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Retirement, Advice and Investment Division
The Treasury
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Retirement Phase of Superannuation

Ladies and Gentlemen:

This submission is in response to the Consultation paper issued by The Australian Government Department of the Treasury titled *Retirement Phase of Superannuation* on 4 December 2023. The paper notes that the superannuation industry has largely focused on the goals of the accumulation phase, with relatively little attention on addressing the goals of the decumulation phase: to maximize retirement income, manage risks to the sustainability and stability of that income, and maintain flexible access to capital. It emphasizes the importance of these policy goals and seeks feedback on ways to achieve them. One of the paper's suggestions involves shared longevity risk pooling. It is this area in which we focus our response.

Longevity risk-sharing pools offer substantial benefits to the superannuation system, including greater economic efficiency for the system as a whole and substantially higher income for retirees. Moreover, risk sharing would facilitate greater adoption of lifetime income through features that address many of the factors underlying the so-called annuity puzzle. Our comments discuss how a solution could be implemented most efficiently, allowing for standardization where it makes sense and maintaining the ability of superannuation providers to freely innovate and differentiate.



Sincerely,

Richard K. Fullmer
CEO, Nuovalo Ltd.

About Nuovalo. Nuovalo is a global public benefit corporation specializing exclusively in sustainable lifetime income solutions through pooled longevity risk sharing arrangements. We offer actuarial consulting and technology services to support a wide variety of shared risk-pooling designs. Our clients include pension plans, financial services companies, and government agencies. Our governmental clients include Departments of Finance/Treasury, central banks, and similar agencies involved with retirement plan regulation and financing.

Longevity Risk Pooling

Nonguaranteed longevity risk pooling goes by many names – pooled annuity funds, group self-annuitization, modern tontines, variable payment life annuities, dynamic pension plans, collective defined contribution plans, etc. In this response, we use the generic name *longevity risk-sharing pools*. Regardless of name, the basic underlying principle is the same – participants pool (some portion of) their retirement assets and share their longevity risk. Generally, investments in a risk-sharing pool are irrevocable to reinforce the pooling mechanism. In this way, risk-sharing pools are similar to insured annuities. The primary difference is that annuities are guaranteed, while risk-sharing pools are not.

A risk-sharing pool is a financial arrangement in which members agree to receive payouts while living and to share the proceeds of their accounts upon death. Specifically, a member’s account is forfeited upon death, and the forfeiture proceeds are apportioned and redistributed to the surviving members. The redistributed proceeds received by surviving members are referred to as longevity credits.¹ Surviving members also receive periodic payouts, typically monthly or fortnightly, that depend on investment performance and the mortality experience of the membership pool. The pooling mechanism, combined with a strict constraint on payouts that forces the pool to remain fully funded, provides the assurance of lifetime income for all members. We envision Australian risk-sharing pools as being perpetually open-ended and able to accept new members at any time.

Introducing a risk-sharing pool into the defined contribution system offers a way to provide workers with a form of lifetime pension, albeit one that is variable rather than fixed. Unlike defined benefit pensions, risk-sharing pools incur no liabilities and, by definition, are fully funded. Unlike annuities, they involve no third-party transfer of assets to an insurer, nor do they require risk reserves.

By dispensing with guarantees, risk-sharing pools involve substantially lower costs than annuities and have more freedom to invest in assets such as equities that earn a risk premium, if desired. Our studies in various countries reveal that risk-sharing pools can deliver 15–30% greater income than comparable annuities.² The degree of payout variability depends primarily on the volatility of the underlying investment returns and secondarily on the mortality experience of the pool’s members. Thus, it can be managed through investment strategy and by encouraging a large pool of members. A few hundred members are generally considered minimally sufficient, but bigger is better since longevity risk diversification is a function of the law of large numbers.

