

Corporate Hedging Toolbox

Considerations for Corporate Hedging Activity

Second Quarter 2020

After the Storm

Welcome to the 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. Contact mike.jones@asb.co.nz to subscribe.

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Summary / Implications

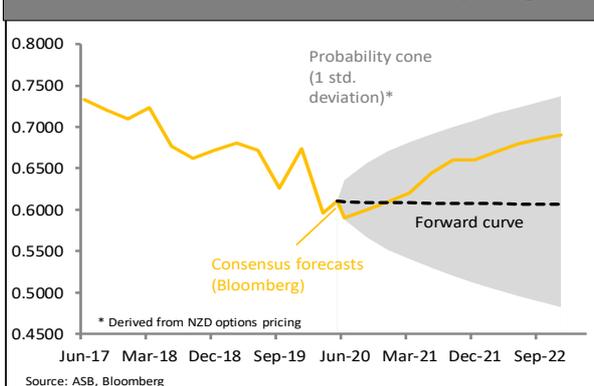
Foreign exchange

- NZD forecasts are being gradually nudged up now that the worst of the COVID-19 storm appears to have blown through. Medium-term risks indeed probably favour a higher NZD, but we're cautious about the near term.
- According to our duration model, NZD/USD and NZD/JPY are close to levels at which corporates should consider changes to hedge duration.
- FX hedging costs have moved favourably for exporters over the past three months, at the expense of importers. Some exporters have been actively increasing hedge duration and hedge ratios on dips, which makes sense to us. We also think NZD/USD zero cost collars have merit in the current environment. For importers, we highlight NZD/AUD as an opportunity.
- For many, COVID-19 disruptions & uncertainty will simply be too great for hedging considerations to be front of mind. Corporates in this group would be better advised to let cover erode towards policy minimums or explore instruments that preserve flexibility like FX options.

Interest rates

- It's a tricky environment to be thinking about hedging interest rate risk. Time is on your side, thus it might be worth holding off on adding to hedges for the time being.
- That said, for some, extremely low rates, particularly at longer tenors, may offer value. "Breakeven" analysis highlights the point.

Feature Chart: NZD forecasts & market pricing

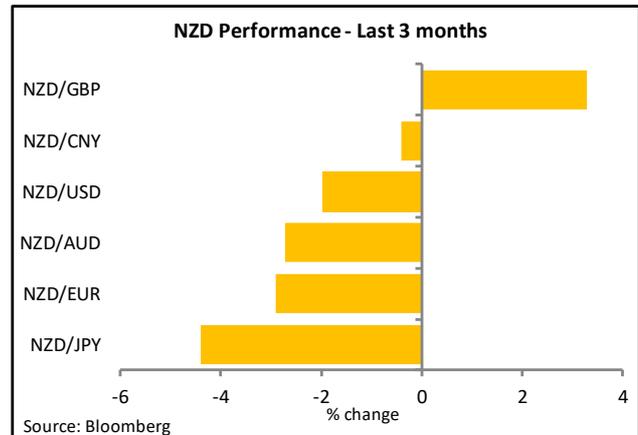


	Last 3 months	Next 3 months
NZ economic pulse	↓	↑ The economy is in the process of regathering itself after 1/3 of all activity was frozen during lockdown. Q3 data will reveal the pace of recovery.
NZD/USD	↓	→ The NZ economy may be better placed than many but the RBNZ is determined to keep the NZD & NZ rates down. This should cap the currency.
NZD/AUD	↓	↓ The NZ & AU economies are in similar positions but the RBNZ is going much harder at QE and NZ commodity prices are falling relative to AU.
NZ wholesale interest rates	↓	→ Barely above zero in many cases already. The RBNZ wants the yield curve low and flat and, one way or another, it will be successful.

