

# NEW ZEALAND INFLATION-INDEXED GOVERNMENT BONDS (IIBS)

JUNE 2016



## INTRODUCTION

The New Zealand Debt Management Office (NZDMO) first issued inflation-indexed bonds (IIBs) in 1995. However, they did not issue many of these bonds, with the maximum outstanding being just NZ\$1.2 billion face value (NZ\$2 billion when adjusted for inflation indexation). The lack of any follow up issuance meant the inflation-linked bond market did not flourish at that time. In fact, turnover in the bond waned and investor interest in the issue diminished to the point where it was largely a 'hold to maturity' investment for investors.

The NZDMO re-introduced inflation-indexed bonds in October 2012 in an effort to lengthen the duration of its borrowing and diversify its investor base. The new issuance programme is aimed at broadening the capital markets in New Zealand and offers investors a product to hedge inflation risks in their portfolios (the biggest risk to long term bond investors). The NZDMO is committed to maintaining inflation-indexed bonds as part of its issuance programme, which means that the market for inflation products should broaden and deepen over time.

With an established presence in the New Zealand capital markets, it is important that investors understand IIBs and consider them for their investment portfolios.

## BOND CHARACTERISTICS

New Zealand inflation-indexed bonds are capital indexed bonds (CIBs), which means they pay a fixed coupon on a principal indexed to movements in CPI inflation. At maturity, both the original principal and the additional indexed principal are repaid to investors.

## COMPARISON OF NZ NOMINAL GOVERNMENT BONDS AND IIBS

| CHARACTERISTIC | NOMINAL GOVERNMENT BONDS   | INFLATION-INDEXED BONDS   |
|----------------|--|---|
| Face value     | If you buy \$100 face value of a nominal bond this \$100 is repaid at maturity.                                | If you buy \$100 face value of an inflation indexed bond at maturity you receive \$100 adjusted for the inflation rate over the period you have held the bond.          |
| Coupons        | Pay a fixed semi-annual nominal coupon over the life of the bond.  | Pay a fixed quarterly coupon that is adjusted by the inflation indexation of the principal. This makes the coupon real.   |
| Liquidity      | The most liquid bonds in New Zealand.  | Not as liquid as nominal government bonds.  |
| Yield          | The nominal yield (assumed to be an unknown real yield plus an estimate of future inflation).                  | IIBs are quoted on a real yield basis.  |
| Quoted         | Trade on a nominal yield basis.  | Trade on a real yield basis.  |
| Return         | Will return the same as an IIB if it is held to maturity and there is no unexpected (by the market) inflation. | If inflation is up then expected IIB returns will be greater than nominal returns. If inflation is down then expected nominal returns will be greater than IIB returns. |



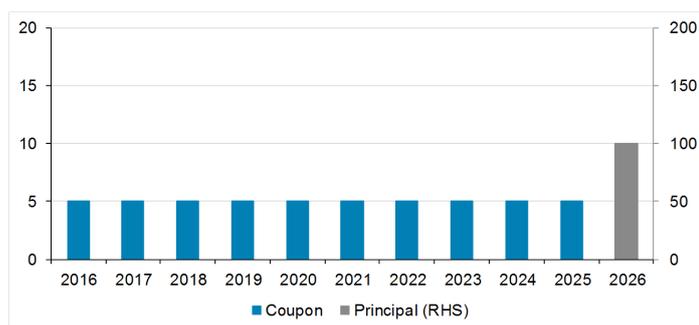
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## NOMINAL BOND CASH FLOWS

Chart 1 shows the cash flows of a stylised nominal bond.

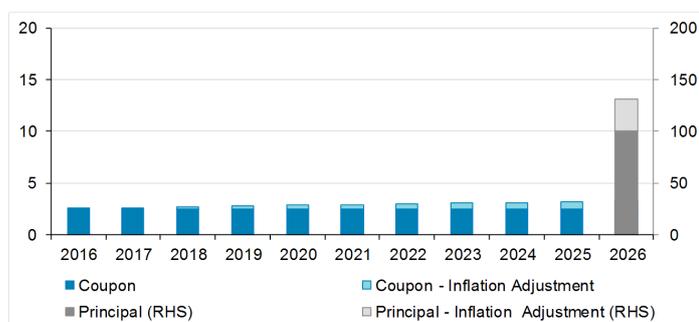
**CHART 1: CASH FLOWS OF \$100 INVESTED IN A STYLISED 10Y NOMINAL BOND WITH A 5% COUPON**



## INFLATION-INDEXED BOND CASH FLOWS

Compare this with chart 2 that shows the cash flows of an IIB where both the coupons and the principal increase with the rate of inflation.

