



Personal Care Savings Bonds – a new way of saving towards social care in later life

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The International Longevity Centre - UK (ILC-UK) is an independent, non-partisan think-tank dedicated to addressing issues of longevity, ageing and population change. It develops ideas, undertakes research and creates a forum for debate.

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Foreword

The International Longevity Centre-UK is the leading think tank on longevity and demographic change. We are independent and dedicated to addressing issues of longevity, ageing and population change. We develop ideas, undertake research and create a forum for debate.

Demographic change means that more people will live past the point where they will require care because they become mentally or physically infirm. As the increase in life expectancy looks set to continue for the foreseeable future, we need to develop new ways to help people save and plan for this eventuality and bring more money into the care system. This is what Personal Care Savings Bonds are all about.

If people are to save for their future, especially people who are on lower incomes or are less wealthy, it is essential that they have opportunities to do so in a way that is simple, engaging, and safe. Equally, they must not be penalised for having done so through means tested support systems.

Wealthier people are well catered for by the private sector and have a range of options available to them directly or through financial advisers. These people are generally more aware of the need to plan ahead and are unlikely to be affected by disincentives resulting from means testing. However, the same cannot be said to be true of people on lower incomes and with lower levels of wealth.

In April 2016, the upper capital limit for social care means-testing is set to increase from £23,250 to £118,000. This step change will result in many more people being caught in the middle means testing zone where there is a strong disincentive to save or plan ahead. While available to everyone, Personal Care Savings Bonds would be primarily aimed at these people who want to save for the future and who want to top-up the social care benefits that the State provides. It is these same people who would reap the benefits of favourable treatment for means-testing.

For these reasons, I welcome this paper co-authored by Les Mayhew and David Smith from Cass Business School. It is an important and timely contribution to stimulating the debate on how we can bring more money into the social care system. It proposes a way to help people, especially less wealthy people, to save for their future and have more choices about when they receive care, the type of care and support they would like, and how it is provided.

Baroness Sally Greengross, Chief Executive, International Longevity Centre-UK

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Summary

An ageing population ushers in a completely new era requiring society to find new solutions to funding social care and looking after older people. This is not a temporary issue that will go away and there are no quick economic fixes. In the UK it is estimated that the population aged 75+ will double from 5m to 10m by 2040. Financial buildings blocks are needed to pay for social care that will be sustained for decades and provide extra security. This paper proposes a new savings product called Personal Care Savings Bonds (PCSBs). They are designed to encourage saving for social care by providing extra money at the time of greatest financial need. PCSBs are likely to be attractive to older people who have only a basic pension and modest savings, but also to other age groups as they not only attract interest but also pay prizes. Based on reasonable assumptions, the paper shows how the fund could build into a substantial investment worth £70bn with regular monthly prize pay outs. In concept they are somewhat similar to Premium Bonds, another UK personal savings product which has been successfully operating since 1956.

Key words: paying for social care - personal care bonds - care assessments - fund accrual - prize money – funeral costs

1. Background

On February 11th 2013, the Coalition Government for the United Kingdom announced the introduction of a reform to the social care system to prevent an individual from spending all their savings or being forced to sell their home to pay for care.¹

The reform includes a cap such that individuals will only be liable in future for up to £72,000 of their care costs as announced in the March 2013 Budget.² Currently, no cap exists leaving many facing large bills, with almost 1 in 5 older people facing care costs of this magnitude.

In addition to the cap, there will be a new means-test threshold such that in future, people will no longer need to be down to their last £23,000 before they get financial help. The Dilnot report³ initially recommended that this threshold should be raised to £123,000, but this has now been reduced to £118,000 also following the Budget. This is only a technical adjustment because implementation will be a year earlier than originally planned.

In addition to the above it is proposed that no one will have to sell their home in their lifetime to pay for residential care, with those unable to afford the fees given the right to defer paying during their lifetime.

Together, these reforms are forecast to cost the Exchequer £1 billion a year by the end of the next Parliament. The cost is expected to be met in part by extending the freeze on the Inheritance Tax threshold at £325,000, or up to £650,000 for couples, by three years from 2015-16. The remainder will be funded by technical adjustments to the National Insurance system.

¹ <https://www.gov.uk/government/news/landmark-reform-to-help-elderly-with-care-costs>

² Originally the Government announced the cap as £75,000 but it was reduced to £72,000 in the March 2013 Budget

³ Commission on Funding of Care and Support (2011) Fairer Care Funding - The Report of the Commission on Funding of Care and Support. <http://www.dilnotcommission.dh.gov.uk/our-report/>

Apart from any net expenditure incurred by the Dilnot reforms, no extra money is promised to fund the growing funding gap in social care. Individuals will therefore continue to be responsible for a large proportion of their care costs, as at present, except for those with least means.

As a recent parliamentary select committee report has noted: “The proposals are primarily concerned with redistributing the costs of care. They do not bring extra funding into the system to tackle the current funding crisis....or address the problem of expanding need in the coming decades”.⁴

An ageing population ushers in a completely new era requiring society to find new solutions to the funding of social care and looking after older people. This is not a temporary issue that will go away and there are no quick economic fixes. The Office of National Statistics (ONS) population projections, for example, estimate that the population aged 75+ will double from 5m to 10m by 2040.

Clearly, financial building blocks will be needed to pay for social care that will be sustained for decades to come and provide extra security. This paper proposes one such financial mechanism which we call Personal Care Savings Bonds (PCSBs).

It sets out the arguments for such a product, who it is primarily aimed at, how it would fit with the current reforms under way and financial estimates of the contribution it could make.

Role of private finance

One of the hoped-for changes resulting from the Dilnot report is that it will allow insurance to meet long-term care costs to become more affordable and encourage the private sector to engage in this potentially lucrative market.

Whilst this may be so, insurance will not be attractive or suitable for everybody and other products will be needed for people with different means and/or attitudes towards risk. Mayhew et al (2010) described some of these products in their paper on the role of the private sector in paying for long term care.

These included products such as enhanced disability linked annuities which would sit along side products such as equity release and immediate needs annuities. Such products seem well suited to the UK as so much of personal wealth is tied up in housing assets and pensions.

