

Do Government Benefits for High Income Retirees Encourage Saving?

Peter Siminski, University of Wollongong

Abstract

The Australian government provides benefits to high income older people, which are intended to induce saving for retirement. It has not been established whether this unusual policy is effective. Using an illustrative two-period model, it is shown that these benefits may induce some people to save and work more, but they may have the opposite effect on other, more affluent, people. The magnitude and direction of the net effect on private saving remains an open empirical question. The policy may have increased Commonwealth government expenditure on relatively affluent older people and reduced state government expenditure on people with slightly less resources.

1. Introduction

Faced with the fiscal pressures of ageing populations, most OECD countries have sought to reduce reliance on publicly funded retirement income schemes. Such reforms include lifting the eligibility age for public pensions, introduction of mandatory private pension schemes and favourable taxation treatment of voluntary private saving for retirement (Whiteford and Whitehouse, 2006). Australia has implemented reforms in each of these areas. Beginning in 1999, however, it has progressively introduced a set of new government benefits for relatively high income older people. The Commonwealth Seniors Health Card (CSHC) is the key component of this system. Eligibility for other (cash and non-cash) benefits is tied to the CSHC. The CSHC is intended to 'encourage people to save for their own retirement' (Costello, 1998: 5).¹

In contrast, the standard lifecycle model of saving, consumption and labour supply predicts that an increase in public retirement benefits would decrease private saving through a 'lifetime income effect' (Ando and Modigliani, 1963; Blundell *et al.*, 2006).² An increase in public retirement benefits adds to lifetime income. Assuming diminishing marginal utility of consumption in each period, forward looking households

¹ The CSHC might also be intended to address an equity objective, since it extends eligibility for some benefits to a greater proportion of older people. On the other hand, it can be argued that the CHSC is inequitable, since most holders are particularly wealthy (Siminski, 2009).

² Such benefits can include pensions, or other cash or noncash benefits (see section 3).

Address for correspondence: Peter Siminski, School of Economics, University of Wollongong, Wollongong, NSW 2522, Australia. Email: siminski@uow.edu.au

Acknowledgements: I thank Garry Barrett, Denise Doiron, Bob Gregory, Joan Rodgers, Peter Saunders, Ian Walker, Oleg Yerokhin and two anonymous referees for comments and suggestions on earlier manuscripts. The research was partially supported by the ARC Grant LP0774950.

© The Centre for Labour Market Research, 2009

will dissave in earlier periods to maximise utility. Further, the increased public expenditure must be offset by decreased expenditure on other programs or increased taxation. If the incidence of such tax increases or expenditure cuts is on younger people, this will reduce private saving further.³ Empirical support for the partial substitutability of public benefits and private saving has been established (for example Attanasio and Rohwedder, 2003; Attanasio and Brugiavini, 2003; Feldstein, 1974).

Means testing can also reduce the incentive to save. Many retirement benefits are targeted to individuals with relatively low private income and/or wealth. The 'taper' of public pensions with respect to private resources represents an effective tax on saving. Reducing the taper rate might lessen this disincentive for some people. However, such a reform would shift the saving disincentives to groups with greater resources. Thus the net effect on saving is not immediately clear. Few published studies have analysed such changes. A recent notable exception is Sefton *et al.* (2008), who examined the effect of a change in the taper rate for a UK public pension from 100 per cent to 40 per cent, finding a negative average effect on saving.⁴

By benefiting relatively affluent people, the introduction of the CSHC is in some ways analogous to a reduction in age pension taper rates. For some people, it may remove the disincentive associated with the age pension means test. But it may provide a disincentive to save for people with higher resources. It remains to be established whether the CSHC has achieved its goal of promoting saving for retirement. The budgetary implications of any such induced saving have not been evaluated either. An empirical evaluation would be difficult as there is no apparent comparison group from which to infer counterfactual behaviour. A behavioural micro-simulation model that incorporates lifecycle dynamics would be potentially useful here, but such models are not presently available (Creedy and Kalb, 2005).⁵ The aims of this paper are more modest. I present a simple, graphical depiction of the ambiguous effect of the CSHC on private saving. I use an illustrative two-period model of the incentives for consumption and earning through the life-course. The model is similar to Sefton *et al.*'s (2008) two-period model.

The remainder of this paper is organised as follows. Section 2 explains the history of the CSHC and its evolving role in the retirement income system. Section 3 discusses the interaction between private income and public retirement benefits. The model and its implications are described in section 4. Section 5 demonstrates that further considerations such as the source of finance for the benefits, the age pension assets test and variations in subjective valuation of the PBS concession are inconsequential for the insights gained by the simple model. Section 6 considers the budgetary implications of any induced savings response and section 7 concludes.

³ Such cuts in expenditure or increases in taxation directly reduce the utility of younger people, regardless of the funding mechanism or preferences for consumption versus leisure. Again, the lifecycle model predicts that the rational consumer will compensate for this by drawing on resources that would otherwise have been saved for retirement.

⁴ In Australia, the age pension income test taper rate has also changed. It was reduced from 50 per cent to 40 per cent in July 2000, and will revert back to 50 per cent in September 2009. The effects of these changes have not been evaluated. Similar reductions to the taper rate for working-age pensions and benefits have been evaluated by Creedy *et al.* (2003) and Gregory *et al.* (2008).

⁵ See, however, Sefton *et al.* (2008) and Creedy and Guest (2008) who simulate the effects of related policy changes on saving.

2. The Changing Role of the Commonwealth Seniors Health Card

Since its introduction in 1994 by the Keating Labor government, eligibility for the CSHC has been restricted to a subset of older people who are ineligible for the age pension. However, the role of the CSHC in Australia's system of retirement benefits has evolved considerably in terms of its other eligibility criteria and the benefits it provides.