Market Themes

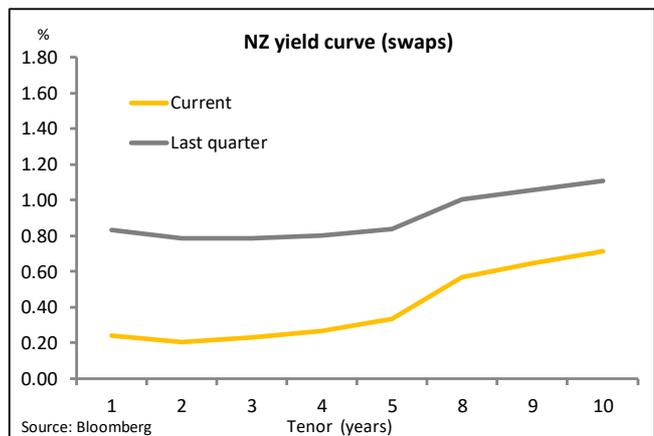
Foreign Exchange

- The NZD has underperformed since our last Corporate Hedging Toolbox (CHT) in February, losing ground to all of the major currencies with the exception of the GBP.
- The kiwi's status as a 'risk-sensitive' currency saw the currency sold particularly aggressively through March and early April as the global COVID-19 crisis took hold. A 10% fall in NZ commodity export prices since February has also taken a toll.
- The JPY and USD have tended to be the biggest 'winners' of the past three months. Both have benefitted from the increased demand for safe-havens through the recent period of disruption. USD hoarding on the part of firms and banks was also a feature of the early part of the crisis.
- We suspect recent NZD choppiness will continue through the coming quarter. Investors' risk appetite, a key influence on the NZD, will remain fickle given the uncertain global and domestic backdrops. The RBNZ's aggressive easing stance and possible further falls in commodity prices will continue to anchor the currency.



Fixed Interest

- The NZ yield curve has tumbled by 50-60bps over the past three months. Shorter-dated rates have fallen by relatively more, steepening the curve slightly.
- The RBNZ is pulling out all the stops to keep interest rates under downward pressure. The OCR has been slashed to 0.25%, the Bank's bond buying programme (QE) has been ramped up to \$60b, and negative interest rates and foreign bond purchases are being touted as possible next steps.
- Our view is that QE will remain the RBNZ's weapon of choice, given some of the nasty side effects of negative interest rates. But whatever the tools ultimately used, we think the Bank will be successful in keeping the interest rate curve low and flat for a long time.

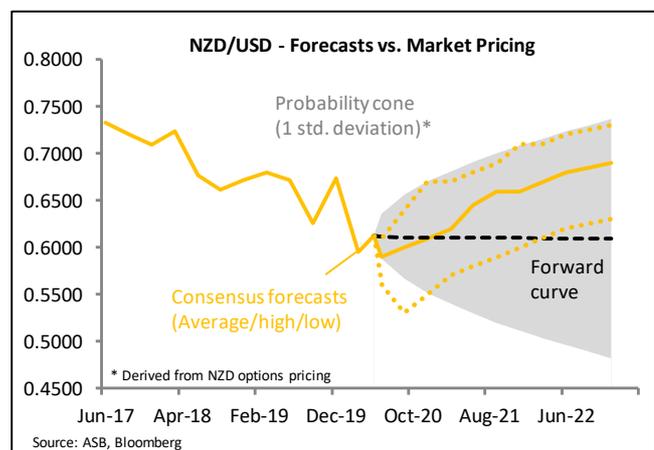


FX Hedging Considerations – What should you be thinking about?

Spot Position

The NZ dollar has been volatile through the COVID crisis but has more recently settled into a comfortable 0.6000-0.6200 range against the USD.

The consensus forecast is for the currency to trend steadily higher from around the middle of the year (see chart opposite). If these forecasts are to be believed then exporters can derive value from hedging using the comparatively flat forward curve, and importers can afford to wait.



However, as we’ve been at pains to point out in our post-COVID market notes (see [here](#) and [here](#)), now is not the time to get too hung up on forecasts. Uncertainty is unprecedented. For example, the one standard deviation probability distribution around NZD/USD by year end is 0.5500-0.6700.

Over the medium-term, the balance of risks probably does favour a higher NZD. The NZ economy is emerging from lockdown in better shape than most, and the outlook for the Terms of Trade – a key fundamental driver of the NZD – is relatively favourable. Our short-term valuation model estimates a “fair-value” range (see “Valuations” section) of 0.6100-0.6500, and the trade-weighted NZD is around 8.5% “cheap” relative to our preferred estimate of the currency’s long-run equilibrium.

But we’re still cautious about the near term. The RBNZ wants the NZ dollar to remain low to help the recovery, and it has the tools – a negative OCR and foreign bond purchases – to lean against any unwanted appreciation if it needs to. The global economy is also far from out of the woods, meaning bouts of risk aversion will continue to buffet the currency from time to time. We’d reiterate the [advice](#) from our March note here in trying to use higher volatility to your advantage by being nimble and using FX orders where possible.

Hedging Instrument - Forwards¹

Recent movements

There have been some interesting movements in NZ forward curves through the COVID crisis as relative interest rates, the key driver of forward curves, have moved in all sorts of directions.

