**SeLFIES Can Improve Australia’s Retirement Security**

By Robert C. Merton, Ph.D., Nobel Laureate in Economics and Arun S. Muralidhar, Ph.D.[[1]](#endnote-1)\*

**Executive Summary**

The Australian Treasury has issued a report seeking comment on ways to improve retirement income security in Australia (“Retirement Income Covenant Position Paper**:** Stage one of the Retirement Income Framework,” May 2018). We recommend a simple innovation by the Australian Treasury that can achieve the three principles of an effective Comprehensive Income Product for Retirement (CIPR). Australia’s Treasury could issue a new, low-cost, liquid and safe ultra-long bond instrument we call SeLFIES (Standard-of-Living indexed, Forward-starting, Income-only Securities). SeLFIES start paying investors upon retirement and pay real coupons only, indexed to aggregate per capita consumption—for a period equal to the average life expectancy at retirement. It is easily shown that SeLFIES ensure constant income (in terms of standard-of-living), access of capital and longevity risk-management. These bonds are a good deal for the Treasury too.

**Background on Australian Treasury Report on Retirement Income Covenant**

The Treasury report notes, “The retirement phase of the superannuation system is currently under-developed and needs to be better aligned with the overall objective of the superannuation system of providing income in retirement to substitute or supplement the Age Pension. The Government is addressing this through the development of a retirement income framework. The framework is intended to:

• enable individuals to increase their standard of living in retirement through increased availability and take-up of products that more efficiently manage longevity risk, and in doing so increase the efficiency of the superannuation system and better align the system with its objective; and

• enable trustees to provide individuals with an easier transition into retirement by offering retirement income products that balance competing objectives of high income, flexibility and risk management.”

The Australian Treasury can have an immediate impact on the retirement challenge, create a liquid in-plan retirement income option, and raise funding for infrastructure by issuing a new type of long-term bond, one we call SeLFIES—Standard of Living indexed, Forward-starting, Income-only Securities.[[2]](#footnote-1) SeLFIES address many of the challenges raised in the Treasury report and are also advantageous to the Australian Treasury. SeLFIES address the following key Convenant Principles: Retirement Income Strategy; Engagement; and Comprehensive Income Product for Retirement (CIPR) and Offering a Flagship CIPR. As noted in the report, “A CIPR is a retirement income product which is designed to provide: efficient, broadly constant income, in expectation; longevity risk management (income for life); and some access to capital.”

**The Challenges for the Australian Superannuation Industry – Financial Illiteracy and Absence of Effective CIPR**

Individuals seek a guaranteed, real income, ideally from retirement through death, and to lead a lifestyle comparable to pre-retirement. Chart 1 visualizes the retirement saving goal – a 25-year-old Australian woman desires basic/comfortable A$45,000/year guaranteed super income[[3]](#footnote-2), starting at age 65, for 22 years (assuming a life expectancy of 22 years in retirement based on the most recent life expectancy data – men are closer to 20 years[[4]](#footnote-3)). This guaranteed income (or goal) secures the retiree’s pre-retirement standard-of-living in retirement. This retirement income flow goal pattern is very different from the flow patterns for other goals such as a house purchase, or travel experience.

**Chart 1: Potential Retirement Cash Flows Desired by a 25-Year-Old Australian Citizen**

A major challenge to achieving this goal is the individual’s lack of financial knowledge to determine how much to save, what assets to invest in, and how best to decumulate. Few adults can answer basic questions about compound interest, effect of inflation, or the benefit of diversification. They are overwhelmed by the information provided in their portfolio reports (often on level of wealth accumulated and on rates of return on various investment choices), and the absence of a robust and uniform method to calculate income replacement rates.