It was originally provided to low income older people who did not receive the age pension, primarily due to the pension's assets test or residency requirements (Dawkins, 1993). Its main benefit was eligibility for the Pharmaceutical Benefits Scheme concession. In 1999, under the Howard coalition government, the income eligibility threshold for the CSHC was almost doubled and it was increased again in 2001. As a result, the number of CSHC recipients increased by around 600 per cent (Department of Family and Community Services, various years; Standing Committee on Family and Community Affairs, 1997). From 1999, its primary role ceased to be that of a safety net for low income retirees. Most of its beneficiaries are wealthy, relatively high income retirees (Siminski, 2009). It is estimated that in 2007 the total cost to government of the CSHC was in the order of \$271 million.⁶

Importantly, the CSHC income eligibility threshold is not indexed to inflation. It has remained at \$50,000 per annum for singles and \$80,000 for couples since 2001. It has thus decreased considerably in relation to the threshold for a part-rate age pension. At August 2008, the CSHC threshold is 27 per cent higher than the age pension threshold for singles, while it was 87 per cent higher in 1999. For couples, the CSHC threshold is 21 per cent higher than the pension threshold, compared to 86 per cent in 1999.⁷ By default, the CSHC is reverting back to its original role. In the absence of further policy changes, eligibility will again be restricted to people whose income is low enough to qualify for an age pension. Despite this, the number of CSHC holders increased in each year up to 2007 (Department of Family and Community Services, various years) due to population ageing and because the proportion of older Australians that meet the age pension means tests is (slowly) decreasing (Australian Government, 2007: Chart C6). However, this trend has recently reversed, as the number of CSHC holders fell by 13 per cent in the year to June 2008 (Macklin, 2008). The government will be forced to reform the CSHC again. The apparent options are to link the CSHC income eligibility threshold back to the age pension income eligibility threshold, or to increase the CSHC income eligibility threshold again. While total expenditure on the CSHC is relatively small, the number of high income older people will increase as the population continues to age and become more affluent.

⁶ Author's calculations from Siminski (2009: tables 1, 2, 5). The proportion of CSHC holders who are single was estimated using the Household Expenditure Survey 2003-04 Expanded Confidentialised Unit Record File. The estimate of \$271m includes the cost of the Telephone Allowance and Seniors Concession Allowance to CSHC holders. It does not include the costs of the 2007 one-off payment to seniors, the Medicare Safety Net Concessional threshold or the incentives provided to doctors to bulk-bill CSHC holders.

⁷ A second factor in this convergence is the decrease in the age pension income test taper rate from 50 per cent to 40 per cent in July 2000, which substantially increased the income eligibility threshold for a part pension.

3. Benefits for People of Retirement Age

The CSHC affects the interaction between private income and benefit income for people of retirement age. This section considers this interaction in detail for single people at August 2008. It serves as an input into the analyses in the following sections. Corresponding details for coupled people are not shown, but are similar in substance as will be demonstrated in section 4. Benefits are defined broadly to include cash benefits, rebates and concessions provided by the Commonwealth and state governments and private providers. Many of these benefits vary by state and by utilisation of the goods and services in question, so it is emphasised that the exercise is illustrative.

Age pensioners and CSHC holders are entitled to the Pharmaceutical Benefits Scheme concession, estimated to be worth an average of \$547 p.a. for single CSHC holders (Siminski, 2009). Both groups also receive the Telephone Allowance (\$88 p.a.).⁸ CSHC holders receive the Seniors Concession Allowance, which for singles is of equal value to the Utilities Allowance for pensioners (\$500 p.a.).⁹ Both groups might benefit from higher rates of bulk-billing¹⁰ for GP services due to Commonwealth government financial incentives for GPs, and concessional coverage under the extended Medicare Safety Net, but their value is difficult to quantify. 'Oneoff' payments to seniors (such as those provided in 2006 and 2007) are also excluded here.

Age Pensioners receive a range of benefits to which CSHC holders are not entitled. This includes the pension itself (a maximum of \$14,216.80 p.a. for singles), the Pharmaceutical Allowance (\$150.80 p.a.) and Rent Allowance from the Commonwealth government. The pension (including the Pharmaceutical Allowance) is reduced by 40 cents for each dollar of private income exceeding \$3,588 p.a. Few people in this age and income group are renters (just 3 per cent of CSHC holders were renters in 2003-04).¹¹ Pensioners also receive Commonwealth subsidies for some types of health care such as diabetes and hearing services. Pensioners are entitled to a range of state government rebates, which (depending on the state) subsidise council and water rates, energy, public transport, ambulance, drivers' licenses and motor vehicle registration (for further details, see the DVA Fact Sheets for each state and territory, such as DVA, 2008a, 2008b, 2008c). Telephone service providers such as Telstra and Optus offer discounts to pensioners. In addition to the pension and Pharmaceutical Allowance, the combined value of benefits available to pensioners (but not CSHC holders) is assumed to be \$500 per year per single person.

The dotted line (labelled current system) in Figure 1 illustrates the relationship between private income and benefit income for single people at August 2008 (males aged 65 and over; females aged 63.5 and over) who meet the age pension assets and residency tests. The solid line (denoted 'no CSHC') represents a hypothetical 2008 benefit structure (for those who meet the age pension assets and residency tests) if the CSHC was abolished. This is also the benefit structure that these same people would

⁸ The Telephone Allowance is \$44 p.a. higher for those with a home internet connection. This is not included in the analysis.