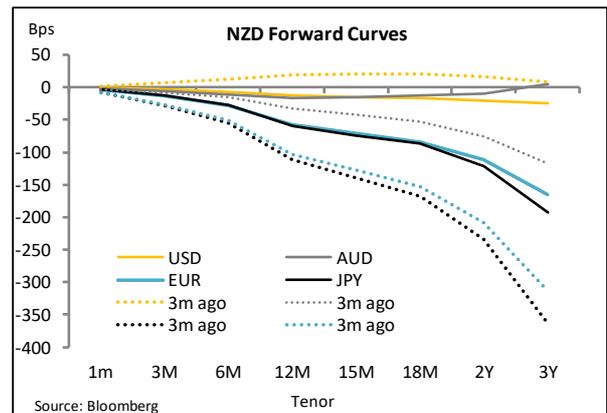
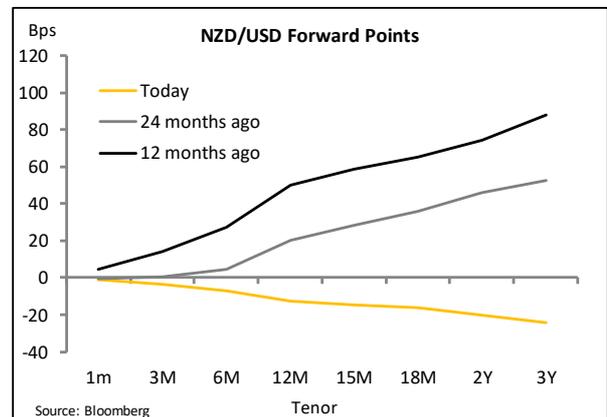
NZD/USD forward points have fallen dramatically, carrying on the trend decline since the mid-2019 peak. They are now back to being negative (forward rates below spot rate) at all tenors, having been positive – a historical abnormality – since early 2018.

In contrast, most other NZD currency pairs have experienced an increase in forward curves since COVID volatility struck in mid-March. This has reduced the cost of hedging forward in NZD/AUD, NZD/JPY, and NZD/EUR for importers, and increased it for exporters.

Exporter strategies

Market pricing has moved favourably for exporters relative to our February CHT. The spot rate is lower and forward points, at least for NZD/USD, have fallen. This means all-in hedge costs are lower. For some this will be great news and, indeed, some exporters have been actively increasing hedge duration and hedge ratios on dips. This strategy makes sense to us given the medium-term NZD prognosis. What’s more, with financial market sentiment shaky and the economic outlook uncertain, it seems very likely there will be additional shake-ups ahead and thus opportunities to scoop NZD/USD and NZD/JPY at lower rates. Exporters exposed to NZD/AUD can probably afford to be more patient.

For other exporters, COVID-19 disruptions and uncertainty will simply be too great for hedging considerations to be front of mind. Becoming over-hedged is the biggest concern. Corporates in this group would be better advised to either allow levels of forward cover to erode towards Treasury policy minimums or use alternative hedging



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

instruments that preserve flexibility such as FX options (see next section).

One thing we would certainly caution against is “chasing” the lowest hedge rates by moving further down the forward curve (longer-term forwards are lower than near-term). We noted in our last CHT that the level of the forward curve should not be a driver of hedging decisions. Decisions around increasing duration should primarily reflect commercial requirements for certainty.

Importer strategies

Generally speaking, recent developments in foreign exchange markets have not been particularly favourable for importers. The NZD has fallen against most currencies we monitor and is now trading below the 5- and 10-year average on a trade-weighted basis. We certainly wouldn’t rule out further near-term falls.

We nevertheless still don’t advocate ‘waiting for better rates’ as a hedging strategy. A further sharp fall in the NZD from here is not our core view. But we’re still far from out of recessionary woods, and the COVID saga probably has a few twists and turns to go yet. As insurance against these ‘tail’ risks and any associated NZD sell-off, it may make sense for importers to carry at least a small amount of forward hedging cover.

NZD/AUD is worth highlighting as a possible opportunity. Having gone into the COVID crisis at record highs close to 1.000, the cross has fallen a reasonable way since. Analysts generally expect further falls ahead as the RBNZ goes harder at quantitative easing relative to the RBA, and the Aussie economy outperforms. The combination of a still historically-high spot rate of around 0.9350 (see “Histograms” section below), and forward points increasing to higher-than-average levels, makes it a potentially opportune time to top up on NZD/AUD forward cover.

