ANZ Research

New Zealand Market Overview

July 2020

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Summary

The New Zealand Dollar debt market is a $209bn market, comprising around $176bn in fixed income securities and $33bn in money market securities.

The overall market is dominated by NZ Government Bonds (NZGBs). Nominal NZGBs and inflation-linked NZGBs (linkers) comprise around half of the market.

The Reserve Bank of New Zealand (RBNZ) launched its Large Scale Asset Purchase (LSAP) quantitative easing programme in March 2020. The LSAP is currently $60bn, and it targets NZGBs and LGFA (limited to $3bn).

Derivative activity is significant, with good liquidity in Interest Rate Swaps (IRS) and Cross Currency Interest Rate Swaps (CCIRS) out to 10 years, and Overnight Indexed Swaps (OIS) out to 1 year. Interbank IRSs pay interest semi-annually on the fixed leg against a quarterly floating leg, both on an Actual/365 basis. The floating leg sets against NZD 3mth BKBM, which is published by the New Zealand Financial Markets Association based on where 3-month bills trade (or are priced) between 10.20am and 10.22am. Benchmark reform is underway and the RBNZ has said that "supports the selection of the Official Cash Rate (OCR) as New Zealand's fall-back benchmark interest rate".

For most short-term interest rate instruments (OIS, 90-day bank bill futures, bank certificates of deposit, Treasury bills and commercial paper), interest is calculated on an Actual/365 basis.

The 2019 BIS Triennial Survey estimated that NZD spot turnover was US$53bn per day, making the NZD the 10th most actively traded currency.

New Zealand – quick facts

Nominal GDP was NZ$311bn (~US$200bn) in calendar 2019. New Zealand's economy has been severely impacted by the COVID-19 pandemic, which is likely to see nominal GDP fall in the 2020 calendar year. Pre-COVID, primary industries comprised around 7% of GDP, goods-producing industries around 19%, and service industries the remainder. Although the service industry is the dominant sector, this masks the importance of the primary sector, which makes large contributions to both manufacturing and services activity. New Zealand's population clock was at 5.01 million people in July 2020.

Total exports account for just under a third of GDP and are dominated by tourism, dairy products, meat, forestry products, horticultural products and wine. Key imports include motor vehicles, mechanical machinery and petroleum products. New Zealand runs persistent current account deficits (-3% of GDP for 2019). The net international investment position was 58% of GDP in Q1 2020.

In 2019, New Zealand's top 10 merchandise export destinations (in order) were China, Australia, US, Japan, South Korea, UK, Hong Kong, Taiwan, Singapore and Malaysia. The top ten countries of import origin were China, Australia, US, Japan, Germany, UAE, Thailand, South Korea, Malaysia and Singapore.

New Zealand is an OECD member and has free trade agreements with Australia, China and most ASEAN countries. New Zealand has also signed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership.

The New Zealand dollar debt market is a NZD 209bn market dominated by NZGBs

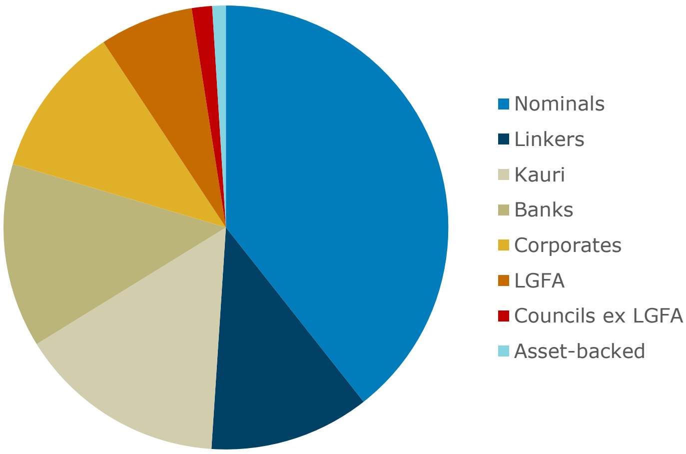
The New Zealand dollar debt market

ANZ estimates that there were around $209bn of NZD debt market securities on issue as at July 2020 (in face value terms), amounting to around two-thirds of GDP. Around half of all securities on issue are NZGBs, which account for just over half of the market.

The estimated $33bn money market is dominated by Bank registered certificates of deposit (approximately $18bn on issue), Treasury Bills ($12bn), and Commercial Paper ($3bn).

The estimated $176bn domestic fixed income market is dominated by nominal NZGBs, with around $85bn on issue as at July 2020. The other significant sectors are inflation-linked NZGBs (approximately $18bn on issue), Kauris ($22bn), Bank-issued bonds ($18bn), Corporate bonds ($14bbn) and LGFA bonds ($12bn). Together with nominal NZGBs, these comprise over three-quarters of the total debt market.

Figure 1: Estimated composition of NZD debt market (~$209bn in July 2020)



Source: ANZ Research estimates, NZDM, LGFA, RBNZ

New Zealand Government Bonds (NZGBs)

All NZGBs are issued by NZDM on behalf of the Crown (see the primary issuance section of "NZGB Conventions and Issuance" below). NZDM also tends to buy bonds back during their final 6-18 months to smooth cash flow, with the RBNZ taking over buy-backs during the final 6 months to help manage the balance of the cash system.

In the wake of the COVID-19 crisis, the RBNZ launched its Large Scale Asset Purchase Programme (see "Quantitative Easing" section below). At that point, NZDM ceased buying back bonds, and handed that task to the RBNZ.

It is worth noting that there are three definitions of the face value of outstanding NZGBs, with sub-sets as follows:

- NZDM's measure of the gross value of bonds on issue (as in the tables below and on Bloomberg page NZDM4): The largest measure, which includes the value of all bonds issued, less bonds that NZDM has bought back and cancelled. This is the figure ANZ uses in charts and tables in this paper.
- NZDM's measure of the value of market bonds (also on Bloomberg page NZDM4): This is the gross value as noted above, less bonds held by the RBNZ as a part of its normal (non-LSAP) operations (mostly for repo purposes).

