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Innovations in Savings Schemes: The Bonus Bonds Trust in New Zealand

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Bonus Bonds were introduced into New Zealand in March 1970 based on the Premium Bond savings scheme operating in the United Kingdom. A Bonus Bond is a unit in the Bonus Bonds Trust with all income from the trust's conservative investments being balloted for on a monthly basis by the bond holders. This paper looks at the history and operation of the Bonus Bonds savings scheme in New Zealand and examines why it has such wide appeal for New Zealanders. The paper also addresses the following aspects of the scheme. Performance of the bonds; their level of success as a savings vehicle; factors contributing to their relative success over time; the risk profile of the bond holders. The major findings of the paper are that investors in Bonus Bonds have little appreciation of real values and they view the bonds as an appropriate investment for risk averse investors.

I. INTRODUCTION

Bonus Bonds are a savings vehicle which were introduced to the New Zealand public in March 1970. This paper outlines the history of Bonus Bonds in New Zealand and examines their operation and the reasons for their wide appeal to the New Zealand public. A Bonus Bond is a unit in the Bonus Bonds Trust and the return earned by the Bonus Bonds Trust is balloted for by the bond holders in the trust. The principle deposited in the Bonus Bonds Trust is invested in low risk assets. This paper examines the interesting risk profile of the bond holders, being very risk averse with their principle contributions in nominal terms yet risk takers with their income component.

II. DEFINING A BONUS BOND

Bonus Bonds are not an investment in the traditional sense. Instead of being paid the interest earned by the fund, the bond holder has a chance of winning between $20 and $300,000

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a month in prize money. Chances of winning are currently one in 13,000 per bond with approximately 1.6 billion units currently on issue. Section 28 of the Finance Act 1991 under which the Bonus Bonds Trust operates requires that no unit is to have a better chance of winning a prize than one in 9,600. The level of prizes is set by the interest the funds of the trust earn in their highly conservative portfolio, being over $6 million for the month of June 1997. Some New Zealanders treat Bonus Bonds as a serious investment on which they hope to win a steady number of small prizes with the excitement of possibly winning a large prize.

As is normally the case for managed funds operating in New Zealand, tax on the Bonus Bond fund's income is deducted prior to the allocation, through ballot, of the prizes and is therefore tax-free in the hands of the winners. The tax rate currently applied is the top tax rate in New Zealand of 33% making the fund a tax inefficient investment for those bond holders on lower personal tax rates. As prizes are tax-free in investor's hands they do not have to be declared on tax returns. One substantial benefit for investors is that there appears to be no fluctuation in the capital value of each Bonus Bond from the viewpoint of the investor. While the fund is subject to some interest rate risk the mandate under which it operates allows for some flexibility in adjusting the prize payouts to ensure an asset backing of $1 per bond is maintained. Also the duration of the fund is kept short to minimise capital gains and losses through interest rate movements.

Each Bonus Bond on issue has a cost of $1 with a minimum purchase being twenty $1 units making it a very affordable fund to invest in, but expensive to manage with a management fee of 1.33% of gross assets. The fact that the manager of the Bonus Bonds Trust has a virtual monopoly on this type of product in New Zealand may also be a contributing factor to this high management fee which was 15% of total income for 1996. A trustee fee is also payable at the rate of 0.3%.

No entry or exit fees are charged and Bonus Bonds can be redeemed within 7 working days. No commission is payable to agents with the exception of New Zealand Post, the New Zealand postal service company, which is paid a 0.3% fee for the applications it processes. This unique product is part of New Zealand life. One in three New Zealanders are holders of the bonds of which over 90% hold less than $2,000 worth.

Bonus Bonds are competing with term deposits and other fixed interest investments at one end of the risk spectrum and popular gambling games at the other, of which there are many operating legally in New Zealand. The term deposit market tends to be very competitive in New Zealand with all major banks competing for market share. As an indication of this short-term bank interest rates on personal deposits tend to be very close to the wholesale 90 Day Bank Bill rates. Gambling in New Zealand has always been a very popular past time with a number of legal gambling options being available to willing participants. In recent times the number of these has increased significantly which could be seen as competition for Bonus Bonds. Bonus Bonds are different from other forms of gambling, however, as when you redeem your bonds your original investment is repaid.

