**Investment Management Association** 



# Investment Returns from Tracker Funds and Guaranteed Equity Bonds

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## Introduction

Structured products often offer returns linked to the performance of stockmarket indices together with the guarantees of the return of investors' capital if the stockmarket falls. An example is the Guaranteed Equity Bonds (GEBs) that National Savings and Investments (NS&I) have issued since 2002. These have offered investors returns linked to the FTSE100 index with a guarantee of a full return of their initial investment if the FTSE falls over the five year term.

NS&I are transparent about the returns that their investors have received from the GEBs that have matured and this has enabled us to compare these returns with those that their investors could have obtained from investments in the stockmarket through FTSE100 tracker funds. Our analysis shows that investors in nine out of the ten GEBs that have matured to date would have done better if they had invested in tracker funds and, usually, by a large margin.

The main reason why tracker investors have done better than GEB investors is that GEB investors do not receive the dividends of the FTSE100 companies. The value of these dividends and their re-investment net of the costs into the tracker funds is what delivers tracker investors' better returns. Another factor is different tax treatment of the returns.

Our analysis also shows the better returns delivered by trackers, compared to the GEBs that recently matured, are not an aberration. Using stockmarket returns over the last century, it shows that tracker investors should do better than investors offered GEB type returns in six years out of seven. It also shows that the value of the guaranteed return of their capital in the bad years leads investors to lose returns in the other years that are ten to more than twenty-fold larger.

## The Guaranteed Equity Bond offer

In 2002, National Savings and Investments launched their first "Guaranteed Equity Bond" offering investors the opportunity to "play the stock market without risking your capital". This was the first of a large number of such bonds and this paper looks at investors' experiences to date in comparison with investors that put their money into unit trust "tracker funds".

The first Guaranteed Equity Bond (GEB1) offered in its prospectus:

- an attractive potential return linked to the UK's top 100 companies through the FTSE100 index;
- a guarantee to return your investment in full backed by HM Treasury;
- maximum return of 65% gross over 5 years;
- return paid at maturity;
- no fees or charges.

Subsequent GEBs made similar offers. The second one (GEB2) through to the fifth (GEB5) offered exactly the same format except that the maximum return varied.

GEB6 launched in November 2003 changed the approach – the maximum return was removed and investors were offered "participation" in the growth of the FTSE100. For GEB6 the participation rate was 95% of any growth of the FTSE100 index paid gross. Subsequent issues up to GEB10 launched in July 2005, and the most recent GEB to mature, were on the same basis, though the participation rate varied. Exceptionally, GEB8 launched in July 2004, also offered a guarantee to return the original investment plus a return of at least 15%.

All the GEBs had 5 year terms and, in each case, the FTSE100 return was calculated on an averaged basis to smooth out any short term fluctuations in the value of the index. Start levels were based on the first five trading

days of a bond and the end levels defined by the average of the daily FTSE closing level over the final six months of the investment term.

The key parameters of the different GEBs are summarized in Table 1 together with the gross return for investors at maturity. However, the GEB return is subject to UK income tax.

Table 1: Key GEB data

Issue	Start date	Туре	Minimum return	Maximum return	Participation rate	FTSE100 growth	Investor's gross return
1	18/04/02	Capped	Capital	65%	N/A	19.49%	19.49%
2	29/08/02	Capped	Capital	70%	N/A	55.39%	55.39%
3	29/11/02	Capped	Capital	65%	N/A	57.24%	57.24%
4	09/04/03	Capped	Capital	60%	N/A	59.68%	59.68%
5	17/06/03	Capped	Capital	65%	N/A	44.11%	44.11%
6	25/11/03	Participation	Capital	N/A	95%	16.91%	16.07%
7	19/05/04	Participation	Capital	N/A	110%	-7.34%	0.00%
8	28/07/04	Participation	Capital + 15%	N/A	75%	-5.74%	15.00%
9	10/11/04	Participation	Capital	N/A	105%	-1.30%	0.00%
10	20/07/05	Participation	Capital	N/A	125%	2.07%	2.58%

Source: NS&I

In NS&I's own words introducing GEB1, you could "play the stock market without risking your capital". The risk was eliminated by HM Treasury's guarantee to return the original investment. As can be seen from the table the guarantee came into play on three occasions – GEBs 7, 8 and 9 that matured in 2009.

