

Corporate Hedging Toolbox

Considerations for Corporate Hedging Activity

First Quarter 2020

Low Volatility Provides Opportunities

Welcome to the first edition of our new *Corporate Hedging Toolbox* - our practical guide for corporates managing foreign exchange and interest rate exposures. We use a variety of quantitative tools to make sense of financial markets, and offer some hedging considerations to address some of the challenges facing corporate treasuries. To subscribe email us [here](#)

In this edition:

[Summary/Implications](#)

[Market Themes](#)

- Foreign Exchange
- Fixed Interest

[FX Hedging Considerations](#)

- Spot position
- Hedging Instrument
 - Forwards
 - Options
- Hedge Tenor

[Valuations Chart Pack](#)

- FX valuation models
- FX position in cycle/histograms
- NZ yield curve
- Fix/float (breakevens)

[Appendix](#)

- Which hedging tool when?

[Glossary](#)

Summary / Implications

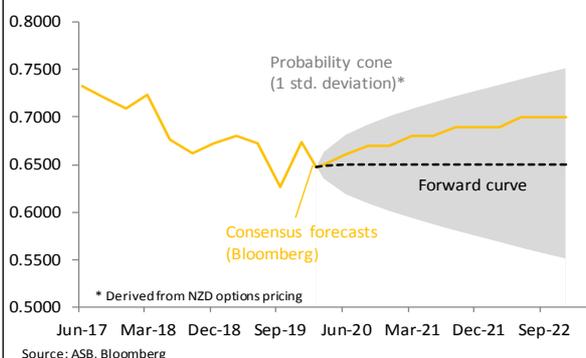
Foreign exchange

- Risk aversion brought on by coronavirus fears is weighing on the NZD/USD. We're currently in the eye of the coronavirus storm but 'fair-value', our long-run equilibrium NZD estimate, and historical precedent all point to some risk of NZD appreciation over a medium-term horizon.
- The NZD is not currently at a level where corporates should be considering changes to hedge duration. The closest pair to a cyclical low/high is NZD/JPY; our duration model points to 66.00 as a possible trigger for action.
- Despite various global risks, FX implied volatility is at levels not far from 20-year lows. As a result, corporates can increase optionality at attractive levels. We don't think the risk reward is particularly favourable for increasing exporter optionality. But for importers, we particularly like zero-cost collars in the current environment.

Fixed interest

- Not only is the NZ yield curve close to record lows, it is also exceptionally flat. This provides opportunities to hedge or extend hedges on long-dated interest rate exposures.
- For example, extending two-year interest rate cover for a further three years currently costs around 10bps, well down from 70bps in 2017.

Feature Chart: NZD forecasts & market pricing

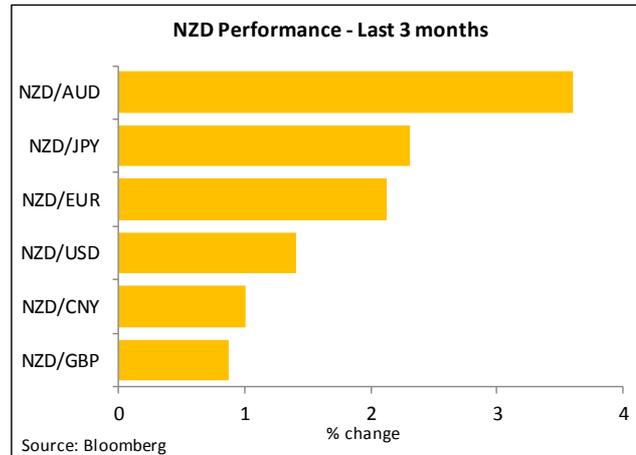


| | Last 3 months | Next 3 months |
|-----------------------------|---------------|--|
| NZ economic pulse | ↑ | → Signs of a turning point in the NZ economic pulse have emerged. However, in the near term we're bracing for the impact of the coronavirus. |
| NZD/USD | ↗ | → Domestic fundamentals are positive but the global picture is still a little foggy. A clearing of global risk aversion would see 0.6700 tested again. |
| NZD/AUD | ↑ | ↑ Fundamentals favour the NZD and we may see further gains ahead. We expect two further RBA rate cuts with just one, or none, from the RBNZ. |
| NZ wholesale interest rates | → | → The global and domestic economies appear to be in recovery mode, which argues for an upside bias. But the coronavirus muddies the waters a little. |

