

ANNUITIZATION LESSONS FROM THE UK: MONEY-BACK ANNUITIES AND OTHER DEVELOPMENTS

Tom Boardman

INTRODUCTION

I have been asked to share some annuitization lessons from the United Kingdom including covering the concept of value protected annuities, or, as I like to call them, money-back annuities, which were introduced in the United Kingdom in April 2006 following extensive lobbying by my company and others.

I'm going to provide some brief background on the UK market. I will then discuss why I believe most pensioners need an annuity and when pensioners should annuitize. Then I'll provide some comments on investment considerations. Finally, I'll attempt to suggest that although the United Kingdom and United States currently have very different approaches to converting savings into retirement income, there are signs of both countries beginning journeys based on customer needs which may well converge in the future.

It might help if I define what I mean by annuitization up front. By annuitization I mean that people enter an annuity pool in which they put their capital at stake in exchange for an enhanced income for life. This contrasts with a drawdown approach in which they draw income from their pension fund and if they die their outstanding fund less some tax is available as an inheritance. In the United States, I believe this would be the equivalent of systematic withdrawals.

UK RETIREMENT INCOME MARKET 2005

The UK pensions system was significantly simplified in April 2006 with one set of rules combining both defined contribution and defined benefit schemes. Essentially the UK government gives generous and flexible tax relief that allows people to build a pension fund up to a lifetime allowance of £1.5 million (close to 2.5M US dollars). In practice, the current average DC fund in the United Kingdom is less than £30k at retirement.

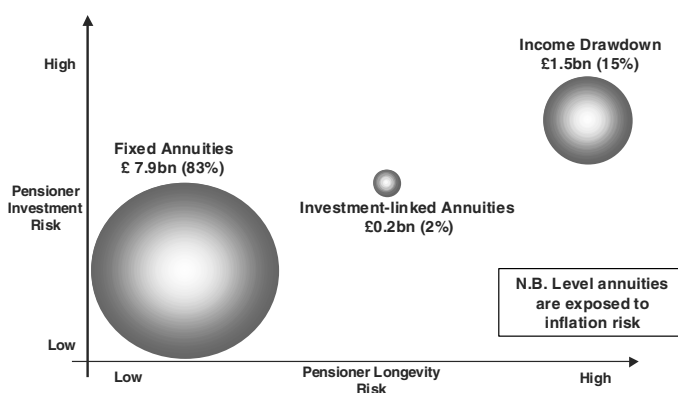
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At retirement, UK pensioners can take 25 percent of their fund as a tax-free cash sum with the remaining fund used to provide regular retirement income through an annuity or drawdown account. Broadly, withdrawals in any year up to age 75 cannot exceed 120 percent of sustainable lifetime income. There are still strong incentives to buy an annuity by age 75. Prior to April 2006, the purchase of an annuity by age 75 was mandatory in the United Kingdom. The UK government's philosophy is that pensions savings should be used to secure a pension, not to provide an inheritance scheme.

FIGURE 1

UK Retirement Income Market 2005



Source: ABI Data 12 Months to December 2005.

If we look at the UK market (see Figure 1) it is essentially polarized in two corners; in the bottom left hand corner are fixed annuities and in the top right corner is income drawdown.

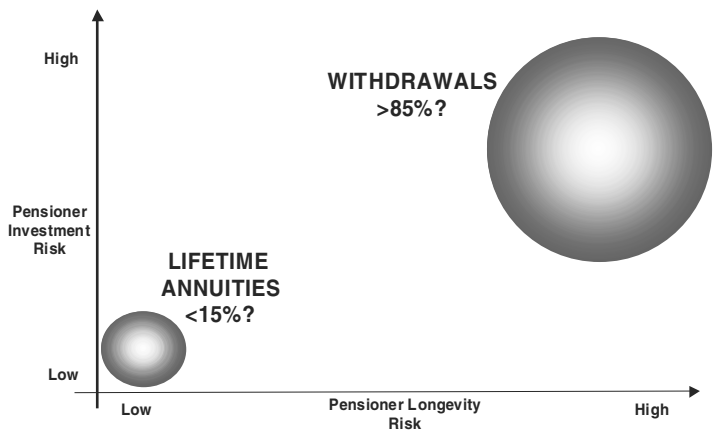
With fixed annuities, the annuitant gets certainty with respect to investment and longevity with a guaranteed income for life. With income drawdown, the pensioner takes the investment risk and, although he or she may not appreciate it, considerable longevity risk, but the plan gives a return of fund on death.

There is currently very little in the middle ground. There are a few contracts where the investment risk and longevity risk are shared with the pensioner, but these products account for less than 2 percent of the UK market. If you think about it, this is not consistent with a normal market. You would normally expect the majority of business to be in the middle ground with the more adventurous pensioners buying in the top right corner and the more cautious in the bottom left.