Hedging Instrument - Options

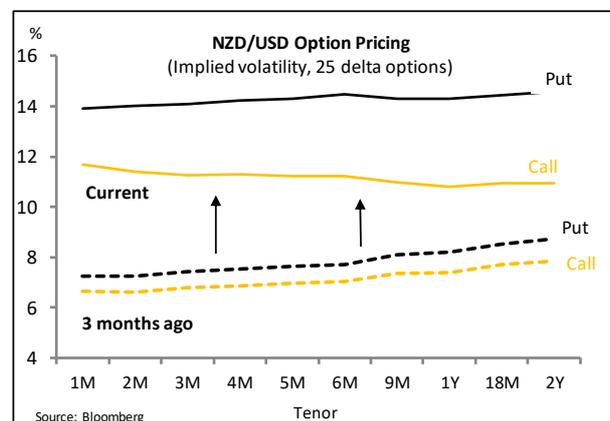
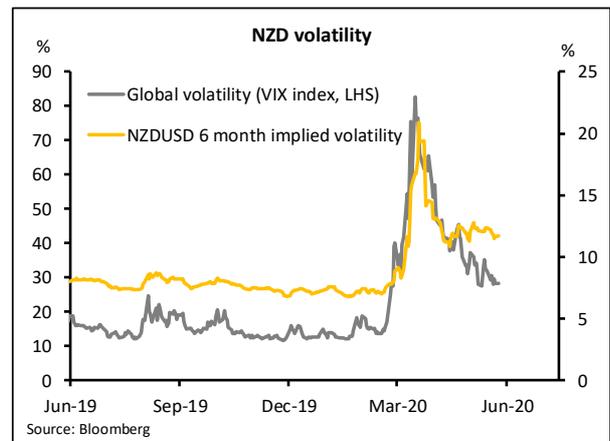
Our last CHT made a point of highlighting the hedging opportunities offered by near 20-year lows in FX implied volatility (“vols”, see Glossary). For a while, these low levels continued to hold despite the global outbreak of COVID-19. However, as FX markets became disrupted, volatility spiked markedly. It has now normalised to levels around long-run averages (chart opposite).

The implication for NZD options pricing is that options are now a more expensive hedging tool relative to three months ago, but not so relative to historical averages. Moreover, given the new economic normal, we doubt vols will return to the multi-decade lows of February anytime soon.

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, but also allow participation in favourable NZ dollar moves (i.e. NZD depreciation). In other words, the FX rate is not locked-in like a forward contract.

This flexibility of a FX option extends not only to the FX rate ultimately dealt, but also to managing the underlying exposure. For example, if an order is cancelled or delayed, an option can either be costlessly torn up, or sold back to the bank if there is value left in the contract. This flexibility

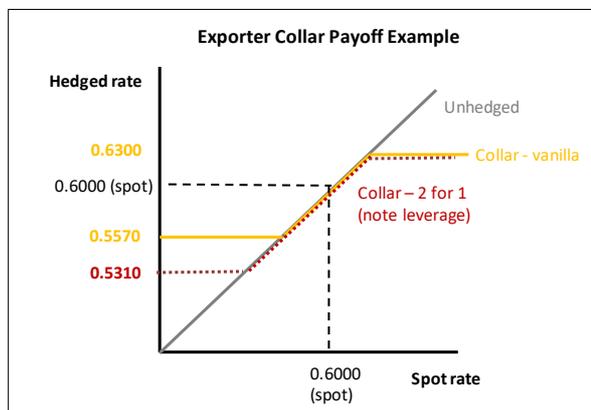
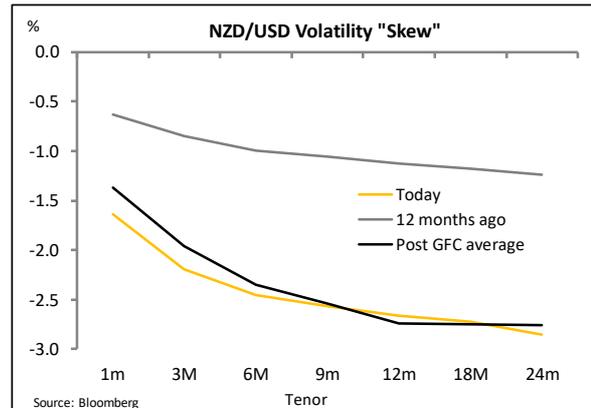


costs, but it might be something worth considering in the current environment of uncertainty and supply chain disruption.

We expressed in our last CHT a preference for exporter zero-cost collars over outright call options (for which a cash premium is due) given the outlook and market pricing. We've retained and slightly strengthened this preference for collars given pricing dynamics over the past three months.