Market Themes

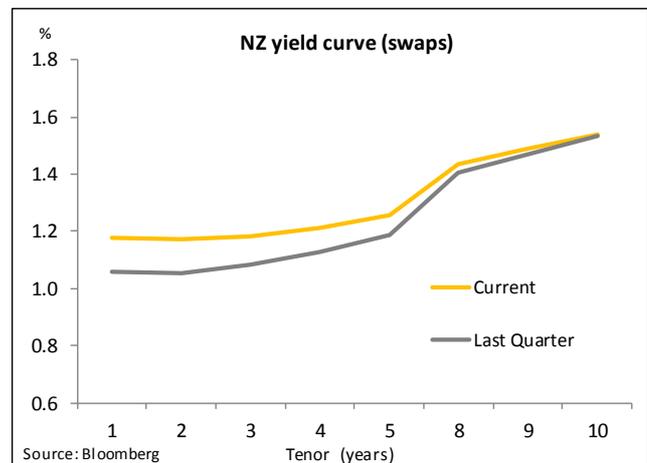
Foreign Exchange

- The NZD has outperformed over the past three months, gaining ground against all the major currencies (see chart).
- Despite sporadic bouts of risk aversion (the latest on coronavirus concerns) the kiwi found support from rising commodity prices and interest rate differentials, the latter on signs the RBNZ may not have to lower rates any further.
- Outside of the NZD, a slump in the AUD/USD following the bushfires has been a notable feature of FX markets recently. Volatility in the RMB has also been influential for broader market sentiment.
- For the coming quarter, the NZD will likely be buffeted by improving domestic fundamentals on one hand (an upward influence) and coronavirus-inspired risk aversion on the other (a downward influence).



Fixed Interest

- The NZ yield curve has lifted by 1-10 bps, on net, over the past three months. Shorter-dated rates have lifted by relatively more, flattening the curve.
- Yields are now 30-45bps above the all-time lows struck in October. Coronavirus fears saw rates pull-back a little through January and early February.
- Key to the lift has been an array of signs the NZ economy is pulling itself out of the mire. Prior to the coronavirus outbreak, markets were convinced the RBNZ would not have to cut rates again. Now, they price around a 60% chance of a cut this year, which is similar to our own view.

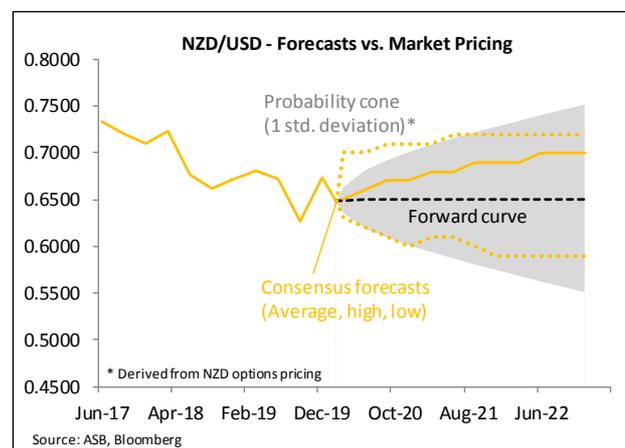


FX Hedging Considerations – What should you be thinking about?

Spot Position

Rather than getting too tied up in FX forecasting, which we can all agree is difficult, we prefer to look at the spot position of the NZ dollar objectively.

The NZD/USD is currently around the middle of its long-run trading range, but below its 5-year average of 0.6900. It's also a little below both our modelled short-term 'fair-value' range of 0.6750-0.7150, and our long-run equilibrium estimate of 0.6750 (see valuations section for details). All else being equal, these factors point to some risk of appreciation over a medium-term horizon.



The Bloomberg consensus forecast is for the NZD/USD to appreciate reasonably steadily over the next three years, albeit with a downside skew (see chart).

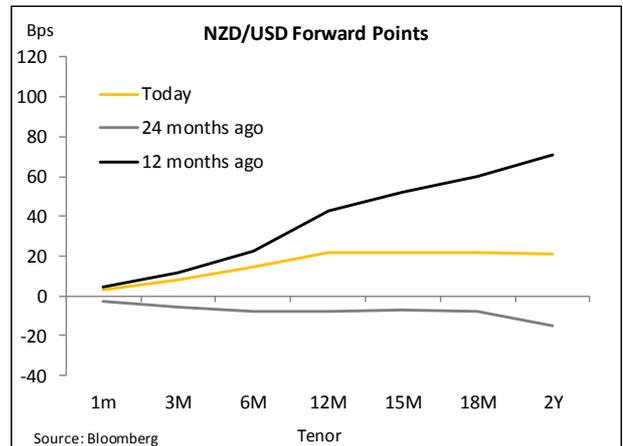
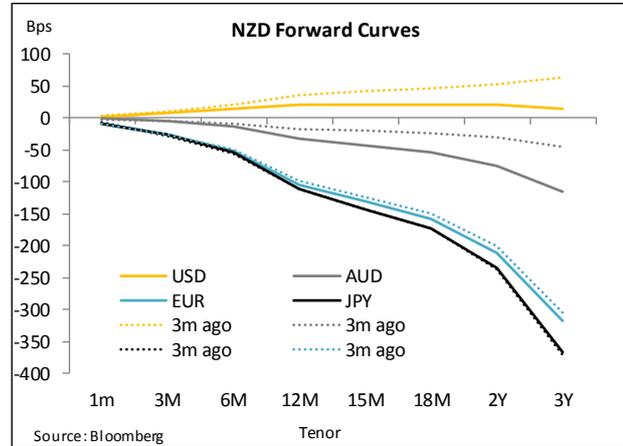
Hedging Instrument - Forwards¹

Recent movements

NZD forward curves have shifted up dramatically since the lows in 2014. This trend increase in NZD forward points flattened out around mid-2018, and there hasn't been a material change since. NZD/USD forward points are now positive out to the 4-year tenor. NZD/JPY, NZD/EUR, and NZD/AUD forward curves are negative, but much less negative than historical norms. Over the past three months, forward points have fallen a little as NZ interest rates have climbed faster than those of the US.

Exporter strategies

With NZD/USD forward points positive (and therefore all-in forward rates higher than spot), there's been a temptation amongst exporters to spurn forward hedging in favour of just executing at the spot rate (i.e. unhedged). We are not fans of this approach. Hedging decisions should be based on the "all-in" (spot + forward) hedged rate. It's worth noting in this regard that even though NZD/USD forward points are positive, an all-in 12 month NZD/USD forward hedged rate is pretty much bang on the long-run average. Moreover, if the risks are indeed tilted towards currency appreciation over the next 12-18 months, exporters should actually be thinking about *increasing* forward cover and lifting hedge ratios. As covered in the appendix, a forward is the most efficient instrument to hedge against the risk of a rising NZD.



Overall, we don't believe the current (historically high) level of NZD forward points are a reason for exporters to be changing their hedging strategy or policy.

Importer strategies

The marked decline in the NZ dollar spot rate over the past few years has posed a risk management challenge for importers and other buyers of foreign exchange. But while the currency is well off its highs, we don't advocate 'waiting' as a hedging strategy. Many of the risks currently confronting the local and global economies are events that, if realised, would involve a marked decline in the NZD. Things like a global coronavirus outbreak, trade war escalation, or NZ recession. As insurance against these 'tail' risks, it makes sense for importers to carry at least a small amount of forward hedge cover.

There are also a few positives worth bearing in mind for importers. First, forward points (for the NZD/USD) are positive and likely to remain so for the near future. Second, as above, the medium-term risk profile is currently tilted towards NZD appreciation. Third, in situations where all-in forward rates are unpalatable for importers, certain option structures are currently relatively appealing (see next section), offering the ability to participate in any moves higher in the NZD we see this year.

Hedging Instrument - Options

Foreign exchange implied volatility ("vols", see Glossary) has fallen markedly over the past year. Despite the outbreak of coronavirus and attendant global economic impacts, currency vols are not far above the 20-year lows hit in mid-

¹ See Appendix for the 'what' and 'when' of the hedging instruments discussed in this section.

January. All else being equal, vols at these low levels reduces the purchase price of options, and boosts their relative appeal as a risk management tool.

Exporter strategies

Exporters typically hedge with options by either purchasing an outright call, or a zero/partial premium collar. These structures provide a worst case rate, usually above the spot rate (an “out of the money” strike – see glossary), but also allow participation in favourable NZ dollar moves (i.e. NZD depreciation). In other words, you are not locked-in like a forward contract.

Currently low vols (see chart) makes purchasing outright calls cheap relative to history. However, we don’t think the risk reward is particularly favourable for exporters to increase levels of optionality at present. The currency is not far above the recent cyclical lows (0.6250 in October) and the medium-term outlook is tilted in favour of appreciation. This reduces the appeal of paying for downside protection. For example, to ‘insure’ a USD1m six-month currency exposure using a call option with an at-the-money strike (0.6480) would cost around NZD32,000 indicatively. The spot rate the NZD/USD would have to at least fall to ‘break-even’ on the premium would be around 0.6340. This is possible of course but would take a material escalation in global risks from here.