US RETIREMENT INCOME MARKET

From what I have been able to gather the US market is also polarized (see Figure 2). This time with most of the retirement income coming from systematic withdrawals from pension funds with limited use of lifetime annuities.

FIGURE 2
US Retirement Income Market

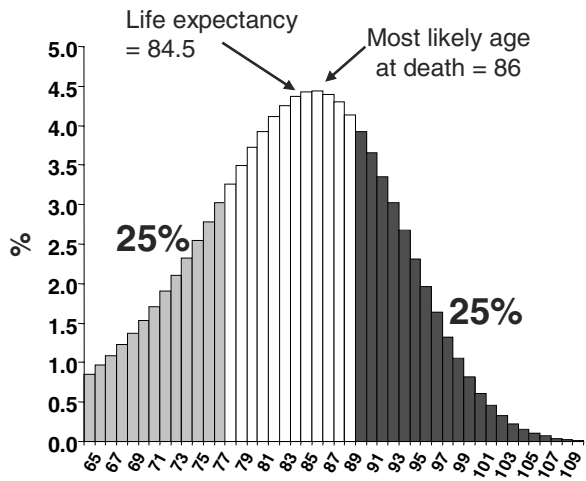


Source: 2001 Survey of Consumer Finance—IAB Research.

THE ROLE OF ANNUITIZATION

Let's consider why annuitization could be valuable to a pensioner.

FIGURE 3
Expected Distribution of Death Ages: Male Aged 65



Source: 100 percent PMA92 (U2003).

Consumers are aware of increased life expectancy but not so aware of the variability in life expectancy

The guarantee of an income for life provided by an annuity is still essential for the vast majority seeking security and to maximize income in retirement.

There are large variations in the future life span of those retiring and it is not possible to predict this span for a given individual with any precision. Figure 3 shows that at age 65, male life expectancy is $84\frac{1}{2}$ but, the most likely age at death is 86. At age 65 a man has a 25 percent chance of dying before age 78, but also a 25 percent chance of living beyond age 90. Some 10 percent will live past 95. Figure 3 comes from a standard UK mortality table and my expectation is that the distribution in the United States is very similar. Overall the table used is not that critical to the arguments I am putting forward. All the analysis uses this same mortality table.

Planning retirement finances in the context of this level of uncertainty is very difficult. In the light of this distribution, what rules should people adopt in deciding how to spread their assets to deliver retirement income in the absence of annuitization?

FIGURE 4

Probability of Outliving Assets—Male Aged 65

Reduce income by:	0%	5%	10%	20%
Fund size at life expectancy of 84 (% of initial amount)	0%	0%	12%	39%
Probability of outliving assets (%)	58%	54%	45%	20%

Source: Own calculations. 100 percent PMA92 (U2003).

Figure 4 shows that, although you could spread your fund over your average life expectancy, you have a better than even chance of outliving the fund, maybe by many years. Taking a lower income than available under an annuity would prolong the life of the fund and so reduce the probability of outliving it. However, this constrains living standards in retirement, increases the proportion of the fund from which the pensioner receives no benefit, and still does not eliminate the possibility of outliving the assets.

Taking a 10 percent lower income leaves a fund value of just 12 percent of the amount originally invested unconsumed by the end of normal life expectancy at age 84, but there is still a 45 percent chance of outliving the fund. Even taking a reduction of 20 percent results in a 20 percent chance of the fund running out.

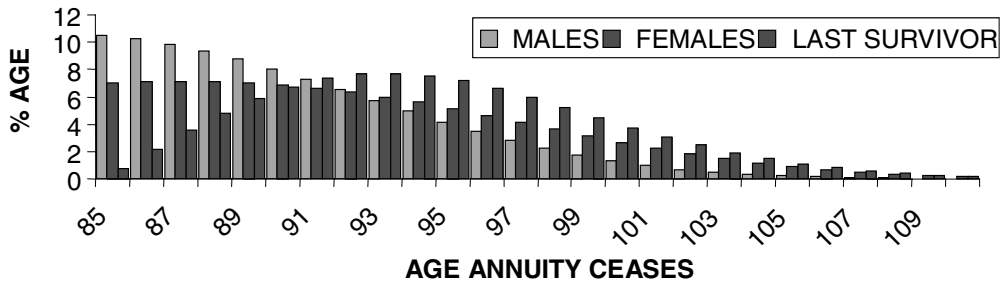
If the same fund had been annuitized, then the probability of outliving the assets would have been eliminated, and the monthly income would not have needed to be reduced.