As often happens through periods of NZD volatility/weakness, the NZD volatility "skew" has become more negative. This reflects the market's traded preference for NZD downside protection over topside. In practise, this increases the level of participation (i.e. lowers the "floor") an exporter can get by entering a zero cost collar.²

As an example, if we assume a NZD/USD spot rate of 0.6000, a six-month zero cost collar with a "worst case" rate of 0.6300 would yield a floor of around 0.5570 currently (rates are indicative only). This is around one cent more participation than the equivalent structure in February. For those wanting even greater participation, a variation, known as a "2 for 1", can be dealt where twice the notional amount is exchanged if the put/floor is exercised, relative to an exercise of the call/cap. This lowers the applicable floor. Under a "2 for 1" structure, the "floor" implied in the above example would drop to 0.5310. Participation is still not as high compared to an unhedged scenario, but if the put is exercised, the buyer would have still outperformed the alternative of transacting a forward. The payoff diagram opposite illustrates the various scenarios under this example.



An exporter collar may be a particularly attractive proposition if it's dealt when the NZD spot rate is also under pressure, perhaps from another bout of global risk aversion. The caveat is that it won't be suitable for those exporters wanting full participation in any NZD declines, or those with particularly uncertain revenue streams that need the ability to walk away from hedging contracts.

Importer strategies

Recent shifts in the NZD spot rate, option vols, and the volatility skew have dampened the attractiveness of FX options for importers. But an option may be a useful proposition for those importers dealing with exposure uncertainty, or those who want to 'buy time' to give themselves a chance to lock in a higher NZD (for example to achieve a budget rate) without risking going unhedged.

Those worried about the higher premium costs could consider a short-dated put option (1-3 month maturity) and/or a well out of the money (i.e. lower) strike rate as ways of reducing premium outlay. In this way, the option buyer would still be hedged against the near-term risk of a marked NZD sell off, albeit the well out-of-the-money strike means the option would act more as a cover for a 'tail-risk' (i.e. large NZD fall) scenario only. Essentially, "disaster" insurance.

²The "worst case" rate can be lowered instead of the put/floor if the buyer so chooses, or both can be lowered by a smaller amount.

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.

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. For importers, the reverse applies.

Of course, 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.

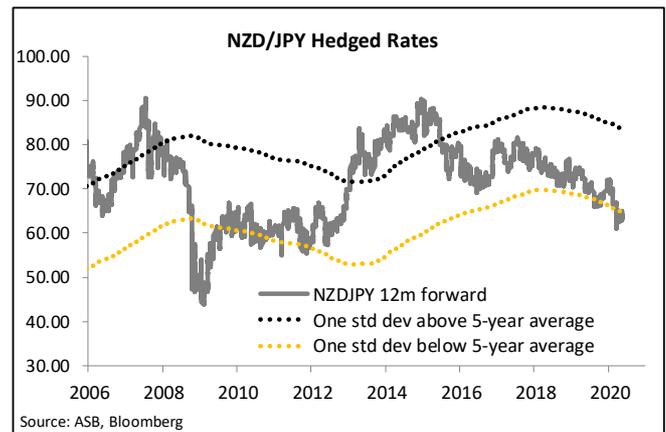
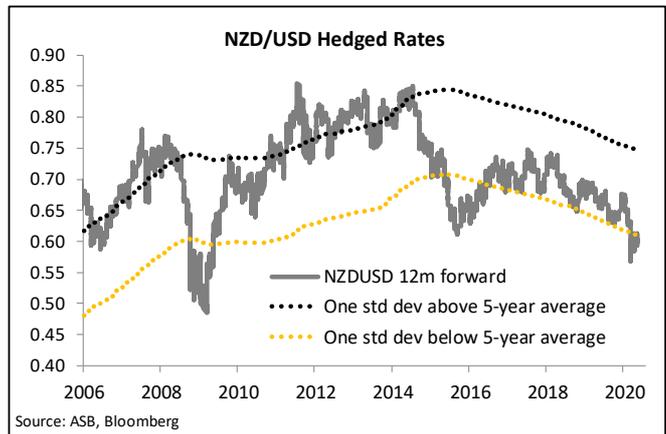
One way to get a objective steer on currency cycles is via models that track all-in hedge rates relative to some sort of moving average. Our hedge duration model (table above) tracks hedged rates against a 5-year moving average. The model generates a high/low “signal” – a possible trigger to rethink hedging duration – when hedged rates move more than one standard deviation away from the average.

The model is not generating any signals at the moment. But both NZD/USD and NZD/JPY have spent a reasonable amount of time below the “cyclically low” trigger levels of 0.6100 and 64.70 lately. Current spot rates are not too far away from these levels (hence the orange lights in the table).

Both of these currency pairs are particularly sensitive to volatility in investors’ risk appetite. So there’s every chance of these currencies falling back below these levels in coming weeks. Such an outcome could be a trigger for exporters with relatively secure medium-term exposures to think about increasing the tenor of FX hedges. Importers, by contrast, may look to shorten hedge duration on any NZD/USD (NZD/JPY) dips back through 0.6100 (64.70).

