

INVESTING IN NZ BONDS

August 2008

Summary

Historically active NZ bond managers have achieved returns about 0.6% p.a., before tax and fees, above that of the NZ government stock index. While on the surface this is a good result, a fair part of the extra return came from the managers holding corporate bonds and having a bias to a “long” duration portfolio. Adjusting for these “passive” investment factors and deducting fees, little, if any, real value was added by investment expertise.

There are several strategies that can be employed to enhance long-term performance from a bond portfolio and outperform a pure government stock index. Specifically:

- increasing the exposure to investment grade non-government bonds.
- increasing the portfolio’s duration beyond the average of the government stock index.
- reducing trading costs and “active” risk, by buying bonds with the intention of holding them long-term.
- achieving lower management fees.

One option therefore is for investors to buy 5 or 10 year non-government bonds and hold them until opportunities to sell them arise. Such an approach should see investors receive higher annual income returns and higher average long-term total returns reflecting the characteristics of non-government bonds. The income returns will also be more stable but the total return more volatile. Accordingly such an approach will not suit all investors.

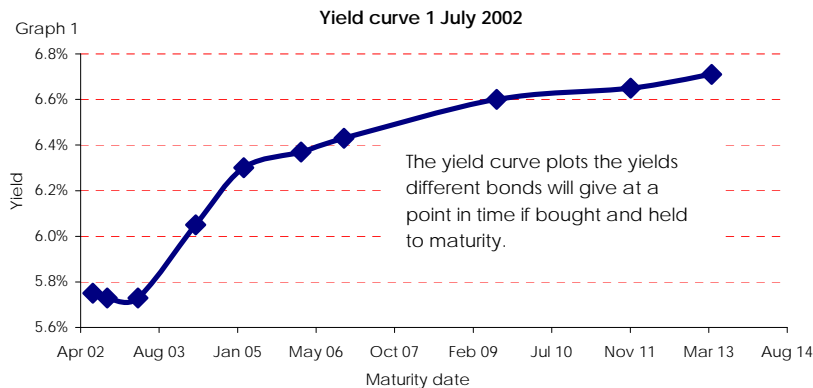
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The purpose of this article is to look at the practices commonly employed in the management of NZ bond portfolios. It seeks to help with understanding bonds as an investment, raises a number of issues and suggests an alternative approach that may be of relevance to some investors. However, like all investment approaches, no method guarantees the highest return in any individual year.

Over the 25 years to 30 June 2002 annual returns have, because of significant interest rate movements, varied between -3.5% and 30.5% before tax. The average has been about 12.0% p.a. before-tax. This is significantly higher than the returns over recent years and higher than the outlook. Recent returns have averaged about 7% p.a.. More details are set out on the back page.

The bond market



The current returns available from bonds of different durations, are indicated by the “yield curve”. The current yield curve for government bonds is shown in graph 1. At the same time, non-government bonds (e.g. local authorities, companies etc.) yielded a margin over the equivalent

Table 1

10 year bond yields	Yield	Margin
Government	% p.a. 6.7	% p.a. -
Non-government		
AA rated	7.3	0.6
A rated	7.8	1.1
BBB rated	8.3	1.6

government bond depending on their duration and the borrower’s credit rating. This is because they don’t have a “taxpayer guarantee” and there is the greater risk of default; reduced liquidity etc. The current “approximate” margins for 10 year non-government bonds are:

In terms of the bond market, a number of generalisations can therefore be made:

- longer dated bonds (e.g. 10 year bonds) tend to return more than shorter dated bonds (e.g. 3 year bonds), but not always.

- non-government bonds (e.g. corporate debentures) tend to provide higher returns than government guaranteed bonds, but not always.

Also, relevant in understanding the bond market, is the effect of interest rate movements on returns. When interest rates fall (rise) the capital value of a bond rises (falls). The total return is therefore higher (lower) than the interest payment alone. The size of the fall (rise) reflects the size of the interest rate movement and the duration of the bond.

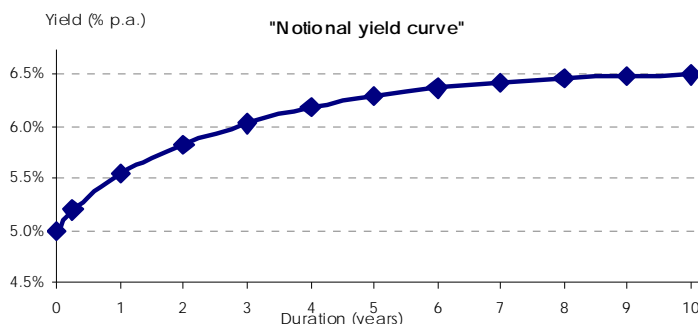
Understanding the potential return

The total return from a bond comes from the interest received (coupon) and the change in the market value due to interest rate changes. Over the long-term the return should average more than cash, but will vary above and below cash returns over the short-term.