# Comparing bond and tracker investment returns

How did the GEBs compare with direct investments into the market through funds? To make this comparison, we chose the three largest FTSE100 tracker funds that were on offer when the first GEB was launched. All our figures are based on the average of these three trackers, though in practice the returns from the individual trackers were very similar.

Table 2 and Chart 1 show the net returns that investors would have made if they had bought tracker funds on the same day as each of the GEBs was launched and sold them on the maturity dates of the respective bonds. The figures are based on investments of £10,000 and returns shown are net of income tax at the basic rate. The tracker investor is assumed to be able to make use of his annual exemption for capital gains tax. Compound annual growth rates (CAGRs) are also shown – these rates of return shown would be the same whatever the amount of the investment.

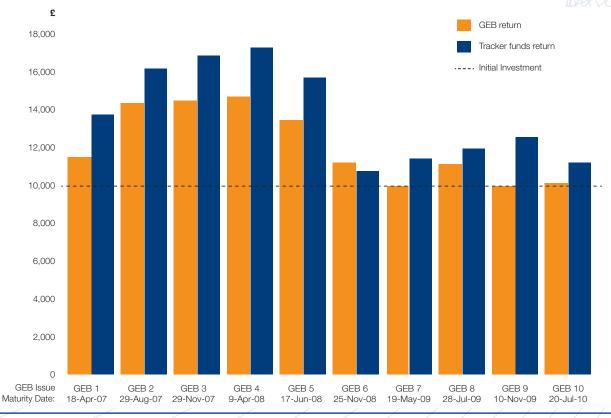
Table 2: Comparison of GEB and tracker returns net of basic rate tax

	GEB return	Tracker funds return	Difference	GEB CAGR	Tracker funds CAGR	CAGR difference
GEB1	£11,559	£13,822	£2,263	2.94%	6.69%	3.64%
GEB2	£14,431	£16,271	£1,840	7.61%	10.23%	2.43%
GEB3	£14,579	£16,979	£2,400	7.83%	11.17%	3.09%
GEB4	£14,774	£17,396	£2,622	8.12%	11.71%	3.32%
GEB5	£13,529	£15,787	£2,258	6.23%	9.56%	3.14%
GEB6	£11,286	£10,837	-£449	2.45%	1.62%	-0.81%
GEB7	£10,000	£11,478	£1,478	0.00%	2.79%	2.79%
GEB8	£11,200	£12,022	£822	2.29%	3.75%	1.43%
GEB9	£10,000	£12,645	£2,645	0.00%	4.81%	4.81%
GEB10	£10,207	£11,275	£1,068	0.41%	2.43%	2.01%

Sources: NS&I, IMA

The table shows that investors would have done better in tracker funds in nine cases out of ten. The only occasion when the GEB gave a better return was GEB6 which matured in November 2008, two months after Lehman's collapse. The GEB did not do better because the guarantee came into operation but because we have assumed that the investors in tracker funds would have sold out on the maturity date of the GEB (25 November 2008) when the FTSE was 4171 which was well below the average FTSE level of 5114 over the previous six months which determined the GEB pay-out.

Chart 1: Value of £10,000 investment into GEBs and tracker funds after five years



Sources: NS&I, IMA

Even if the tracker investor had sold out on 25 November 2008, they would have still recovered their original investment in full, with a small return. In practice, unlike the GEB investors, they would have had the flexibility to decide when to sell and, if they had held on for another year by which time the FTSE100 had recovered to 5365, they would have been well ahead of the GEB investor (receiving £14,259 compared with the GEB return of £11,200). GEB6 was the worst result for investors in tracker funds. For the other nine GEBs, tracker investors would have comfortably out-performed by amounts ranging from £822 to £2,645. The average out-performance over the ten GEBs was £1,695. Moreover, an investor putting £1,000 into a tracker and £1,000 into a GEB at the launch date of each GEB would have received back £13,851 from the tracker investments compared with £12,156 from the GEB investments.

These figures have been calculated for a basic rate taxpayer. Comparable figures for higher rate taxpayers are presented in Appendix A. Like the basic rate taxpayer, the higher rate taxpayer investing in a tracker fund would have fared worse than an investor in GEB6. Again, like the basic rate taxpayer, for the other nine GEBs, tracker investors would have comfortably out-performed by amounts ranging from £725 to £3,304. Moreover, an investor putting £1,000 into a tracker and £1,000 into a GEB at the launch date of each GEB would have received back £13,444 from the tracker investments compared with £11,617 from the GEB investments. Further detail for the higher rate taxpayer is provided in Appendix A.