- The RBNZ's measure of Outstandings (as in the D30 table on the RBNZ's website). This is NZDM's market bonds measure above, less bonds held purchased via the LSAP. This is the denominator the RBNZ uses for its non-resident bond holdings, making offshore holdings look larger as a percentage of gross outstandings.

Fiscal updates

Regular fiscal updates in May (Budget) and December (HYEFU) as well as before each General Election (PREFU)

Fiscal Updates are provided twice a year at the *Budget Economic and Fiscal Update* (normally in May) and the *Half Year Economic and Fiscal Update* (or *HYEFU* – normally in December). During election years (like 2020) the Treasury publishes a *Pre-election Economic and Fiscal Update* (*PREFU*). The Public Finance Act states that this must be published 20-30 working days before the election. The Treasury has announced that the 2020 PFEFU will be published on August 20th. Updates contain detailed fiscal forecasts out to 5 years, with projections going out a further 5 years. The Treasury publishes a Long Term Fiscal Statement at least every four years, with projections out to 40 years.

NZGB issuance projections

NZDM announced at the 2020 *Budget* that it will issue $60bn of bonds in the 2020/21 fiscal year, more than triple the previous record set in fiscal 2010/11 in the wake of the Christchurch earthquake. Issuance is set to fall to $40bn in 2021/22, $35bn in 2022/23 and $30bn in 2023/24.

A record $60bn of NZGBs are planned to be issued in 2020 …

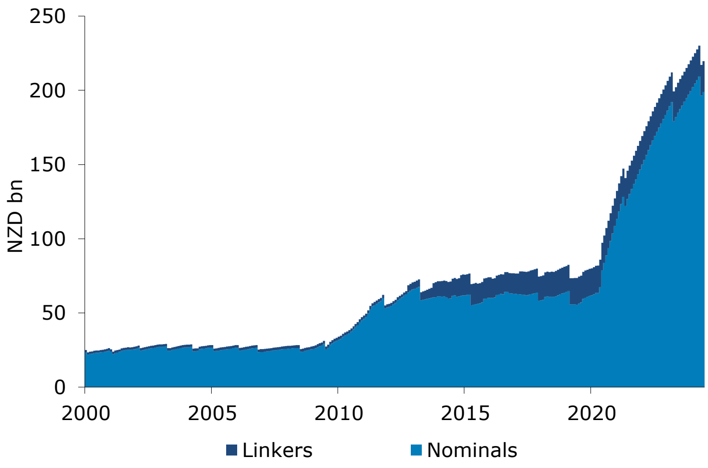
This year's $60bn issuance projection is a gross figure, and it excludes T-Bills. Nominal bond issuance over the current fiscal year will be spread across the entire curve (excluding 2021s), with NZDM stating that linkers will make up between $1bn and $2bn of total issuance.

NZGB outstandings and ownership

New Zealand government debt levels are low by global comparison, even post-COVID. Prior to this COVID-19 crisis, the government had committed to maintaining net core Crown debt between 15-25% of GDP. However, the crisis forced the government to deviate from its Budget Responsibility Rules and the associated commitment to maintain net core Crown debt between 15-25% of GDP. As at the *Budget* in May, net core Crown debt was forecast to increase from around 20% of GDP in 2019 to over 53% by 2023.

… significantly adding to outstandings.

Figure 2: NZGB issuance and projection



Source: NZDM, RBNZ, ANZ Research

The face value of government securities on issue stood at just over $82bn at the end of January 2020, comprising of $62bn of nominal bonds, 18bn of Linkers and $2bn of T-bills. However, the government's fiscal response to the COVID-19 crisis has seen swift, and by July 2020 there were $115bn of government securities on issue, comprising of approximately $85bn of nominal bonds, $18bn of Linkers and $12bn of T-bills.

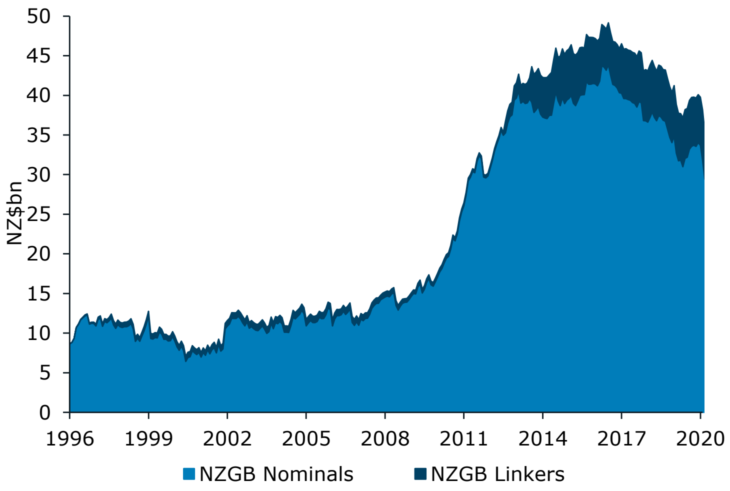
The government's fiscal year-end is on June 30th each year. Projected issuance based on the May 2019 *Budget* and maturities will see total bond outstandings (nominals and linkers) grow to around $145bn by the end of fiscal 2020/21 eventually reaching around $220bn by the end of fiscal 2023/24 (Figure 2).

As at the end of June 2020 (latest data), non-resident investors hold approximately NZ$31bn of nominal NZGBs and $6bn of inflation-linked NZGBs, representing 54% and 34% of nominal and inflation-linked outstandings respectively (as a percentage of the RBNZ's measure of outstandings, which excludes the bonds it holds for its repo book and bonds purchased via the LSAP) .

Significant offshore holdings of NZGBs

These percentages are well below the July 2008 peak (where over three-quarters of nominals on issue were held by non-residents). However, the market has grown significantly since then, and the dollar amount of non-resident holdings since 2008 is far higher. The reduction in non-resident holdings appears largely to be due to the spread compression in NZ yields relative to G10 counterparts (particularly US Treasuries) in recent years.