Furthermore, with the exception of deferred annuities (from insurance companies), no other asset offers this specific cash flow profile. Deferred annuities are however complex, illiquid, inflexible in providing survivor benefits, and often costly and not common place in Australia. Investing in existing assets is risky relative to the retirement objective, because these assets fail to provide a simple or low-cost cash-flow hedge against desired retirement income.[[5]](#footnote-4) Even a portfolio of traditional, “safe” government securities, unless heavily financially engineered—at some cost—would be risky because of the cash flow, and potential maturity, mismatch between traditional bonds and the desired retirement income stream. Other saving (bank deposits) that provide wealth protection have low yields and very volatile income patterns - unsuitable for retirees. The absence of either effective income-hedging instruments for institutions or simple methods to allow financially unsophisticated individuals to achieve their goals is a major challenge for Australia.

Currently, Australian Treasury Bonds (TBs) are of the traditional payout form of interest-only coupons and principal repayment at maturity. Individuals who buy A$45,000 face value of the 30-year TB today receive semi-annual coupon payments (e.g., 3% of principal annually, A$1,350) starting immediately, with the principal amount (A$45,000) repaid along with the last coupon in year 30 (see Chart 2). The Australian government also offers Inflation-linked TBs (or TIBs). These bonds, which may appear to be safe instruments from a wealth-protection perspective, are actually very risky for income received when compared to the desired payout goal plotted in Chart 1. Individuals receive coupons before they need them (while they work and have income), and thus, must reinvest them at future uncertain interest rates. The principal is repaid in lumpsum 10 years before these 25-year-olds retire, leading to cash flow mismatches and re-investment risk. Even complex financial engineering cannot address this challenge and are likely to be risky and costly. Even if these payments were adjusted for inflation, they would not be sufficient—for savings invested long before retirement, standard-of-living risk is really significant. The amount needed to maintain one’s evolving life style while working, is likely to increase over this long horizon, potentially leaving retirees with inadequate savings to cover that higher life style.

**Chart 2: Cashflows from a Traditional Nominal 30 Year TB (with a 3% Annual Coupon)**

**SeLFIES as a Financial Instrument that Helps Australia Create CIPRs**

SeLFIES address many of these issues. Governments could issue a new, low-cost, liquid and safe ultra-long bond instrument. SeLFIES start paying investors upon retirement and pay real coupons only—say, $5—indexed to aggregate per capita consumption—for a period equal to the average life expectancy at retirement, e.g., another 22 years. Instead of current bonds that index solely to inflation, SeLFIES cover both the risk of inflation and standard-of-living improvements.

SeLFIES are designed to pay people *when* they need it and *how* they need it, and greatly simplify retirement investing. A 55-year-old today would buy the 2028 bond, which would start paying coupons when he turns 65, in 2028, and keep paying for 22 years, through 2050.

In this way, even the most financially illiterate individual can be self-reliant with respect to retirement planning. For example, if investors want to guarantee A$45,000 annually, risk-free for 22 years in retirement to maintain their current standard-of-living, they would need to buy 9,000 SeLFIES—i.e., $45,000 divided by $5—over their working life. The complex decisions of how much to save, how to invest, and how to draw down are simply folded into an easy calculation of how many bonds to buy. This achieves the first principle of an effective CIPR: broadly constant income.

Besides being simple, liquid, easily traded at very low cost and with low credit risk, SeLFIES can be bequeathed to heirs. SeLFIES would qualify as a CIPR as they offer total clarity on retirement income that will be earned and hence super statements will be much clearer as they can tell citizens how much retirement income is guaranteed and how many additional bonds need to be purchased to achieve the target goal. Further, since these are liquid TBs/TIBs, individuals have access to capital and can easily change their target retirement income level or even target retirement date with minimal effort. This ensures that SeLFIES achieve the third principle of an effective CIPR: access to capital.