Whilst such products are perfectly reasonable for those with assets and moderately sized pensions or large personal savings, for large numbers of older people these are never going to be viable options and they will continue to fall back on the state.

There are also concerns that even with the introduction of a cap on care costs, insurance products will not be appropriate, affordable or even available to everyone under a capped cost model. In addition, pension pots would need to be substantial for enhanced disability linked annuities and similar products to be attractive to pension savers.

Given the growing funding gap, it is our view that more needs to be done to bring new money into the social care system. Based on recent decisions and the demise of previous reform attempts, we

⁴ Ready for Ageing? - Select Committee on Public Service and Demographic Change. <http://www.parliament.uk/business/committees/committees-a-z/lords-select/public-services-committee/report-ready-for-ageing/>

do not believe that the state will want or be able to provide ever increasing support without a fundamental redirection of government spending priorities (Mayhew and Rickayzen, 2012).

In other words, social care is an area of activity in which the cost is always going to be a split responsibility between the tax payer and the individual. If spending by the state and by the individual does not keep pace with need, then quality and availability of care will suffer unless there are better mechanisms to help people support themselves.

It is true that efficiency improvements in the delivery of care may assist and also other reforms aimed at better integrating health and social care, but success is not guaranteed. It can be argued therefore that the longer term question is how to bring new money into the care system, either to replace state spending or, preferably, as additional spending.

It is important to stress that there are no perfect solutions. A Pay-As-You-Go system for funding social care, on similar lines to the NHS would involve a combination of higher taxes, more borrowing and/or redirecting public finances from other priority areas. In summary, a way therefore has to be found to make it easier and more attractive for people to save for their social care needs in a way that builds up over decades and gives people a personal stake.

2. Personal Care Savings Bonds

In what follows we describe a new savings product which we call Personal Care Savings Bonds (PCSBs). They are designed to encourage saving for social care by providing extra money at the time of greatest financial need. PCSBs can be bought by anybody but are primarily designed to provide extra financial support to older people who have only a basic pension, and modest savings and assets.

PCSBs are likely to be attractive to a range of people throughout their adult lives because they not only attract interest but also pay prizes. Purchasers are therefore likely to include spontaneous purchasers as well as regular savers. Some will regularly purchase lottery tickets for example.

Although PCSBs are unlikely to cover all care costs, their total value is likely to be substantial and greater than the likely value of any insurance market for most other long term care products. There is no equivalent product on the market at present since the concept is neither a pure lottery nor a conventional savings account but a combination of both.

The nearest equivalent is the Premium Bond which was first introduced in 1956 and is still hugely popular with savers. However, there are other popular fund raising lottery-style schemes in the UK and elsewhere (e.g. for history see Douglas, 2000) but, unlike Premium Bonds, the stake is forfeited in these cases.

Frequently lotteries are used in lieu of voluntary contributions by private charities and governments when taxes are not feasible but the same argument applies to Premium Bonds. As the investment in Premium Bonds is redeemable, comparing PCSBs with Premium Bonds is therefore more useful.

With around 23m depositors, the total value of Premium Bonds currently stands at £43bn. They pay around 1.8m prizes a month to a value of around £50m, with prizes ranging in size from £25 to a single maximum prize of £1m; however, 89% of the prize fund is paid out in prizes of up to £100.

Premium Bond prizes are tax free and equivalent to an annual return on investment of about 1.5%. However, the chances of winning will obviously vary depending on the prize structure with the probability of winning a particular prize reducing as the prize value increases.

Premium Bonds tend to be bought by two types of saver. They include children who receive them as gifts from relatives and secondly regular savers who tend to be aged 30 and above. They are not therefore normally regarded as an alternative to or in competition with, say, the national lottery.

Premium Bonds remain in perpetuity although a disadvantage is that their value may be eroded by inflation over time. Nevertheless it can be argued that the earlier that they are purchased, the more likely that a prize will be claimed sometime in the future.

There are, however, two critical differences between PCSBs and Premium Bonds. The first is that, unlike Premium Bonds, PCSBs attract a small rate of interest, in addition to a prize element, which builds up over time. The second is that PCSBs will only be cashable on passing an assessment for social care or on the death of the person and so funds are ring fenced until such time as they are needed.

National Savings and Investments (NS&I) are responsible for the administration of Premium Bonds. All the money invested with NS&I is backed by HM Treasury with no overall limit on how much is guaranteed and this may be seen as an advantage in comparison with some other forms of saving.

For this reason, and given the similarities between Premium Bonds and PCSBs, it would make sense if this new savings vehicle also were to be administered by NS&I, although this is only a suggestion. Although administrative costs are not broken down separately in NS&I's annual report, they work out at about 17 pence per £100 vested in NS&I savings products which is understood to be cheap by savings industry standards.

Premium Bonds can be bought online, over the phone or in post offices or purchased by standing order. Post offices for example would almost certainly welcome the chance to participate in this scheme as it would attract more footfall, although we believe consideration could also be given to offering it to other retail outlets.

If for example the distribution channels of PCSBs are broadened relative to Premium Bonds, this would have the effect of increasing administrative costs but it could also help to get the fund started. Responsibility for this function may need to be outsourced, if it is not able to be run by NS&I directly.

Currently there is a £30k limit on the amount that could be invested in Premium Bonds. Something similar could be envisaged in the case of PCSBs to protect the fund from speculators, although there would be no upper limit on the fund itself. This could take the form of annual limits as already applies for example to ISAs for broadly similar reasons.

However, these are generally issues for further consideration. One suggestion is to link the maximum deposits to the Dilnot cap such that accumulated investments of a certain percentage above the cap (currently £72,000) would be liable to taxation in the normal way.