Addressing the “Annuity Puzzle”

For those who have a strong desire for a fixed floor of income and are willing to pay the cost to guarantee it, annuities serve a valuable purpose. But this seems to represent a very small share of Australia’s

¹ Our use of the term “longevity credits” rather than “mortality credits” is purposeful. Mortality credits are theoretical values, whereas longevity credits are *actual* dollar amounts granted to (and owned by) the investor.

² The cost differential depends on product design and environmental factors including the competitiveness of the local annuity market, fee assumptions, and the return assumptions of the underlying investment portfolio.

population, given that only 3.5 per cent of assets held in pension accounts are in annuities.³ Economists refer to the low rate of annuitisation despite the high risk of outliving one's savings as the “annuity puzzle”.

Risk-sharing pools are uniquely well positioned to alleviate this puzzle by offering:

- materially higher payouts, on average,
- lower costs and greater transparency,
- greater freedom to invest in assets that earn a risk premium, and
- the elimination of guarantor counterparty risk.

From a policy perspective, another way to address the annuity puzzle would be to allow superannuation providers to default members (at least partially) into a lifetime income option when they reach the age of retirement. This idea has the support of the OECD, which has stated:

“DC pension plans should provide some level of lifetime income as a default for the payout phase, unless other pension arrangements already provide for sufficient lifetime pension payments. Lifetime income can be provided by annuities with guaranteed payments or by non-guaranteed arrangements where longevity risk is pooled among participants. The choice of the type of arrangement will depend on the desired balance between the cost of guarantees and the stability of retirement income. Flexibility could be provided by allowing for partial, deferred or delayed lifetime income combined with programmed withdrawals. Full lump-sums should be discouraged in general, except for low account balances or extreme circumstances.”⁴

If Australian policymakers should choose to allow such defaults, there is a case to be made for defaulting members into a lower-cost nonguaranteed option rather than a higher-cost guaranteed option. A well-designed default scheme that auto-pilots member investment allocations and generates reliable lifetime income with low administrative costs could be very beneficial to society. Naturally, members could maintain the option to opt-out of the default if they wish.

Fairness

It is not enough for risk-sharing pools to be low cost. They should also be fair, exhibiting no biases that favour one cohort over others. Fairness, both actual and perceived, is critical to ensuring public trust.

A “fair” risk pool is one in which the expected value of the longevity credits that members receive while living is equal to the expected value that they eventually forfeit at death.⁵ Thus, each member gets a “fair deal” in the probabilistic sense as determined by a set of underlying mortality assumptions.

³ APRA Annual Superannuation Bulletin June 2022, table 8.

⁴ OECD Legal Instrument No. 0467 – *Recommendation of the Council for the Good Design of Defined Contribution Pension Plans*. Available at: <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0467>

⁵ This definition is referred to in the literature as “actuarial fairness.” Policymakers may wish to deviate from actuarial fairness for various reasons – for example, a requirement for men and women to receive the same pension payout rate even though they have different life expectancies. Such policies are typically easily accommodated.

Designed properly, risk-sharing pools can be fair to all members at all times even when:

- they are open-ended,
- the membership is heterogeneous,
- members are allowed to make their own investment decisions, and
- members are allowed to elect their own payout options (single or joint, immediate or deferred, flat or escalating trajectory, etc.).⁶

Thus, there is no requirement for a fair risk-sharing pool to have only a single investment portfolio. Rather, they can span *multiple* investment portfolios and even multiple providers.

Potential Pathways to Implementation

At a high level, risk-sharing pools can be implemented in two ways. One way is by allowing providers to create and manage their own risk pools. Another way is by allowing risk pools to span multiple providers. These pathways are not mutually exclusive – regulators could allow either or both.

Single Provider Pools

It is possible that each superannuation provider could develop its own set of risk pooled products (e.g., as the Australian Retirement Trust has done). The benefits of this would be substantial. Providers would be free to innovate as they see fit within the set of regulations set forth by policymakers. Regulatory policymakers would need to “thread the needle” between standardizing the rules and granting providers the freedom to decide how their pools would work. Our work on this subject in other countries demonstrates the need for regulators to understand the trade-offs before making this decision.