**CHART 2: CASH FLOWS OF \$100 INVESTED IN A STYLISED 10Y IIB WITH A 2.5% COUPON ASSUMING 2.5% INFLATION PER ANNUM**



If you examine both charts you can clearly see in chart 2 how the inflation adjustment impacts the coupons and principal.

The majority of global inflation-linked bonds are structured as capital indexed bonds, just like those in New Zealand. Coupon interest on New Zealand inflation-indexed bonds is payable quarterly in arrears, based on the capital value of the bond. The quarterly coupon is based on the capital-adjusted principal of the bond using the following formula:

$$\text{Coupon interest} = r \times N \times K(t)/100$$

$r$  = coupon rate

$N$  = Face value of the bond

$K(t)$  = factor adjusting the principal of the bond for quarterly inflation

The  $K(t)$  factor adjusts the principal of the bond for quarterly inflation, as measured by the All Groups Consumer Price Index (CPI) published by Statistics New Zealand. Specifically, the inflation component of the coupons is calculated as “the average percentage change in the CPI over the two quarters ending the quarter which is two quarters prior to that in which the next interest payment falls”. For example, if the next coupon payment is in November 2016, the inflation adjustment is calculated by dividing the June CPI index by the CPI index in December 2015 to work out the inflation over the two-quarter period March to June.

New Zealand inflation-indexed bonds are quoted on a real yield basis, with interest accruing on an actual/actual basis. Coupons are paid quarterly, in contrast to the semi-annual coupons attached to nominal NZ government bonds. The coupon on New Zealand inflation-indexed bonds is known on or before the current coupon date, with the securities trading ex-coupon for 10 days prior to the coupon payment date.

As the NZDMO highlighted in launch documentation attached to the September 2030 syndication, an important factor to note is that, unlike many Australian linked bonds, “New Zealand Government inflation-indexed bonds have no deflation floor”. This means that if New Zealand experienced sustained deflation (negative inflation) then the bonds can pay a lower coupon than coupon rate due to the impact of the  $K(t)$  factor and investors could be returned less principal at maturity than they initially invested.

NZ Government inflation-indexed bonds are rated AA+ by Standard & Poor’s and Aaa by Moody’s (long-term local currency rating).

## REAL YIELD, NOMINAL YIELD AND BREAK-EVEN INFLATION

As we have already discussed, nominal government bonds are quoted in terms of a nominal yield. In contrast, IIBs are quoted on a real yield basis. The difference between the real yield of an IIB and nominal yield of an equivalent maturity nominal bond is called the break-even inflation rate (BEI).

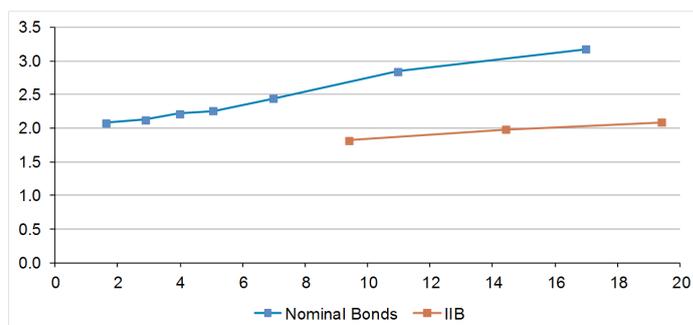
The BEI is the market derived price for inflation for the remainder of the term of the IIB. In other words, it is where the market expects inflation to be over the life of the IIB.

If the BEI is low then the market is not anticipating much inflation during the period to maturity that it is calculated over, but if the BEI is high then the market is anticipating higher inflation. Looking at BEI versus its own history, actual inflation, inflation expectations, and monetary policy inflation targets allows investors to determine whether it makes sense to switch between nominal bonds and IIBs.

Typically an investor will prefer to hold IIBs when BEIs are lower than their own expectations for inflation over the life of the bond. Alternatively, an investor will want to hold nominal bonds when BEIs are higher than their own expectations for inflation over the life of the bond.

Chart 3 shows the current yield curve for both government nominal bonds and IIBs. The gap between the two curves is the BEI for a given maturity.