How PCSBs work

PCSBs will work as follows:

- Each bond has a nominal value assumed to be £1 and is entered into a monthly prize draw; prize winners are individual bond holders who can elect to receive the money or re-invest it in more bonds thus increasing their personal fund.
- Bond values, both the prize element and accumulated value, will be tax free. PCSBs will normally be purchased out of taxed income, unlike personal pensions, though similar to Premium Bonds and lottery tickets. They would be purchasable over the internet, by standing order, and from local post offices and/or shops.
- Cash can only be withdrawn from deposits on being assessed as needing social care or on death. This means that the chance of winning a prize would increase with age as long, as their fund accumulated in line with the total fund, and would reach a maximum value at the point of needing care or at the point of death.
- It follows that the longer a person lives without triggering social care, the larger the fund will be when it is required. In an example given in the annex, a person aged 90 would be up to 162 times more likely to win a prize than an 18 year old assuming they saved regularly.
- For those who die before triggering a social care assessment, the value of the accumulated fund would transfer to a person's estate to be inherited by persons or others of the deceased person's choice. This addresses one of the perceived problems of insurance for long-term care in which prospective policyholders may be concerned that they will not receive a benefit due to small print in the policy. With PCSBs, even if they do not receive a payment for care, their estate will get the benefit.
- In some cases bond values on death could be used to pay funeral costs replacing some public expenditure that would have been incurred under the Social Fund. This would represent a small but useful saving on welfare expenditure⁵ and would provide cheap form of funeral insurance for people who would not usually buy these products.
- Encashed bonds could be used in different ways by investors assuming a social care need is triggered and the fund redeemed. Much depends on individual circumstances and some examples are given below.

The fund itself would build up over a period of time and we provide some examples below. Just as it took Premium Bonds several decades to build into a steady state so it will take several decades for the fund to mature and so it is not an immediate solution to the funding gap but rather a foundation stone for a more diversified system of funding in future.

We do not regard the length of time for the fund to mature as a problem since demographic ageing is a long-term issue and most projections of life expectancy suggest that ageing is set to increase up to the end of the century and so the demand for social care is bound to continue its increase.

⁵ Payments from the Social Fund can be made to claimants of means-tested benefits and tax credits to help meet the costs of a funeral. Payments are made from the regulated Social Fund and, as such, are not limited by budgetary constraints. Over 38,000 payments were made in Great Britain in 2011-12, at a total cost of £47 million.

However, the fund is structured such that the prize money and benefits withdrawal could begin in year one though clearly the initial value of the withdrawal benefits would not be nearly as high as when the fund has matured and so expectations in the first years of what it would achieve would need to be managed carefully.

It may be required for the Government to subsidise the early prize fund to make sure that it is attractive enough to get initial investors into the bonds, though this amount could be slowly repaid over a period. Alternatively there could be a start up period of a few months before prize pay-outs would begin should that be necessary.

Treatment of bonds in means testing

Currently, for a person to receive public support all assets and income must pass a means test. Under present arrangements, the accumulated value of a bond would count towards assets and might lead to a reduced entitlement.

Based on the current means testing formula, for example, a weekly income of £1 is imputed for each £250 of assets so that a saver with £10,000 could lose £2,080 of their investment in the first year of care in foregone state support.

Our clear preference would be for the benefits to be exempt although clearly there would be very little reduction in public expenditure as a result. However, by making it exempt there would be more incentive for people with modest means to save thereby bringing new money into the system.

Since local care tariffs represent basic entitlement to care against which individuals are means tested, we would prefer that the additional money provided by bonds be part of a person's personal budget to buy higher quality care if they so wished, although clearly there are arguments both ways.

Under present means testing arrangements, the following cases may be identified:

1. A person dies without triggering care. The value of the fund would pass to their estate and might be subject to inheritance tax. For most people inheritance tax would not be applicable, although for the very poor the benefits on death may cover funeral costs that would have been paid by the state otherwise.
2. A person is assessed as needing care but their accumulated assets including the benefits received from the bonds are below the lower means testing threshold. They would have all their care paid for in the normal way by the state and the fund could be used for example to purchase additional care or services if they so wished (e.g. as part of a personal budget).
3. A person is assessed as needing care but their combined assets are between the lower and upper asset threshold for means testing purposes. Depending on their income they would have to pay a proportion of their care costs. If PSCBs were included in the asset test there would clearly be a saving in public expenditure but not so otherwise.
4. A person is assessed as needing care but their combined assets including the fund value put them above the upper asset threshold. They would receive no state help initially and so there would be no immediate saving to public expenditure but they would keep all their investment. If their assets fell below the upper threshold after a period in care then they might be entitled to

some state help later. The cost to the state is therefore deferred and reduced assuming that the total period in care is the same.

5. A person is assessed as needing care and even without the fund their assets and income are such that they would not qualify for state help. In this scenario there may be no savings to the state as even without the bonds the state would not have paid for their care. The main beneficiaries in this case are the people who will inherit their estate as it will be larger than would have been the case without the fund. The state may benefit in the case of wealthy savers due to higher inheritance tax.

The financial incentives to purchase bonds may therefore differ by individual and for most people the category into which they will eventually fall could be difficult to predict from the outset. A key factor is likely to be how people perceive the purpose of the bond before purchasing it. If people see it as purely a way of winning prizes then the admissibility of assets will matter less. If instead people see this as primarily a way to save for their future social care then the means testing issue is likely to be an important deterrent factor in terms of their purchasing behaviour.

In summary, if the aim is to bring more new money into the care system then how PCSBs are treated for mean testing purposes becomes a strategic issue. In our view the wider care economy will benefit more, because new money will become available by keeping PCSBs exempt.

3. Financial principles of the PCSB fund

The principles under-pinning PCSBs are standard for this kind of product, namely that once the fund has reached its stable value, the value of new deposits plus the interest earned on existing deposits should equal the outgo. In this case the outgo for a given period consists of prize money plus benefit payments.

Some prize money would be withheld to pay for administration costs and the amount of prize money could be varied, as with Premium Bonds, to ensure that the fund is able to meet its obligations.

Administration costs for Premium Bonds are not separable from other services provided by National Savings and Investments (NS&I) but as already noted are modest relative to the size funds vested.

The following example shows how the fund would operate once it has reached maturity (i.e. has reached a steady state), along with the build up in deposits and withdrawals from inception. This illustration makes the following assumptions although these can be changed as required.