⁹ For couples, however, the Seniors Concession Allowance is more generous (\$1000) than the Utilities Allowance (\$500).

¹⁰ Bulk-billing is a billing system which includes no charge for the patient.

¹¹ Author's calculations from the 2003-04 ABS Household Expenditure Survey Expanded Confidentialised Unit Record File.

be subject to if the 1999 reform had not occurred. The benefit structure of the two systems is identical at private incomes outside of the range presented in this Figure. These schedules also have a similar shape for the combined income of couples.

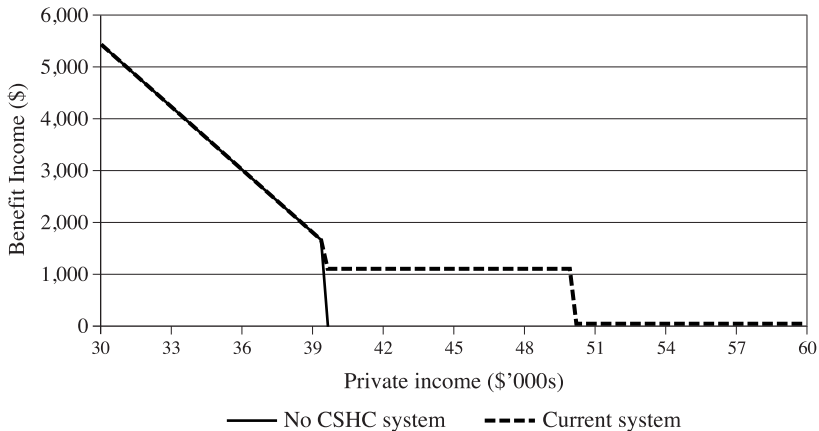
Benefits for singles in the current system (B_C) are thus a function of private income (P) as follows:

$$\begin{aligned}
 B_C &= 16,002.60, & P < 3,588 \\
 &= 16,002.60 - 0.4(P - 3588) = 17,437.80 - 0.4P, & 3,588 \leq P < 39,507 \\
 &= 1135, & 39,507 \leq P < 50,000 \\
 &= 0, & P \geq 50,000
 \end{aligned}$$

If the CSHC did not exist, the benefits (B_N) would be:

$$\begin{aligned}
 B_N &= 16,002.60, & P < 3,588 \\
 &= 17,437.80 - 0.4P, & 3588 \leq P < 39,507 \\
 &= 0, & P \geq 39,507
 \end{aligned}$$

Figure 1 - Annual Private Income and Benefit Income in Retirement, Singles August 2008*



* For people who meet Age Pension assets test and residency requirements. Retirement benefits include those provided by Commonwealth and state governments, as well as private providers, see text.

4. Inter-temporal Model

Consider a two-period model of consumption and leisure (pre-retirement: $t = 0$ and retirement: $t = 1$). Assume that a consumer's utility function is additively time separable. The consumer may exhibit a preference for current consumption ($\delta \geq 0$). The consumer's problem is to maximise total utility as follows:

$$\max U = \frac{u(C_0, L_0)^{1-\rho}}{1-\rho} + \frac{u(C_1, L_1)^{1-\rho}}{1-\rho} (1 + \delta)^{-1}, \tag{1}$$

where C and L represent consumption and leisure in each period. The Arrow-Pratt parameter of relative risk aversion (ρ) (Pratt, 1964) is also the reciprocal of the

intertemporal elasticity of substitution. Consumption (C) is in constant dollars, while L is the proportion of total available time spent in leisure: $L \in [0,1]$. The consumer is assumed to not work in the retirement period and so L_1 is set to 1. The within-period utility function is denoted u . Let u be characterised by constant elasticity of substitution between C and L , so that:

$$u(C_i, L_i) = \left[C_i^{(1-1/\varepsilon)} + \alpha^{1/\varepsilon} L_i^{(1-1/\varepsilon)} \right]^{\frac{1}{1-1/\varepsilon}} \quad i \in \{0, 1\}, \quad (2)$$

where ε is the elasticity of substitution and α is a measure of the preference for leisure versus consumption. Let H_0 be the (exogenous) total resources available in $t = 0$ which is equal to maximum potential earnings if the consumer was to spend all available time (at $t = 0$) in work. Expenditure in $t = 0$ is defined as consumption plus the income foregone through leisure:

$$E_0 = C_0 + L_0 H_0 \quad (3)$$

The inter-temporal budget constraint equates the present value of consumption expenditure with the present value of lifetime income:

$$C_0 + \frac{C_1}{1+r} = (1-L_0)H_0 + \frac{B_1}{1+r}, \quad (4)$$

where r is the real interest rate and B_1 represents benefit income in retirement. Benefits are a function of private income in period 1, as discussed in the previous section. Private income in period 1 equals $(1+r)(H_0 - E_0)$.¹² Thus the inter-temporal budget constraint for the current system can be expressed as:

$$\begin{aligned} C_1 &= (1+r)(H_0 - E_0) + 16,002.60, & (1+r)(H_0 - E_0) &< 3588 \\ &= 0.6(1+r)(H_0 - E_0) + 17,437.80, & 3588 &\leq (1+r)(H_0 - E_0) < 39,507 \\ &= (1+r)(H_0 - E_0) + 1135, & 39,507 &\leq (1+r)(H_0 - E_0) < 50,000 \\ &= (1+r)(H_0 - E_0), & (1+r)(H_0 - E_0) &\geq 50,000 \end{aligned}$$