As at 1 July 2002, 10 year government bonds yielded approximately 6.7% p.a. (see graph 1). If an investor therefore buys and holds a 10 year bond for the 10 years, the average return earned will be 6.7% p.a.. The actual return on a year by year basis will vary around the average however, depending primarily on interest rate movements. Even if interest rates don't move, the year by year return will vary. The variation will reflect the reducing duration of the bond and the lower yields for short duration bonds. However, the average will still be 6.7% p.a..

To understand the pattern of returns without interest rate movements, assume that yields of bonds at different durations are:

Based on the notional yield curve, the



average yield is about 6.2% p.a.. This would be the yield of the market index. Relative to the index return, an investor can buy a 10 year bond yielding 0.3% p.a. higher at 6.5% p.a.. If the investor bought the 10 year bond, and interest rates don't change, the investor will automatically earn 0.3% p.a. above the index. Also the investor can sell it 1 year later (i.e. as a 9 year bond) at a yield of 6.49% (say). The overall return for the year is therefore 6.57% made up of the 6.5% initial yield plus, a capital gain of 0.07%. The gain reflects the capitalised value of the difference between the yields of 9 and 10 year bonds.

On the same basis, the return over each year, of the 10 year bond's life as yields fall, would be:

Table 2

Future year	1	2	3	4	5
Annual return in year (%)	6.6%	6.7%	6.7%	6.7%	6.7%
Cumulative average return (% p.a.)	6.6%	6.6%	6.6%	6.6%	6.6%

Future year	6	7	8	9	10
Annual return in year (%)	6.7%	6.6%	6.4%	6.1%	5.6%
Cumulative average return (% p.a.)	6.7%	6.6%	6.6%	6.6%	6.5%

As can be seen the year-by-year returns initially rise and then fall, but average 6.5% p.a..

There is therefore a small (0.2% p.a.) advantage in buying longer bonds (e.g. 10 years) and selling them when they have a few years to go (e.g. 3 or 4 years) or earlier if an opportunity arises.

While the 0.2% p.a. return differential over 10 year bond yields is small, it actually represents a margin of approximately 0.5% p.a. above the return of the market index. This is not bad value added

given that no skill is required, no management fees are incurred.

Adding value to a bond portfolio

Value can be added, relative to the standard market index, from a number of strategic policies and tactical decisions.

Strategic policies

- **Hold longer bonds:** With the average market duration (i.e. the average duration of all bonds) about 4 years, one way to add value relative to the market index is to have a longer duration than average i.e. buy more 10 year bonds and fewer 2 year bonds etc.
- **Hold non-government:** With

non-government bonds paying a higher interest rate than government bonds, by strategically holding a defined level of non-government bonds the average return can be enhanced.

Greater risks are involved however, as should the bond issuer default, losses of income and/or capital may arise.



Tactical policies

In addition to strategically buying longer dated bonds and non-government bonds, in order to do better than the market return, there are several tactical strategies that can be employed:

- forecasting interest rate movements:** Just as opportunity exists in the sharemarket for achieving gains by timing entry into and exit out of the market, a similar such opportunity also exists within the bond market. Forecasting changes in interest rate movements, and making those calls correctly, will allow significant value add.

An investor who forecasts that interest rates will rise could temporarily sell out of the bond thereby avoiding the losses associated with interest rate rises. The investor can then buy back the bond before interest rates fall back. Assuming interest rate movements are forecast correctly, higher returns will be made. Of course if you make the wrong call, you will reduce value. Also, if someone earns a higher return by correctly forecasting the interest rate movement, someone else (the buyer) will earn less, as the average will still be the same. Interest rate movement forecasts will therefore require skilled judgement (or good luck).

- exploiting temporary anomalies:** From time to time similar bonds, or a combination of bonds that should return similar yields, are mispriced relative to each other. An active investor can take advantage of such anomalies by buying and selling and increasing the return otherwise earned.
- non-government:** From time to time the gap between government and non-

government yields is higher than normal. When this happens more non-government bonds can therefore be bought tactically until they return to normal.

Managers in New Zealand use one or more of the above methods to add value. In some cases their style has a particular bias (e.g. long duration or a specific allocation to non-government bonds) that delivers “value” over time without any real effort. In other cases, the style is unbiased and value is added by short-term active decisions.

Current practices

In New Zealand the common method employed by investors to manage their New Zealand bond portfolio is to appoint a manager to make active decisions on which bonds to buy and sell. The manager will typically buy and sell bonds and might turn the portfolio over 2 or 3 times throughout the year. The aim is to do better than the overall market average and managers take advantage of one or more of the “adding value” methods described earlier. The performance is typically measured relative to the CSFB government stock index.