- Mortality rates are based on the combined male and female life tables for England and Wales in 2009. An average of two years before death is spent in care and one in five people are likely to need care (this assumption can be varied).
- It is further assumed that prize money is *not* re-invested in buying more bonds; although this is an option which if widely exercised would result in the fund growing even faster.
- We assume constant mortality rates over the projection period. Since life expectancy is increasing, our results are possibly slightly conservative because people will have longer lives over which to save than we have allowed for.

Table 1 shows the other assumptions used: overall the real long term rate of return is assumed to be 3% which is split 1% in prize money and 2% investment return. It is assumed that 25% of the adult population purchase bonds at any point in time and that they do so at the rate of 100 bonds per person per year (or roughly two per week). To allow for easy interpretation over the long projection period we are assuming no inflation (however, also see annex).

Under these assumptions the total value of the fund would attain a maximum value, once it had fully accrued, of £69.6bn. This would take around 70 years from start to finish. The size of fund is proportional to take-up which we assumed is 25% for illustrative purposes. Take-up of half that rate would still lead to a fund worth £35bn.

Table 1: Assumptions used in illustrative example

Variable	Parameters
Real investment return	3% p.a.
Equivalent rate of interest for prize pool	1% p.a.
Interest for investment return	2% p.a.
Assumed bonds bought per person per year	£100
Take up	25%
% of people who need care	20%

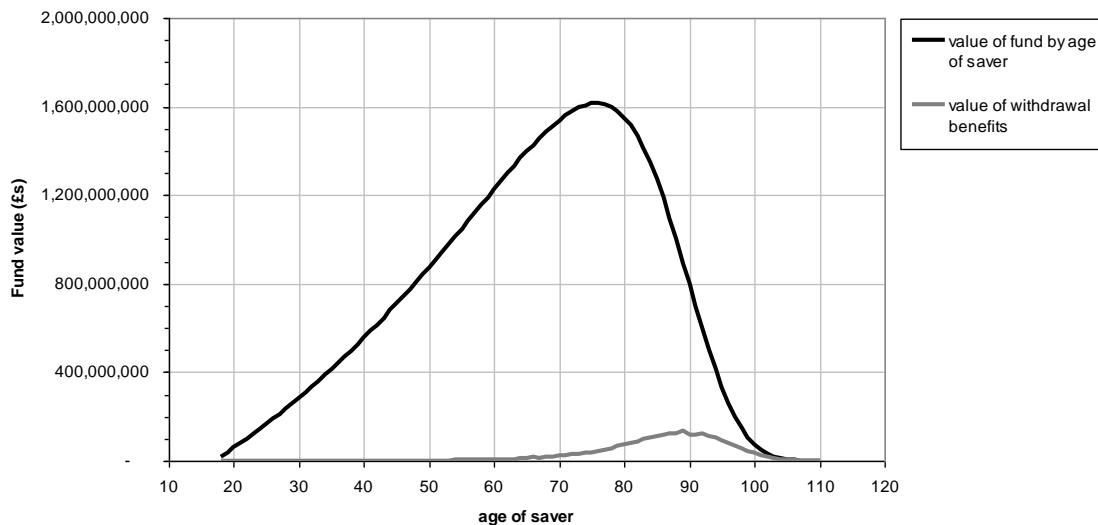
For this example we assume 20% of investors would trigger care before they died. Varying this assumption has very little effect on the value of the fund, all other assumptions staying the same. For example, if 50% triggered care the size of the fund on maturity would be only round £1bn less.

Note that the fund value is larger than the current fund value of Premium Bonds (£43bn) by some margin. This is despite the fact that our assumptions assume about 12.6m people purchase PCSBs whereas there are 23m holders of Premium Bonds.

The differences in fund size is due in part because PCSBs earn interest and cannot be drawn down until the point of need, but in other respects it can be seen that our assumptions are quite conservative in terms of take up relative to Premium Bonds. However, it should be noted that we also assume regular purchase of these long term care bonds which may not be the case with Premium Bonds.

Figure 1 shows the steady state position of the fund by the age of saver. The assumed start age in this chart is 18 years; however, this is arbitrary (the minimum age for example for premium bonds or a lottery ticket is 16). A second smaller curve shows that annual value of withdrawals for comparison purposes. These are payments to people triggered on assessment as needing care or who die first and which reach a peak between age 85 and 90.

Figure 1: Steady state value of fund and annual value of withdrawals due to payments on needing care by age of saver



The aggregate fund, when separated by age, attains its maximum value at age 75 after which it starts to decline as people enter care or die. If we look at individual holdings for individuals who are alive and not in care, then at age 75 the average fund is worth £1k and continues to increase, reaching £14k at age 85 and £18k at age 95 based on our assumptions.

As previously noted, the impact of this money on the quality of care received by the person and/or the savings for the state depend on how the assets are assessed when determining whose care costs are covered by the state and how the benefits can be spent.

It is clear for example that these funds would be insufficient to pay the full costs of residential care, but would be a significant contribution in the case of domiciliary care and reduce other financial pressures on individuals and their families at their time of greatest need. The extra money could be used for example to purchase higher quality care or additional services as required.

To reach these values we have assumed a steady inflow of bond purchases and return on investment. The build up phase is shown in Figure 2 in which the return on the fund equals annual purchases (assumed to be constant) plus the return on the fund.

The total outgo by contrast is shown in Figure 3. This has two elements – prize money and benefits. When added together to give total outgo, the amount is less than the total income up to maturity in approximately 70 years time when inflow and outgo are in balance.

As is the nature of these types of product, the accumulated individual sizes will be quite modest in size in the early years (e.g. a 65 year old bond purchaser will only accumulate around £1,100 after 10 years if they purchased at the assumed rate). This is inevitable with any new scheme and so the full impact and benefits accruing needs to be measured over decades.