Figure 3: NZGBs held by non-residents



Source: RBNZ, ANZ Research

Quantitative Easing (QE)

The RBNZ launched its Large Scale Asset Purchase (LSAP) QE programme in the wake of the COVID-19 crisis

The RBNZ launched the Large Scale Asset Purchase (LSAP) programme on 23rd March 2020 in response to the COVID-19 pandemic, a week after slashing the OCR from 1.00% to 0.25%. As it began to become clear that a significant fiscal response was warranted, with little further room to ease monetary policy in the traditional sense, the RBNZ opted for quantitative easing.

The programme was initially launched as a $30bn programme over 12 months, with only nominal NZGBs in scope. However, in early April the RBNZ added $3bn of LGFA bonds to the programme, lifting the overall programme to $33bn. It was further extended in May 2020 to $60bn over 12 months, and at the same time, linkers were added to the list of eligible purchases.

The week-ahead schedule of purchases is published every Friday at 2.00pm. NZGB purchases typically occur three times a week, on Mondays, Wednesdays and Fridays, and LGFA purchases have all occurred on Thursdays. When there have been public holidays, the RBNZ has shifted the days but has continued to purchase NZGBs three times a week and LGFA bonds once a week.

Purchases are conducted via offer auctions on *Yieldbroker*, with participation limited to New Zealand settlement banks. The auction window is open between 11.00am and 11.30am, with results published between 11.35am and 11.45am.

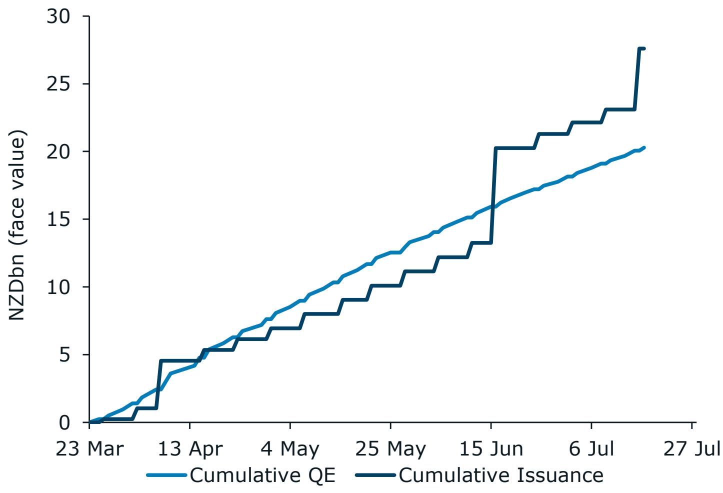
During the early weeks of the programme, the RBNZ varied the pace of weekly NZGB purchases as conditions evolved. At the outset, the RBNZ said it would purchase bonds at a $750m/week pace (in face value terms), which it did for the first partial week. However, it quickly became clear that more support was needed, and the pace of purchases rose to $1,350m/week in the second week, before being lifted again to a $1,800m/week pace in the third week, where it peaked. At the time, the pace of weekly tender issuance was $800m.

The RBNZ's lifted the pace of QE initially to support market functioning, which called for a front-loading of purchases. The peak in the pace of QE coincided with the tap syndication of the 2031 bond in April, which led to speculation that the pace of QE might be lifted when NZDM sold a record $7bn of 2024 bonds via syndication in June. However, the RBNZ kept the pace steady, citing functioning markets (which was evident by the $14bn+ of bids received for the 2024s). Going forward, the RBNZ has said that it intends to keep the pace of QE consistent with the "run rate" required to achieve the size of the flagged programme (currently $60bn over 12 months), adjusted for maturities and reinvested coupons, and assuming a 2-3 week hiatus over Christmas and New Year.

By mid-July 2020, the RBNZ had settled into a $940m/week pace of NZGB purchases, having purchased approximately $21bn of bonds by face value. QE had been keeping up with NZDM bond issuance until the syndication of the 2024 bond, but it has slipped behind by mid-June, with the face value of issuance since QE started amounting to approximately $28bn (Figure 4). Until the launch of the new 2041 bond, the overall delta of QE exceeded the overall delta of issuance since QE started, with bonds with maturities longer than 5 years accounting for around two-thirds of QE, whereas bonds due to mature in less than 5 years accounted for more than half of issuance. However, the launch of the 2041 bond has re-weighted the delta of issuance towards the long end (Figure 5 overleaf).

RBNZ QE and NZDM issuance tracked together initially, but QE has slowed and issuance has increased

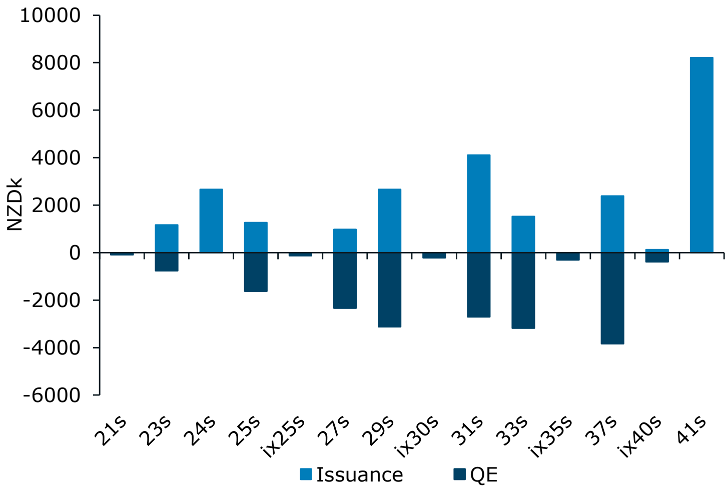
Figure 4: Cumulative issuance versus QE (March 23rd to July 17th)



Source: ANZ Research, RBNZ, NZDM

LSAP purchases have been across the curve. Although in face value terms, the 2025s, 2027s and 2029s have featured the most prolifically; large-scale buying of the 2031s, 2033s and 2037s has been the main contributor to the above-mentioned large delta mismatch. Linker purchases to date have been small.

