

A GENERAL DISCUSSION INVESTMENT RETURNS

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Most investors are familiar with shares going up and down but many do not realise that almost all investments (including fixed interest and property) behave in this way. The exception is cash. To understand an investment, requires an understanding of the likely source of the return and the pattern of returns that will be received.

The overall or total investment return of any investment, achieved in a period, can be split between:

- **Income.** The actual income received, i.e., interest, dividends, rental income, etc.;
- **Capital.** The change in the "capital" or "market" value of the asset, i.e., the difference between what you could buy/sell the asset for at the start of the period against what you can buy/sell the asset for at the end of the period.

In each case the income may fluctuate and the market value may go up and down daily, weekly, monthly, etc. However, when evaluating an investment, what is important is the income received and the change in the market value over the period the investment is intended to be held. The current market value is only important when you have to sell the investment. Until that time, short-term changes might result in sleepless nights, but is really only of academic interest.

This article looks at the make-up of investment returns of the different investment sectors, and looks at issues such as why rising interest rates may lead to poor or negative investment returns from bonds. It also profiles the risk/return characteristics of the main asset classes and the historical returns.

Return characteristics

To understand the principles and the dynamics of investment returns it is easiest to consider an example. Suppose you buy an asset with a market value of \$100 paying a return of \$5 per annum. Over the first year, you receive income of \$5, and if its market value (the price you could then sell it for) rises to \$107 you receive a total return of \$12 or 12% (\$5 from "income" and \$7 from "capital").

If in the following year, the market value fell from \$107 to \$101 then the total return in that year would be - \$1, i.e. \$5 income less \$6 "capital" loss.

Over the two-year period the investment therefore returned in total \$11 (\$10 income, \$1 capital) i.e. \$5.50 per annum on average, but ranged from -\$1 to +\$12 on a year by year basis. The income return however, was \$5 each year.

If you are happy with steady income (\$5 p.a.) and modest growth (\$1) over a two year period the sample investment is fine. However if you want modest income and higher growth or a positive return each year, the sample investment may not be suitable.

As can be seen from the example the return over any period of an investment is made up of income received, and capital value changes. The purpose of an investment strategy is to combine the different types of assets to align the income and capital movement of the assets with your objectives. In determining your investment strategy the key questions are what income and growth do you want over the whole period, and what minimum level of income and

growth is acceptable or tolerable during the intervening periods.

The important characteristics of investments are therefore; "what income will be generated?" and "how will the market value change?". From a liability point of view, also important is "how long will the investment be held?". Income may be needed for immediate cash flow requirements. Capital growth to generate higher capital values so that higher income can be achieved in subsequent periods may also be important. Given adequate cash flow, what happens in the intervening period is less important, though if you are required to report to members or the public on an interim basis you need to be aware of the likely movements over the shorter-term.

The paragraphs below look at each of the main investment sectors.

Shares

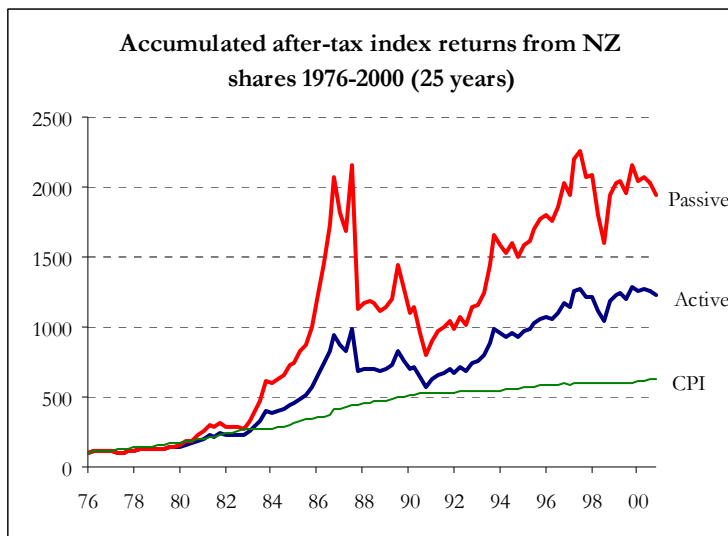
For shares, the "income" is the dividend paid to shareholders, and the change in "capital" value is the change in the price as quoted on the sharemarket.

When the share price goes up an investor does well, as the investor gets both the dividend and the growth in capital. When the share price goes down, the dividend is still paid but the investor suffers the short-term capital loss, which may be more or less than the dividend. If the share is sold the capital movement is then realised.

Over time, history has shown that sharemarkets go up more often than they go down, but over the short-term a sharemarket can go down significantly.

The graph below shows the growth in the New Zealand sharemarket over the last 25 years. While it has generally gone up, the graph shows that over short periods, for example 1987, 1989/90 and, to a lesser extent, 1994, the sharemarket has gone down. Over longer periods, e.g., 5 years, the returns have been less volatile but can still go down. Over 10-year periods the sharemarket has, to date, always gone up. This is why shares are considered a good long-term investment and “risky” short-term investments.