Manager returns

In New Zealand the investment outcomes of the major managers have typically resulted in returns above that of the index.

Historical analysis shows that most managers have added “value” relative to the index. For example, over the last 5 years, the average return of a manager was 7.5% p.a. before-tax and fees, or 0.6% p.a. above

that of the index.

These patterns of the margins over and above the index are probably sustainable, on average, in the future. Returns, as in the past, will vary by manager and the top manager in the future will not necessarily be the top manager in the past.

Table 3

Manager	Manager value added relative to government bond index over the last	
	3 years	5 years
	% p.a.	% p.a.
Alliance Capital	0.8	0.7
AMP	0.8	1.0
ANZ	0.6	0.7
BNZ	0.4	0.4
BT	-0.2	0.1
Guardian Trust	1.1	0.8
ING	0.6	0.8
Tower	0.2	0.3
Average value	0.5	0.6

Note: above average past performance does not guarantee above average future performance.

Source: 30 June 2002 iPerformance.MCA

Table 3 should, however, be interpreted carefully as it focuses on return and not source of return and includes a survivor bias. Major managers around in New Zealand in different forms five years ago, but not today, include Barclays, Cigna, Citibank, Norwich, NZI, Prudential, Southpac and WestpacTrust. Shortly, ANZ, following the ANZ/ING joint venture, will disappear from future tables. Therefore, returns are not always attributed to the current manager.

Also relevant is the short-term volatility experienced. Graph 3 plots the 3 year value added against the 1 year variability of the return. It is for investors to decide whether they want lower consistent value, or higher more volatile value.

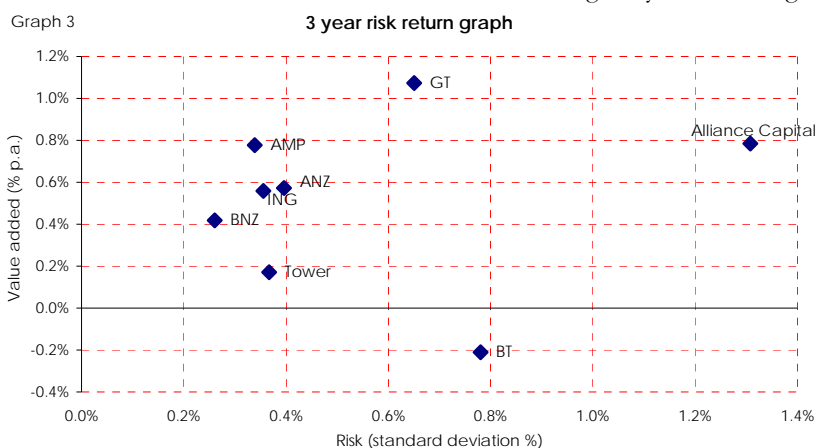
Even allowing for the volatility and manager fees, wholesale investors have been rewarded¹. On the surface this would appear a satisfactory outcome.

securities on issue. This has two problems. First, managers that have a natural bias to a long duration will by default appear to add value over time because of the higher yields of longer

“is this the best way for an investor to manage their NZ bond assets?”

If investors are happy with the inherent risks of the current practice, and are motivated by avoiding poor short-term relative returns, the current practice is probably appropriate. Also, if the NZ bond exposure is part of an active “balanced” mandate including active tactical asset allocation, the current practice is also probably appropriate.

If there is a NZ bond focus, a medium term return focus, or an income return focus, and the investor can tolerate some short-term asset price volatility, there may be a better way.



While the recent outcomes appear satisfactory, several practices question the true quality of the outcome:

- mandates tend not to include a specific allocation to non-government stock and the index does not include non-government stock. Yet managers normally hold a level of non-government bonds and therefore get credit for the higher return. The real value added therefore is lower than what appears to be the case because the true benchmark should be a combination of government and non-government. In practice, investors should make a conscious decision on the non-government exposure having regard to their liabilities, and performance should be measured against this. It should not be left to the “bias” of the manager.
- the neutral duration of the portfolio is defined by reference to the average duration, for the time being, of the different bond

duration bonds.

Secondly, and more importantly, is the relevance of the average market duration. The duration of the index will be unrelated to the liabilities and the securities in the index will partly reflect the preferred duration of the borrowers not investors. Logic, and prudence, suggests that the duration of a portfolio should not be set by accident and should be set with regard to the liabilities, and not based on the average of what happens to be on offer at any point in time.

- investors investing in bonds normally want an income return and stability in the income return short-term. Market practice however, focuses on total return.

Given the market, and the way that managers operate (i.e. their practices as opposed to their specific skills), we think that the actual returns overstate the quality of the return and hide the risks taken.

The questions are “should we be happy with the results?” and

¹ Retail investors, because of higher fees will have under-performed the index in most cases.