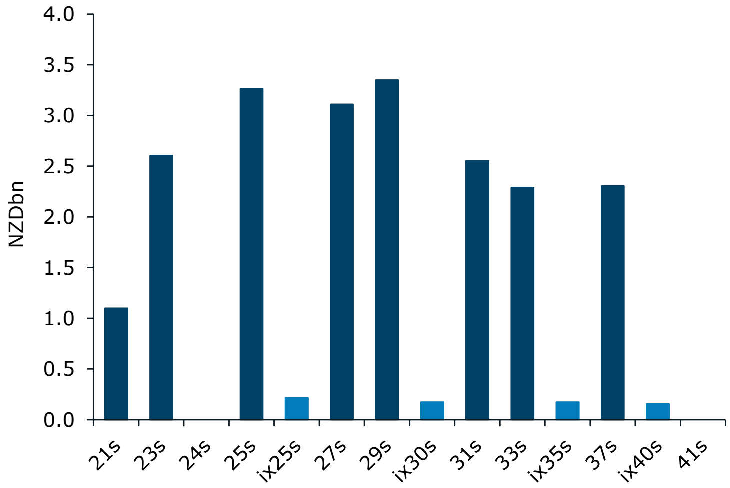
Figure 5: Estimated delta of issuance and QE by bond (March 23rd to July 17th)



Source: ANZ Research, RBNZ. NZDM

Figure 6: Cumulative face value of LSAP NZGB purchases (March 23rd to July 17th)

The RBNZ has been buying bonds across the curve

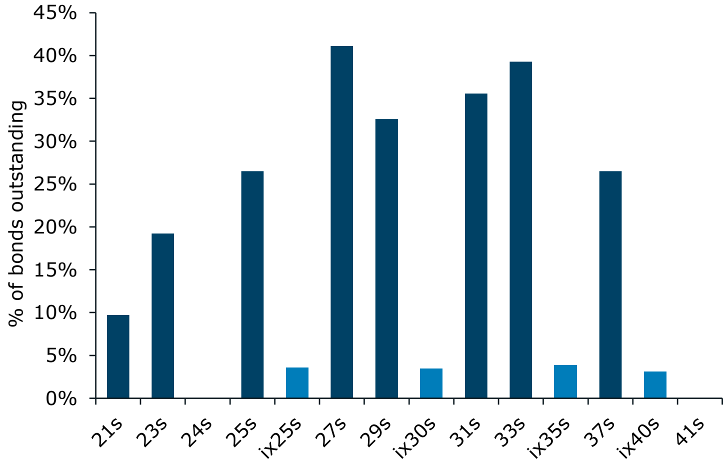


Source: ANZ Research, RBNZ

The RBNZ is indemnified against market value losses on LSAP purchases by prior agreement with the Minister of Finance. This agreement also sets a cap on the amount of bonds the RBNZ is able to purchase. At the moment, the NZGB cap (which is aggregate rather than on an individual bond basis) is 50% of gross nominal outstandings and 30% of gross linker outstandings at the time of purchase. The indemnified cap on LGFA purchases is also 30% of outstandings too, but the RBNZ's LSAP limit is set at $3bn.

Although there isn't a cap on the percentage of outstandings on individual bonds, the LSAP holdings of some nominal bonds are getting close to 50%. No linker bond holdings are close to their 30% cap.

Figure 7: Percentage of each NZGB purchased under LSAP (July 17th)

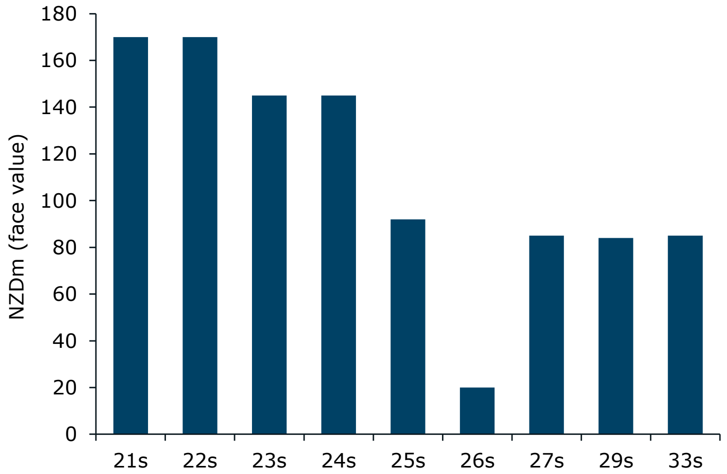


Source: ANZ Research, RBNZ

LGFA purchases conducted under the LSAP amounted to $880m as at June 30th. Against a cap of $3bn, that gives the RBNZ ample capacity to continue purchases over the next 12 months. Purchases have been consistent across the curve, with around twice as many shorter bonds purchased relative to longer bonds. By late July, the pace of weekly purchases had dropped to $30m per week, down from a peak pace of $140m per week when purchases started in April.

LGFA bonds are also included in the RBNZ's QE programme

Figure 8: Cumulative face value of LSAP LGFA purchases (March 23rd to July 17th)



Source: ANZ Research, RBNZ

Strong sovereign credit ratings

NZGB Conventions and Additional Information

Credit ratings:

Agency	Foreign Currency	Domestic Currency	Last Update
Moody's	Aaa (stable)	Aaa (stable)	Apr 2020
S&P	AA (positive outlook)	AA+ (positive outlook)	May 2020
Fitch	AA (positive outlook)	AA+ (stable)	Jan 2020

Source: Moody's, Standard & Poor's, Fitch, Bloomberg, ANZ

Interest: Most (but not all) nominal bonds mature on the 15th day of the maturity month and pay equal semi-annual coupons in arrears. Both the 2021s and 2023s mature on a Saturday; market dissatisfaction with this led NZDM to alter the date of more recently issued bonds like the 2029s (20th April maturity/coupon) and the 2033s (April 14th maturity/coupon).

All existing Linkers mature on the 20th day of the maturity month. All existing and planned linkers are capital indexed bonds, paying quarterly coupons in arrears. Note that there is NO negative inflation floor.