Of note, the NZD/AUD cross has fallen 6 cents since its mid-March highs but our model says it still has some way to fall (to around 0.8680) before it can be considered “cyclically low”.

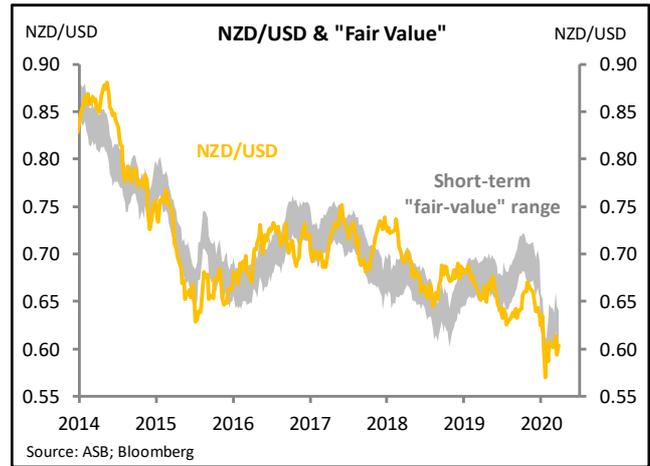
Hedging Duration Model				
	+1 st dev	-1 st dev	Cyclically low	Cyclically high
NZD/USD	0.7460	0.6100	●	●
NZD/JPY	83.30	64.70	●	●
NZD/AUD	0.9930	0.8680	●	●
NZD/EUR	0.6500	0.5290	●	●
NZD/GBP	0.5690	0.4400	●	●
NZD/CAD	0.9700	0.8060	●	●



Valuations Chart Pack – Foreign Exchange

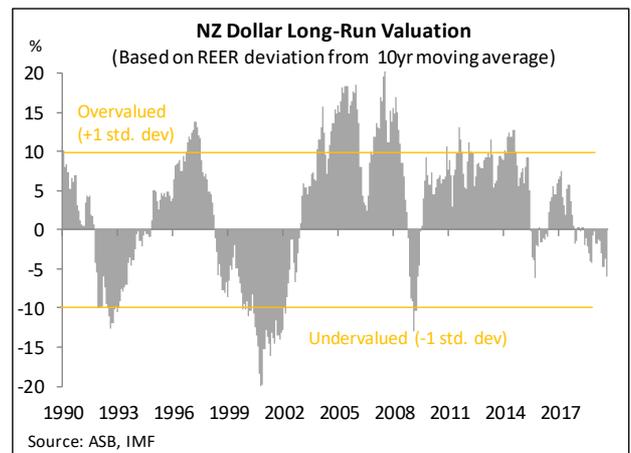
NZD/USD short-term fair-value range 0.6100-0.6500

- 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.
- Fair value (FV) has fallen around 5 cents since the COVID crisis began. The model currently estimates a 0.6100-0.6500 range, meaning current NZD/USD spot is broadly “fair”. Risk appetite (proxied by the VIX index) has become a slightly more important driver of FV since the crisis struck, but NZ commodity export prices remain the most powerful driver.
- There’s potential for NZ commodity prices to fall a little further given the soft global outlook. A scenario where the NZ commodity price index fell a further 3% would see the NZD/USD FV range lowered by a cent.

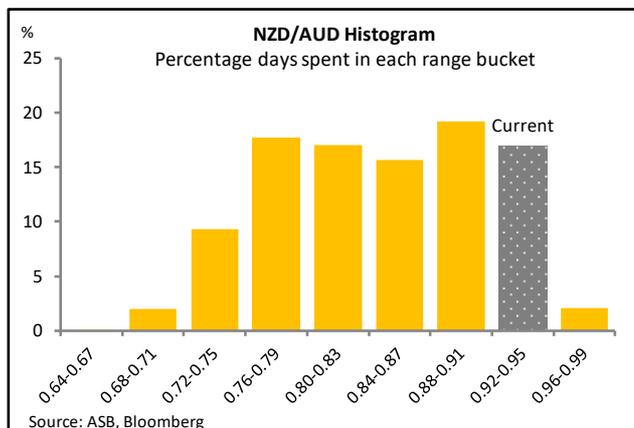
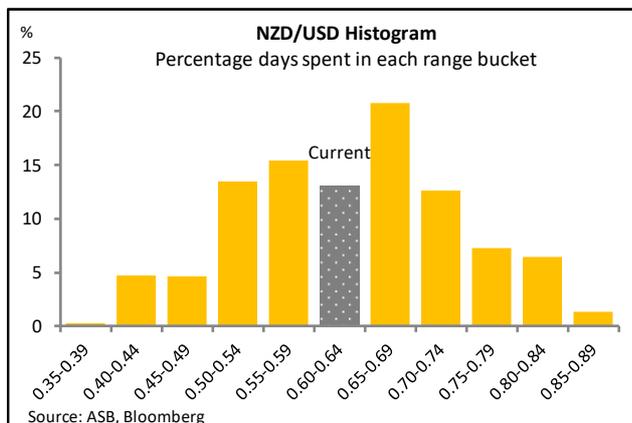