Figure 2: Cumulative income from start up to steady state

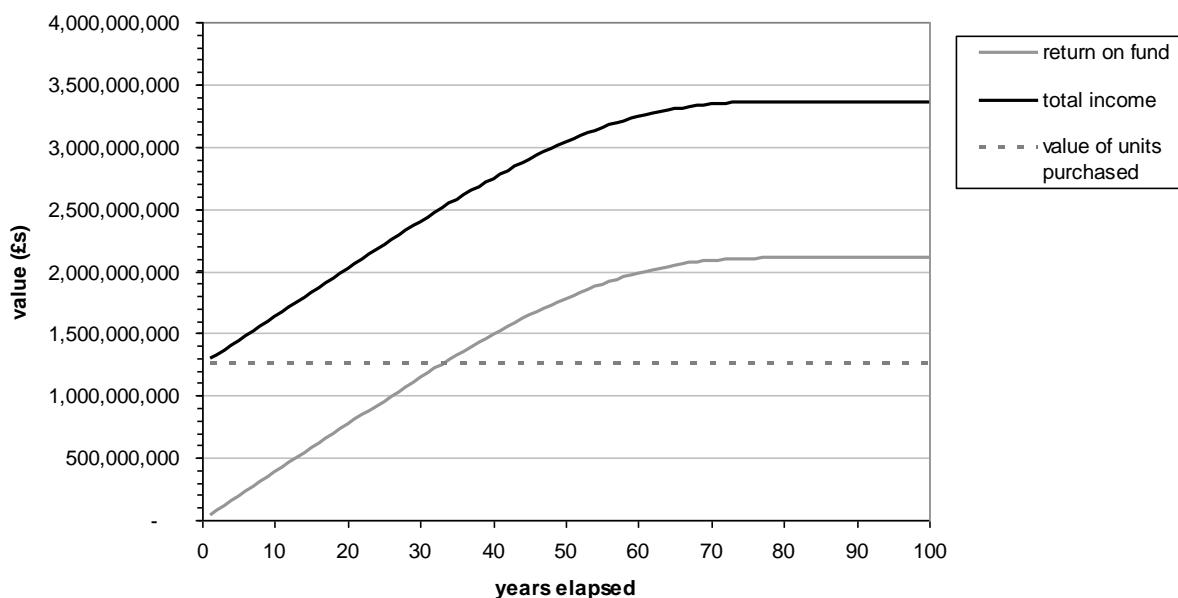
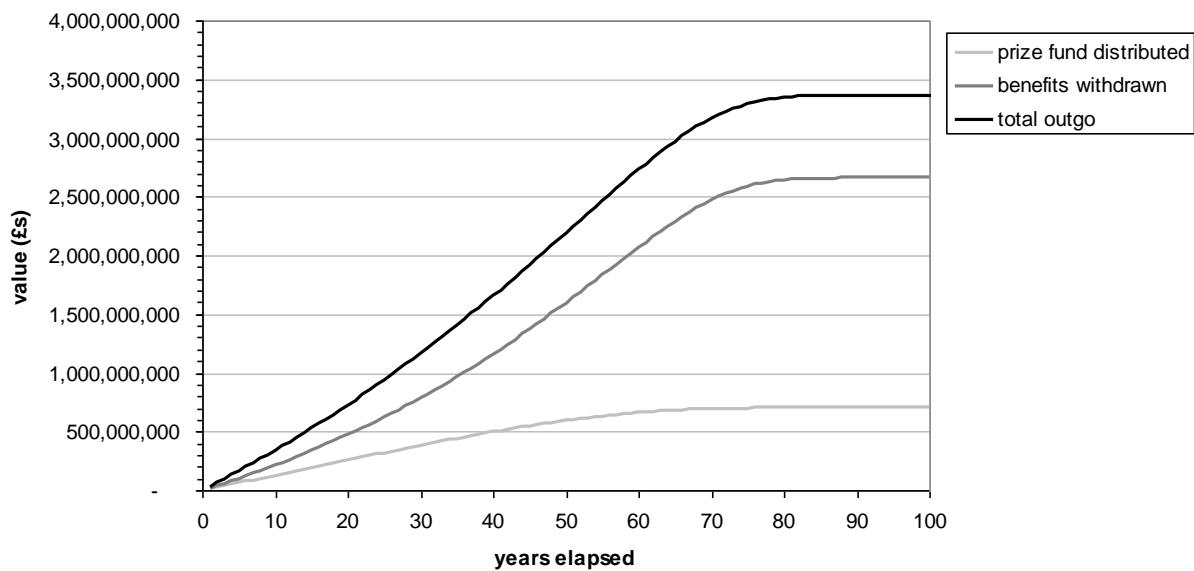


Figure 3: Cumulative outgo from start up to steady state



4. Who are PCSBs aimed at?

We have assumed that any adult aged 18+ could buy a bond although this could be easily lowered. Based on the Premium Bonds they should be broadly popular, but like lottery tickets are more likely to be bought by people on lower incomes.

Research on lotteries mainly in the US confirms that poorer people spend a larger fraction of their income on gambling than the well to do and that they tend to do so by reducing other non-gambling expenditures (Laitner, 1999; Kearney, 2005).

This suggests that national lottery sales in the UK would not be affected unduly by the introduction of PCSBs as the products differ markedly from each other and purchasers will be motivated by different reasons, but this statement may need to be tested in further research.

To give an example, it would be highly unlikely for a financial advisor to recommend that a person buys lottery tickets with their savings, but they may well recommend the purchase of PCSBs as a compromise.

It is difficult to obtain detailed information on wealth and assets for all adults. Our analysis is based on the income and wealth of older purchasers which we use as a guide to potential purchasers.

These, as we have previously suggested, will tend to fall into a sub-group who have few assets and modest retirement income. These might be people with relatively small savings and little or no housing equity, who rely primarily on the state pension and other welfare benefits aimed at older people.

There are different ways of quantifying these groups. In previous work we segmented the older population according to the notional number of years of residential or nursing care that could be afforded based on their income and assets combined.

A more precise feel for the groups we are referring to is provided by Figure 4 which is a contour map of wealth and assets in the 65+ population.⁶ This map shows that wealth and assets are essentially bimodal based on whether a person has housing equity or not. These two categories are represented by A and B in Figure 4.

Both A and B have similar annual incomes but the people in group B are without significant assets to support their social care needs. Although there is nothing to prevent any older person buying PCSBs, we believe that the sub-group B will be a significant part of the purchaser mix.

The solid line shown in Figure 4 is the proposed boundary for eligibility for public support based on the proposed extended means testing arrangements. Anybody within this boundary could be especially attracted by PCSBs from the inception of the scheme based on our arguments.