Regular NZGB issuance occurs via weekly tenders. They are generally held on Thursdays, and are conducted via Yieldbroker

The ex-interest period for all NZGBs is 10 days (e.g. the holder of record of a 15 April 2025 bond at close of business on 5th April/October will receive the coupon and the bonds trade ex-interest from the 6th).

Primary Issuance: Bond tenders are usually held on a Thursday. However, tenders that clash with the *Budget, HYEFU* or *PREFU* (if they are also scheduled for a Thursday) are generally delayed by one day to the Friday.

Tender schedules are now published monthly at 8am NZT on the day before the last tender of the prior calendar month. They used to be published quarterly, but higher volumes, greater uncertainty and the more frequent use of syndicated bond placements has seen NZDM move to a monthly schedule. Tender schedules detail the size and intended composition of each tender over the coming month, and are subject to final confirmation when a formal notice of intention to tender is given at 11.30am the day before each tender is held.

ANZ is a primary dealer

Bids close at 2.00pm NZT. Bids are entered via *Yieldbroker*, and expressed in yield to maturity to 3 decimal places with the 3rd decimal place in quarter point increments only (i.e. 1.4625% and 1.465% are acceptable bid yields, but 1.467% is not).

Only registered tender counterparties (RTCs) may bid in NZGB tenders. At the moment, there are eight RTCs (i.e. primary dealers), **one of which is ANZ**.

The minimum denomination of bids is NZ$1m with multiples of NZ$1m thereafter. Results are usually announced by 2.05pm and NZDM reserves the right to issue less than the amount tendered. NZDM normally issues one bond per tender, but historically, when more than one bond has been offered, NZDM has asserted the right to accept oversubscriptions of up to 50% in any maturity offered in the tender, subject to the proviso that the total amount of bids accepted in all maturities does not exceed the total amount offered for the tender.

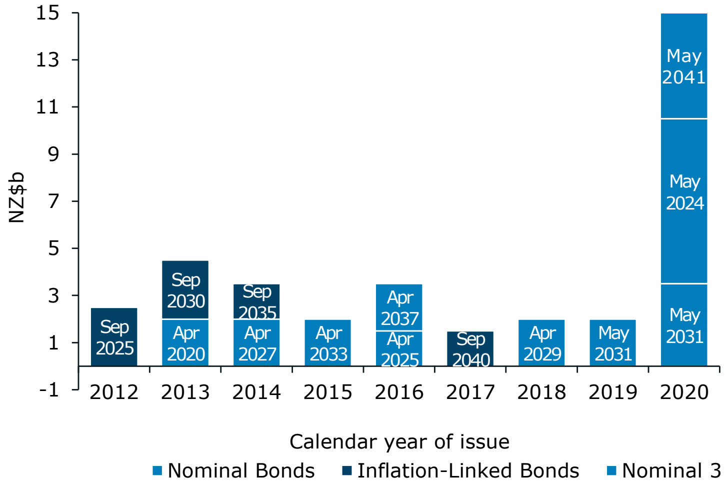
New issuance is generally conducted via syndication

New Issuance via syndication: Placement via syndication is now NZDM's preferred style of launching new bonds. Until 2020, all bonds issued via syndication were new bonds, but in the wake of COVID-19, NZDM has used the syndication process to tap existing bonds. To preserve secondary market price tension, NZDM tends to commit to not offering newly syndicated bonds via tender for a period of around three months after they are issued or tapped.

Syndicated bond issuance is generally flagged 2-3 months in advance. Post-COVID, NZDM has tended to announce that it will issue either a new bond or tap an existing bond a few months out, and to finalise the maturity date at least a month ahead. The next bond to be sold via syndication a tap the exiting 2027 bond in August. There has been no announcement of further syndicated bond issuance beyond Q3 (and the General Election on 19th September), but the issuance "run rate" required to reach $60bn suggests we will see additional syndications in coming quarters.

NZGBs have been issued on fourteen separate occasions so far, with record issuance seen across three separate transactions in 2020 (Figure 9).

Figure 9: Syndicated NZGB issuance by year



ANZ makes markets in all NZGBs 24/5

Source: ANZ Research, NZDM

ANZ secondary market price-making: ANZ endeavours to make a market in NZGBs to clients 24 hours a day from 8.30am NZD Monday to 4.30pm London time Friday. While standard market parcels are relatively small, much larger parcels are the norm when dealing direct with clients. For example, it is not unusual for ANZ to price much larger parcels (outright or against swap) often exceeding US$50k of dV01 although market liquidity can fluctuate given the small relative size.

Interbank market: Bonds trade on a yield (rather than price) basis. While there is no formal reciprocal interbank market, NZGBs trade actively in the voice-broker market in the following standard market parcels:

Bonds	Market parcel
0-5yr (21s, 23s, 24s & 25s)	$20m notional
5-15yr (27s, 29s, 31s & 33s)	$10m notional
15yr+ (37s & 41s)	$5m notional
All linkers	$2m notional

Source: NZFMA, ANZ Research

Market parcels on spread trades are based on the standard market parcel for the longer bond.

Settlement: Settlement is T+2 and bonds can be held in Austraclear or Euroclear/Clearstream.

Tranche Size: NZDM has set a tranche cap of $18bn for nominal NZGBs. The tranche cap for linkers is $6bn.

Information Memorandums: Information Memorandums for all New Zealand Government securities can be found online. Please see the links below to download pdf versions.

Nominal NZGBs:

https://debtmanagement.treasury.govt.nz/sites/default/files/information-memorandum-governmentbonds-25mar20.pdf

Inflation Indexed NZGBs (linkers):

Nominal NZGBs:

https://debtmanagement.treasury.govt.nz/sites/default/files/information-memorandum-iibs-25mar20.pdff

Nominal NZGBs

As at 20 July 2020, the amount of NZGB on issue stood at just over $103bn. Of that, nominal bonds (10 maturities) totalled around $85bn as in the table below. Note that these data are gross outstandings.