Figure 5 shows that the distribution of death ages becomes more skewed as age increases. This is true for single life males and females as well as for joint lives. So the risk of not annuitizing grows as people get older. The probability of a single life male pensioner outliving assets taking an income of 80 percent of the annuity income increases from 20 percent at age 65 to 36 percent at age 85.

With income drawdown there is a death benefit of the residual fund. This is clearly valuable if you die early, but generally this is less than an even chance.

FIGURE 5

Expected Distribution of Death Ages: Male, Female, and Joint Lives Aged 85



Source: Own calculations. 100 percent PMA92 (U2003).

Given the uncertainty of life spans, I believe a product offering annuitization benefits is an essential component of financial planning in retirement for anyone without extensive alternative wealth.

So, if annuitization makes sense, when should people buy an annuity?

WHEN SHOULD PEOPLE ANNUITIZE?

In the United Kingdom, earlier retirement combined with improvements in longevity have made it less attractive to annuitize at the time of retirement and put capital at risk in exchange for a guaranteed income for life. Many people in the United Kingdom are retiring in their early 60s.

If the chance of dying at age 60 is around 0.5 percent then an annuitant receives a mortality cross-subsidy of just £500 in the first year of the contract in exchange for putting £100,000 capital at risk. The attractiveness of the proposition is made even worse by the fact that the £500 is spread over the remainder of the annuitant's lifetime. At age 60, life expectancy is almost 25 years, so in simple terms, the annuitant receives just £20 of additional income per annum for putting his or her £100,000 at risk. At age 65, the additional income for putting £100,000 at risk is around £40 per annum.

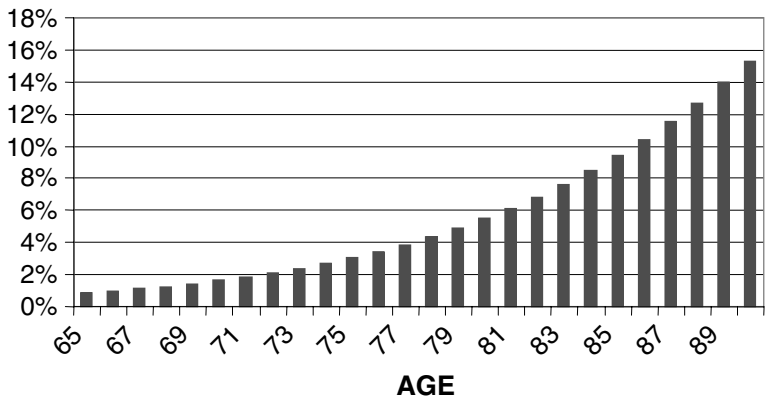
Annuitizing at an early age is not really very attractive and I would suggest this is at the heart of concerns about annuities being perceived as offering poor value.

You might consider delaying annuitization and employing drawdown for a few years. But this introduces other risks as interest rates and mortality assumptions may change to your disadvantage, as those who have used income drawdown in the United Kingdom over the past decade have found at their own cost.

Figure 6 shows the effective mortality cross-subsidy, or the bonus that people annuitizing and surviving for each year, can receive as a percentage of the fund that arises at each age for a typical male life annuitizing today at age 65. As annuitants get older, the impact of the mortality cross-subsidy grows rapidly, particularly after age 75, and the annuitization proposition becomes much more attractive.

Once annuitants are into their 80s, they have around an 8 percent chance of dying and their life expectancy is around eight years. As a result the bonus for putting their £100,000 of capital at risk for a year is now £8,000 and the extra income generated

FIGURE 6
Mortality Cross Subsidy Male Life Age 65



Source: Own calculations. 100 percent PMA92 (U2003).

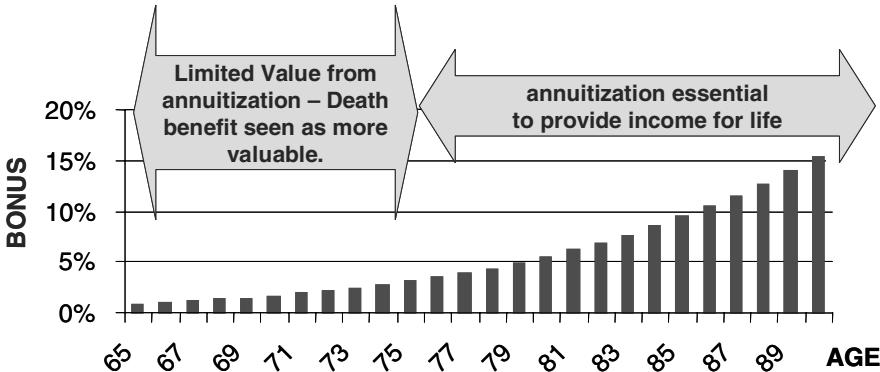
around £1,000 per annum or some 50 times the amount secured through annuitizing at age 60.