A. A History of Bonus Bonds

Bonus Bonds were introduced to the New Zealand public under Section 129A of the Post Office Act 1959. The scheme was based on the Premium Bond Scheme in operation in the United Kingdom at that time. Premium Bonds went on sale in Britain in 1956 and found instant success with total sales having reached £6.6 billion by 1997. Comparing

Bonus Bonds with Premium Bonds, Premium Bonds have a face value of £1 each with any £1 bond having a one in 19,000 chance of winning a prize. The major prize for Premium Bonds is the £1 million jackpot which was introduced in November 1993. Premium Bonds are subject to a maximum holding of £20,000, unlike Bonus Bonds, on which there is no maximum holding. This limit is fixed by regulation and may be changed from time to time. Premium Bonds can be bought in multiples of ten £1 units with a minimum purchase of one hundred units. The only exception to this is where the purchase is made under an automatic prize reinvestment mandate. The £1 million jackpot prize is guaranteed each month and the numbers of each of the other prizes varies according to the total prize pool. A person with a maximum holding of £20,000 of Premium Bonds would, on average, expect to win an average of 13 prizes a year.

In New Zealand too, Bonus Bonds found instant success. At the time of launching it had been anticipated that $1 million worth of Bonus Bonds might be sold in the first month whereas the actual figure was $10.9 million. Bonus Bonds were introduced by the Finance Minister of the day, Sir Robert Muldoon, in conjunction with National Development Bonds as part of a scheme designed to direct savings towards so called "productive" Government projects. The money raised by Bonus Bonds was used to invest in New Zealand infrastructure such as roads, airports and schools. New Zealanders were encouraged to save by investing in Bonus Bonds, an investment which guaranteed the nominal value of the principal but appealed to the risk taking nature of New Zealanders by having the interest earnings balloted for.

Until 1987 the Bonus Bonds Trust was managed by the New Zealand Post Office Savings Bank on behalf of the New Zealand Government. The Post Office became a corporation in 1987 and Post-Bank came into being. Post-Bank continued to manage Bonus Bonds until it was sold to the Australia and New Zealand Banking Group on October 1, 1990. At the time of the Post-Bank sale to the ANZ Banking Group, the parties agreed that the Bonus Bond scheme would also transfer. The Bonus Bond fund was transferred to a unit trust scheme named The Bonus Bonds Trust under the Bonus Bonds Trust Deed on September 17, 1990. Management and ownership of the scheme was then transferred to the ANZ Trust with unit holders becoming reliant on the trustee and manager of the fund to protect their interests rather than the New Zealand Government. Until October 1990 the face value of deposits represented liabilities of the Government. From this date until October 1992 only pre-October 1990 bonds had the guarantee with this being removed in October 1992. All units are now unsecured although a substantial percentage of deposits are invested in Government securities.

B. Operation of the Bonus Bonds Trust

As previously stated income on the Bonus Bonds Trust is not distributed proportionally but is placed in a pool and distributed as prizes. Prize winning serial numbers are selected at random by ELSIE the Bonus Bonds random number selector. For the year ending September 30, 1996 the Bonus Bonds Trust Funds were invested as follows.

Investment Securities	**1996**	**1995**	**1994**
	$000	**$000**	**$000**
NZ Government Securities	899,835	1,097,134	1,072,673
Local Body Securities	87,752	47,738	65,852
Redeemable Preference Shares	-	9,875	-

Debentures/State Owned Enterprise Securities	28,240	14,994	10,196
Bank Deposits	95	1,901	2,336
Corporate Bonds	317,246	296,002	268,437
Discounted Securities	260,389	140,528	283,706
TOTALS	1,593,357	1,608,172	1,703,230

Source: Notes to the Financial Statements 1996. Bonus Bonds Trust.

The trust has a New Zealand-only investment policy but does not impose any limits on the proportion of assets that may be invested in any one company. Although equities, futures, options, swaps contracts, insurance and underwriting contracts are permitted it has been the policy of the manager to invest in low risk debt securities. In 1997 New Zealand Government Stock made up 56% of the portfolio. The manager does not have to inform unit holders of any changes made to the Bonus Bonds Trust investments but the manager, along with the trustees could be held personally responsible should the asset backing of each bond drop significantly below the $1 level. The prize pool equals the return to the Trust Fund after allowing for trustee's and manager's fees, allocations to reserves and taxation. The pool is divided into prizes as for prize draw No. 324, April 8, 1997.