**CHART 3: YIELD CURVE FOR NEW ZEALAND NOMINAL AND IIB (% , MATURITY (YEARS))**



Source: AMP Capital, Bloomberg

## THE CURRENT NEW ZEALAND INFLATION-INDEXED BOND MARKET

After a long absence from the inflation linked market, the NZDMO re-introduced IIBs in late 2012 when a September 2025 bond was syndicated in October 2012 (NZ\$ 2.5 billion syndication). This was followed by more recent issuance of a September 2030 bond (NZ\$ 2.5 billion syndication) in October 2013 and finally a September 2035 bond (NZ\$ 1.5 billion) in November 2014.

The NZDMO has three IIBs outstanding, with issuance totalling NZ\$13.2 billion at the end of May 2016.

### NEW ZEALAND INFLATION-INDEXED BONDS ON ISSUE (AS AT END OF MAY 2016)

| Issue             | Initial syndication NZD billion | Amount on issue NZD billion* | Coupon % | Real yield** % |
|-------------------|---------------------------------|------------------------------|----------|----------------|
| NZGB 2.0% 09/2025 | 2.5                             | 5.2                          | 2.0      | 1.595          |
| NZGB 3.0% 09/2030 | 2.5                             | 4.2                          | 3.0      | 1.755          |
| NZGB 2.5% 09/2035 | 1.5                             | 2.9                          | 2.5      | 1.860          |

Source: AMP Capital, RBNZ

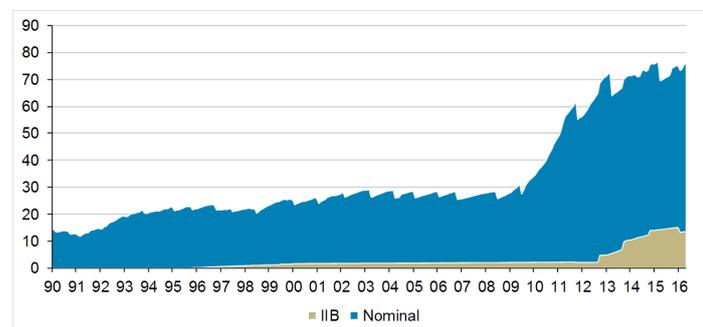
\* Bonds in market (excludes holdings at Reserve Bank of New Zealand and Earthquake Commission)

\*\*As at 31 May 2016

The chart below shows the total market value of government bonds on issue in New Zealand. You will observe a noticeable increase in nominal bonds post the start of the Global Financial Crisis (GFC) as the government funded budget deficits. (The short, rapid drops are bond maturities.) Issuance also picked up following the Canterbury earthquakes.

With the syndication of the 2025 IIB there was a step-up in inflation-linked issuance beginning in 2012. By face value, IIBs currently represent 17% of government bonds outstanding as at the end of May 2016.

### CHART 4: MARKET VALUE OF NZ GOVERNMENT BONDS ON ISSUE (AS AT END OF MAY 2016) (NZ\$ BILLION)



Source: AMP Capital, RBNZ

The NZDMO is committed to sustaining the IIB market and has no plans to cease or pause regular issuance. The NZDMO also aims to have IIBs representing 20% of its bond portfolio over time as the bonds represent a good hedge for the government's assets. However, because the IIBs are long-dated instruments, their share of total issuance could increase above 20% in the near term due to nominal bond maturities. It is likely this proportion will normalise in the long term as IIBs begin maturing and new nominal bonds are introduced to the market.

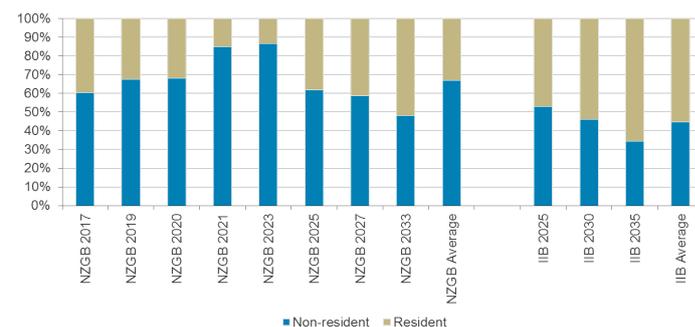
Primary market issuance dominates activity in the New Zealand IIB market, with average secondary market turnover of around NZ\$875 million per month (as captured by the Reserve Bank of New Zealand's (RBNZ) government bond turnover survey) since the launch of the 2025 IIB. This compares to around NZ\$8,100 million per month for nominal bonds. Thus, secondary market liquidity is relatively light, with a five basis points (bps) spread typically associated with IIBs. In saying this, turnover in IIBs continues to increase and has averaged closer to NZ\$1,100 million per month in the 12 months ended May 2016.