The historical annual returns from NZ shares and the equivalent information for the overseas sharemarkets are shown on pages 4 and 5. In respect of overseas shares, in addition to the movement in the underlying share price, movements in currency also impacts on the “capital” return.



Property

For property, the "income" is the rental income less the costs incurred such as maintenance, rates and insurance. As with shares, the capital component is the change in market value. However unlike shares, the value of a property, at any point in time, is more subjective and is generally set by the judgement of a registered valuer as property is not easily or frequently sold.

For this reason, and also due to the nature of property, returns from this sector tend to appear less volatile than those from shares, though negative returns still occur and when they do occur, may continue for several years. Details of the historical returns from the property sector are set out on pages 4 and 5.

Bonds (fixed interest)

Most investors think of fixed interest investments, i.e., bonds, as being like a bank savings account or term deposit. The investor's money is invested, interest income is received and at the end of the fixed term the original money is returned. While this is true, it does not explain the actual overall return on a year by year basis. The return on bonds, like other investments, is made up of the interest received and the capital movement.

So, why do rising interest rates lead to poor returns from bonds? Put simply, if interest rates rise, buyers will pay you less for the bond than you originally paid as they can get higher returns elsewhere.

To demonstrate this, consider an example of a bond with one year to go issued by the Government (say). The numbers in the example have been rounded for ease of illustration; in reality the actual returns would vary slightly. The Government promises to pay the owner of the bond, whoever that is, an income of \$5 per annum for one year and at the end of the year to pay back the capital of \$100.

If you bought the bond, then in one year's time you would receive \$105 (\$5 income plus \$100 capital). The question is, what should you pay for the bond today?

Let us assume that you could invest money in a bank account to earn 4% p.a. over one year. Then, if you invested \$101 in a bank account, the balance in the bank account in one year's time would be \$105 (\$4 income plus the original \$101) which is the same amount as you would get from the bond. Therefore, a fair price for the bond, i.e., its market value, if one year interest rates are 4% is \$101. It would be better to put your money in the bank than to pay more than \$101. It would be better to buy the bond if the price was less than \$101 as the return would be higher than 4% as you still get \$105 in one year's time irrespective of what you pay to buy it.

Suppose instead that you could get 7% interest in a one year bank account. Then \$98 deposited in the bank account would give approximately \$105 in one year's time, i.e., \$7 interest plus your original \$98. In this case the market value of the bond, i.e., the maximum price you would pay, is only \$98 and not \$100, otherwise you would do better by putting your money in the bank.



The example shows that as interest rates rise, e.g., go from 4% to 7%, the market value of a bond falls (i.e. \$101 down to \$98) and this leads to a "capital" loss. For example if interest rates were 4% and you bought the bond at \$101 and then interest rates suddenly rose to 7%, your bond will only be worth \$98 (a \$3 loss). If you had to sell it, you would realise the loss of \$3. Of course, despite what happens to interest rates, if you hold the bond for the year (i.e. until maturity), you get the \$3 back as you still get the \$105.

If interest rates rise significantly or the term is long, e.g. 10 years, then the capital loss may be more than the interest income otherwise payable (i.e. greater than \$5 in the example). This is how fixed-interest assets can give poor or negative returns.

When it comes to bonds what is important is understanding the relationship between price and yield (i.e. return). For a particular bond as the price goes up (i.e. it becomes more expensive) the resulting yield goes down. Likewise as interest rates (i.e. yields) go up, the price goes down giving a capital loss.

When a bond is	The price is	The yield is
Expensive	Higher	Lower
Normal	Normal	Normal
Cheap	Lower	Higher

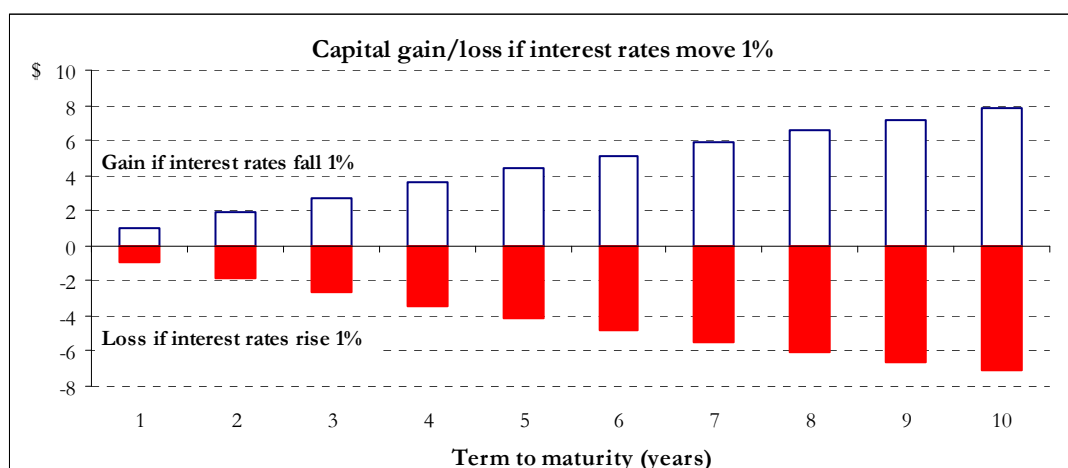
The size of the capital loss/gain is not only affected by the change in interest rate but also the duration or length of the investment. The longer the period the bigger the loss or gain. This is seen from a simple example. If interest rates rise by 2% say, then for a 5 year bond the capital value or price must go down so the future return (or yield) becomes 2%p.a. higher for 5 years. For a 10 year bond it must go down more as it has to provide for the 2%p.a. higher return for 10 years.