As people get older, the benefits of annuitizing grow exponentially. By age 90, the chance of dying is around 15 percent and life expectancy is less than 5 years. As a result the value of annuitizing is now some 150 times the value at age 60.

The scale of the mortality cross-subsidy at older ages makes annuitization essential for anyone without extensive alternative wealth. Even for those with wealth, annuitization can have an important role in reducing the variability of the inheritance that their family actually receives.

The best way of capturing this is a retirement account which limits the fund at risk in early years, but retains mortality cross-subsidy in later years to provide the essential longevity insurance (see Figure 7). To address this need and to help counter consumer

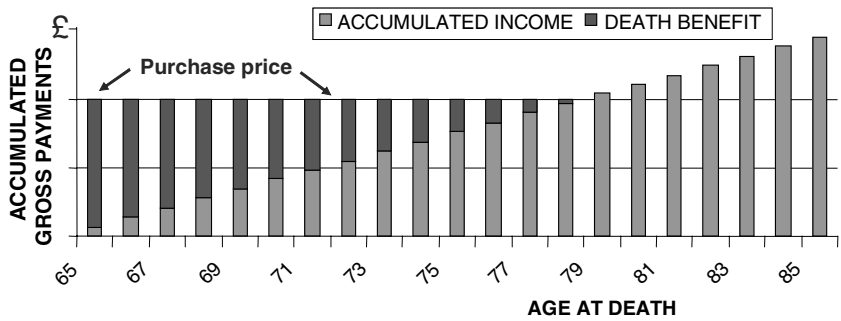
FIGURE 7
Annual Mortality Cross Subsidy



concerns about annuities, my company developed the idea of a money-back pension annuity

THE MONEY-BACK PENSION ANNUITY

FIGURE 8
Death Benefits Under a Money-Back Annuity



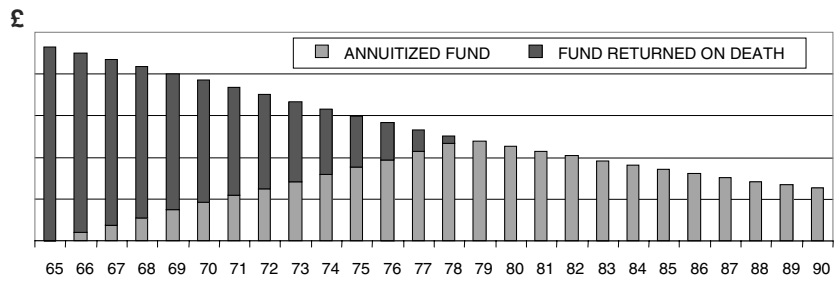
Source: Own calculations. 100 percent PMA92 (U2003).

The concept of the money-back pension annuity is straightforward, particularly for those familiar with capital protected annuities. On death, any excess of the original purchase price over the gross annuity payments already received is returned to the annuitant's estate.

Figure 8 shows the guaranteed payment schedule under a money-back annuity with a decreasing death benefit which ensures that the overall payment is at least equal to the original purchase price. This 'live or die' guarantee of getting your money back provides a simple underpin in the mass market.

A lump sum rather than continuation of current income for a guaranteed period of five or ten years (which has been the norm in the United Kingdom) is easier for pensioners to understand and does not require complex advice. With today's low annuity rates, the money-back benefit provides higher death benefits than those available through a ten year guarantee.

FIGURE 9
Proportion of Fund Annuitized



Source: Own calculations. 100 percent PMA92 (U2003).

The money-back annuity effectively allows for annuitization to increase gradually over the early years of the contract (see Figure 9). The dark bars show the amount of the fund not annuitized and therefore available to provide the required death benefit on early death. The light bars show the gradual increase in the annuitized fund.

This is, of course, what is wanted, since the small mortality cross-subsidy for annuitizing in the early years makes retaining a lump sum death benefit the desired option for most pensioners. Money-back annuities also have the advantage of allowing the mass market to defer annuitization without incurring the risks, costs, and complexity of income drawdown.

FIGURE 10

Cost of Money-Back Annuities

Age	Male Single Life			Joint Lives		
	No g'tee £	MB g'tee £	% age red'n	No g'tee £	MB g'tee £	% age red'n
65	7449	6878	7.7%	6247	6190	0.9%
75	10653	8870	16.7%	7874	7505	4.7%

Source: Own calculations. £100,000 purchase price June 2004.

So what does a money-back annuity cost? Figure 10 shows that the cost of the life cover is recovered by a reduction in the annuity income for those that select the money-back option. The money-back annuity results in a rebalancing of benefits from those living longer to those dying early. The percentage reduction increases according to age as shown in Figure 10. (The percentage reduction in income for females is less than for males as females have a reduced probability of dying early.) The cost of the guarantee is not very high on joint life cases—even with two 75-year olds it amounts to less than a 5 percent reduction in income.