# Comparison of the costs of investing in bonds and trackers

These figures relate to returns received net of costs. GEBs are sold on the basis that there are no fees or charges. The cost of the product has been taken into account in the return offered – so the costs are not known to the consumer. In the case of the tracker funds, the costs are more transparent. Each of the three quotes an annual management charge of 1% of the value of the fund. The average total expenses ratio (TER) of the three funds is currently 1.05%. Also, there are the costs of investing in the underlying portfolio. These latter costs include stamp duty on transactions, dealing costs and, potentially, market impact. Some of these costs may sometimes be offset by income from stock lending. None of the trackers levies initial charges.

All the tracker returns shown in this paper are net of all these costs. One way to calculate a fully comprehensive assessment of a tracker's costs is to estimate its tracking error. The tracking error is calculated as difference between the return on the funds and a costless investment in the FTSE100 including re-investment of the dividends. Calculating tracker costs in this way not only includes the impact of annual management charges and other charges such as registration, audit and depositary fees that are included in the TER but also the costs of investing in the underlying portfolio. Table 3 shows the tracking errors expressed as the total cost over the different five year periods in relation to a £10,000 investment and also expressed as annual percentage performance loss.

Table 3: Tracking costs and errors

Period	Tracker costs	Tracking error (per year)
GEB1	£779	1.18%
GEB2	£1,022	1.35%
GEB3	£1,113	1.42%
GEB4	£980	1.23%
GEB5	£857	1.16%
GEB6	£527	0.97%
GEB7	£541	0.95%
GEB8	£484	0.82%
GEB9	£643	1.04%
GEB10	£582	1.04%
Average	£753	1.12%

Source: IMA

The average tracker error for investments over these five year periods is 1.12%, just 0.07% higher than the average TER quoted today for these funds. However, there is some variability around this average which may reflect variation in the valuation of the funds depending whether there were net sales or redemptions at the start and end of the five year periods. Other technical factors may also have a small effect.

Tracker funds deliver a better return than GEBs in most circumstances because the trackers re-invest the dividends (net of costs and charges) received from the FTSE100 companies in which the tracker funds are invested whereas the GEBs return no equivalent stream. Whilst the GEB investors incur no explicit charges, the effective cost of their investments is the FTSE100 dividends lost. Table 4 gives an estimate of the total value of the dividends lost with each GEB investment, calculated by comparing the growth of Lipper's FTSE total return and FTSE capital return indices.

Table 4: GEB dividend losses and tracker costs compared

	Dividends lost on GEBs <sup>1</sup>	Tracker costs	Difference
GEB1	£2,268	£779	£1,489
GEB2	£2,724	£1,022	£1,703
GEB3	£2,864	£1,113	£1,751
GEB4	£2,880	£980	£1,900
GEB5	£2,656	£857	£1,798
GEB6	£1,859	£527	£1,332
GEB7	£1,995	£541	£1,454
GEB8	£2,109	£484	£1,625
GEB9	£2,240	£643	£1,597
GEB10	£2,002	£582	£1,420

<sup>&</sup>lt;sup>1</sup> Dividend losses calculated on the basis of investment in FTSE100 from start date to maturity date. Figures include capital appreciation of re-invested dividends.

Sources: Lipper, IMA

The dividends lost varied between £1,859 and £2,880 on an investment of £10,000. This is far higher than the costs of the tracker investments, by between £1,332 and £1,900. This represents the extent to which investors in trackers funds would have done better than GEB investors apart from the fact that (a) GEB investors' returns were based on average FTSE values over the last six months to maturity and (b) the different tax impacts.

# Factors that impact GEB and tracker returns differentially

Two key factors are the respective tax treatments of the investments and the fact the GEB investors returns are based on the average FTSE level over six months whereas the tracker investors' return is determined by the FTSE100 on the day he redeems his investment.

The GEB investor receives interest, which is taxed at 20% for the basic rate taxpayer, linked to the FTSE return. The tracker investor receives his return in part as dividend distributions (the FTSE100 dividends less the trackers' costs) net of tax at 10% for the basic rate taxpayer and the other part, if the FTSE100 rises, as a capital gain which, in these figures, we have assumed will be covered by the annual exempt amount (£10,100 in 2010/11) under Capital Gains Tax rules.