The graph below shows the relationship between the change in interest rates and the market value of a bond which pays a fixed income of \$6 p.a. at various durations if interest rates move $\pm 1\%$. As can be seen, if interest rates rise from 6%, say, to 7% then the market value of a 5 year investment goes down by approximately \$4 e.g. from \$100 to \$96. For a 10 year investment the capital loss is \$7.1 i.e. 7.1%.

However, when interest rates are falling the reverse is true. If interest rates fall from 6% to 5% you would get a capital gain of \$4 for a 5 years bond and \$8 for a 10 year bond as the price, i.e., market value, moves from \$100 to \$108.

The above looks at returns from New Zealand bonds. International bonds operate on the same basis, but with the added issue of currency movements. However, the risks associated with currency movements can be minimised by hedging.

On pages 4 and 5, details of the historical returns of both the New Zealand and international bond sectors are shown



Historical returns and characteristics of investment sectors

The table below looks at some statistics in respect of the different investment sectors over the last 10 years (40 quarters) to 31 December 2000. All returns quoted are net of tax at 33% on income and trading gains.

Sector	Number of quarters with a negative return	Number of quarters with a positive return	Average annual return	Range of annual returns
			(% p.a.)	
NZ shares				
- active	14	26	7.9	18.9% to 30.7%
- passive	14	26	9.2	-29.1% to 45.1%
Overseas shares (unhedged)				
- active	8	32	10.3	-5.5% to 41.7%
- passive	10	30	14.6	-8.7% to 64.7%
Overseas shares (hedged)				
- active	12	28	8.8%	-6.5% to 23.9%
- passive	12	28	12.3%	-10.0% to 36.0%
NZ Property				
- direct	8	32	3.5	-8.3% to 10.4%
- listed	21	19	-0.8	-38.8% to 26.2%
NZ bonds	8	32	6.3	-2.3% to 15.2%
Overseas bonds				
- hedged	4	36	7.4	-1.2% to 14.0%
- unhedged	14	26	6.9	-7.2% to 27.1%
Cash	0	40	5.1	3.2% to 9.4%
Inflation	4	36	1.8	-0.5% to 4.6%

Note: "hedged" international bond assets are investments in overseas bonds where the currency risk, i.e., the impact of a rising or falling NZ\$, is eliminated. "Unhedged" investments are where, in addition to the risks of the investment, the investor also gains or loses from a weakening or strengthening NZ\$.

The after-tax returns over other periods were:

Sector	Long-term returns over			Recent returns over	
	Last 25 years	Last 15 years	Last 10 years	Last 5 years	Last 1 year
	(% p.a.)	(% p.a.)	(% p.a.)	(% p.a.)	(%)
NZ shares					
- active	10.5	5.3	7.9	3.0	-5.4
- passive	12.6	4.5	9.2	1.9	-10.0
Overseas shares (unhedged)					
- active	11.9	9.9	10.3	14.4	2.2
- passive	16.5	13.7	14.6	20.9	2.2
Overseas shares (hedged)					
- active	9.0	8.4	8.8	10.2	-6.5
- passive	11.7	11.3	12.3	14.5	-10.0
NZ Property					
- direct	6.9	4.7	3.5	5.2	5.5
- listed	-	-	-0.8	4.9	5.2
NZ bonds	7.9	8.1	6.4	5.4	7.4
Overseas bonds					
- hedged	8.2	8.9	7.4	6.5	6.8
- unhedged	8.8	6.8	6.9	7.8	13.1
Cash	8.2	7.2	5.1	4.9	4.4
Inflation	7.6	4.1	1.8	1.6	4.0

Performance to 31 December 2000



Investment sector returns

Graphs of the net investment returns of each sector for each of the 10 year periods in the last 25 years, relative to the last 25 year average, are set out below. In addition, the risk/return relationship over the last 10 years of each of the sectors is shown in the traditional risk/return scattergraph format. The performance for shares relates to passive management.