If the CSHC did not exist, the inter-temporal budget constraint would be:

$$\begin{aligned} C_1 &= (1+r)(H_0 - E_0) + 16,002.60, & (1+r)(H_0 - E_0) &< 3588 \\ &= 0.6(1+r)(H_0 - E_0) + 17,437.80, & 3588 &\leq (1+r)(H_0 - E_0) < 39,507 \\ &= (1+r)(H_0 - E_0), & (1+r)(H_0 - E_0) &\geq 39,507 \end{aligned}$$

The time-separability assumption allows the optimisation problem to be solved in two stages. The levels of C_0 and L_0 are determined by maximising (2), subject to (3), resulting in the following demand functions:

$$L_0 = \frac{\alpha E_0}{H_0^\varepsilon (1 + H_0^{1-\varepsilon} \alpha)} \quad (5)$$

¹² In this two-period model, all period 0 savings are converted into an annuity, which is received in full as income in period 1 and is thereby considered in the pension income eligibility test. Note that the age pension assets test is ignored, this is returned to in section 5.

$$C_0 = \frac{E_0}{(1 + H_0^{1-\varepsilon}\alpha)} \quad (6)$$

At all levels of E_0 , the ratio of leisure to consumption is constant, reflecting the homothetic property of the Constant Elasticity of Substitution utility function:

$$\frac{L_0}{C_0} = \frac{\alpha}{H_0^\varepsilon}, \quad (7)$$

Using (5) and (6), the intertemporal utility maximisation problem is reduced to a function of E_0 , C_1 and exogenous parameters:

$$\max U = E_0^{1-\rho} \left[1 + H_0^{(1-\varepsilon)} \alpha \right]^{\frac{1-\rho}{\varepsilon-1}} (1-\rho)^{-1} + \left[C_0^{(1-1/\varepsilon)} + \alpha^{1/\varepsilon} \right]^{\frac{1-\rho}{1-1/\varepsilon}} (1-\rho)^{-1} (1+\delta)^{-1}, \quad (8)$$

subject to the intertemporal budget constraint given above.

Assumed Parameters

In the baseline model, the parameters ρ and ε are set to 3 and 0.7, respectively, values that are consistent with recent related simulations (see for example Creedy and Guest, 2008; Sefton *et al.*, 2008). The qualitative implications of the model are not sensitive to large variations in these parameters, as will be shown. Similarly to Sefton *et al.* (2008), α is set to preserve the equality in (7) as a function of the assumed ε and average adult wage rates, consumption and leisure.

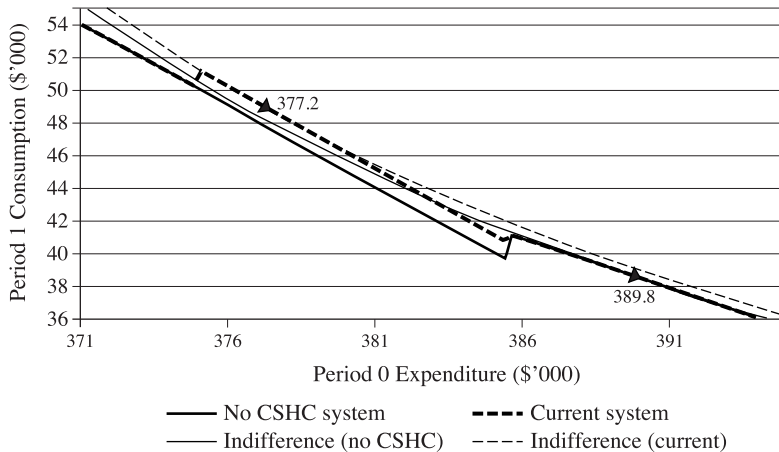
It is not immediately clear what values are appropriate to assume for the rate of time preference (δ) and the real interest rate (r). The pre-retirement period may perhaps represent 40 years, and the retirement period 25 years. Alternatively, one might assume that planning horizons are shorter than this. However, if one assumes that $\delta = r$, the actual level of these constants is largely inconsequential for what follows. To see this, consider the slope of the intertemporal budget constraints and indifference curves. At all points, the slope of both budget constraints is proportional to $(1+r)$. The slope of indifference curves at all points is equal to the marginal utility of E_0 divided by the marginal utility of C_1 , which is proportional to $(1+\delta)$. The solutions to the optimisation problem would be completely independent of the level of $\delta = r$ if the budget constraints did not include constant components. Even with the constant components, the results are highly insensitive to this level. To simplify the analysis, δ and r are set to zero. The qualitative implications of the model are unchanged with alternate levels of $\delta = r$, even at large values such as 200 per cent.

Implications for Pre-retirement Saving

It will be shown that the effect of the CSHC on saving depends on the consumer's wage rate. To illustrate this, I consider different levels of H_0 , each chosen to illustrate a different type of effect. Figure 2 shows (parts of) the relevant intertemporal budget constraints for $H_0 = \$425,000$. The red dotted line is the budget constraint corresponding to the current retirement-age benefit system. It has two discontinuities. The first discontinuity (at $E_0 = \$375,000$) results from the income eligibility threshold for the CSHC. The second discontinuity (at $E_0 = \$385,493$) is due to the income

eligibility threshold for a part pension. The more shallow slope where $E_0 > \$385,493$ reflects the pension income test taper region. The thick continuous line is the budget constraint corresponding to the 'no CSHC' benefit structure, described above. It has one discontinuity (at $E_0 = \$385,493$) and has the same slope as the first constraint at all points. These two budget constraints are identical at consumption levels outside the domain of the graph.

Figure 2 - Inter-Temporal Budget Constraints and Indifference Curves for Single Person with $H_0 = \$425,000$ - Baseline Model



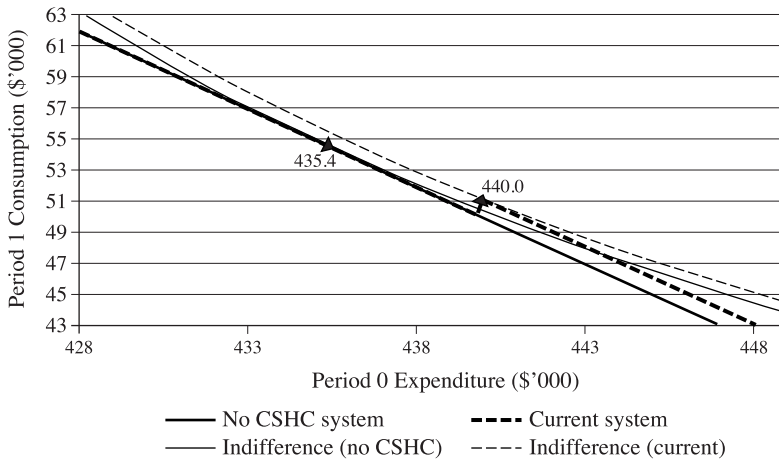
Notes: Results are from the illustrative two-period model of consumption and saving, as described in the text. Period 0 Expenditure is defined as consumption plus the income foregone through leisure. The indifference curves correspond to the highest attainable utility in the current system and a hypothetical benefit system with no CSHC, respectively for the given value of H_0 . H_0 is the total resources available at $t=0$, equal to the maximum potential earnings if the consumer was to spend all available time (at $t=0$) in work. The difference between the two levels of expenditure (labelled) is the effect of the CSHC on saving at the given level of H_0 .

Consider the optimal E_0 which maximizes utility. The indifference curves representing the optimal level of utility under the 'current system' and 'no CSHC' are also shown in Figure 2. Under the 'current system', utility is maximized with E_0 equal to \$377,200. With 'no CSHC', utility is highest when E_0 is equal to approximately \$389,800. Therefore, the CSHC increases saving by \$12,600 when $H_0 = \$425,000$. Similar results are found when $\$410,200 < H_0 < \$433,600$.

However, the CSHC can have the opposite effect at higher levels of H_0 due to the additional budget constraint discontinuity caused by CSHC eligibility. This discontinuity leads some rational decision makers to corner-solutions in the utility maximisation problem. This is shown in Figure 3 for $H_0 = \$490,000$. Under the 'current system', utility is maximised at $E_0 = \$440,000$. In the 'no CSHC' system, the optimal E_0 is \$435,400. Thus the current system discourages saving at this level of private resources. More generally, corner solutions (which all correspond to decreased savings as a result of the current system) are found for $\$449,600 < H_0 < \$534,800$. The

effect on saving is greatest at $H_0 = \$534,800$, with the current system reducing optimal saving by around \$8,600 as compared to the no CSHC system.

Figure 3 - Inter-Temporal Budget Constraints and Indifference Curves for Single Person with $H_0 = \$490,000$ - Baseline Model



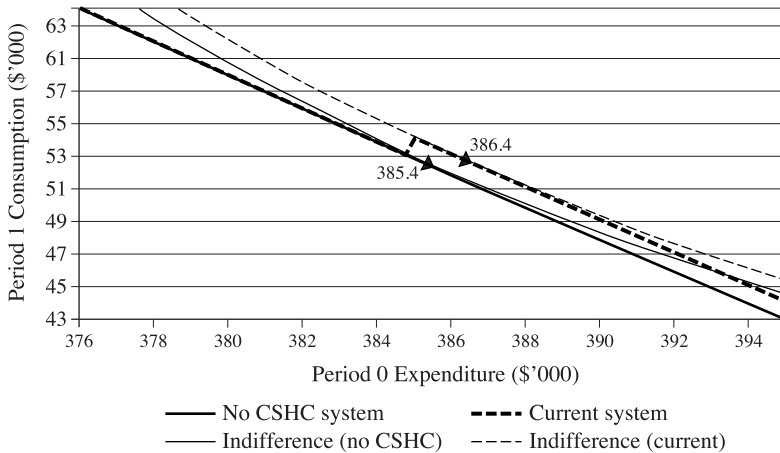
Notes: Results are from the illustrative two-period model of consumption and saving, as described in the text. Period 0 Expenditure is defined as consumption plus the income foregone through leisure. The indifference curves correspond to the highest attainable utility in the current system and a hypothetical benefit system with no CSHC, respectively for the given value of H_0 . H_0 is the total resources available at $t=0$, equal to the maximum potential earnings if the consumer was to spend all available time (at $t=0$) in work. The difference between the two levels of expenditure (labelled) is the effect of the CSHC on saving at the given level of H_0 .

For a small range of private resources ($\$433,600 < H_0 < \$449,600$) the CSHC is equivalent to a simple transfer in period 1. The rational course of behaviour in these circumstances is a small reduction in saving, which allows the consumer to derive utility from the benefit in both periods. The indifference curves corresponding to maximised utility in the current and no CSHC systems are shown in Figure 4 for $H_0 = \$435,000$.

For $H_0 < \$410,200$ and $H_0 > \$534,800$ the optimal levels of E_0 are the same for the current and no CSHC systems.

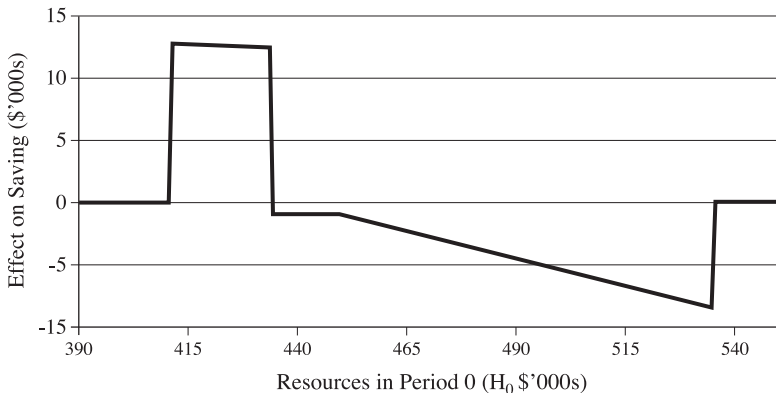
The effect of the CSHC on saving is summarised in Figure 5 for H_0 between \$390,000 and \$550,000. The CSHC has no impact on saving outside of this income range. A positive value on the vertical axis denotes an increase in saving associated with the CSHC, while a negative value denotes a decrease in saving. It is clear from this graph that whilst the CSHC does have a substantial positive effect on saving within a given range of H_0 , this range is quite small. The CSHC has a negative effect on saving across a much large range of H_0 . In this illustrative model, it is not possible to estimate the net effect on saving.

Figure 4 - Inter-Temporal Budget Constraints and Indifference Curves for Single Person with $H_0 = \$435,000$ - Baseline Model



Notes: Results are from the illustrative two-period model of consumption and saving, as described in the text. Period 0 Expenditure is defined as consumption plus the income foregone through leisure. The indifference curves correspond to the highest attainable utility in the current system and a hypothetical benefit system with no CSHC, respectively for the given value of H_0 . H_0 is the total resources available at $t=0$, equal to the maximum potential earnings if the consumer was to spend all available time (at $t=0$) in work. The difference between the two levels of expenditure (labelled) is the effect of the CSHC on saving at the given level of H_0 .

Figure 5 - Effect of CSHC and Related Benefits on Saving by Period 0 Resources for Singles - Baseline Model



Notes: Results are from the illustrative two-period model of consumption and saving, as described in the text. H_0 is the total resources available at $t=0$, equal to the maximum potential earnings if the consumer was to spend all available time (at $t=0$) in work.

Table 1 - Simulated Effects on Saving – Summary

Singles						Couples					
Effect on saving (\$'000s)						Effect on saving (\$'000s)					
Resources \$'000s (H_0)	base- line	$\rho=1$ (log)	$\rho=5$	$\varepsilon=0.9$	$\varepsilon=0.5$	Resources \$'000s (H_0)	base- line	$\rho=1$ (log)	$\rho=5$	$\varepsilon=0.9$	$\varepsilon=0.5$
300	0	0	0	0	0	400	0	0	0	0	0
310	0	18.2	0	0	0	420	0	0	0	0	0
320	0	17.6	0	0	0	440	0	0	0	0	0
330	0	-2.6	0	0	0	460	0	0	0	0	0
340	0	-3.8	0	0	0	480	0	25.0	0	0	0
350	0	-5.0	0	0	0	500	0	-4.8	0	0	0
360	0	-6.2	0	0	0	520	0	-7.4	0	0	0
370	0	-7.4	0	0	0	540	0	-10.2	0	0	0
380	0	-8.6	0	0	0	560	0	-12.6	0	0	0
390	0	-9.8	0	0	0	580	0	-15.2	0	0	0
400	0	0	0	14.2	0	600	0	0	0	0	0
410	0	0	0	14.0	0	620	0	0	0	0	16.6
420	12.6	0	0	-1.0	0	640	20.0	0	0	21.4	16.2
430	12.4	0	0	-1.6	0	660	19.4	0	0	22.4	15.8
440	-0.9	0	0	-2.8	10.6	680	-1.8	0	0	-2.6	-1.8
450	-1.0	0	0	-3.8	10.6	700	-3.2	0	0	-4.8	-1.8
460	-1.8	0	0	-5.0	10.4	720	-5.2	0	0	-7.0	-2.6
470	-2.8	0	0	-6.2	-1.0	740	-7.0	0	15.4	-9.4	-4.0
480	-3.6	0	10.0	-7.2	-1.0	760	-9.0	0	15.0	-11.6	-5.6
490	-4.6	0	9.8	-8.4	-1.0	780	-10.8	0	-1.6	-13.8	-7.0
500	-5.4	0	9.6	0	-1.0	800	-12.8	0	-1.6	0	-8.4
510	-6.4	0	-1.0	0	-1.2	820	-14.6	0	-1.6	0	-9.8
520	-7.2	0	-1.0	0	-1.8	840	0	0	-3.0	0	-11.2
530	-8.2	0	-0.8	0	-2.6	860	0	0	-4.6	0	-12.6
540	0	0	-0.8	0	-3.2	880	0	0	-6.2	0	0
550	0	0	-1.6	0	-3.8	900	0	0	-7.8	0	0
560	0	0	-2.4	0	-4.4	920	0	0	-9.4	0	0
570	0	0	-3.2	0	-5.0	940	0	0	-11.0	0	0
580	0	0	-3.8	0	-5.6	960	0	0	-12.6	0	0
590	0	0	-4.6	0	-6.2	980	0	0	0	0	0
600	0	0	-5.4	0	-6.8	1,000	0	0	0	0	0
610	0	0	-6.2	0	-7.4	1,020	0	0	0	0	0
620	0	0	-6.8	0	0	1,040	0	0	0	0	0
630	0	0	-7.6	0	0	1,060	0	0	0	0	0
640	0	0	0	0	0	1,080	0	0	0	0	0
650	0	0	0	0	0	1,100	0	0	0	0	0