As noted above, the second factor is that GEB investors' returns are dependent on the average FTSE value over a six month period whereas the typical tracker investor may redeem his investment as one event – we have assumed he sells out on the GEB maturity date. The GEB's averaging approach reduces the volatility of the returns it offers. On the other hand there is a cost to the fixed maturity date of a GEB – the investor cannot change it whereas the tracker investor can choose when to sell.

A better comparison of the underlying performance of GEBs and trackers would exclude such differences. Therefore, Table 5 provides a comparison on the basis that the investments into the trackers were phased to mimic the same exposure to the FTSE100 as the GEB ie the investor is assumed to spread his initial investment over five days and realise his investment gradually over the last six months of the five year period.

Once again, the tracker investment performs better than the GEB nine times out of ten. On this occasion, it is GEB8 that offers a return that beats the tracker investment. Although the tracker investment delivers a positive return, GEB8 was the one occasion where NS&I offered investors not only a guarantee of the return of their original capital but also a minimum interest return of 15%.

Table 5: Comparison of GEB and tracker returns without timing differences

	GEB return	Tracker funds return	Difference	GEB CAGR	Tracker funds CAGR	CAGR difference
GEB1	£11,559	£13,223	£1,664	2.94%	5.75%	2.73%
GEB2	£14,431	£17,188	£2,757	7.61%	11.44%	3.56%
GEB3	£14,579	£17,546	£2,967	7.83%	11.90%	3.77%
GEB4	£14,774	£17,512	£2,738	8.12%	11.86%	3.46%
GEB5	£13,529	£15,839	£2,310	6.23%	9.63%	3.20%
GEB6	£11,286	£13,198	£1,912	2.45%	5.71%	3.18%
GEB7	£10,000	£10,433	£433	0.00%	0.85%	0.85%
GEB8	£11,200	£10,701	-£499	2.29%	1.36%	-0.91%
GEB9	£10,000	£11,213	£1,213	0.00%	2.32%	2.32%
GEB10	£10,207	£11,665	£1,458	0.41%	3.13%	2.71%

Sources: NS&I, Lipper and IMA

The average out-performance of the tracker investments is £1,695, the same as the out-performance when the calculation was based on the full tracker investment being made on the GEB start date and the funds all sold on the maturity date.

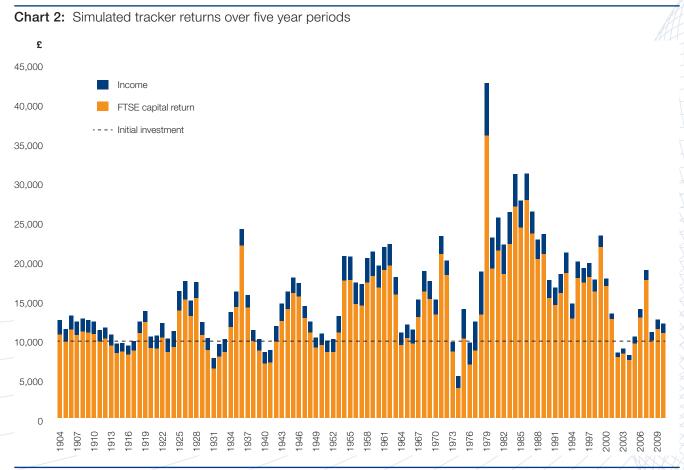
For the seven GEBs where the final FTSE100 value was higher than the start value, the tracker investor fared much better than the GEB investor. The lowest additional benefit from the tracker investment was £1,458 in the case of GEB10 whilst the highest was £2,967 for GEB3. These benefits reflect both the distributions that are reinvested in the tracker funds and the different tax impacts. The latter contributed to the fact that the three GEBs (GEBs 2, 3 and 4) that delivered over 50% gross return over their terms were also the three GEBs investors lost most relative to tracker investors.

The three GEBs where the FTSE fell were GEBs 7, 8 and 9. In two of these cases, GEB7 and GEB9, the tracker investor still did better than their GEB counterpart because the value of the re-invested distributions out-weighed the fall in the FTSE. Whilst this was also true in the case of GEB8, this was also the only case where the GEB paid a guaranteed minimum interest in addition to the repayment of the original capital.