THE MONEY-BACK GUARANTEE—THE CONSUMER PERSPECTIVE

Research confirms the money-back concept is well received and is also considered affordable—in that the cost is less than people expect or are prepared to pay.

- It removes the single biggest consumer objection to annuities: “If I die soon after I retire, the annuity provider will keep my fund.”
- The “live or die” guarantee of getting your money back provides a simple underpin in the mass market.
- A lump sum at death rather than the continuation of current income for a limited period is highly attractive.
- It is very easy to explain and for consumers to understand.
- It avoids uncertainty and allows a pensioner to lock into investment and longevity guarantees to provide a guaranteed lifetime income.
- As an alternative, the money-back option can be used with flexible investment linked annuities.

- The cost of the guarantee is transparent and allows consumers to make an informed choice.
- It removes a significant barrier to preretirement saving.

We believe this is an attractive option for the mass market. The ideal contract needs to look after everyone's interests: those unfortunate to die early as well as those fortunate enough to live into their 90s. Any pooling of mortality needs to be perceived as fair by the public, not just simply actuarially sound.

This is an area we have focused on heavily in my company—for us this is an initiative about changing the consumer perspective of annuities. We believe this is critical—people won't save voluntarily if they don't believe that it pays to save. The idea of a "live or die" guarantee of at least getting your savings back is readily understood and valued.

UK MONEY-BACK ANNUITIES AND VALUE PROTECTION

We started lobbying for money-back annuities a couple of years ago and there has been some movement by the UK government with the introduction of value protected annuities from April 2006. These allow a partial money-back option but have two serious flaws.

First, lump-sum death benefits are only permitted up to age 75! The inability to pay any benefit under value protection after age 75 means that the simple money-back concept cannot be provided and introduces significant complexity into retirement income product design and advice. Many pensioners will not reach a position where the total income exceeds their initial fund value by age 75 and if they defer annuitization into their 70s they might be better with a 10-year guarantee which can provide death benefits beyond 75.

Second, there is a penal tax rate on any lump sum death benefit. The tax charge of 35 percent on the lump-sum death benefit, which has been carried over from the income drawdown regime, is too high for the mass market.

We hope that these flaws will be addressed so that we are able to assure savers and pensioners alike that it pays to save. Allowing value protection beyond 75 will provide a clear message to savers and annuitants that they can ensure they get full value from their pension savings, no matter when they die. The analysis presented in this article assumes that there is no cut off at age 75.

UK INVESTMENT CONSIDERATIONS

Investment considerations are obviously very important in any retirement income proposition.

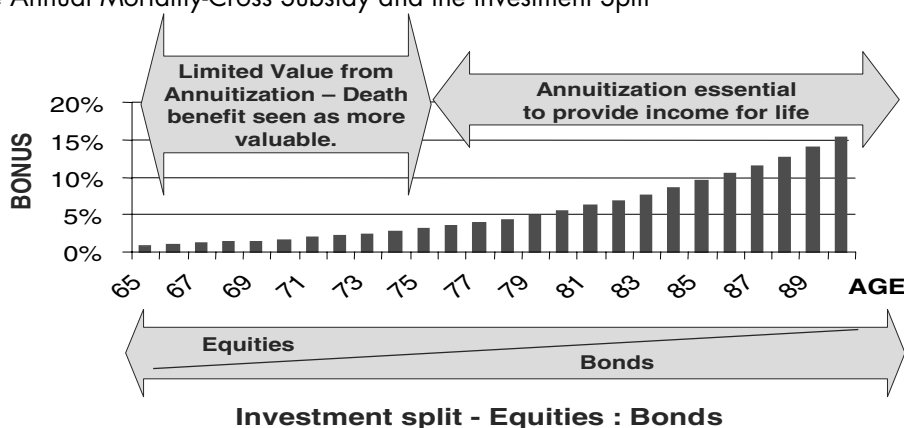
The significance of the investment returns underlying traditional guaranteed annuities has grown as interest rates have been reduced and longevity improved. UK regulations effectively require guaranteed annuities to be backed by government or corporate bonds—or at least bond-like investments.

But 100 percent investment in bonds over a 20-year period is not an optimal investment strategy! For one thing, long term bonds are in short supply in the United Kingdom and we consistently have an inverse yield curve, with 20-year bonds yielding

4.36 percent and 10-year bonds 4.53 percent.² For another, fixed level annuities, which are the only type of annuities available with an investment in fixed-income bonds, are exposed to inflation risk. Even with a 2 percent inflation rate the purchasing power of a fixed annuity reduces by almost 50 percent over a 20-year period.