On this basis we found that 21% of people in this age range had insufficient income or assets to afford care for more than one year. This equates to approximately 2.2m people. This rises to 31% of the older population who might be eligible for the extended means test proposed by Dilnot and accepted by the Government (equivalent to 3.4m people in 2012, rising to an estimated 5m in 2030 and 7m by 2060).

We have not analysed the pre-65 adult age groups though it is likely that the age profile of purchasers will tend towards a similar distribution in their 50s upwards. More consumer analysis of Premium Bond purchasers could be informative in this respect.

Younger adults, for example, are more likely to be attracted by the prize element rather than in the building up a fund and so their purchase will reflect this; much could depend on the balance between the prize and interest bearing elements of the scheme.

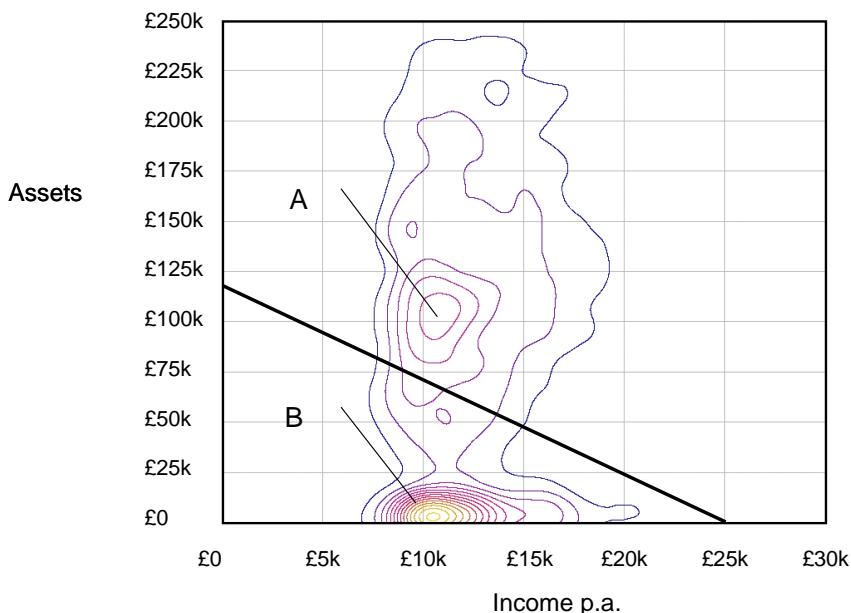
Based on our assumptions, and given future increases in the older population and life expectancy, an assumption of around 12m bond purchasers does not seem unreasonable in the circumstances, as long as people are drawn from a broad age range to become savers.

These people could comprise several sub-groups of potentially new savers such as the economically inactive population (this could include fulltime carers for example), people with no private or occupation pension arrangements, or the disabled.

⁶ Based on data from the English Longitudinal Study of Ageing (ELSA)

Finally, to encourage purchase of the bonds further optional inducements could be considered. This could take several forms such as bonuses for people who had saved regularly over a number of years or introductory offers or vouchers offering reductions among participating care providers in the scheme.

Figure 4: Contour map showing the distribution of assets and wealth in the older population (Source: ELSA). The solid line represents the proposed new means testing threshold for people with assets of up to £118k assuming annual care costs of £25k



5. Conclusions

PSCBs are a new way of saving for social care in old age. UK experience to date suggests that insurance products for long term care will be expensive and not generally suited to everyone even with the cap on care costs in place.

Whilst PSCBs, like insurance, pay out on the triggering of care needs, they have the additional attraction of producing substantial prize money which is tax free. In addition, unlike insurance premiums, unused bonds pass into a person's estate and are only subject to inheritance tax.

In addition PSCBs are cheap and can be bought in small nominal units at any time and are not linked in the usual way to insurance premiums, which in turn reflect the cost of care or the future funding gap faced by individuals as well as the risk of needing care.

Because of the prize money, the negative prospect of money being locked up for a long period is reduced. This makes them more flexible and a good choice for those on low income or minimal assets. Purchasers will include people who would not be in a position to draw down equity from their homes or be able to afford regular insurance premiums for full care costs or have substantial occupational pensions as sources of extra income.

In our examples we have assumed a constant take up rate regardless of age. Similarly, the size of purchases of the bonds was assumed to be the same for all ages. Actual purchasing behaviour will probably fluctuate depending on one's stage of life and financial circumstances.

We also saw that PSCBs are simple and likely to be very cheap to administer. The UK has considerable experience of running such schemes based on Premium Bonds which have existed for over 50 years are the UK's single biggest savings vehicle and which are administratively efficient.

As PSCBs are predicated on care being assessed by a responsible authority (currently local authorities), it suggests that a universal system of portable assessments would be a useful and necessary part of the scheme as proposed in the draft Care and Support Bill going through Parliament.

Alternatively they could be triggered by eligibility for Attendance Allowance which is a universal tax free benefit to help with personal care for people aged 65 or over. If this were the case, there would be several important implications; for one thing Attendance Allowance is paid at lower needs threshold than social care and so could change the balance between care and death benefits as well as personal fund values.

On the other hand earlier access to the fund could be used for example to pay for preventative measures such as home adaptations or assisted living technologies which may defer the time when residential care is needed. Again these are features and issues which could be modelled and then consulted upon at a later stage.

An important strategic issue is how and whether the state profits from PSCBs through reduced expenditure on social care. It will depend on whether PCSBs would replace equivalent expenditure on social care, aside from funeral payments, in which case the state and hence the tax payer benefits and not the individual.

In our view there are advantages from exempting PCSBs because it sends a clear signal that the state is concerned that people should save for social care by producing a low cost affordable product which the state would not then claw back through the means test. If means testing is too punitive then people may be discouraged from buying bonds altogether.

We also saw that if people died without triggering payment then the fund could save public money in death grants and any balance remaining would pass to a person's estate. The average cost of a funeral varies enormously from around £2,000 upwards depending on the type of funeral and so PCSBs could therefore help families as well as making modest reductions in Social Fund expenditure.