Prize	**Amount**
First Prize	$300,000
Second Prize	$100,000
Third Prize	$50,000
112 Prizes of	$5,000
280 Prizes of	$1,000
565 Prizes of	$500
3,176 Prizes of	$100
34,800 Prizes of	$50
123,040 Prizes of	$20

Each Bonus Bond has a serial number and each Bonus Bond has the chance to win more than one prize in any one prize draw. The pool allocation has remained unaltered since March 28, 1995. The ballot results are available on the second Tuesday of each month and are published in the press. A letter is also sent to all winners. The full prize draw list is available at all branches of ANZ Bank, Post Bank and Post Shops by the Friday of the week following the draw. Any prize money not claimed within six months is transferred to the surplus account. If a prize is still not claimed within 25 years it is paid to the Crown. No interest is paid on unclaimed prizes and the substantial interest accumulated on these belongs to the ANZ Bank. Currently more than $1.4 million of prizes are unclaimed. In the year to 30, September 1996 the average after tax payout was 4.7%.

C. Performance of the Bonus Bond Trust

The performance success of the Bonus Bonds Trust can be considered from the viewpoint of the managers of the trust; growth of the fund, and also from the viewpoint of the unit holders; returns, real and nominal. When analysing this performance it is important to take note of the economic climate in New Zealand over the period under consideration. Throughout the seventies inflation in New Zealand was running at very high levels and interest rates in general were not compensating investors for the inflationary impact on

their deposits. This situation was reasonably common in the western world at that time leading to periods of negative real interest rates. In 1984 inflation came down very sharply, though not through market forces but on account of the imposition of a wage-price freeze. This freeze was lifted in late 1984 and deregulation of the economy began. Inflation rose again through to 1987 before being brought under control by tight monetary policy implemented by New Zealand's central bank. In 1989 the central bank in New Zealand was given the sole economic objective of maintaining stable prices. Stable prices in New Zealand are currently defined as being an inflation rate between zero and 3% (Reserve Bank of New Zealand, 1992). High short-term real interest rates are the main weapon of the central bank to achieve this goal. This approach to controlling inflation has been largely successful since the early 1990s. It should be noted at this point that it is difficult to make comparisons between the pre-1984 and post-1984 performances of Bonus Bonds as the economic changes which occurred in New Zealand from 1984 on were very substantial.

Since March 1971 the Bonus Bonds fund has grown from $20.8 million to $1.63 billion. The periods which have shown the highest real growth rates were the initial five years when the concept was clearly gaining support and the periods of lowest relative inflation being 1984 and 1988 to 1997. The same generally holds for nominal growth rates, both of

TABLE 1
The Growth of the Bonus Bonds Trust (Nominal and Real)

Date	*Total Deposits $ Million*	*% Increase in Deposits (Nominal)*	*% Increase in Deposits (Real)*
March 1971	20.8		
March 1972	33.1	59.13	46.84
March 1973	55.8	68.58	59.13
March 1974	79.6	42.65	29.34
March 1975	100.3	26.00	11.29
March 1976	128.1	27.71	8.95
March 1977	138.3	7.96	-5.01
March 1978	167.4	21.04	5.61
March 1979	196.4	17.32	6.27
March 1980	215.7	9.82	-7.22
March 1981	239.8	11.17	-3.51
March 1982	287.6	19.93	3.55
March 1983	339.7	18.11	4.85
March 1984	431.7	27.08	22.79
March 1985	486.1	12.60	-0.70
March 1986	494.5	1.72	-9.91
March 1987	541.4	9.48	-7.45
March 1988	641.6	18.50	8.77
March 1989	760.3	18.50	13.94
March 1990	900.9	18.49	10.71
March 1991	1064.0	18.10	12.07
March 1992	1327.0	24.71	24.27
March 1993	1448.0	8.36	7.44
March 1994	1592.0	9.05	7.86
March 1995	1687.0	5.63	1.86
March 1996	1659.0	-1.66	-3.56
March 1997	1630.0	-1.75	-2.83

Source: *New Zealand Key Statistics, 1970-1997* and *New Zealand Official Yearbook, 1970-1997.*