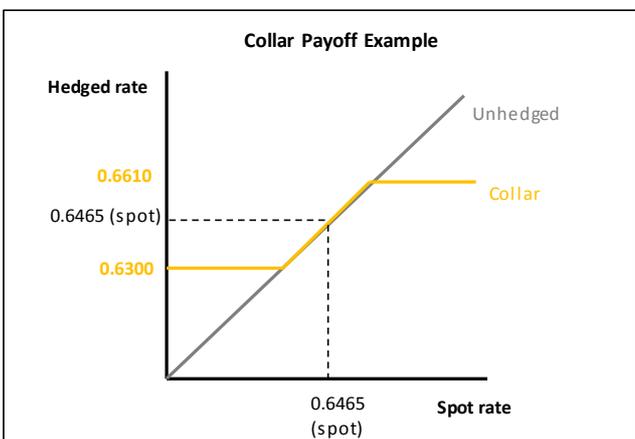
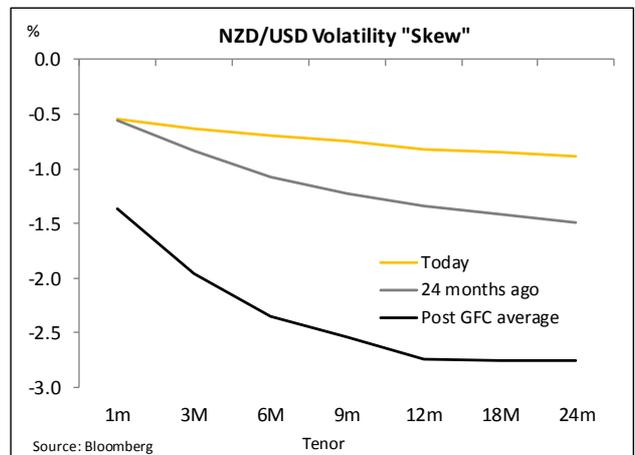
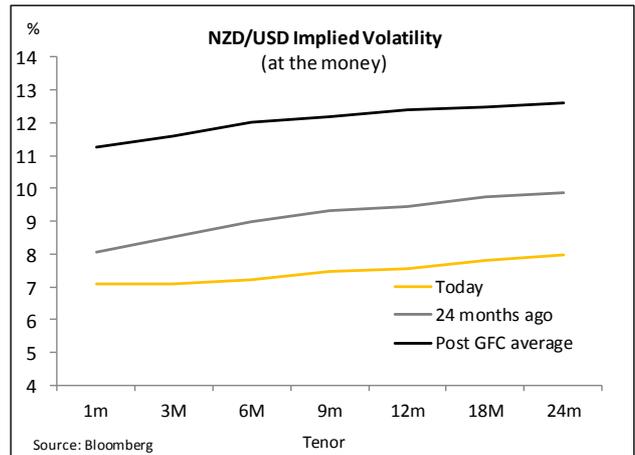
A NZD zero-cost collar may be slightly more appealing, as it can be structured for zero cash cost on the basis of allowing limited downside participation only. This offers advantages relative to an outright call in an environment where paying premium for full downside participation doesn’t make as much sense. Bear in mind though that the NZD volatility “skew” is currently trading much higher than usual (see chart opposite), which worsens the pricing for a exporter wishing to purchase collars.

Importer strategies

Recent declines in currency vols, as well as the shift up in the volatility skew, are boons for importers looking to hedge away their FX exposures using options. Buying an out of the money (i.e. below the spot rate) put option is an effective way of locking in a worse case rate while allowing participation in any NZD moves to the topside. It’s a cheap time to do so.

We nevertheless prefer collars in the current environment. We doubt the currency is about to run away to the topside, at least in the short term. So paying premium for

full participation via a put option may not be that compelling. However, a zero-cost collar can be used to provide limited upside participation, for only a small ‘give up’ in terms of the strike rate. For example, at a spot rate of 0.6465, indicative pricing for a six-month zero-cost collar with a worst-case rate (i.e. the “floor” of the collar) of 0.6300 yields a “cap” of around 0.6610. So, a buyer of this structure would participate in any upside currency moves from the 0.6465



spot rate up to 0.6610. And if the currency collapses they are protected if the spot rate falls below 0.6300. This is illustrated in the payoff diagram on the previous page.

Hedge Tenor

First and foremost, the tenor of FX hedges should be driven by individual business requirements – things like the timing of exposures, treasury policies, and commercial requirements for certainty and/or flexibility. Decisions about hedging duration may also be optimised to reflect market factors. We discuss these market factors below.

Exporters

From a markets perspective, an opportune time for exporters to be thinking about increasing FX hedge duration (i.e. increasing the weighted average tenor of hedges) is when hedge rates are around cyclical lows. Exporters should think about reducing hedge duration when currencies are cyclically high. Of course for importers the reverse applies.

Picking currency cycles is tough. But that’s not necessarily the game here. By gradually increasing/reducing hedge duration and/or hedge ratios when the currency moves into historically high/low areas, corporates may be able to add incremental value to their hedging strategies relative to typical benchmarks.

