed, with the ratio of household debt to economy-wide income more than trebling since the late 1980s/early 1990s. While this is not our central view, a large and persistent increase in funding costs for households and businesses could pave the way to the OCR being cut. **While this remains a tail risk and not a high probability outcome in our view, developments in funding costs should be closely followed by financial institutions, borrowers, investors and policy makers alike.**

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