Over the first ten GEBs offered by NS&I, tracker investors did better nine times out of ten. This is not surprising given the benefits of the income stream. In comparison with a GEB that offers the growth in the FTSE100 but no guaranteed interest, the tracker investor can only realistically lose out where the FTSE100 falls by more than the value of the re-invested income net of tracker costs. The next section looks at how often this is likely to happen over the longer term.

# A longer view of comparative returns

Taking a longer view relies on looking at what has happened in the past, whilst recognising that the future will be different in practice. The FTSE100 has been in existence for more than a quarter century. Other indices provide information on market movements before that. In their Equity Gilt Study, Barclays provide a stockmarket index and income estimates back to the beginning of the 20th century. We have used this information to look at what a tracker investment might have returned over each of these 107 years. For this purpose, we have assumed that the tracker's total costs were 1.12% of the value of the fund – the average total tracking error over the ten GEB periods. We have then calculated 5 year growth rates for five year periods ending each 31 December. The results are shown in Chart 2.



Sources: NS&I, Lipper, Barclays Equity Gilt Study and IMA

There are 92 years where a five year tracker investment would have delivered an increase in the investors' original capital including re-invested income and 15 years when the investor would have made a loss. The latter were investments maturing in 1914-17, 1931-32, 1940-41, 1951, 1973-74, 1976 and 2002-04. The average loss in these years was  $\mathfrak{L}1,217$ . In contrast, the average gain in the 92 successful years was  $\mathfrak{L}6,566$ . All these figures are calculated on the basis of the current tax rate for basic rate taxpayers – obviously the actual tax rate would have been different at different times.

Table 6 compares the returns that the different GEBs would have offered over the 107 years compared with tracker investments. For all GEBs apart from GEB8, there are 15 years where the GEB investor would have done better than the tracker investor. For GEB8, there are 29 years because this GEB offered an interest guarantee in addition to the capital guarantee. In the 92 years where tracker investors do better than GEB investors (and 78 years in the case of GEB8) there is considerable variation in size of tracker investors' out-performance depending on the exact terms of the individual GEB.

Table 6: Simulated returns over 107 years for nineteen GEB offers

		GEB out										C
	tracker investment			performance of tracker investment Tracker out-performance of GEB							Guarantee cost <sup>1</sup>	
	>20%	10- 20%	0- 10%	0- 10%	10- 20%	20- 30%	30- 40%	40- 50%	50- 60%	> 60%	CAGR	
GEB1	2	5	8	13	29	24	9	5	5	7	3.73%	20x
GEB2	2	5	8	13	29	27	7	7	2	7	3.59%	19x
GEB3	2	5	8	13	29	24	9	5	5	7	3.73%	20x
GEB4	2	5	8	13	28	24	8	6	5	8	3.89%	20x
GEB5	2	5	8	13	29	24	9	5	5	7	3.73%	20x
GEB6	2	5	8	13	27	37	13	1	1	0	2.91%	16x
GEB7	2	5	8	14	48	28	1	1	0	0	2.33%	13x
GEB8	7	11	11	15	8	15	20	14	5	1	2.79%	7X <sup>2</sup>
GEB9	2	5	8	14	40	33	4	1	0	0	2.52%	14x
GEB10	2	5	8	21	66	3	1	1	0	0	1.79%	10x
GEB11	2	5	8	14	53	23	1	1	0	0	2.26%	12x
GEB12	2	5	8	18	63	9	1	1	0	0	1.96%	11x
GEB13 <sup>3</sup>	2	5	8	18	63	9	1	1	0	0	1.96%	11x
GEB14	2	5	8	13	29	27	7	7	2	7	3.59%	19x
GEB15	2	5	8	13	30	29	6	6	2	6	3.46%	18x
GEB16 <sup>3</sup>	2	5	8	13	29	27	7	7	2	7	3.59%	19x
GEB17	2	5	8	13	25	11		7	5	20	5.02%	24x
GEB18	2	5	8	13	26	12	12	6	6	17	4.75%	23x
GEB19	2	5	8	13	26	22	6	7	5	13	4.27%	22x

<sup>&</sup>lt;sup>1</sup>Returns forgone when tracker investment would have out-run the GEB expressed as a multiple of the value of the guarantees when these came into play.