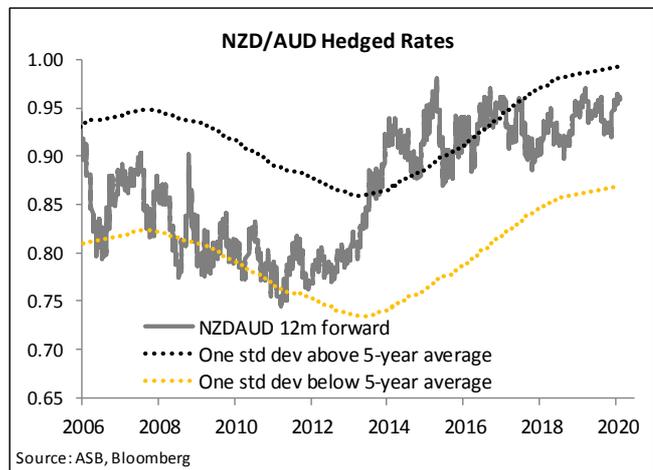
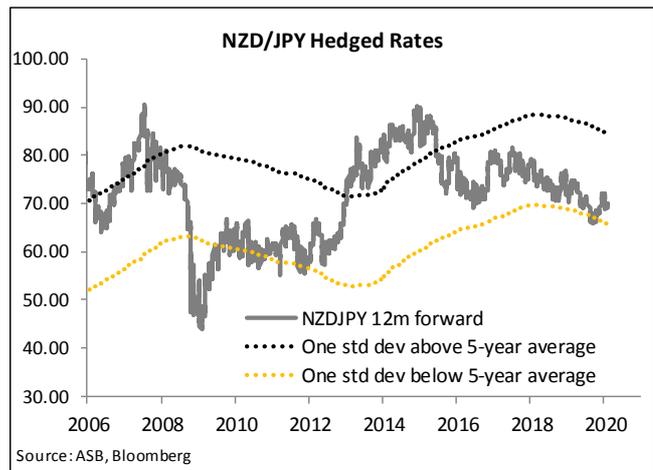
Again, we prefer to get a sense of currency cycles by looking at things objectively. One way to do this is via simple models that track all-in hedged rates (spot + forward points) relative to some sort of average. This is the basis of our hedge duration model in the table opposite.

As an example, in October the NZD/JPY fell to levels more than one standard deviation below a 5-year rolling average (see chart opposite). On this basis it could be termed “cyclically low”, hence our duration model generated a signal for exporters to increase the duration of NZD/JPY currency hedges. The currency has subsequently bounced a little such that the signal is no longer being generated. However, the recent round of coronavirus-inspired risk aversion means NZD/JPY is now again approaching the “cyclically low” 65.90 trigger level (orange light in table above).

Importers

The “cyclically low” signal generated for NZD/JPY late last year was a call to action for importers to think about scaling back the average tenor of hedges in NZD/JPY. But, at present, our duration model currently has no signals for importers to increase or decrease duration. The closest pair to a signal to increase duration is NZD/AUD which, at around 0.9600, is getting close to the cyclically high signal level of 0.9930 (one standard deviation above the 5-year moving average).

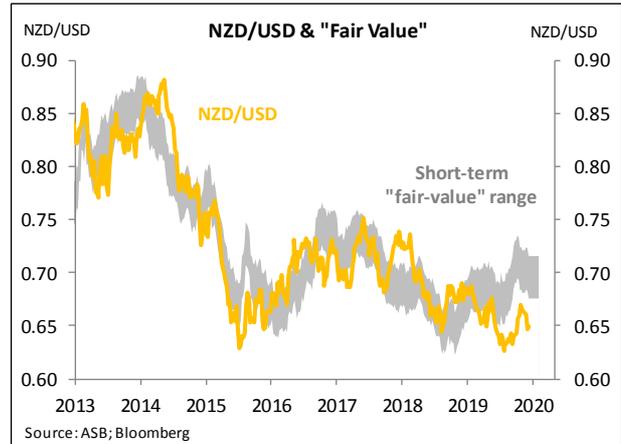
| Hedging Duration Model | | | | |
|------------------------|-----------|-----------|----------------|-----------------|
| | +1 st dev | -1 st dev | Cyclically low | Cyclically high |
| NZD/USD | 0.7530 | 0.6170 | ● | ● |
| NZD/JPY | 84.60 | 65.90 | ● | ● |
| NZD/AUD | 0.9930 | 0.8680 | ● | ● |
| NZD/EUR | 0.6555 | 0.5350 | ● | ● |
| NZD/GBP | 0.5690 | 0.4390 | ● | ● |



Valuations Chart Pack – Foreign Exchange

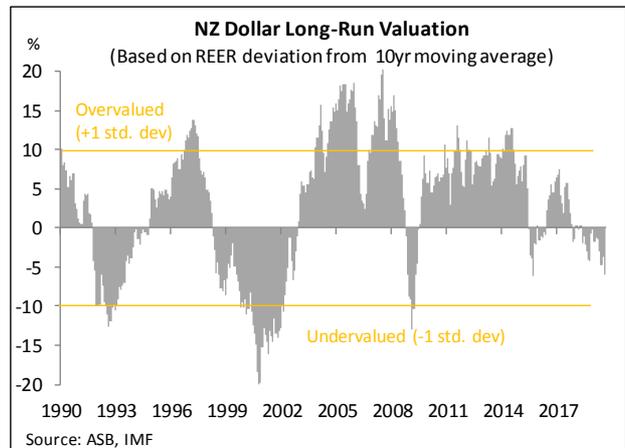
NZD/USD short-term fair-value range 0.6750-0.7150

- Our short-term valuation model is designed to provide an objective estimate of where the NZD/USD roughly “should” be based on its usual fundamental drivers: commodity prices, global risk appetite, and NZ-US interest rate differentials.
- The model currently estimates a 0.6750-0.7150 range. Of the key inputs, interest rates have been the big mover of the past quarter, adding around ¾ cent to fair-value, more than offsetting the negative impact of deteriorating risk appetite.
- Should risk appetite deteriorate further, for example to the December 2018 lows, a further one cent would be shaved off our fair-value range.