FIGURE 11

The Annual Mortality-Cross Subsidy and the Investment Split



So how should an annuity fund be invested? As a general principle, a mixed portfolio of equities and bonds should provide a higher than expected return over twenty years. Those who can afford to take investment (i.e., equity) risk should do so in early years.

As pensioners get older and their life expectancy reduces, a more cautious investment approach becomes increasingly appropriate. Figure 11 shows that the mortality cross-subsidy overshadows any investment return once pensioners are in their 90s, so fixed annuities invested in bonds become the optimal solution at that age.

The ability to control your investment portfolio and have some discretion over the income that you draw down is available through a flexible lifetime annuity in the United Kingdom. This is the product that my company launched, following the ideas outlined in Wadsworth, Findlater and Boardman (2001) which showed how the mortality cross-subsidy could be applied to any investment portfolio by pensioners putting their capital in their individual accounts at risk in exchange for mortality bonuses.³ Simpler versions of this product should become more popular in the United Kingdom following the relaxation of the annuity rules in April 2006.

US RETIREMENT INCOME AND DEATH BENEFITS

Let's try to pull these themes together by contrasting the UK position with the US position.

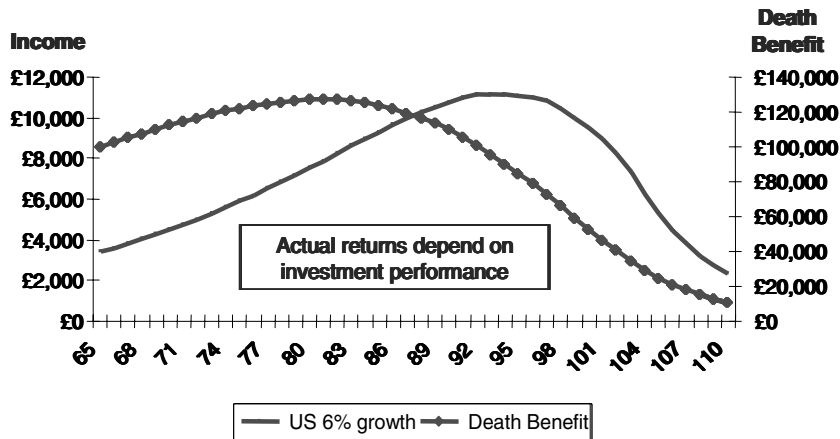
Figure 12 shows the income and death benefit profile that would be generated by using the IRS Minimum Distribution Factors which I understand are based on joint

² Rates April 2006.

³ Reinventing Annuities—Mike Wadsworth, Alec Findlater and Tom Boardman—presented to the Staple Inn Actuarial Society 16th January 2001.

FIGURE 12

US Withdrawals—IRS Required Minimum Distribution Factors



Source: Own calculations. Male age 65 income taken yearly in arrears; 6 percent p.a. growth rate; IRS RMD factors.

life expectation of life factors with a spouse ten years younger. I have used a 6 percent growth rate after all charges. I have kept things simple by using consistent mortality and growth rates in the comparisons I'm going to show so that I can highlight the differences in the approaches without introducing secondary issues of expenses including commission.

Because this method holds back so much income in the early years, income still grows for someone in their late 90s before going into very rapid decline. This approach can therefore produce some very significant death benefits.

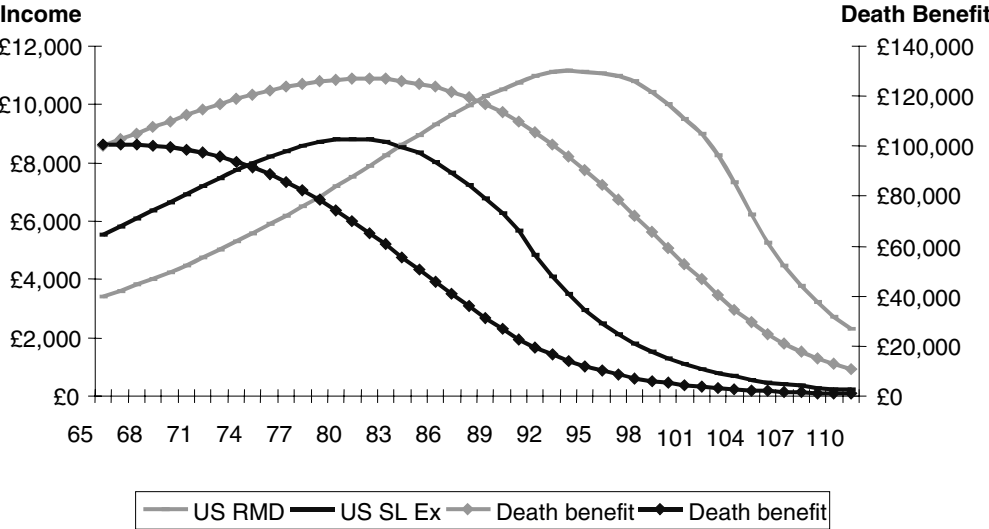
For those more interested in inheritance planning this must be a good proposition: It would certainly alarm the UK government! For those needing income it is not very satisfactory.