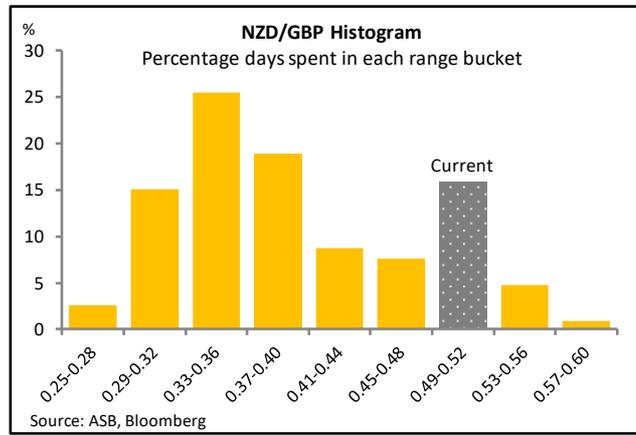
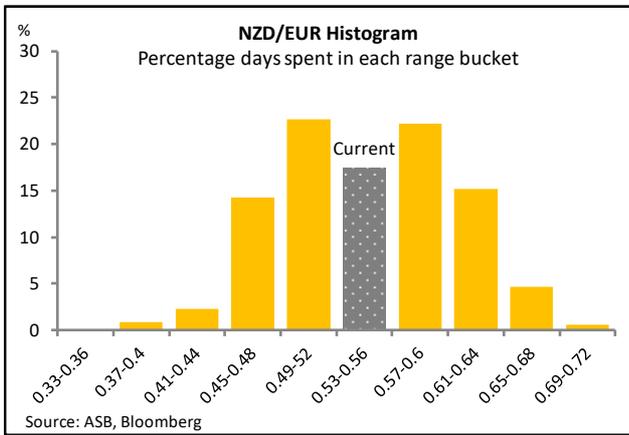
NZD/USD long-run equilibrium 0.7000

- On a long-run basis, the NZ dollar is estimated to be marginally “undervalued”. Our preferred real effective exchange rate model (chart opposite) suggests the trade-weighted NZD is about 8.5% undervalued.
- For NZD/USD specifically, the OECD currently estimates the long-run purchasing power parity equilibrium to be around 0.7000. At a spot rate of around 0.6150, this implies a 12% “undervaluation” on a long-run basis.
- Long-run valuations tend to signal a change in currency direction only when valuations become stretched, i.e. when the currency is at least 20% above/below the long-run equilibrium (LRE). Notably, the NZD/USD bottomed out in March around 25% below its estimated LRE.