TABLE 2
Returns to the Bonus Bond Trust

Date	Payout Rate Nominal	Real Return %	Real Value Investment Dollar	90 Day Treasury Stock	5 Year Govt Bond
March 1970			1.0000		
March 1971	4.00	-6.30	0.9415	5.14	5.29
March 1972	4.00	-4.37	0.9035	4.99	5.24
March 1973	4.00	-1.94	0.8870	4.42	5.18
March 1974	4.00	-6.28	0.8365	4.20	5.41
March 1975	4.00	-9.22	0.7683	4.44	5.66
March 1976	4.00	-13.22	0.6817	5.51	7.44
March 1977	4.16	-9.51	0.6247	7.00	10.00
March 1978	5.17	-9.44	0.5733	7.50	9.75
March 1979	5.76	-4.63	0.5492	10.60	10.00
March 1980	5.70	-12.68	0.4904	11.25	13.00
March 1981	5.50	-9.73	0.4490	11.25	12.50
March 1982	5.70	-10.12	0.4097	12.00	14.00
March 1983	7.20	-5.45	0.3899	7.80	10.30
March 1984	6.90	3.41	0.4027	7.80	11.00
March 1985	7.40	-6.00	0.3814	17.73	12.33
March 1986	7.70	-5.23	0.3638	15.00	12.47
March 1987	7.50	-1.08	0.3306	17.45	12.20
March 1988	8.00	-1.44	0.3262	10.71	8.99
March 1989	8.00	4.00	0.3387	8.92	8.83
March 1990	8.00	0.98	0.3418	9.17	8.09
March 1991	8.00	2.62	0.3503	8.00	7.62
March 1992	6.00	5.08	0.3700	4.91	5.76
March 1993	5.50	4.50	0.3868	4.84	4.85
March 1994	3.50	4.20	0.4030	3.64	4.01
March 1995	3.50	-0.05	0.4010	6.31	5.71
March 1996	4.20	2.30	0.4102	5.94	5.49
March 1997	4.70	3.60	0.4250	5.07	5.22

Note: All returns are on an after tax basis.
Source: *New Zealand Key Statistics, 1970-1997* and *New Zealand Official Yearbook, 1970-1997.*

which are shown in Table 1. Table 2 shows the annual nominal payout rates to the fund from March 1971 through to March 1997 together with the level of real returns to the fund and the real value of the investment dollar adjusted for the payout level. Comparative rates of returns on New Zealand 90 Day Treasury Stock and 5 Year Government Stock are also shown. These rates of return show that the Government achieved its objective of raising cheap capital for economic development over the period that it had control of the fund. Despite the fund's private management in recent times it has still failed to return at a competitive rate in most years but the highly positively skewed distribution of returns that the fund displays would appear to compensate investors for this.

On account of the fact that the fund's investments are all in interest bearing deposits the drop in interest rates, which accompanies a drop in inflation, leads to drops in the nominal payout rate. These drops in the nominal payout rate had no apparent effect on growth rates for the fund, however, at least until just recently. In fact it would appear that the lower nominal bank deposit rates, which occur with lower inflation, act as a strong incentive for people to increase deposits in Bonus Bonds.

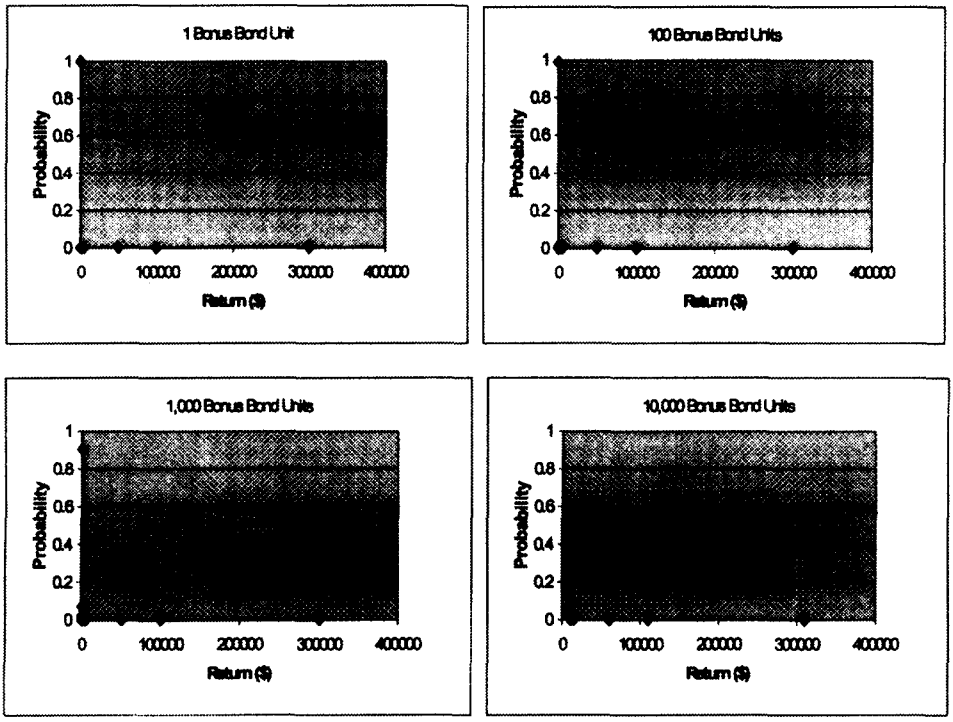

Figure 1. Probability and Returns to Bonus Bonds per Monthly Draw Holdings of One Unit to Ten Thousand Units