There are drawbacks to this approach as well. Creating pools at the provider level would lead to smaller pool sizes, reduced diversification, higher overall administration costs, potential barriers to entry, portability issues, and the potential for adverse selection. These issues are discussed further below, where we present a possible remedy to them.

Multi-Provider Pools

Managing a smaller number of larger pools is more efficient than managing a larger number of smaller pools. There is no technical reason that longevity risk-sharing pools cannot span multiple providers. Again, regulators would be instrumental in setting the boundaries of operation. Providers could either develop joint ventures with each other to develop and maintain the pool infrastructure or outsource this to a third-party risk pool administrator.

⁶ Citations to peer-reviewed published literature that proves these points is available upon request. Fairness under heterogeneous membership naturally assumes that any material differences in cohort longevity are captured in a pool’s mortality tables.

A National Pool

Taking the idea that larger pools are more efficient to its logical conclusion, efficiency can be maximized by using a single risk pool for the entire country. This idea was suggested in an example that appears in the appendix of the Consulting paper. This could be accomplished by using a central “clearinghouse” that administers the longevity risk exposures of participants across multiple providers.

Australia could maximize the value of risk pooling by introducing a *national* risk-sharing pool within its superannuation system. Under such a system, superannuation providers would still be able to offer their own lifetime income products that have their own unique features, and they would continue to manage their members’ assets. The only commonality is that they would share the same longevity risk pool. The payouts from these products would vary depending on A) that product’s own investment experience and B) the common mortality experience of the national pool. There are significant benefits to this approach...

Greater risk diversification. One large pool would offer better diversification than any smaller pool. On a national scale, the pool would be very large indeed, offering maximum diversification.

Economies of scale. One large pool would be less expensive to manage than many smaller pools.

Distinguishes between investment risk and longevity risk. A benefit of individual accounts as used in the Australian superannuation system is that members can share longevity risk without sacrificing the freedom to invest as they choose. In this way, members can receive personalized investment guidance. Moreover, public policy challenges such as intergenerational wealth transfers can be avoided.⁷

Removes barriers to entry. While large providers may have sufficient resources to hire the actuarial and other staff needed to manage their own risk-sharing pools, smaller ones may not. A nationalized risk pool would level the playing field and allow smaller providers to compete in the lifetime income market.

Does not stifle competition. Nonguaranteed risk pooling is a passive activity driven by algorithms. Commoditizing of the pooling mechanism is beneficial to minimize costs, yet it need not stifle competition for lifetime income solutions. Superannuation providers would still have ample ability to innovate and differentiate their offerings through their underlying investment products and their member servicing. Moreover, the presence of a national pool does not necessarily prevent providers from creating their own (smaller) risk-sharing pools should they so choose.

Solves the portability problem. Portability is a thorny issue in risk pools. The problem is that members who switch out of a pool can adversely affect those who remain in the pool. Fund mergers may cause similar problems. A common national pool helps to resolve these problems. Members could change providers with virtually no effect on the other members.

⁷ Intergenerational wealth transfers are an artifact of risk-sharing designs that force the sharing of not only longevity risk, but also investment risk. They are controversial in that some generations are unfairly disadvantaged.

Fosters standardization. A national pool fosters the standardization of how longevity credits are computed and allocated. Income would be variable, but *the way that it varies* could be standardized.

Simplifies participant disclosures. By standardizing how longevity credits are handled, disclosures of the risk-sharing mechanism could similarly be standardized.

Flexibility. A national risk pool could support a variety of investment and payout options – single/joint, immediate/deferred, various payout growth rate trajectories, certain types of death benefits, etc.

Mitigates moral hazard. A national pool eliminates the risk that individual superannuation providers might “game the system” by using mortality tables that purposefully underestimate mortality to artificially inflate their payouts in the early years.