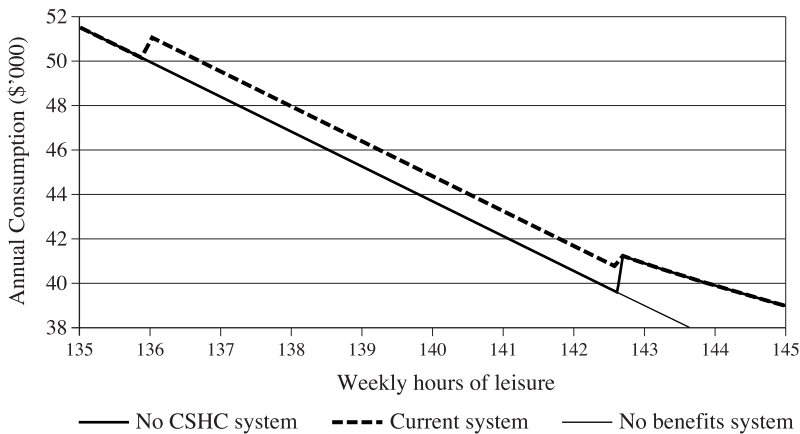
Notes: Results are from the illustrative two-period model of consumption and saving, as described in the text. H_0 is the total resources available at $t=0$, equal to the maximum potential earnings if the consumer was to spend all available time (at $t=0$) in work.

The main features of the results are unchanged when the assumed parameters are altered. Table 1 shows the summarised results for singles for the baseline model and for alterations to the assumed parameters: $\rho = 1$; $\rho = 5$; $\varepsilon = 0.9$; $\varepsilon = 0.5$. Table 1 also shows corresponding results for couples (treating the couple as a single unit that derives utility through the same utility function as described above for singles). It is clear that the main features of the results are similar in all cases, the main difference being in the ranges of H_0 in which the various savings effects occur.

Labour Supply amongst Older People

I briefly consider possible labour supply responses by people of retirement age (those who meet age eligibility rules for retirement benefits). Consider a single period model where utility is derived from consumption and leisure by people of retirement age. Assume that saving in previous periods is exogenous. Figure 6 shows two such budget constraints for a single person with no savings and a wage of \$30 per hour. It is clear that the shapes of these constraints are the same as those in the inter-temporal model above. Assuming that the marginal utility of consumption and leisure are diminishing, this model has similar implications for saving as the original model.

Figure 6 - Budget Constraints for Single Person of Retirement Age with Wage = \$30/hour and No Wealth



5. Further Considerations

The simple models presented above abstract from several issues which are discussed here. None of these issues affect the substantive conclusions of the analysis.

Saving Disincentives of Taxation

Any government expenditure has an opportunity cost. It could be financed by an increase in taxation or a decrease in expenditure on another program. To the extent that this cost is incurred by working age people, their living standards are reduced. This further reduces their incentive to save for retirement, as predicted by a life cycle model (Blundell *et al.*, 2006).

Assets Test

The age pension assets test has been ignored in order to simplify the illustration. In the model, period 0 saving affects period 1 benefits only through the pension income test. In reality, saving may also impact pension eligibility due to the assets test and its taper region. Thus period 1 benefits may cut out at lower levels of period 0 saving than implied by the model. Also, the marginal effect of period 0 saving on period 1 benefits

would be greater than implied in the model when the taper regions of the income and assets tests operate in combination. Consider the ‘no CSHC system’ and ‘current system’ budget constraints depicted in Figure 2. The issues discussed above would have no impact on these constraints at $E_0 < \$385,493$. However, the discontinuities currently at $E_0 = \$385,493$ may occur at a higher level of E_0 . Secondly, the slope of the constraints would be shallower to the right of that discontinuity if the assets and income test tapers are invoked in combination. In any case, the two constraints would always be identical to the right of the discontinuity. Whilst these ideas are not developed formally, it is clear that the main features of the budget constraints are unchanged. Thus the assets test does not change the implications of the analysis.

Value of the PBS Concession

It has been assumed that people know the value of the PBS concession and that this value is constant. Behaviour will reflect each individual’s perceived value of the concession rather than its actual value (see Chan and Stevens, 2008; Thaler, 1994). To relax these assumptions would have no effect on the conclusions. For a given person, a different perceived value of the concession would only shift the budget constraint upward or downward at all points where the person qualifies for the CSHC or age pension. The budget constraints would thus retain their main features, including their discontinuities, regardless of the perceived value of the PBS concession.

6. Fiscal Implications

Implicit in the desire to encourage saving for retirement is a concern for the fiscal sustainability of the public system of retirement benefits. It was shown above that the CSHC may encourage saving for retirement amongst people within a given range of wage rates. However, it does not automatically follow that such an incentive leads to a reduction in government expenditure, even with respect to people who are influenced to increase saving. As demonstrated above, the people who would rationally increase saving in response to the CSHC are those whose incomes would only marginally qualify for a partial rate of the age pension if there was no CSHC. These are people who are close to a corner solution in the absence of the CSHC, as depicted in Figure 2. Although they would qualify for the age pension, they would receive little pension income. They would, however, receive other benefits which are tied to pension eligibility. As discussed in section 3, CSHC holders are also entitled to many of these benefits. Of the benefits that only pensioners receive, most are provided by state governments. Therefore, inducing marginal part pensioners onto the CSHC would only reduce expenditure marginally for the Commonwealth government.¹³ It would also reduce expenditure by state governments.

On the other hand, expenditure on (higher wage) people who would not be age pensioners even in the absence of the CSHC (as discussed above and depicted in Figure 3 and Figure 4) is a new cost to the Commonwealth government. Therefore, even if the CSHC does induce some people to save for retirement, its net effect may be to increase Commonwealth government spending on retirement benefits.