There are further issues to do with the wider impacts on the savings industry; in general, however, we believe this to be relatively small for the reasons previously given (e.g. people able to afford insurance products or have good pensions would be less likely to buy PCSBs anyway and, if they do, are unlikely to cut back on insurance and pension purchases to fund the bond payments).

There could be some competition with lottery expenditure as these are bought by similar people. As we have argued, however, the products are not identical and the motivation for purchasing lottery tickets only partly overlaps with PCSBs. Plainly, the chances of winning a lottery prize are lower but the prizes are higher, but in addition the lottery stake is non-returnable.

Limits on how much money could be held by a single individual in PCSBs before being subject to taxation could be needed just as there are limits on Premium Bond holdings. This could be linked in some way to the Dilnot cap. There may also need to be limits on the amounts that can be

purchased in one year as there are with ISAs to avert possible tax avoidance through asset switching.

It must be emphasised that PCSBs would not contribute significantly to social care costs for some years but would build up over time. Since life expectancy and the number of older people is expected to increase in coming decades, we view this as a long term solution to a long term problem and a key reason for introducing such a product as part of a wider set of financial building blocks.

We have argued that PCSBs is already a good strategic fit with other types of savings and sources of wealth. For example, there is considerable interest in realising equity from homes at the point of needing social care but this only applies to home owners. PCSBs on the other hand are held as cash but would similarly be available at point of need.

The potential for equity release to pay for social care will depend on a number of factors including the availability of unspent equity available at the point of need. It will also depend on future patterns of home ownership, and the sizes of personal and occupational pensions. If pensions and housing equity fall in value PCSBs could become a useful stabiliser.

Pension reforms underway will help over time, but it is worth pointing out that pensions are also currently treated more unfavourably than assets in the means test with those entering care losing state support pound for pound. Alternative arrangements to the social care means test and how it could be reformed more widely to deal with these and other issues are discussed in Mayhew et al (2010).

In conclusion, it is clearer than it has ever been that the Government is not interested in bridging the funding shortfall in social care from taxation. PCSBs are a new idea that would potentially fill a sizeable gap in the system for paying for social care. Our calculations suggest that, once mature, they could potentially deliver more new money and be bought by more people than, say, pre-funded long term care insurance.

However, it is important to be realistic about what is possible as with any new scheme in order not to raise expectations unduly especially in the first few years of operation. Nevertheless, it would be perfectly possible in the light of experience to add a new tier to the product such that it would enable savers to save more and benefit from higher returns once scheme has settled in and it is clear that it will be popular.

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Mathematical Annex

A.1 Basics

We assume that we are working in real terms i.e. that the amounts are adjusted to take into account price inflation (or assume that inflation is 0%).

Define the real investment return earned on the fund as $i\%$

Define the amount of return used to fund prizes as $p\%$

Define the amount of return retained by the fund as $i - p \ % = r\%$

Assume that at the start of each year each life aged 18 and over purchases a fixed number of bonds, b , (where each bond is valued as £1 in terms of the initial year)

Before we reach a steady state, for a life still alive and not requiring care at time t (but before purchasing the bonds at time t) then their fund will have accumulated to:

$$A_t = b \frac{(1+r)^t - 1}{d} \text{ where } d = \frac{r}{1+r}$$

When a steady state is reached then the age of each life who is still healthy will also determine the length of time spent in the state i.e. if a life has current age, c , then they will have spent $c-18$ years in the fund. Redefining the accumulation of assets slightly so as to allow for this 18 year adjustment we can specify the fund held for a life aged c as:

$$A_c = b \frac{(1+r)^{c-18} - 1}{d}$$

Once the steady state has been reached we can calculate the value of the total fund, F , by:

$$F = \sum_{c=18}^{110} A_c l_c$$

Where l_c is the number of lives in the fund at age c .

A.2 Cash Flows

We will assume that $x\%$ of people who are aged 65 and above require the benefit due to sickness and we will assume that people who require this sickness benefit require it m years before they die. We will also assume that both deaths and sickness occur on average half-way through the year. Finally it should be noted that the benefit is the return of the fund so it does not matter whether the person received the benefit due to death or sickness.

Define:

l_c as number of people who are currently active at age c i.e. they are alive and have not taken benefits due to illness

a_c as number of lives who die at age c

d_c as number of lives who die at age c from the healthy state

s_c as number of lives who fall sick at age c

Ω as the maximum age at death

We therefore have:

$$l_{c+1} = l_c - d_c - s_c$$

For ages up to 65 i.e. $c < 65$ then the benefit outgo will be the probability of death only. We therefore have $q_c = \frac{d_c}{l_c} = \frac{a_c}{l_c}$ where q_c is the probability of the person leaving the fund and receiving a benefit.

For ages 65 and over we have to take into account both sickness and death. For the number who become sick at age c we have:

$$s_c = x \times a_{c+m}$$

For ages 65 to $65+m$ the number of deaths remains as before i.e. $d_c = a_c$ and therefore the number of people claiming benefits is $d_c + s_c$.

For ages $65+m$ onwards the number of deaths that are triggering a benefit is now $d_c = 1 - x_a c$ i.e. we have ignored the deaths of people who had previously fallen ill and taken the benefit m years ago.

If we explicitly define $s_c = 0$ for $c < 65$ and $c > \Omega - m$ then for all ages the probability of a life taking a benefit over the year is:

$$q_c = \frac{d_c + s_c}{l_c}$$

A.3 Value of Benefits

Assume that the fund accumulates over the half year before the benefit payment is triggered then the value of benefits for the population aged c is:

$$B_c = A_c + b \times 1 + i^{0.5} \times r_i \times l_c q_c$$

And hence the total value of benefits is:

$$B = \sum_{x=18}^{\Omega} B_x$$

A.4 Value of prizes

The amount that can be paid out in prizes is the amount of return earmarked for prizes that is from the fund that is still active at the end of the year plus the return over the half year from the part of the fund that was paid out in benefits.

$$P = \sum_{c=18}^{\Omega} A_c + b \times p \times 1 - q_c l_c + A_c + b \times [1 + i^{0.5} - 1] \times r_i \times q_c l_c$$

A.5 Impact of simplifying assumptions

Timing of purchases of bonds

We have assumed that bonds are purchased at the start of the year. A more realistic assumption would be that they are purchased throughout the year. This means that the value of the fund will be less as the number of bonds purchased will be lower each year as of course people will stop buying the bond when they die or need care during the year, and in addition there will be less time for the bond to accumulate interest. Having a lower fund will mean both lower benefits and prizes than currently assumed.