The real return on Bonus Bonds has been very poor over most of the period in which the fund has been operating. The nominal payout rate was initially set at 4% and stayed there until 1977 from where it rose steadily, 1984 excluded, until it reached a peak of 8% in the late eighties. Since then it dropped steadily to a level of 3.5% before rising again to its current level of 4.7%. After allowing for inflation expected real returns to the fund have been negative in eighteen of the twenty-eight years in which it has been operating. From inception until 1988 (excluding 1984) the real value of the investment dollar, adjusted for the payout rate, declined steadily to under 33 cents. Despite this very poor performance, however, Bonus Bonds have retained a large degree of popularity among the investing public.

D. The Risk Profile of the Bonus Bond Holders

One of the key features of Bonus Bonds is the public perception, well justified in nominal terms, that the principal amount is very secure to the point of being almost risk free. As current sales literature states, "If the fund managers have one philosophy, it is the absolute need for security of investment."

Currently 56% of the fund is invested in Government securities effectively giving a large degree of Government guarantee. It can be argued that investors view their principal

as being invested in a zero return risk free asset. The compensation for forgoing at least the risk free rate of return on the principal is the high risk expected return which, while positive, is balloted for and clearly lies in the risk taking segment of the risk spectrum. For nominal values then, it can be argued that investors in Bonus Bonds view the total investment as belonging to the risk averse segment of the risk spectrum. If the positive real returns that have been experienced lately continue the same may well apply in real terms as well.

This apparent conflict between risk averse and risk taking behaviour has been noted many times in the literature going back to the Friedman-Savage hypothesis which postulated that individuals have both risk averse and risk taking segments within their utility functions (Elton & Gruber, 1995). This hypothesis came about from the observation that individuals will both buy insurance and gamble at the same time. More recently Levy and Sarnat (1984) reported a finding that investors have a liking for positive skewness within their investment returns, being prepared to forgo a small part of their expected return for a chance of a very high return. Bonus Bonds appear to be able to exploit this characteristic of human behavior in a very effective manner.

The risk nature of this investment can be further explained in Figure 1. Because the principal is justifiably regarded as being secure the distribution of returns per month is highly positively skewed with the downside risk being no more than the going rate of interest on deposits. That is, for most bond holders, the return per month will be zero with no downside risk. As the number of bonds held by an individual investor rises the chances of at least one prize per month increases. If a bond holder holds just one hundred units the probability of no bond winning a prize is 98.99%. In the case of a bond holder holding ten thousand units the probability of no bond winning a prize drops to 36.33% with a 27.94% chance of winning a $20 prize and a 7.9% chance of winning a $50 prize. The average holding in Bonus Bonds is around one thousand units for which the probability of no bond winning a prize at the monthly draw is 90%. This shows that the average investor in Bonus Bonds is prepared to forgo the normal return on deposits on approximately $1,000 for a very small chance of a high return with no risk to capital so long as they receive some small reward about one month in ten.

III. CONCLUSION

The investment mix of retaining the nominal value of one's capital with a high degree of certainty and having the chance of a large win through balloting for the interest earned on the capital has attracted many depositors to the Bonus Bonds Trust operating in New Zealand, making it New Zealand's largest managed fund. Currently in New Zealand only the Australian and New Zealand Banking Group, through their ownership of Post-Bank, are able to operate such a fund, although there are schemes operating at banks where a lower interest rate is paid on deposits so that prizes can be won by lucky depositors. Poor real returns, often negative, have done little to discourage investment in this savings vehicle.

While the high level of security of the capital may well lead investors to view the bonds as being appropriate for a risk averse investor, authorities could view such bonds which promise a zero return on capital with near certainty for most holders as being close to gambling and therefore undesirable. Whatever view the relevant authorities might hold,

one cannot argue against the proven attractiveness of such schemes and other countries might well consider introducing similar products.

Similar schemes could be set up where only part of the return to the fund is balloted for which might well prove more attractive to investors than the New Zealand scheme. Which ever way such a scheme was set up, three components appear necessary to facilitate its success. The worst outcome for a bond holder must be a small or zero return with near certainty, the distribution of returns must be highly positively skewed, and some small regular reward should be received.

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