$85bn of nominal NZGBs over 10 maturities

Maturity	Coupon	Total Outstanding
15 May 2021	6.00%	$11.3bn
15 April 2023	5.50%	$12.7bn
15 May 2024	0.50%	$7.2bn
15 April 2025	2.75%	$11.7bn
15 April 2027	4.50%	$7.3bn
20 April 2029	3.00%	$9.9bn
15 May 2031	1.50%	$6.8bn
14 April 2033	3.50%	$5.7bn
15 April 2037	2.75%	$8.2bn
15 May 2041	1.75%	$4.5bn

Source: NZDM, ANZ Research

Inflation-Linked NZGBs (Linkers)

$18bn of NZGB linkers over 4 maturities

There are four inflation-linked bonds (Linkers) on issue (as shown below) with total outstandings of around NZ$18bn as at 20 July 2020. They are capital indexed bonds linked to headline CPI.

Maturity	Coupon	Total Outstanding
20 September 2025	2.00%	$5.5bn
20 September 2030	3.00%	$4.5bn
20 September 2035	2.50%	$4.3bn
20 September 2040	2.50%	$4.3bn

Source: NZDM, ANZ Research

Treasury Bills (T-Bills)

T-Bills are used for seasonal and short-term funding. Although NZDM projections show projected outstandings holding constant at $10bn over the next 4 years, this figure is approximate and there were $11.89bn on issue as at 30 June 2020.

Maturity dates are evenly spread over the next 12 months, and there are generally two maturity dates per calendar month.

T-Bill tenders are conducted weekly, on Tuesdays via Yieldbroker. Bids close at 2.00pm and results are announced at 2.05pm. NZDM normally issues 3 month, 6month and 12 month T-bills at the weekly tenders.

High Grade Credit: Kauri Bonds

The Kauri market is a relatively new NZD market segment, analogous to the Kangaroo market for AUD bonds. Although there have been some corporate issues, issuance is dominated by Sovereigns, Supra-nationals and Agencies (SSAs). At the end of May 2020 (latest data), total outstandings stood at around NZ$22bn.

The first Kauri issue was completed in November 2004 by the Australian issuer Telstra. The first AAA Kauri was issued in July 2007 by The World Bank.

ANZ estimates that annual issuance in recent years has been as follows:

Year	Issuance
2014	$6.4bn
2015	$6.3bn
2016	$5.1bn
2017	$2.9bn
2018	$3.8bn
2019	$3.3bn
2020 (YTD June)	$3.5bn

Source: ANZ DCM estimates, ANZ Research

Liquidity is reasonable, and has been enhanced with the establishment of a repo market and acceptance of the repo-eligible Kauris in the RBNZ Open Market

Operation since 2007. Kauri pricing is generally equivalent to international comparable benchmarks. In the secondary market pricing generally trades as a spread to swap, not NZGBs.

The following entities have issued Kauris:

- African Development Bank (AfDB)
- Asian Development Bank (ADB)
- Council of Europe (COE)
- Bank Nederlandse Gemeenten (BNG)
- Council of Europe Development Bank (COE)
- Eurofima
- European Investment Bank (EIB)
- Export Development Canada (EDC)
- Export-Import Bank of Korea (KEXIM)
- Inter-American Development Bank (IADB)
- IBRD (World Bank)
- International Finance Corporation (IFC)
- KfW Bankengruppe
- Kommunalbanken (KBN)
- Korean Development Bank
- L-Bank
- Municipality Finance
- Nordic Investment Bank (NIB)
- Queensland Treasury Corp (QTC)
- Rentenbank
- Telstra

Settlement: Can be held in Austraclear, Euroclear or Clearstream.

ANZ secondary market price-making: ANZ generally supports all Kauri bonds in the market, but pricing depends on market conditions.

High Grade Credit: Local Government Funding Agency

Local Government Funding Agency (LGFA) bonds are unique, and while total outstandings represent only a small share of overall NZD debt outstandings, as a single issuer, they are the largest issuer after the government.

The LGFA was established in December 2011 for the purpose of raising funds for its shareholder members, being a collection of local authorities, including the major authorities in most (but not all) of New Zealand's major cities. Borrowings by the LGFA are jointly and severally guaranteed by its members. However, importantly, the LFGA is not guaranteed by the New Zealand government. Standard & Poor's (S&P) have rated the LGFA AA (foreign currency).

While not directly comparable to the Australian Semi-Government sector, it is similar – the main differences being that Australian semi-governments issuers are states that issue debt directly into the market, whereas the LGFA is owned by city, district and regional authorities, and it raises funds for them under a single name.

LGFA issuance is conducted using *Yieldbroker*. As at July 20th, the LGFA had NZ$11.86bn of bonds on issue spread over nine maturities as follows:

Maturity	Coupon	Total on Issue
15-May-21	6.00%	$1,500m
14-Apr-22	2.75%	$1,305m
15-Apr-23	5.50%	$1,650m
15-Apr-24	2.25%	$1,398m
15-Apr-25	2.75%	$1,459m
15-Apr-26	1.50%	$1,150m
15-Apr-27	4.50%	$1,426m
20-Apr-29	1.50%	$842m
14-Apr-33	3.50%	$1,130m

Source: LGFA, ANZ Research

Interest: LGFA bonds typically mature on the 15th day of the maturity month (but there are exceptions as above) and pay equal semi-annual coupons in arrears. The ex-interest period is 10 days (e.g. the holder of record of a 15 April 2025 bond at close of business on 5th April will receive the coupon and the bonds trade ex-interest from the 6th).

Primary issuance: Tenders are conducted according to a schedule published at the beginning of each fiscal year. Tenders are typically held every month, on a Wednesday, and bids close at 2.00pm NZT. Bids are entered via *Yieldbroker*, and expressed in yield to maturity to 3 decimal places with the 3rd decimal place in half point increments only. The minimum denomination is NZ$1m, with multiples of NZ$1m thereafter. Results are *usually* announced by 2.10pm and the LGFA reserves the right to issue less than the amount tendered.

Secondary market: There is no formal interbank market for LGFA bonds and only limited broker market activity.

ANZ secondary market price-making: ANZ typically provides price support across all tranches of LGFA bonds, on a best endeavours basis. Pricing depends on market conditions.

Credit ratings: S&P AA (Stable); Fitch AA (Stable).