Sources: NS&I, Lipper, Barclays Equity Gilt Study and IMA

It is very clear that tracker investments would have out-performed GEBs much more often than vice-versa (six times more often except GEBs) and by much greater margins than the infrequent occasions when GEBs did better. As can be seen from the table, this out-performance can be very large.

The best measure of the benefits of tracker investment, compared with GEBs, is the difference in the expected compound annual growth rates of the two investments. On the basis of our simulations, using stockmarket

<sup>&</sup>lt;sup>2</sup> GEB8 offered guaranteed interest as well as guaranteed return of capital.

<sup>&</sup>lt;sup>3</sup> Not publically offered – only available for re-investment of matured GEBs.

movements over the last 107 years, the expected benefit of a tracker investment compared to a GEB offer is between 1.8% and 5.0% extra investment growth each year, depending on the terms of the GEB offers.

The least costly GEB offer in terms of prospective lost returns compared to a tracker investment was GEB10. The worst GEB offer was GEB17 launched in April 2009 when the financial crisis was still very fresh in investors' minds.

A key selling point for GEBs is a good return without risk, through returns linked to the FTSE100 together with a guaranteed return of investors' initial capital. Table 6 shows the cost of this capital guarantee, in terms of lost returns (mainly lost dividends and, for many GEBs, capped returns), could be expected to be between 10 and 24 times the expected benefit from it when the market falls.

#### Conclusion

Nine out of the ten GEBs to have matured to date have been out-performed by investments in tracker funds over the same time periods. Over all ten GEBs, the return to tracker investors averaged £1,695 more than the return to GEB investors. The extra return in terms of the compound annual investment growth was 2.58%. Just one GEB delivered a better outcome than trackers – the GEB that matured two months after Lehman's collapse returned £449 more than the £10,837 that the tracker investor would have received had they sold the same day as the GEB matured.

These GEBs all matured during 2007 to 2010. But GEBs offering similar terms would have done no better in comparison with trackers over the last hundred years or so. There have been only 15 years since 1900 when a five year investment in trackers would have not delivered investors a positive return. In all other years trackers would have done better than a standard GEB – in many years by a large margin. Compared to the GEB returns offered over the last decade, trackers would have delivered on average between 1.8% and 5.0% extra compound annual growth in investors' capital net of all costs.

The main reason why trackers do so much better is that investors benefit from the dividend distributions paid out by FTSE100 companies to the tracker funds which are then re-invested net of tax and the costs of operation of the funds. GEB investors receive no dividends – the cost of these lost dividends, including their re-investment, averaged £2,360 over the ten GEBs that have matured to date.

## **APPENDIX A**

# Comparative investment returns for higher rate taxpayers

The experience of higher rate taxpayers investing in tracker funds is broadly the same as that for basic rate taxpayers. Like the basic rate taxpayers, they would have done better than the GEB investors in nine of the ten GEB issues that have matured to date. Table A1 gives the figures for higher rate taxpayers that Table 2 gives for basic rate taxpayers.

Table A1: Comparison of GEB and tracker returns net of higher rate tax

	GEB return	Tracker funds return	Difference	GEB CAGR	Tracker funds CAGR	CAGR difference
GEB1	£11,169	£13,431	£2,262	2.24%	6.08%	3.76%
GEB2	£13,323	£15,788	£2,465	5.91%	9.56%	3.45%
GEB3	£13,434	£16,470	£3,035	6.08%	10.49%	4.16%
GEB4	£13,581	£16,884	£3,304	6.31%	11.04%	4.45%
GEB5	£12,647	£15,314	£2,668	4.81%	8.90%	3.90%
GEB6	£10,964	£10,509	-£455	1.86%	1.00%	-0.84%
GEB7	£10,000	£11,166	£1,166	0.00%	2.23%	2.23%
GEB8	£10,900	£11,692	£792	1.74%	3.18%	1.41%
GEB9	£10,000	£12,307	£2,307	0.00%	4.24%	4.24%
GEB10	£10,155	£10,879	£725	0.31%	1.70%	1.39%

Sources: NS&I, IMA

The average out-performance of the tracker investments over the ten GEBs is £1,827, slightly higher than for the basic rate taxpayer. An investor paying higher rate tax and putting £1,000 into a tracker and £1,000 into a GEB at the launch date of each GEB would have received back £13,444 from the tracker investments compared with £11,617 from the GEB investments.