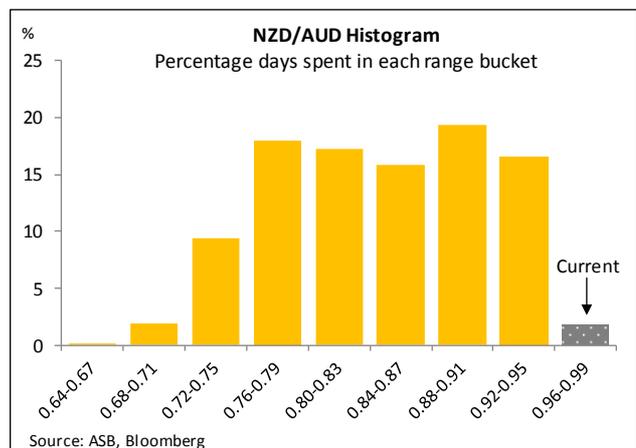
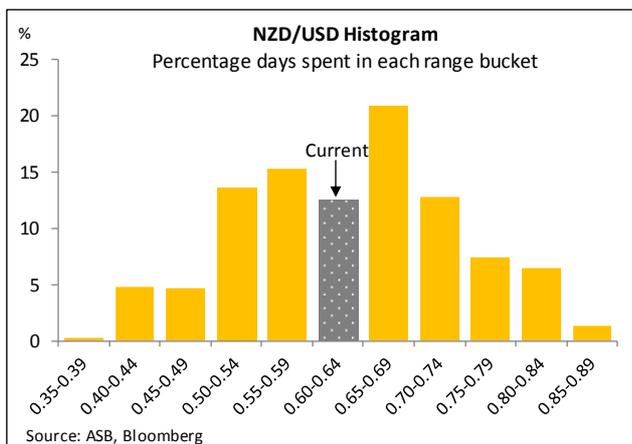


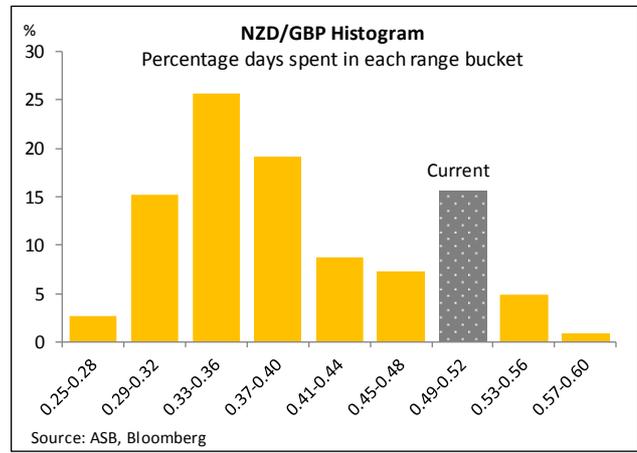
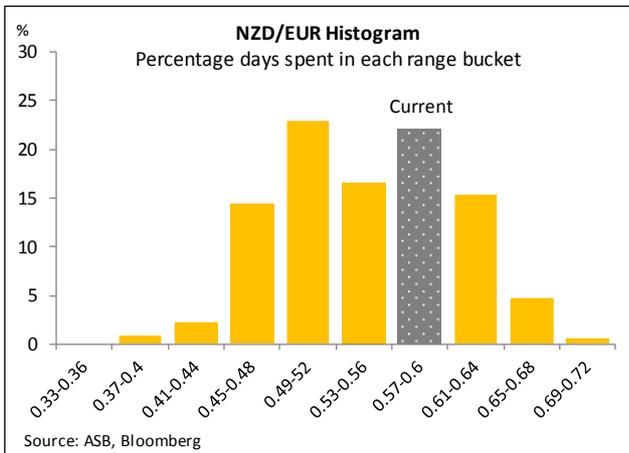
NZD/USD long-run (PPP) equilibrium 0.6750

- On a long-run basis, the NZ dollar is estimated to be marginally “undervalued”.
- We use a real effective exchange rate (REER) model for long-run valuation purposes. Our preferred REER model puts the NZD around 7% below its long-run equilibrium (LRE) level. As a cross-check, our purchasing power parity model returns similar results - long-run equilibrium of 0.6750, or around 4% “undervalued”.
- As the chart shows, these valuation estimates are not particularly extreme. Long-run valuations tend to signal a change in currency direction only when valuations become stretched (15-20% away from LRE).



NZD Position in the Cycle – Histograms

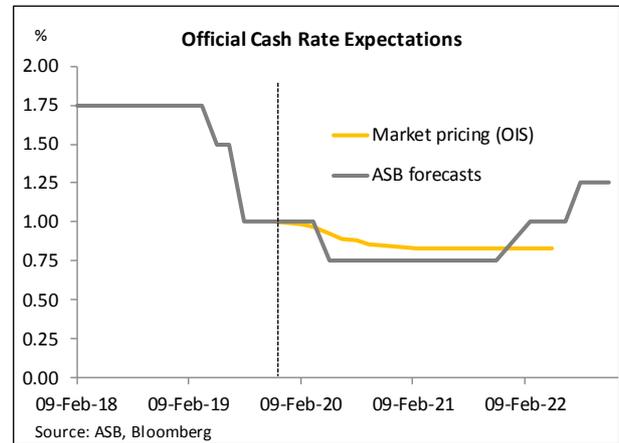




Valuations – Fixed Interest

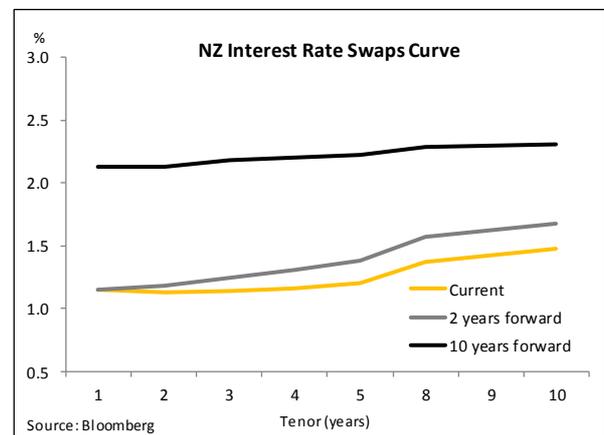
NZ Yield Curve – RBNZ pricing

- Financial market pricing is consistent with around a 60% chance the RBNZ cuts the OCR an additional 25bps this year (peak rate cut pricing is around September). Our own forecast is for one further 25bps rate cut in May.
- At face value, this flags the risk of wholesale interest rates falling further should markets come around to our view. However, we don't have sufficient conviction on the May rate cut to quibble with markets at this point. Moreover, we're cognisant of the risk rate cuts are quickly priced out again if coronavirus worries subside.
- The upshot is that we think the downtrend in interest rates is probably over, but it's probably too soon to start calling a sustained uptrend.



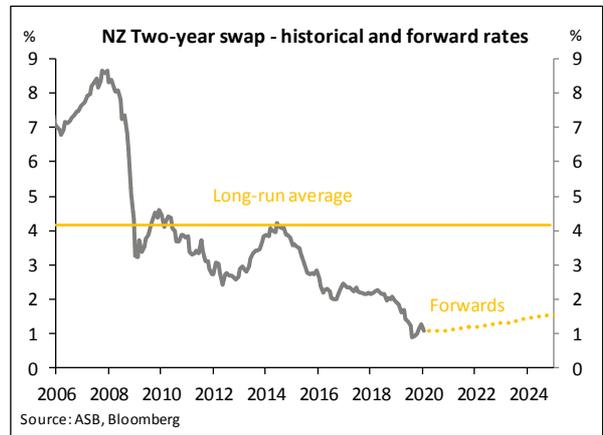
NZ Yield Curve – Fix or float?

- NZ wholesale interest rates are now 30-45bps above the all-time lows struck in October 2019, but remain at exceptionally low levels relative to history. And not only is the yield curve low, it is also very flat. This provides opportunities for corporates looking to hedge long-dated interest rate exposures.
- "Breakeven" analysis can provide guidance on whether it might be a good time to fix (see table below). For example, in swap markets it is possible to fix today for 5 years at around 1.3% (note all rates are indicative). The 'breakeven' on this 5-year term is for the 2y swap rate to be at or above 1.4% in 3 years time (from 1.2%). Given most pundits expect a stimulus-driven economic recovery over this time horizon, a 20bps-odd rise in the



2-year swap yield over three years is eminently plausible. Hence we do think the current environment is a good opportunity to access longer-dated pay fixed hedges.

- A very flat curve is also a great time to consider ‘blending and extending’ existing interest rate hedge cover. This involves increasing the tenor of existing hedge cover, and ‘averaging down’ the rate. For example, extending 2-year hedge cover for a further 3 years (effectively the difference between the 5 and 2 year swap rates) currently costs around 10bps, well down from 70bps in 2017.
- This sort of strategy would suit those corporates that might already be close to policy maximums in terms of their interest rate cover (and hence can’t easily add more), but still want to participate in current low rates.



| NZ Swap Curve - Forward Start Matrix | | | | | | | |
|--------------------------------------|----|----------------|-----|-----|-----|-----|-----|
| | | Forward Period | | | | | |
| | | Spot | 6m | 1y | 2y | 3y | 5y |
| Swap term (years) | 1 | 1.2 | 1.1 | 1.2 | 1.2 | 1.3 | 1.6 |
| | 2 | 1.2 | 1.2 | 1.2 | 1.3 | 1.4 | 1.7 |
| | 3 | 1.2 | 1.2 | 1.2 | 1.3 | 1.4 | 1.7 |
| | 4 | 1.2 | 1.2 | 1.3 | 1.4 | 1.5 | 1.8 |
| | 5 | 1.3 | 1.3 | 1.3 | 1.5 | 1.6 | 1.8 |
| | 10 | 1.5 | 1.6 | 1.6 | 1.7 | 1.9 | 2.1 |

Notes: Rates are indicative only and based on market mids

Appendix - Which Hedging Instrument When?

| Instrument | What | When |
|---------------------------|--|---|
| FX forward | <p>Hedging an FX exposure using a forward contract 'locks-in' a future exchange rate, thereby costlessly providing certainty.</p> <p>Forward exchange rates are determined by adding market-determined forward points to the spot rate.</p> <p>Forward points are driven by relative interest rates between two countries.</p> | <p>Prudent situations to hedge using FX forwards might be when an FX exposure becomes certain (for example a future foreign currency payment is contracted) or when the currency is currently at an acceptable level for a corporate but the risk of an adverse movement would materially impact revenue or cost lines.</p> <p>We don't necessarily advocate "view-based" hedging, but a forward would also be the best hedging product for an exporter (importer) that had a strong view that the currency was about to appreciate (depreciate). Bear in mind though, that if the currency moves in a favourable direction, you are still locked in to deal at the agreed rate, that is, there is zero participation.</p> |
| FX option | <p>FX options provide the buyer with the right, but not the obligation, to buy/sell foreign exchange at a pre-agreed rate (the option "strike") at some point in the future.</p> <p>Options are usually structured to protect a 'worst-case' rate, while also allowing varying amounts of participation in favourable currency movements. There is usually a premium payable.</p> <p>Implied volatility (currency "vol") is the key market-determined component of option pricing. The other components – spot rate, maturity, strike, amount – are usually stipulated by the buyer.</p> | <p>Options provide flexibility. Buyers of options are not 'locked-in' to do anything (other than pay the option premium).</p> <p>This being the case, situations where options offer value are when a future exposure is uncertain in terms of timing, size, or probability of occurring. Options can be used to hedge or partially hedge the exposure but, if it doesn't materialise or it changes, a buyer can simply walk away or sell the option back to a bank. All that would have been lost is the option premium.</p> <p>Options also offer a prudent alternative to corporates going 'un-hedged'. For example, an exporter requires FX cover at a lower rate than current spot and believes there is a good chance the NZD can fall. Going unhedged carries significant risk. But by buying a call option, the exporter is protected at a worst-case rate in the event they are wrong.</p> |
| Interest rate swap | <p>An agreement between two parties to exchange a stream of interest payments for a set period of time.</p> <p>In a corporate context, swaps are most commonly used to convert a series of floating interest rate payments (for example on bank debt) to fixed interest payments, as a means of hedging against the risk that market interest</p> | <p>A corporate will enter a fixed for floating swap anytime it wishes to increase the percentage of debt hedged onto fixed rates.</p> <p>This could be for business reasons, for example a corporate's debt load is increasing, or it needs to protect covenants or rating agency metrics from the possibility of higher interest costs. Or it could be for market reasons, for example the economy starts running hotter, increasing the risk market interest</p> |

| | | |
|--|---|--|
| | <p>rates might rise.</p> <p>Note that an interest rate swap can only hedge against market or base rates rising, a swap cannot hedge the funding/credit component of interest costs.</p> | <p>rates rise.</p> |
| <p>Interest rate swap – forward start</p> | <p>An interest rate swap contract agreed today but with a delayed start date.</p> | <p>A corporate wishes to hedge future interest rate risk now. For example, debt might be low now but forecast to increase materially in three years time, and a corporate wants to hedge against the risk that interest rates rise between now and then.</p> |

Glossary

Option Moneyness – A description of where an option’s strike price lies in relation to the spot rate. The further “out-of-the-money” an option is the further away the strike price is from market and the less valuable and cheaper the option is.

NZD Put Option – The right but not the obligation to sell NZ dollars and buy foreign currency at an agreed rate on a particular date.

NZD Call Option – The right but not the obligation to buy NZ dollars and sell foreign currency at an agreed rate on a particular date.

Option Strike – The price at which foreign exchange is transacted in an option contract if the option is exercised.

FX Implied Volatility (often referred to as option “vol”) – Forward looking view of the likely volatility of a particular currency over a certain period. Key determinant in option pricing.

FX Collar – Obtained by the simultaneous purchase and sale of out-of-the-money put and call options, thus locking in a narrow range of possible hedge rates. A collar provides a worst-case rate but also limits participation to a best-case rate in beneficial currency movements.

Zero-Cost Collar – A collar structured for zero cash cost to the buyer. The cost of purchasing an option offering protection to the buyer is exactly offset by premium earned from the simultaneous sale of another option limiting participation in favourable moves.

Option Volatility “Skew” – The difference in implied volatility between a call and a put option that are the same distance out of the money. The skew is essentially the market’s (traded) preference for puts over calls and hence affects the pricing of collars, which incorporates both.

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