



Research: An inventive retirement solution

June 2016 (Magazine)

*Governments should issue bonds that encompass both the accumulation and decumulation phases for defined contribution participants, argues **Arun Muralidhar***

There is a global crisis among defined benefit (DB) pension plans because worsening demographics have undermined pay-as-you-go social security systems¹, and, more recently, central bank monetary policies have unintentionally worsened the funded status of employer-sponsored plans^{2,3}. Since governments and employers do not want additional pension liabilities, retirement risk is being turned over to individuals by placing them in defined contribution (DC) plans. Sadly, these individuals are largely financially illiterate and are incapable both of making complex decisions to ensure retirement security and bearing this risk.

Some reformers have tried to address the failings of DC plans by creating collective DC (CDC) arrangements. But these pension models are problematic because they engender intra- and inter-generational inequities – favouring long-lived participants over shorter-lived participants, and current generations over future generations. They also force all participants into the same portfolio and replacement rate and eliminate choice. Further, participant surveys, especially in the US, suggest that employees want pension plans to be voluntary, want the freedom to opt-out and to have liquidity (temporarily borrow for current consumption) in relation to their assets. These features would undermine CDC plans.

The challenges of DC plans are solved to some degree by a simple financial innovation. Governments need to issue a new bond – an inflation-adjusted, coupon-only bond that starts paying investors on their date of retirement and for a fixed period of time. The need for our bond is simple: the riskless retirement asset in a DC plan is an inflation-indexed, coupon-only bond that defers payment until retirement and pays till death, and it does not exist today.

All attempts to recreate this profile through traditional stocks and bonds, or purchase such a profile through annuities, are sub-optimal because existing assets and products were designed for the issuer and not for the investor. These new bonds are a good deal for governments because they not only ensure retirement security, but can also be used to fund infrastructure projects because of their deferred cash flow profile, which is synergistic with infrastructure.

The problem

We must save during our working years to finance our retirement, but there is a big time gap between the savings and decumulation periods (as much as 40 years), with a lot of uncertainty embedded in key parameters. Investors have to answer the following complex questions: how much to work; how much to consume or save; which portfolio to invest in; how much to invest in each asset; how to rebalance over time; and how rapidly to decumulate. This is an insurmountable task for the average (financially illiterate) individual and they desperately need help if they want to retire with a decent standard of living. Allowing them to retire poor is not an option for governments as these retirees will become wards of the state, so governments have to take a paternalistic approach to this problem and try to prevent bad outcomes.

A well-structured, DC retirement plan should provide participants with a targeted, inflation-indexed, guaranteed income stream, ideally to death. Sadly, the practical application of the current theoretical models of retirement planning with current instruments leaves a lot to be desired. First, the track record of forecasting expected returns, correlations and volatilities of assets for current approaches is poor. Second, current assets and investment products do not allow for a low risk portfolio relative to the desired retirement income stream (ie, they lead to a cash flow mismatch and a lot of reinvestment risk). Finally, as one nears retirement, the individual is expected to purchase an annuity. These instruments are opaque, complex, illiquid, and often expensive, leaving retirement plan participants with the credit risk that the entity providing the annuity will exist till their death. For all these reasons, we would call the current approach the 'risky approach to retirement investing'.

The solution

A much simpler approach is to find a way to cash-flow match the desired retirement income stream. If done well, this would be the 'risk free approach to retirement investing'. An effective solution is to create a forward-starting government-issued bond called a 'bond for financial security' or BFFS, a single instrument that encompasses both the accumulation and decumulation phases of a DC participant.

The maturity of the bond is set equal to the economy-wide average life expectancy. The coupon is set on a notional par amount (say €100 per bond) and to greatly simplify the problem, the coupon is set in 5% increments. In other words, if the investor buys a 2050 5% BFFS today, it will pay nothing before 2050, and then €5 real per year starting in 2050 for twenty years. Therefore, if an individual wants €30,000 real in retirement starting in 2050 (for 20 years), they just need to make sure that they buy 6,000 of these bonds during their working lives. No complex optimisation or error-prone forecasting procedures or illiquid, costly instruments and products are needed.

The BFFS can be issued for every retirement year of the population. While BFFS do not offer a complete hedge against longevity, they favour the poor (who live shorter lives). The risk of outliving average life expectancy is easily overcome by staggering the bond purchase or purchasing deferred annuities. Similarly, early death allows heirs to inherit the BFFS.

Why it works

By matching the desired retirement cash flow pattern, BFFS distil retirement planning into a single decision – how much to save. They eliminate intermediary fees that cut into the counterparty retirement income pot. While guaranteeing (or smoothing as in CDC) a return on contributions is the simple way to make DC plans mimic their DB counterparts, it is much more critical and simpler to focus on guaranteeing retirement cash flows. BFFS do so by bridging the time gap between saving and retirement, and are ideally suited to unsophisticated participants as the only safe, low-cost, simple, liquid, default savings option for DC plans. Further, unlike CDCs, each individual can customise their level of retirement income and the risk they seek to incur. Those seeking a higher retirement income or greater risk without saving more can invest a portion of their savings in risky assets.

BFFS also eliminate credit-risk issues, as long as the government does not default on them. The liquidity, unlike annuities, allows investors to change their retirement date easily (by selling the 2050 bond and buying the 2055 bond, for instance) or even the nature of their retirement payout. The UK's NEST has discovered that some retirees want lump-sum payouts at retirement. This is easily achieved with BFFS; not so with annuities. The best part of having BFFS is that the annual statement provides total clarity on the participant's guaranteed real income at retirement, based on current savings and investments. Current defined contribution statements do not provide such clarity.

At today's rates, these bonds (and all other assets) will offer a low real return, but pension reform requires a long-term view. In setting a target retirement income, a 25-year-old today will dollar-cost average rates over a 40-year horizon and lock-in a guaranteed, inflation-indexed income stream for the subsequent 20 or 30 years.

In short, BFFS can greatly facilitate the development of effective retirement products and ensure retirement security. Without this innovation, DC investing is one big, risky gamble.

Footnotes:

1 Even though some like Jean Frijns argue for extending these pay-as-you-go systems, a careful examination shows why these systems are easily undermined by small changes in key parameters. See *Rethinking Pension Reform*, by Prof Franco Modigliani and Arun Muralidhar, Cambridge University Press (2004)

2 Preesman, L. 2015. Dutch Pension Funds' Coverage Ratios Plummet in January. *Investments & Pensions Europe*, 3 February 2015

3 Merton, R.C. and Muralidhar, A., 2015. *Monetary Policy: It Is All Relative*. *Pensions & Investments*, 16 April 2015, Crane Publishing, Chicago, IL

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