NZD Position in the Cycle – Histograms

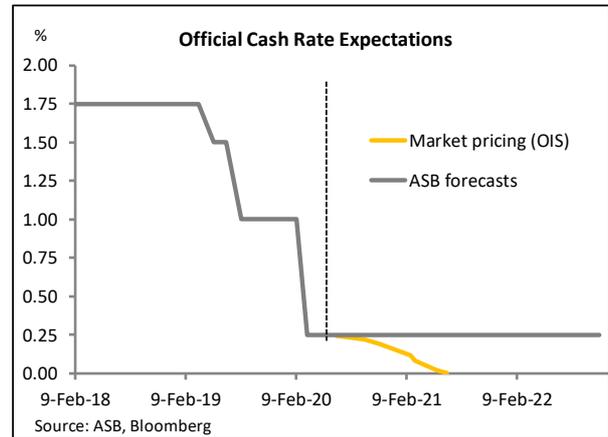




Valuations – Fixed Interest

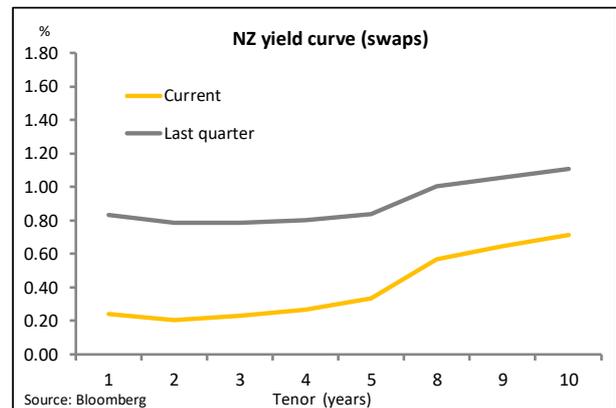
NZ Yield Curve – RBNZ pricing

- The RBNZ has promised to keep the OCR at 0.25% until March. Financial markets have recently been dabbling with the idea of the OCR going negative soon after.
- Our own view is that the OCR will remain at 0.25% for the foreseeable future. At face value, this suggests wholesale interest rates could lift off rock-bottom levels should markets reassess the chances of negative rates.
- However, we think the RBNZ will want to keep the possibility of a negative OCR as a “live threat” for most of 2020 at least. As a result, we suspect markets will continue to price a good chance of such and any lift in interest rates over the rest of 2020 will be limited.



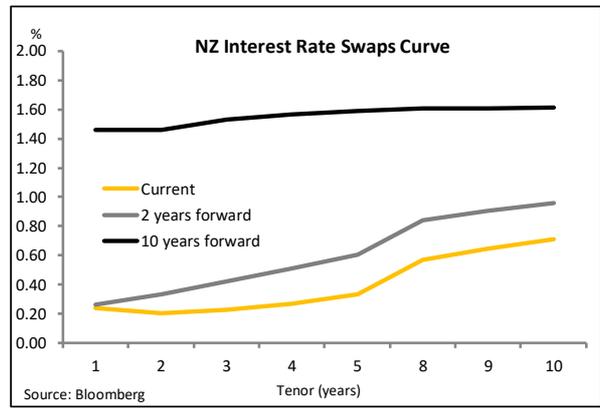
NZ Yield Curve – Fix or float?

- NZ wholesale interest rates are a whopping 50-60bps below the pre-COVID levels prevailing at the end of February. Almost incredibly, the NZ swap curve is below 0.3% out to the 5-year tenor.
- It’s a tricky environment to be thinking about hedging interest rate risk. Uncertainty is high, both in terms of the economic outlook, and corporates’ underlying debt exposures. There’s also the added headache of what negative floating (BKBM) rates, if they did transpire, might mean for the efficacy of pay-fixed swap hedges.
- All else being equal, these factors would suggest corporates should hold off on adding to hedges for the time being, or perhaps explore optionality.
- That said, there will be some – particularly those with



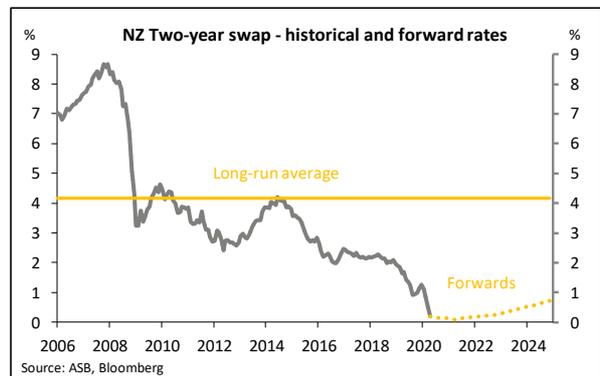
relatively predictable revenue/debt exposures – for which the extremely low rates at present represent an opportunity. To us, the opportunity is greatest at longer tenors.

- It’s hard to know how quickly the NZ and global economies will recover over the next year or so. It’s very likely there will be setbacks along the way. But the COVID crisis won’t last forever and hence some of the market’s long-dated and forward interest rate pricing may thus offer value.
- “Breakeven” analysis highlights the point (see table). For example, in the swap markets it is possible to fix today for 5 years at 0.26% (all rates are indicative). The ‘breakeven’ on fixing for this 5-year term is for the 2y swap rate to be at or above 0.37% in 3 years time (from 0.18%). Absent a prolonged economic depression, an increase to what is still an extraordinarily low rate appears relatively plausible.
- There’s also the option of ‘blending and extending’ existing interest rate hedge cover. This might suit corporates not interested in trying to pick the timing of interest rate moves, or increase outright cover levels, but still wanting to participate to some degree in current low rates. It’s a cheap time to look at this.



NZ Swap Curve - Forward Start Matrix						
Swap term	Forward Period					
	Spot	6m	1y	2y	3y	5y
1y	0.25	0.17	0.13	0.16	0.28	0.65
2y	0.18	0.16	0.14	0.22	0.37	0.76
3y	0.18	0.18	0.19	0.30	0.46	0.85
4y	0.20	0.23	0.26	0.39	0.57	0.92
5y	0.26	0.29	0.33	0.48	0.66	0.98
10y	0.62	0.67	0.72	0.84	0.98	1.22

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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