SeLFIES do not address all issues, including longevity, but go a long way toward improving retirement income security. There is another innovation that would create bonds to hedge longevity risk - which we call LIVE Bonds (Longevity-Indexed Variable Expiration bonds) – but for the interest of brevity we do not discuss it here (and happy to discuss it in more length if there is interest). SeLFIES, by covering the average life expectancy, ensure that poorer individuals who, on average, tend to have lower than average life expectancy are covered for longevity risk. In effect, the shorter-lived poorer segments of society are not subsidizing the richer, longer lived segments of society. The richer, longer lived participants can purchase deferred annuities today – which are going to be cheaper and easily created by vendors because SeLFIES improve their asset-liability management and thereby potentially improve the willingness of vendors/insurance companies to offer these deferred annuities. This ensures that SeLFIES can go a long way to achieving the second principle of CIPRs – longevity risk management.

Moreover, innovative Australian insurance companies and superfunds could also purchase such bonds to better hedge their retail retirement income products – thereby mass-marketing this cash flow profile.

**Using SeLFIES to Create Flagship CIPRs**

In separate research, we have shown how SeLFIES can be combined with other risky assets to create products that can ensure guaranteed retirement income (i.e., the amount invested in SeLFIES) and attempt to raise returns/lower contributions.[[6]](#footnote-5)[[7]](#footnote-6) Innovative investment operations can be used to dynamically hedge and target a retirement income that a participant might have. Further, safe harbor can be provided to those Flagship CIPRs that achieve the client’s target retirement income, thereby ensuring that safe harbor is based on outcome as opposed to investment process.[[8]](#footnote-7)

**Summary**

These securities are a good deal for governments, too. In fact, governments are the biggest beneficiaries. SeLFIES not only improve retirement outcomes for all defined contribution (DC) plans, but also have spill-over benefits for governments. First, cash flows from SeLFIES reflect synergistic cash flows for infrastructure spending: namely, large cash flows upfront for capital expenditure, followed by delayed, inflation-indexed revenues, once projects are online. Second, SeLFIES give governments a natural hedge of revenues against the bonds, through value-added taxes (VATs). Australia has a goods and services tax (GST), which is a value added tax of 10% on most goods and services sales, with some exemptions (such as for certain food, healthcare and housing items) and concessions (including qualifying long term accommodation which is taxed at an effective rate of 5.5%).[[9]](#footnote-8)

# The looming retirement crisis needs to be addressed by timely innovation, because the longer that governments wait, the higher the cost to the taxpayer. SeLFIES improve retirement security, fund infrastructure and can be created immediately, at low cost! They also allow the Australian government to ensure that superannuation trustees can achieve their retirement income convenant and all the goals of an effective and Flagship CIPR.

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2. For the background on these instruments, see the following articles/papers: <https://www.ipe.com/analysis/analysis/research-an-inventive-retirement-solution/10013503.article>; <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2880002>; <https://www.ipe.com/reports/special-reports/ipe-at-20/ipe-at-20-time-for-retirement-selfies/10018263.article>; <https://www.plansponsor.com/selfies-can-improve-nations-retirement-security/>; [↑](#footnote-ref-1)
3. https://www.superguide.com.au/boost-your-superannuation/comfortable-retirement-how-much-super-need#2 [↑](#footnote-ref-2)
4. https://www.superguide.com.au/boost-your-superannuation/latest-data-find-out-how-long-you-can-expect-to-live [↑](#footnote-ref-3)
5. This is shown most clearly in the following paper: <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3148747>. [↑](#footnote-ref-4)
6. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3148747>

   http://www.prweb.com/releases/2018/05/prweb15464562.htm [↑](#footnote-ref-5)
7. See also Merton, R.C. 2012. Funding Retirement: Next Generation Design. JASSA *Finsia Journal of Applied Finance* vol. 2012, no. 4 (winter): 6–11. [↑](#footnote-ref-6)
8. This is discussed in more detail in Muralidhar, A. 2018. Fifty States of Gray: An Innovative Solution to the Looming DC Retirement Crisis. *Investments and Wealth Institute,* Denver, CO. [↑](#footnote-ref-7)
9. https://en.wikipedia.org/wiki/Goods\_and\_services\_tax\_(Australia) [↑](#footnote-ref-8)