Figure 13 shows what would happen if a formula based on single life expectancy is used with a minimum guarantee of five years. I think this may have been a method used in the US at some time in the past. As you can see, this gives a higher income at outset at the expense of lower death benefits and income later in life. The decline in income starts from age 80 and incomes available in the 90s are not adequate. This is, of course, consistent with the analysis in Figure 4 above.

To counteract this decline, US annuity companies offer people the option of a guaranteed living benefit. In exchange for a basis points charge and a restriction on maximum withdrawals in any year, the annuity company guarantees a minimum income irrespective of longevity and investment returns. Figure 14 illustrates the case where the minimum is 5 percent of the initial investment or the IRS Required Minimum Distribution if greater. The charge might be around 60 basis points.

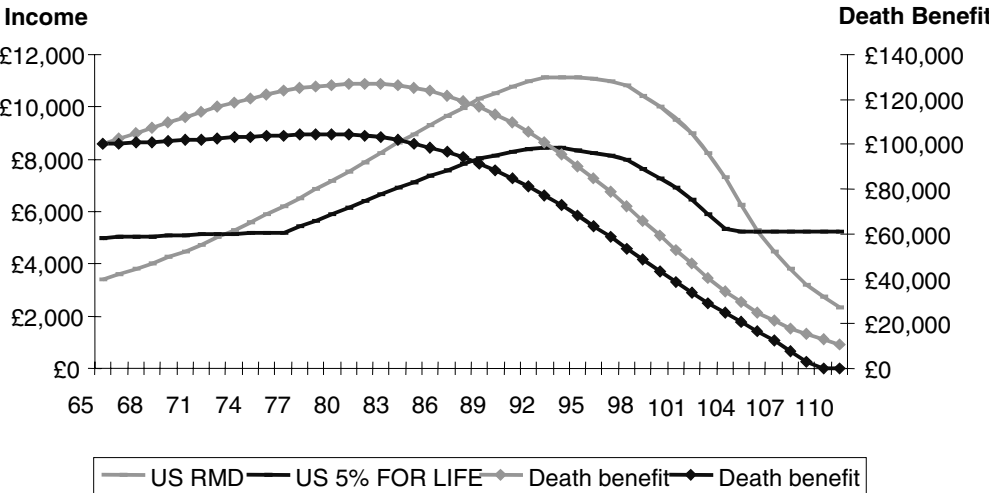
The guaranteed minimum income amount can increase, or step up, if the fund grows by more than the income withdrawn and the cost of living benefit guarantee.

FIGURE 13
US Withdrawals Using IRS RMD Factors & US Withdrawals Using UK Single Life EX Factors



Source: Own calculations. Male age 65 income taken yearly in arrears; 6 percent p.a. growth rate; IRS RMD factors; 100 percent UK PMA92 (U2003).

FIGURE 14
IRS RMD Withdrawals & 5 Percent for Life Guaranteed Minimum Withdrawals with Annual Step-Ups



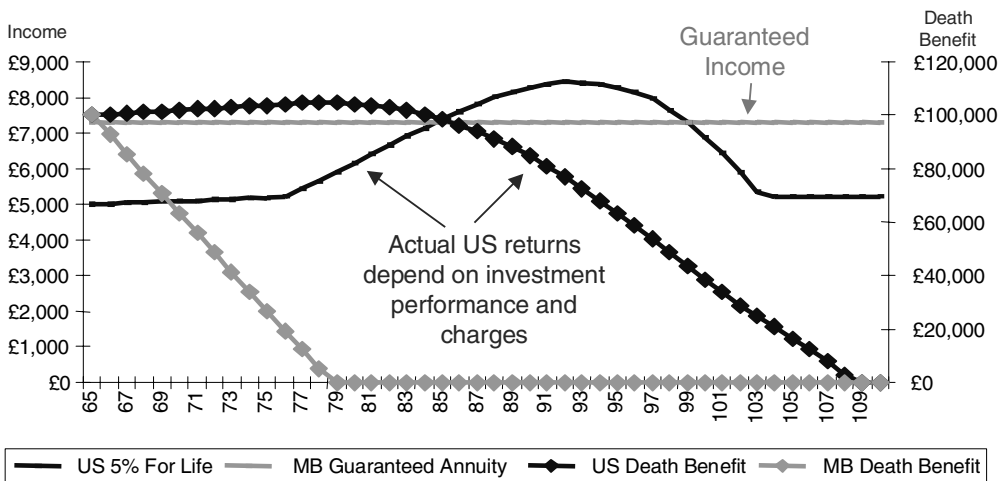
Source: Own calculations. Male age 65 income taken yearly in arrears; 6 percent p.a. growth rate; IRS RMD factors; 0.6 percent p.a. Living Benefit charge.