Financial Issuers (Banks)

Major issuers are the New Zealand banks, as well as some offshore banks. Bank issuance is usually off domestic programmes (and hence withholding tax generally applies) or in EMTN format (where no withholding tax applies).

Issuers include:

- ANZ Bank New Zealand
- ASB Bank
- Bank of New Zealand
- Bank of China NZ
- China Construction Bank NZ
- Heartland Bank
- HSBC
- Industrial & Commercial Bank of China NZ
- Kiwibank Ltd
- MUFG Bank
- Rabobank NZ
- Westpac NZ

Interest: Most bonds pay equal semi-annual coupons in arrears and the ex-interest period is usually 9 days.

Primary issuance: Various methods are employed, ranging from book-builds, private placements and retail issues.

Secondary market: Activity is reasonable, but depends on how widely held bonds are. Spreads tend to be wider.

ANZ secondary market price-making: ANZ tends to support financial issuer names it brings to market, and to make markets in larger and more liquid issues. Pricing is done on a best endeavours basis.

Corporate & Local Authority Bonds

Corporate issuers range from AA+ to non-rated with utility companies being well represented, especially from the electricity sector. Local government councils (the NZ equivalent of US municipals) are also well represented and see good take-up from retail buyers. Outstandings for local authorities are likely to fall over time as LGFA issuance grows (on their behalf).

Rated investment grade issuers include (S&P rating* in brackets):

- Auckland Council (AA)
- Auckland International Airport (A-)
- Chorus Limited (BBB)
- Christchurch City Holdings (AA-)
- Christchurch International Airport Limited (A-)
- Contact Energy (BBB)
- Dunedin City Treasury (AA)
- Fonterra Co-operative Group (A)
- Genesis Energy (BBB+)
- Goodman Property Trust (BBB+)
- Housing NZ (AA+)Kiwi Property Group (BBB+)

- Meridian Energy (BBB+)
- Mighty River Power (BBB+)
- Powerco (BBB)
- Port of Tauranga (BBB+)
- Sky City Entertainment Group (BBB-)
- Spark (A-)
- Telstra Corp Ltd (A)
- Toyota Finance NZ (AA-)
- Transpower Finance (AA)
- Vector (BBB)
- Wellington International Airport (BBB+)

*ratings subject to change without notice

Unrated issuers include:

- Argosy Property Ltd
- Infratil
- Investore Property
- Melifecare
- Precinct Property
- Property for Industry
- Refining NZ
- Synlait Milk
- Summerset Group Holdings
- Trustpower
- WEL Networks
- Z Energy

Interest: Most corporate pay equal semi-annual coupons in arrears and the ex-interest period is usually 9 days.

Primary issuance: Various methods are employed, ranging from book-builds, private placements and retail issues.

Secondary market: Activity varies and depends on how widely held bonds are. Spreads tend to be wider.

ANZ secondary market price-making: ANZ typically supports corporate issues it brings to market, and endeavours to make markets in larger and more liquid issues. Pricing is done on a best endeavours basis.

Bond Benchmarking Performance

Most domestic real-money fixed income fund managers are benchmarked against the S&P/NZX New Zealand Govt Bond Index (Bloomberg ticker: NZGS Index). This index is balanced at the close of trading each day, and includes all NZGBs issued, rather than just NZGBs held by the market (thus it includes RBNZ and Earthquake Commission holdings). As a consequence of there being very few NZGB issues, the duration of this index tends to jump significantly when bonds mature. This obviously has knock-on implications for the market around this date.

For more information, please see the following link:

http://www.us.spindices.com/documents/index-policies/20150324-sp-nzx-fixed-income-indices-consultation.pdf

Most global bond indices (such as the FTSE Russell World Government Bond Index) exclude bonds that are held by central banks, including those purchased as part of QE operations. For this reason, even though gross outstandings of NZGBs will grow rapidly over 2020-2025, because much of that will be absorbed by QE purchases, which are excluded, it will be many years (if ever) before New Zealand will be included. New Zealand bonds are included in some regional global and/or product specific indices. As an example, NZGB linkers are included in the Bloomberg Barclays Global Inflation-linked Bond Index.

Derivatives

Interest Rate Swaps account for the majority of NZD derivatives trading volumes. OIS, CCIRS, FRAs, BOBs and FX Swaps are also widely traded. Almost all derivatives trade over-the-counter, with all interbank and many client trades centrally cleared. ANZ is the largest domestic player in derivatives.

Swaps and CCIRS are quoted on an outright basis and liquidity is good out to 10 years, and reasonable from 10 to 15 years.

OIS are quoted on an outright basis to RBNZ meeting dates and liquidity is good over the first 3-4 meetings, but limited beyond 1 year.

Liquidity in the 90 day bank bill future contracts (exchange-traded on the ASX) is reasonable for the front 4 contracts. Although 3 year and 10 year bond futures contracts exist, there is virtually no trading in them.

Swap spreads are calculated as a spread to the interpolated NZGB curve. However, these rarely trade, and swap-bond spreads are generally traded on a MMS (matched maturity swap) or ASW basis.

IRS (and CCIRS) conventions

Fixed interest: Semi-annual; Actual/365.

Floating interest: Quarterly; Actual/365 BKBM.

Rate Set: BKBM is published each day (Bloomberg ticker: NFIX3FRA Index).

Date convention: Modified following.

Holidays: Auckland and Wellington.

Settlement: Settlement is T+2 for vanilla IRS.

Documentation: ISDA normally required.

Clearing: IRSs are cleared on LCH, ASX or CME (the vast majority are LCH cleared), but CCIRS are bilateral and usually subject to ISDA CSAs.

ANZ secondary market price-making: ANZ endeavours to make a market in IRS and CCIRS to clients 24 hours a day from 8.30am NZD Monday to 4.30pm London time Friday. While standard interbank market parcels are around NZ$20k (as per the table below), much larger trades frequently trade in the broker market and ANZ will make prices in parcels up to (or exceeding) NZ$100k to clients (under normal circumstances).