Prizes

As noted above, we would have a smaller prize fund if bonds are assumed to be purchased throughout the year. In addition, if we assume that prizes are paid out each month rather than at the

end of the year then there will be less time for the prize fund to accumulate. As the prizes are cost neutral to the fund this is not a problem but would make the bonds less attractive to purchasers of bonds if the values are slightly lower than calculated here.

Inflation

Thus far we have assumed no inflation. This makes calculations and results a lot easier when we state the value of the fund in say 80 years time, as we do not want to have inflation distorting the value. To introduce inflation is not a problem as we can simply use real rates of return in most of our calculation.

We have assumed that PSCBs will have a nominal value of £1 in perpetuity. This may work against the scheme if it results purchasers not increasing the amount of bonds they buy over time (i.e. they only ever buy £100 worth of bonds a year). An alternative would be a scheme in which purchasers buy 'a bond' at whatever the currently denominated value is at the time.

In the calculations, the main difference comes when valuing the amount of return that comes from the bonds that are cashed-in to pay for the benefits as we have to determine the amount of return that is retained in the fund and that which is put into the prize fund. When there was no inflation we could use a simple ratio.

Now let us introduce the idea of a nominal return (*nom*) and inflation (*in*). Then to get our real return, *i*, defined earlier we have:

$$1+i = \frac{1+nom}{1+in}$$

For the return made on bonds that are cashed-in to pay benefits we used to split the return so that the fund retained $\left(\frac{r}{i}\right)\%$ and the prize fund received $\left(\frac{p}{i}\right)\%$. To make sure that the fund is not eroded by inflation the inflation part of the nominal return needs to be retained by the fund. The above values therefore become $\left(\frac{nom-p}{nom}\right)\%$ and the prize fund receives $\left(\frac{p}{nom}\right)\%$.

A.6 Distribution of Prize Winners

The table below shows two likelihoods of winning. The first one is the probability that a winning ticket comes from a particular age in the population. The second gives the likelihood that a particular person who does not die during the year has of getting a winning ticket compared to an 18 year old i.e. a value of 4 means they are four times more likely to win than an 18 year old.

Age	Probability a winning ticket is from this age	How likely a person of this age is to win compared to an 18 year old (assuming that neither dies)
18	0.03%	1.00
19	0.05%	2.02
20	0.08%	3.06
21	0.11%	4.12
22	0.14%	5.20
23	0.17%	6.31
24	0.20%	7.43
25	0.23%	8.58
26	0.26%	9.75
27	0.29%	10.95
28	0.33%	12.17
29	0.36%	13.41
30	0.39%	14.68
31	0.43%	15.97
32	0.46%	17.29
33	0.50%	18.64
34	0.54%	20.01
35	0.57%	21.41
36	0.61%	22.84
37	0.65%	24.30
38	0.69%	25.78
39	0.73%	27.30
40	0.77%	28.84
41	0.81%	30.42
42	0.85%	32.03
43	0.90%	33.67
44	0.94%	35.34
45	0.98%	37.05
46	1.03%	38.79
47	1.07%	40.57
48	1.12%	42.38
49	1.17%	44.23
50	1.21%	46.11
51	1.26%	48.03
52	1.31%	49.99
53	1.36%	51.99
54	1.41%	54.03
55	1.46%	56.11
56	1.51%	58.24
57	1.56%	60.40
58	1.61%	62.61
59	1.66%	64.86
60	1.71%	67.16
61	1.76%	69.50
62	1.81%	71.89
63	1.86%	74.33

Age	Probability a winning ticket is from this age	How likely a person of this age is to win compared to an 18 year old (assuming that neither dies)
64	1.90%	76.82
65	1.95%	79.35
66	2.00%	81.94
67	2.04%	84.58
68	2.08%	87.27
69	2.12%	90.02
70	2.16%	92.82
71	2.19%	95.67
72	2.22%	98.59
73	2.25%	101.56
74	2.27%	104.59
75	2.29%	107.68
76	2.30%	110.83
77	2.30%	114.05
78	2.29%	117.33
79	2.28%	120.68
80	2.25%	124.09
81	2.21%	127.57
82	2.15%	131.13
83	2.09%	134.75
84	2.01%	138.44
85	1.92%	142.21
86	1.81%	146.06
87	1.69%	149.98
88	1.56%	153.98
89	1.42%	158.06
90	1.27%	162.22
91	1.13%	166.46
92	1.00%	170.79
93	0.85%	175.21
94	0.72%	179.71
95	0.59%	184.31
96	0.47%	188.99
97	0.37%	193.77
98	0.28%	198.65
99	0.21%	203.62
100	0.15%	208.69
101	0.10%	213.87
102	0.07%	219.14
103	0.05%	224.53
104	0.03%	230.02
105	0.02%	235.62
106	0.01%	241.33
107	0.01%	247.16
108	0.00%	253.10
109	0.00%	259.16

A.7 Effect on fund of changes to the percentage needing care

If the proportion of people need care increases then less money is available to pay for funeral expenses and vice-versa. However, the balance of these two effects has relatively little impact on the size of the fund as the table below shows.

This shows the size of the fund once matured according to different levels of bond purchases and the percentage of people drawing down the money to pay for social care. Units are billions of pounds.

The effect of a greater percentage of investors triggering care is to bring forward the outflow of funds and so reduce slightly the total value of the fund. As can be seen the resulting change is negligible even at high percentages.

Bonds purchased p.a.	% needing care				
	10	20	30	40	50
50	35.4	35.2	34.9	34.6	34.4
100	70.8	70.3	69.8	69.3	68.8
150	106.2	105.4	104.7	103.9	103.2
200	141.6	140.6	139.6	138.6	137.6

Assumed take up in this example: 25% (cell values £ bns)



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