This gives a higher income in earlier and later years. As expected, the death benefit is slightly lower.

This lifetime guarantee is not that different from a standard lifetime annuity. A deduction is made from everyone's fund while they are alive and this builds a contingency fund that can be used to pay income for those lucky enough to live a long time. But to date the guarantees have been fairly modest, and this is reflected in the low charge and modest reduction in death benefits, and, as a direct consequence, the low impact on retirement income provided.

FIGURE 15

US 5 Percent Guaranteed for Life Minimum Withdrawals & UK Guaranteed Money-Back Annuity



Source: Own calculations. Male age 65 income taken yearly in arrears; US 6 percent p.a. growth rate & 0.6 percent p.a. Living Benefit charge; UK 4 percent growth & 100 percent PMA92 (U2003).

How do these US annuities compare with UK conventional annuities? The money-back annuity would provide around 7.3 percent guaranteed for life on a yearly-in-arrear basis. However, Figure 15 shows that, even with the money-back benefit, the death benefit under the UK contract is much lower than the US contract even though it has been costed as continuing beyond age 75.

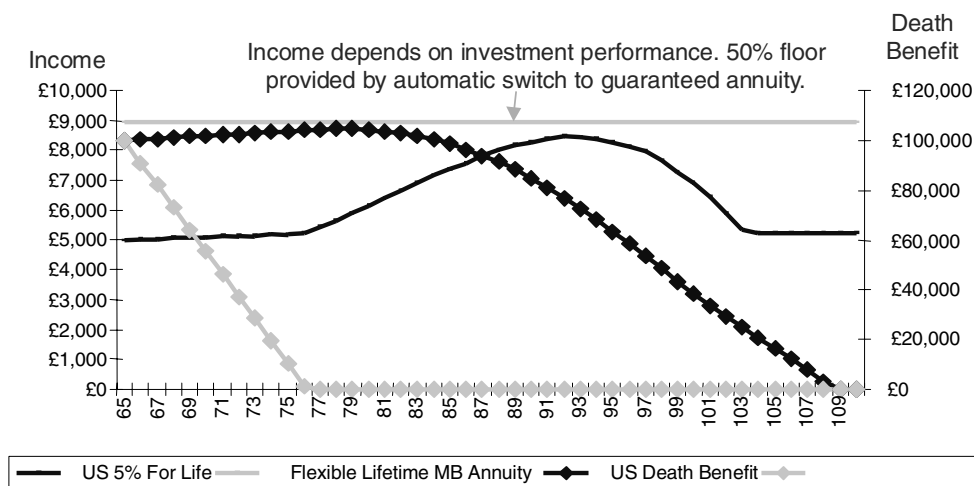
The difference in death benefits is the major reason why the income under the UK contract is higher despite the investment in corporate bonds resulting in an investment return assumption some 2 percent lower.

How would the US annuities compare with money-back annuities? If you compare the US living benefits income with a UK flexible lifetime money-back annuity invested in a consistent investment portfolio to the US contract up to age 90 and then switching to bonds, then the flexible lifetime annuity provides significantly higher income, but of course, again, this is at the expense of lower death benefits.

But this gives food for thought if retirement income is the pensioner's biggest concern and need.

FIGURE 16

US 5 Percent Guaranteed for Life Minimum Withdrawals & UK Flexible Lifetime Money-Back Annuity



Source: Own calculations. Male age 65 income taken yearly in arrears; US 6 percent p.a. growth rate & 0.6 percent p.a. Living Benefit charge; UK 6 percent growth to age 90, 4 percent thereafter & 100 percent PMA92 (U2003).

CONCLUSIONS

So what conclusions can we draw?

In the United Kingdom, pensioners could increase income by taking more investment risk. The UK government needs to allow a full money-back option to allow consumers more choice around the trade-off between income and death benefit. In the United States, pensioners could significantly increase their income by reducing death benefits and embracing annuitization.

I am attracted to the living benefit approach of a modest basis points charge in early years, rather than putting all of a pension fund's capital at risk. This ensures pensioners have greater death benefits, more flexibility, and some protection against investment falls. However as people get older, the annuitization approach comes into its own in securing higher lifetime income.

As foreshadowed at the outset, perhaps both countries are on a journey that will be driven by consumers' need and which may well converge at some point in the future.

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