Mitigates adverse selection by addressing socioeconomic differences. Adverse selection could be mitigated by assigning mortality factors beyond age and gender. For example, it is well known that income inequality is highly correlated to life expectancy. For this reason, lower earners tend to be more reluctant to annuitize their savings than higher earners. Assuming that mortality rates can reasonably be estimated by income cohort, it would be relatively easy to incorporate income level as a factor within a risk-sharing pool. This could materially reduce adverse selection and make payouts substantially fairer to low earners.

Retirement Income Objectives

The Consulting paper states that a retirement income strategy must help members to achieve and balance three objectives:

Maximize retirement income. By squeezing out costs and pooling assets, risk-sharing pools offer the highest level of sustainable lifetime income.

Manage risks to the sustainability and stability of that income. Providers could offer members the ability to invest in either aggressive or conservative portfolios, or even target-date portfolios with asset allocations that shift over time. Aggressive investments offer higher income that is more variable. Conservative investments offer lower income that is more stable. Moreover, providers could offer programs that combine pooled investments and liquid investments to smooth their members’ retirement income streams (discussed below).

Maintain flexible access to capital. Risk pools do not provide flexible access to capital. The solution is for members to make only a partial allocation of their retirement assets to a risk pool, with the remainder allocated to liquid investments. Financial guidance could help members determine the appropriate allocations. Liquid investments can be used for emergency spending needs, bequest motives, and to shore up income during periods in which the variable payout on a pooled investment is less than desired. Combining income from a risk-sharing pool with periodic withdrawals from liquid investments allows members a simple way to smooth their consumption.

A Comment on Government Guarantees

The “example product” discussed in the Consulting paper suggests that the government could provide a guarantee on mortality pricing, with two main benefits:

Equitability. *“Government can provide more equitable prices so that certain cohorts do not cross-subsidise the longer life expectancies of other groups in the population (for example, lower socio-economic cohorts).”*

We agree with this statement and address it above in our comment about that ability of a national risk pool to offer lifetime income rates that are fair regardless of one’s socio-economic group. That being said, achieving this equitability does not require a government guarantee. It simply requires that the mortality tables used in the pricing and risk-sharing algorithms take socio-economic effects on life expectancy into account.

Guarantee on systemic mortality risk. *“The Government will support a national mortality credit pool from all funds’ complying products – allowing diversification across the population. The Government also guarantees the longevity risk of the products, so if life expectancy is longer than expected (a shortfall of mortality credits) the Government will cover the shortfall.”*

We agree that this type of guarantee could be provided as part of a nationalized longevity risk pool. However, the cost of such a guarantee would be significant and would have to be paid for from somewhere. There is a reason that risk-sharing pools are less expensive than annuities – long-term guarantees are expensive. Additionally, the benefit to retirees would likely be marginal. Recall that the greatest benefit of risk pooling (by far!) lies in the diversification of *idiosyncratic* mortality risk, which a nonguaranteed risk pool can accomplish very effectively at very low cost. The effect on payouts to individual retirees of the *systemic* risk of unexpected increases in longevity for the entire population is small by comparison.⁸ Moreover, because the realization of systemic changes in life expectancy occurs gradually over time, the effect on the payouts of a risk-sharing pool would similarly be gradual. The cost/benefit trade-off of such a guarantee is a matter of opinion, of course, but it bears noting that the cost of this guarantee is high while the benefit seems relatively low.

Conclusion

Adding a risk-sharing pool as an option for retirees is highly beneficial to society. Every dollar spent to reserve against and otherwise service an income guarantee is one dollar that cannot be paid out to retirees. From a public policy perspective, risk-sharing pools are the most efficient means to deliver retirement income because they minimize costs, maximize income to retirees, provide the assurance of lifetime income, and minimize the amount of money left over at death.

⁸ To clarify: Systematic mortality risk is quite large when viewed under the lens of an insurer or a defined-benefit plan that has many thousands of members, yet its effect on the payouts of the individual members in a longevity risk-sharing pool is relatively small.