## NEW ZEALAND INFLATION-LINKED BONDS JOIN GLOBAL INDICES

New Zealand IIBs officially joined the Barclays World Government Inflation-Linked Bond (WGILB) Index on 1 January 2014, having met the US\$4 billion inclusion criteria in the second half of 2013. New Zealand inflation-linked bonds became the ninth market to enter the WGILB Index, with an initial weighting of around 0.35%. The current weighting in the index is 0.4% as at the end of May 2016.

Non-resident holdings of nominal NZ Government Bonds sits on average around 66% as at the end of April 2016. In contrast, for IIBs this figure is much lower at around 44% (refer to Chart 5). However, with the inclusion in the Global Index and the relatively high real yield offered by NZ IIBs versus Global alternatives we expect non-resident holdings of IIBs to increase over time.

### CHART 5: OWNERSHIP OF NZ GOVERNMENT BONDS



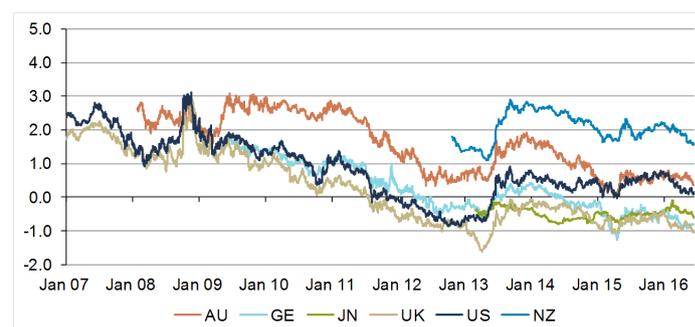
Source: AMP Capital, RBNZ

## WHY INVEST IN IIBS?

### THE REAL YIELD

The real yields attached to New Zealand IIBs are among the highest in global markets (refer to chart 6). This reflects both higher than average nominal yields (and associated risk and liquidity premia) in New Zealand, but also the cheapness of New Zealand IIBs relative to other developed market inflation linked bonds.

### CHART 6: 10Y GLOBAL AND NEW ZEALAND REAL YIELDS (%)



Source: AMP Capital, Bloomberg

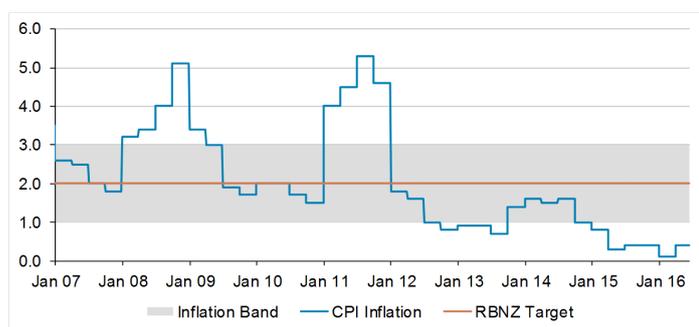
For investors wanting a high real return (compared to global comparators) New Zealand IIBs are attractive.

## INFLATION AND BREAK-EVEN INFLATION (BEI)

The Reserve Bank of New Zealand was the first central bank to officially adopt an inflation target, with the Policy Targets Agreement (PTA) component of the Reserve Bank of New Zealand Act signed between the RBNZ Governor and Minister of Finance in 1989. The initial inflation target band of 0-2% was changed to 0-3% in 1997 and to 1-3% in 2002.

The latest PTA signed in September 2012 aims “to keep future CPI inflation between 1 and 3 percent on average over the medium term, with a focus on keeping future average inflation near the 2 percent target midpoint”. The inflation target is defined in terms of the All Groups Consumer Prices Index (CPI) as published by Statistics New Zealand. This is the same index used in the IIBs.

**CHART 7: NEW ZEALAND INFLATION AND RBNZ TARGET (% ANNUALISED)**



Source: AMP Capital, Bloomberg

As can be seen, CPI Inflation has been low since the beginning of 2012. Causes of this low inflation have been the significant falls in oil and other commodity prices over this period, as well as low rates of wage appreciation. However, the RBNZ has responded by easing monetary policy during 2015 and 2016 eventually cutting the Official Cash Rate (OCR) to the current record low of 2.25%. At the June Monetary Policy Statement (MPS) the RBNZ signalled a continuing easing bias with a further cut of 25 bps to the OCR in its forecasts.