¹³ There may be some fiscal benefit from taxation on the interest earned on the induced saving. But this may be offset by the reduction in saving of higher income groups.

7. Conclusions

An illustrative two-period model has been developed to demonstrate the effect of government benefits for high income retirees on incentives to save for retirement. Whilst such benefits may induce some people to save, they may have the opposite effect on other, more affluent people. It is unclear which effect dominates and so the net effect of the CSHC on saving is an open empirical question, which may warrant further research, as does the effect of recent changes to age pension taper rates. It was shown that the net effect of the CSHC and related benefits may be an increase in Commonwealth government expenditure on affluent older people, accompanied by a decrease in expenditure by state governments on people with slightly lower incomes.

It is stressed that the model is illustrative and would require further development before it could facilitate quantification of the net effect on saving. A model in continuous time would account for the fact that retirement is generally shorter than the working age. Additional considerations include the system of taxation on earnings and superannuation, the age pension assets test, the dynamics of lifecycle wage rates, inheritance and bequests, the government budget constraint, the role of children in optimal household consumption, and household formation and dissolution. (See Sefton *et al.*, 2008 and Creedy and Guest, 2008 for attempts to account for some of these issues in related contexts.) Thus readers are cautioned against attempts to quantify the net effect on saving by simply imposing a distribution for H_0 based on, say, the distribution of wage rates.

References

- Ando, A. and Modigliani, F. (1963), 'The Life Cycle Hypothesis of Saving: Aggregate Implications and Tests', *The American Economic Review*, 53, 55-84.
- Attanasio, O.P. and Rohwedder, S. (2003), 'Pension Wealth and Household Saving: Evidence from Pension Reforms in the United Kingdom', *The American Economic Review*, 93(5), 1499-521.
- Attanasio, O.P. and Brugiavini, A. (2003), 'Social Security and Households' Saving', *Quarterly Journal of Economics*, 118(3), 1075-119.
- Australian Government (2007), Intergenerational Report 2007, Commonwealth of Australia, Canberra.
- Blundell, R., Emmerson, C. and Wakefield, M. (2006), The Importance Of Incentives In Influencing Private Retirement Saving: Known Knowns And Known Unknowns, WP06/09, The Institute for Fiscal Studies.
- Chan, S. and Stevens, A.H. (2008), 'What You Don't Know Can't Help You: Pension Knowledge and Retirement Decision-Making', *The Review of Economics and Statistics*, 90(2), 253-66.
- Costello, P. (1998), Budget Speech 1998-99, Commonwealth of Australia.
- Creedy, J. and Kalb, G. (2005), 'Behavioural Microsimulation Modelling for Tax Policy Analysis in Australia: Experience and Prospects', *Australian Journal of Labour Economics*, 8(1), 73-110.
- Creedy, J. and Guest, R. (2008), Changes in the Taxation of Private Pensions: Macroeconomic and Welfare Effects', *Journal of Policy Modeling*, 30, 693-712.

- Creedy, J., Kalb, G. and Kew, H. (2003), 'Flattening the Effective Marginal Tax Rate Structure in Australia: Policy Simulations Using The Melbourne Institute Tax and Transfer Simulator', *Australian Economic Review*, 36, 156-72.
- Dawkins, J.S. (1993), Appropriation Bill (No. 1) 1993-94, Australian Government House of Representatives.
- Department of Family and Community Services (various years), Annual Report, Australian Government.
- DVA (2008a), Concessions for Pensioner Concession Card Holders New South Wales, DVA Facts SOI01, Australian Government Department of Veterans' Affairs.
- DVA (2008b), Concessions for Pensioner Concession Card Holders Queensland, DVA Facts SOI21, Australian Government Department of Veterans' Affairs.
- DVA (2008c), Concessions for Pensioner Concession Card Holders Victoria, DVA Facts SOI11, Australian Government Department of Veterans' Affairs.
- Feldstein, M. (1974), 'Social Security, Induced Retirement and Aggregate Capital Accumulation', *Journal of Political Economy*, 82(5), 905-26.
- Gregory, R.G., Klug, E., and Thapa, P.J. (2008), 'Cut-offs, Knock-ons and Welfare Taper Changes: An Evaluation of the July 2000 Tax and Welfare Changes for Lone Mothers', *Economic Record*, 84(266), 291-309.
- Macklin, J. (2008), 'Commonwealth Seniors Health Care Card (Question No. 116)', Australian Parliament House of Representatives Official Hansard No. 8, 2008, Thursday, 19 June 2008, p5526.
- Pratt, J.W. (1964), 'Risk Aversion in the Small and in the Large', *Econometrica*, 32(1/2), 122-36.
- Sefton, J., van de Ven, J. and Weale, M. (2008), 'Means Testing Retirement Benefits: Fostering Equity Or Discouraging Savings?', *The Economic Journal*, 118 (April), 556-90.
- Siminski, P. (2009), 'A Welfare Analysis of the Commonwealth Seniors Health Card', *Economic Record*, 85(269), 164-80.
- Standing Committee on Family and Community Affairs (1997), Concessions – Who Benefits?: A report on concession card availability and eligibility for concessions, Australian Parliament House of Representatives.
- Thaler, R.H. (1994), 'Psychology and Savings Policy', *American Economic Review*, 84 (2 Papers and Proceedings of the Hundred and Sixth Annual Meeting of the American Economic Association), 186-92.
- Whiteford, P. and Whitehouse, E. (2006), 'Pension Challenges and Pension Reforms in OECD Countries', *Oxford Review of Economic Policy*, 22(1), 78-94.