Interbank Market: There is an active voice-broker market. IRS (and CCIRS) trade actively in the broker market in the following standard market parcels:

Maturity	Market parcel
1yr	$200m notional
2yr	$100m notional
3yr	$75m notional
4-5yr	$50m notional
6yr	$40m notional
7-8yr	$30m notional
9-10yr	$25m notional
10-15yr	$20m notional
15yr+	15yr equivalent

Source: NZFMA, ANZ Research

Curve trades deal in the same-sized parcels (on the longer leg), but notional volumes on interbank butterfly trades are double standard market parcels (in the "belly").

OIS conventions

Fixed rate: Actual/365, fixed basis.

Floating rate: Business day compounding (ie. daily compounding during the week, and 3-day compounding over weekends).

For OIS < 1-year to maturity: Interest is payable and settled at maturity.

For OIS > 1-year to maturity: Net interest is payable at the end of the front end stub period (if any) and annually in appears thereafter until maturity.

Date convention: Modified following.

Holidays: Auckland and Wellington.

Settlement: Start date is T+2. Payment is T+1

Documentation: ISDA normally required.

Clearing: LCH or ASX (the vast majority are LCH cleared).

ANZ secondary market price-making: ANZ endeavours to make a market in OIS to clients 24 hours a day from 8.30am NZD Monday to 4.30pm London time Friday. ANZ will make prices in parcels up to approximately NZ$50k to clients (under normal circumstances).

Interbank Market: There is an active voice-broker market, and while there is no standard OIS market parcel, interbank parcels are generally $10k or more ($5k minimum).

The NZD Foreign Exchange Market

According to the 2019 BIS Triennial Central Bank Survey, the NZD was the 10th most actively traded currency, accounting for 2.1% (net of double counting) of global FX trading. The NZD has held the 10th place spot since 2010.

By geography, FX trading in all instruments onshore in New Zealand was US$9.5bn (0.1% of all trades).

By currency pair, NZD/USD accounted for 1.5% of all global FX trading, with an average of US$136bn of turnover per day.

Of that $136bn, by product, $54bn (40%) of global NZD trading was FX swaps, $53bn (39%) was spot, $16bn (11%) was outright forwards, $10bn (7%) was FX options, and $4bn (3%) was currency swaps.

Although there is some FX trading done on US-based currency futures contracts, the bulk of FX trading is direct spot FX.

For more information, please see the following links:

http://www.bis.org/publ/rpfx19.htm

https://www.rbnz.govt.nz/news/2019/09/nzd-remains-10th-most-traded-currency

Appendix 1: Reserve Bank of New Zealand and the operation of monetary policy

The Reserve Bank of New Zealand is independent from the government. The current Governor is Mr. Adrian Orr, who has been Governor since March 2018. Governors are typically appointed for five year terms, and Mr Orr's predecessor, Mr. Graeme Wheeler served as Governor for a single term between 2012 and 2017, whilst Mr Grant Spencer served as Acting Governor for six months prior to Mr Orr's joining.

The RBNZ is responsible for the following:

- Operating monetary policy to achieve and maintain price stability.
- Assisting the functioning of a sound and efficient financial system.
- Meeting the currency needs of the public.
- Overseeing and operating efficient payment systems.
- Providing effective support services to the Bank.

Price stability is defined in the Policy Targets Agreement (PTA), an agreement between the Minister of Finance and the Governor of the Reserve Bank.

The most recent PTA was signed on 26 March 2018, and it directs the RBNZ to conduct monetary policy to "maintain a stable general level of prices, and contribute to supporting maximum sustainable employment within the economy". It goes on to say that "in pursuing the policy target, the Bank shall have regard to the efficiency and soundness of the financial system and avoid unnecessary instability in output, employment, interest rates, and the exchange rate". The price stability target will be defined in terms of the All Groups CPI". It specifically defines price stability as keeping "annual future CPI inflation outcomes between 1 per cent and 3 per cent on average over the medium term, with a focus on keeping future inflation near the 2 percent target mid-point".

The PTA has evolved substantially in several iterations since the early 1990s, when it called for a "hard" 0-2% target. By contrast, today's PTA takes a more medium term view, and price stability is no longer the singular objective.

The primary policy lever is the OCR. Although the RBNZ reserves the right to make changes to the OCR at any time, changes are generally made at the quarterly *Monetary Policy Statements* (in February, May, August, and November) or the alternate OCR Reviews (held in April, June and September).

The RBNZ operates a policy of transparency, which is demonstrated by the Monetary Policy Statement, which provides a full overview of the economic outlook and policy judgements, including a projection for interest rates, and is generally followed by a press conference. By contrast, the OCR Review is typically a one page press release similar to the US Federal Reserve's FOMC Statements.

There is a Monetary Policy Committee, comprising of four internals, and three externals, with Governor Orr as the Chair. Prior to heading the RBNZ, Mr Orr was CEO of the NZ Super Fund. Prior to that, he was a Deputy Governor at the RBNZ and Chief Economist at Westpac.

The PTA allows for deviations from target owing to natural disasters, economic shocks and tax changes, and does not require a written explanation if inflation deviates from the target (like it does for the Bank of England). However, the Governor is required to answer to the parliamentary Finance and Expenditure Committee each quarter.

Appendix 2: The New Zealand Political System

New Zealand is a constitutional monarchy with a parliamentary democracy. Queen Elizabeth II is the Queen and head of state, and is represented in the country by the Governor General, currently Dame Patsy Reddy.

The parliament holds legislative power, with elections held every three years. The next election will be held on 19 September 2020. The parliament usually consists of 120 Members of Parliament in a single house, following the Westminster tradition. The voting system is a proportional representation system, and this sometimes results in "overhang" seats, returning more than 120 MPs to Parliament.

The Prime Minister is the head of the Government, and the post is currently held by the Right Honourable Jacinda Ardern, who is the leader of the Labour Party.

The Right Honourable Winston Peters is the Deputy Prime Minister, and the Finance Minister is the Honourable Grant Robertson.

At the moment there are MPs representing five parties in parliament. This includes the two main parties, National and Labour, as well as the Greens, NZ First, and ACT.

For more information, please see the following link:

https://www.parliament.nz/en

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