However, there is the prospect of inflation picking up in the coming years. Key drivers for this would be:

- > With the RBNZ focused on achieving its inflation target, the prospect of a weaker NZ dollar driven by the easier New Zealand policy (coupled with the prospect of tighter policy in the US as the US Federal Reserve looks to raise interest rates gradually) should see a pickup in imported or tradeables inflation.
- > Excess capacity coming out of the New Zealand labour market putting upward pressure on wages and eventually the costs of firms which will flow through to end goods prices.
- > The rebound in the price of oil and other commodities that have occurred over the last three months.
- > House price inflation supporting incomes and expenditure in the economy which will create upward pressure on prices.

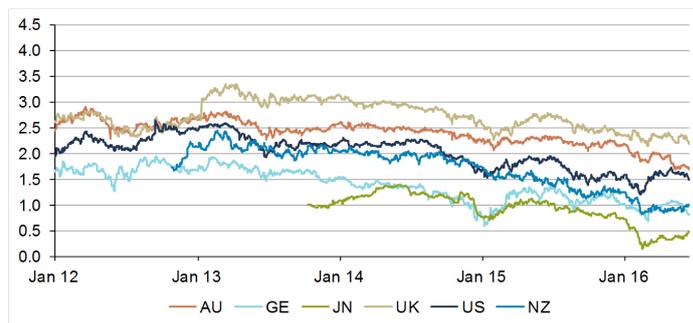
Despite the risk of higher inflation, IIBs do not seem to be pricing this risk. We view them as cheap relative to nominal bonds.

As already mentioned, a simple way to look at the value of an inflation-linked bond is to look at the break-even inflation rate (BEI). BEI is simply the difference between the yield on a nominal bond and the real yield on an inflation linked bond with the same

maturity. This provides the level at which inflation is expected to average over the term of the bond.

Chart 8 shows the 10Y BEI for the New Zealand and global inflation linked bond market.

**CHART 8: 10Y BREAK-EVEN INFLATION RATES (%)**



Source: AMP Capital, Bloomberg

You will observe the very low level of BEI in New Zealand, sitting around 1% (surprisingly only lower in Germany and Japan). This level of BEI means the market expects New Zealand inflation to average 1% per annum over the next 10 years. We think this is too low given our inflation outlook over 10 years.

Buying New Zealand IIBs at this level provides a cheap way to protect a portfolio from any pickup in inflation above the 1% per annum currently priced by the market.

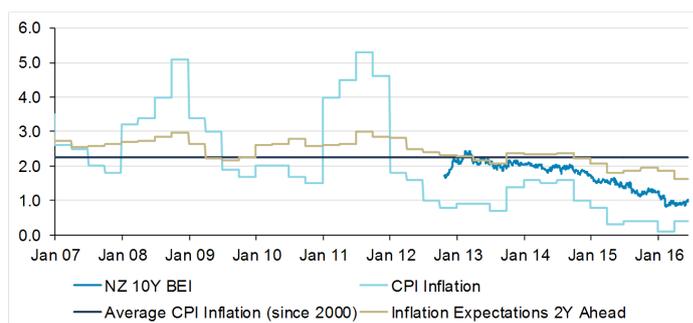
## IS IT A GOOD TIME TO INVEST?

We think it is a good time to consider IIBs in a fixed income portfolio and we have invested in them in our portfolios. The key reasons for this view are:

1. From a real yield perspective (chart 6) New Zealand IIBs offer a superior real yield to other developed markets.
2. From a BEI perspective, the current BEI for 10Y New Zealand IIBs (chart 8) at 1% is cheap given our outlook for inflation in New Zealand over the next 10 years.

Finally, Chart 9 looks at the 10Y BEI versus inflation and inflation expectations in New Zealand. Compared to long-term average inflation and 2Y inflation expectations, the New Zealand inflation-linked bonds also look attractive relative to nominal bonds by showing that average historical inflation and inflation expectations are both higher than the BEI. We think average inflation, and in particular inflation expectations, are a useful indicator as to the value of IIBs at these yields to an investment portfolio.

**CHART 9: NZ 10Y BEI VERSUS INFLATION AND INFLATION EXPECTATIONS (%)**



Source: AMP Capital, RBNZ, Bloomberg

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## CONTACT US

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