Whilst, on average, the reward is slightly higher for higher rate taxpayers from choosing tracker funds in preference to GEBs, this is not always the case. It depends on the circumstances. Thus when the stockmarket falls over the five year term, the GEB investor receives the return of their capital and there is no tax to pay whereas the tracker investor not only has a capital loss but still has to pay tax on the distributions re-invested into the fund.

The relative reward from tracker investments, compared with investment into GEBs, is highest for higher rate taxpayers when the stockmarket has risen strongly (GEBs 2,3,4 and 5). This reflects the fact that GEB investors must pay higher rate tax on the whole of their investment return which is treated as income for income tax purposes whereas the same investor in funds has to pay the higher rate of tax only on the income distribution re-invested into the tracker fund. For the tracker investor, the capital gain is not taxed if it is covered by the annual exempt amount (£10,100 in 2010/11) under Capital Gains Tax rules.

Table A2 provides the same information for higher rate taxpayers that Table 6 provides for basic rate taxpayers. There are 86 years where a five year tracker investment would have delivered an increase in the investors' original capital including re-invested income and 21 years when the investor would have made a loss.

It is very clear that tracker investments would have out-performed GEBs much more often than vice-versa (four times more often except GEBs) and by much greater margins than the infrequent occasions when GEBs did better. This out-performance can be very large.

The best measure of the benefits of tracker investment, compared with GEBs, is the differences in the expected compound annual growth rates of the two investments. For a higher rate taxpayer, on the basis of our simulations, using stockmarket movements over the last 107 years, the expected benefit of a tracker investment compared to a GEB offer is between 2.2% and 4.9% extra investment growth each year, depending on the terms of the GEB offers.

Table A2 shows the cost of this capital guarantee could be expected to be between 9 and 17 times the expected benefit from it when the market falls.

Table A2: Simulated returns over 107 years for nineteen GEB offers – net returns for higher rate taxpayers

	GEB out- performance of tracker investment			performance of								Guarantee cost <sup>1</sup>
	>20%	10- 20%	0- 10%	0- 10%	10- 20%	20- 30%	30- 40%	40- 50%	50- 60%	> 60%	CAGR	
GEB1	4	6	11	12	22	22	7	7	5	11	3.87%	15x
GEB2	4	6	11	12	22	22	11	5	4	10	3.75%	14x
GEB3	4	6	11	12	22	22	7	7	5	11	3.87%	15x
GEB4	4	6	11	12	22	22	5	7	5	13	4.00%	15x
GEB5	4	6	11	12	22	22	7	7	5	11	3.87%	15x
GEB6	4	6	11	12	22	16	25	8	2		3.17%	12x
GEB7	4	6	11	12	23	29	19	2	1	0	2.68%	11x
GEB8	7	13	12	12	8	10	16	13	10	6	3.14%	7x <sup>2</sup>
GEB9	4	6	11	12	22	28	17	6	1	0	2.84%	11x
GEB10	4	6	11	13	32	35	6	0	0	0	2.22%	9x
GEB11	4	6	11	12	24	30	17	3	0	0	2.61%	11x
GEB12	4	6	11	12	30	35	7	2	0	0	2.37%	10x
GEB13 <sup>3</sup>	4	6		12	30	35	7	2	0	0	2.37%	10x
GEB14	4	6	11	12	22	22		5	4	10	3.75%	14x
GEB15	4	6	11	12	22	24	9	6	5	8	3.65%	14x
GEB16 <sup>3</sup>	4	6		12	22	22	11	5	4	10	3.75%	14x
GEB17	4	6		12	22	10	7	8	4	23	4.92%	17x
GEB18	4	6	11	12	22	11	8	7	8	18	4.70%	17X
GEB19	4	6	11	12	22	17	7	6	6	16	4.31%	16x

<sup>&</sup>lt;sup>1</sup> Returns forgone when tracker investment would have out-run the GEB expressed as a multiple of the value of the guarantees when these came into play.

Sources: NS&I, Lipper, Barclays Equity Gilt Study and IMA

<sup>&</sup>lt;sup>2</sup>GEB8 offered guaranteed interest as well as guaranteed return of capital.

<sup>&</sup>lt;sup>3</sup> Not publically offered – only available for re-investment of matured GEBs.