- Investors could buy predominantly longer bonds (e.g. 10 year bonds). This might add 0.3% p.a. on average. Selling them when they have just 3 or 4 years to go before maturity when interest rates have not moved or have fallen might add a further 0.2% p.a. on average.
- By holding bonds to maturity you ensure that there are no realised losses from interest rate risks.

Implementing the above strategies would provide investors with a low maintenance approach but higher average returns than the returns of the current market practice. It will also provide a stable income return and save on costs. Whilst the strategy increases short-term volatility in asset values, the portfolio will be less liquid than a portfolio of government bonds. These risks can be managed by cash holdings.

Many of the brokers in NZ have the resources to assist investors create and maintain such a bond portfolio. However, if an investor continues to use a manager but adopts the above concepts, the long-term outcomes should still be better.

¹In the NZ market it could be argued that sufficient diversification is not possible, though the same doesn't apply to overseas markets.

Why don't managers adopt the above approach? There are probably several reasons:

- The managers are currently employed as "experts" to be "active".
- The alternative approach will probably result in higher short-term volatility. This means that in some individual years, it will give a lower total return. This gives the manager a business risk (low performance relative to their peers).
- It would be hard to justify the current manager fee levels for what would become a low turnover buy and hold approach.
- In New Zealand it can be argued that the margins of non-government over government are not high enough and therefore don't adequately compensate investors for the default risk. Sooner or later a bond will default. The managers would not wish to take on such risk on their own accord.

However, for an average investor looking for an above average stable income return, it is an approach that should result in higher average returns and the short-term capital volatility may not be an issue. It is an alternative worth thinking about.

Glossary

In simple terms a bond is a loan. When you purchase a bond, you are lending money (known as the "capital", "face value" or "principal") to another party (known as the "issuer"). Common issuers include governments, local authorities, companies etc. In return for the loan, the issuer promises to pay you a particular rate of interest (the "coupon") during the life of the bond (known as the "term") and to repay the principal at the end (i.e. when it "matures" on the "maturity date"). The interest payments are normally every 3 or 6 months.

As a loan, the security of a bond depends on the ability of the issuer to honour its promises to pay interest and to repay the loan. Security in part, comes from what the issuer decides to use the money for. Generally the better the security, the lower the coupon the issuer has to pay to be able to borrow money.

Bonds are also known as "fixed income" or "debt" securities.

Terms also relevant are:

Duration

The duration of a bond is the weighted average period of the cashflows i.e. of each coupon payment and of the return of capital on the maturity date. Generally, but not always, the longer the duration, the higher the return; i.e. 10 year bonds yield more than 3 year bonds.

Yield

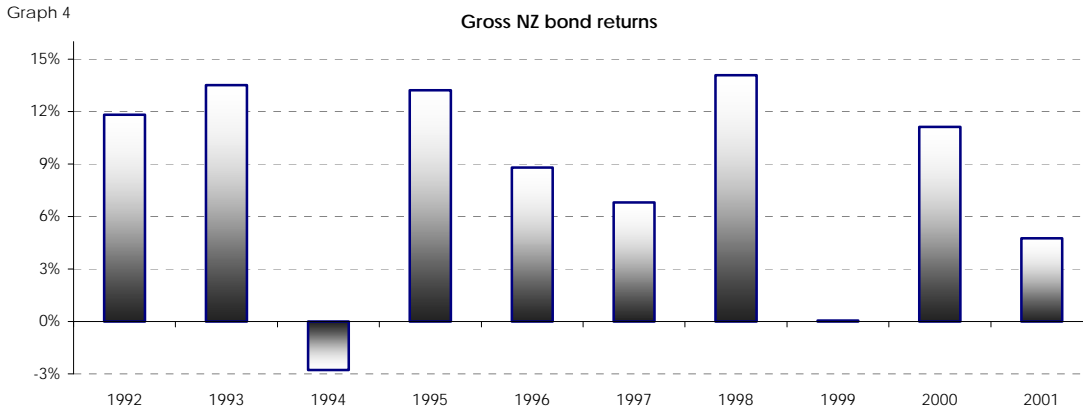
The "yield" is the return that an investor receives if the bond is held to maturity. It includes the coupon and any capital movement.

Yield curve

The "yield curve" is the graph of the yields of the bonds of different durations that are available in the market.

Historical returns

The annual returns (coupons and capital movement) from NZ Government bonds over recent years have been:



Over a period when the average return was 8.0% p.a., the graph highlights the yearly variation of returns given the interest rate movements. The yields (i.e. changes to interest rates) of 10 year NZ government bonds over recent years have been:



Over the same 10 year period, NZ bonds outperformed cash by 0.75% p.a., on average, but varied around the cash returns by -9% to 7%. The difference between cash returns (90 day bank bills) and Government bond returns have been:

