AUSTRALIA'S
RETIREMENT INCOME REVIEW

SOME STRATEGIC REALITIES

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RISK RESEARCH INTERNATIONAL

SYNOPSIS

The subject of this submission is the trade-offs and functioning within the current Australian retirement system of its second pillar of compulsory superannuation.

The evidence shows that the current system *reduces the total retirement income* of low to middle income Australians when compared with removing the second pillar and redirecting its tax cost to boosting age pension. This reduced income applies over the next 40 years. Ending the second pillar would also end both their loss of take-home pay and uncertainty in retirement income.

Under the current system most Australians' interests have been sidelined and deprived. Part is due to a dysfunctional second pillar. Trustee and regulatory inability to grasp strategic investment obligations has sad consequences for retirement income and the taxpayer.

If the second pillar is to be retained then its execution begs reform. Web-based technology now exists which enables Australians to take responsibility for their retirement savings, discarding the failed pooled trust interposition. If the second pillar is retained, in any form, Australians must be dignified with the information to participate rationally.

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KEY TRADE-OFFS WITHIN THE CURRENT SYSTEM

Introduction

The retirement income system aims to provide *adequate* income for older Australians. It is now based on three pillars:

Pillar 1: the means tested age pension, providing a frugal living from age 67;

Pillar 2: compulsory savings, soon to take 12% from worker incomes; and

Pillar 3: voluntary savings, including additional super contributions and home ownership.

The age pension now costs $50 billion. The superannuation retirement savings now cost over $40 billion in forgone tax revenue. Combined these total some 20% of the federal budget.

In this first part we quantify the trade-offs and opportunity costs of the second pillar in relation to the first and third pillars, and to total retirement income. We consider the retirement system as it is now in 2020 and how this system could evolve over the next 40 years to 2060.

For this analysis we have interpreted *adequate* income to imply a primary focus on workers earning low to middle incomes. We use the case of the "median Aussie" as our proxy for this group. The full details of our calculations are covered in the Annex.

We have used the ASIC superannuation calculator and its version of "inflation adjusted dollars" - which adjust for rising prices AND rising real incomes - in our balance and income calculations. Using these ASIC dollars simplifies both the analysis and comparison of results over time because key numbers like the median income and the age pension remain constant in these dollars. We have also rounded the numbers to simplify presentation and ease of comparison.

Note: future values in ASIC dollars are less than future values expressed in standard "inflation adjusted dollars" (due to the extra income adjustment) and much less than values expressed in nominal dollars.

Direct Costs of the Second Pillar

The direct personal cost to workers of the second pillar is high: a permanent 10% cut in pay. This cut hits discretionary spending on family and leisure and on home ownership for their entire working life. And for this discretionary spending it hits low income workers hardest.

The cost to the federal budget of the concessional tax on contributions is also high: now $20 billion in foregone revenue. Over 80% of this is from compulsory contributions under the second pillar. The planned increase in compulsory contributions to 12% will increase this cost to $24 billion. We use **$22 billion** for this foregone revenue in the calculation below.

The cost to the budget of the concessional tax on investment earnings is similar: $22 billion in foregone revenue. We mostly do not consider the opportunity cost of this further in our calculations below because of its key role in supporting voluntary self-provision under the third pillar.

These high personal and budget costs for the second pillar have "lost opportunity" costs in relation to the age pension and home ownership.

Opportunity Cost to Total Income During Retirement

We first examine the basic opportunity cost to retirement income of the second pillar in relation to the age pension. To do this we compare the current retirement system to an alternative system which:

- has no compulsory employer contributions and no concessional tax on contributions; *and*
- uses all the resulting $22 billion increase in tax revenue to fund a higher age pension.

Such a change would deliver the following immediate outcomes:

- a permanent 10% increase in take-home pay for most workers; *and*
- a permanent 44% increase in the age pension *(at zero net cost to the budget)*.

That is, under this alternative system the maximum age pension increases from $25,000 to $36,000 for singles and from $37,000 to $53,000 for couples.

In the total income calculations below, we take the singles case and examine how this alternative would affect total retirement income of the median Aussie over the next 40 years. We do four cases:

aged 67 and retiring in 2020;
aged 47 and retiring in 20 years at 2040;
aged 37 and retiring in 30 years at 2050; and
aged 27 and retiring in 40 years at 2060.

And we use the current median super account balances for these four age cases:

$200,000 at age 67;
$100,000 at age 47;
$60,000 at age 37; and
$20,000 at age 27.

In order to calculate *total* retirement income we must first calculate the value of these account balances at retirement. To do this we assume that these balances are invested in the ASIC *balanced* option with 70% in shares. And we base future contributions on the current $60,000 income of the *median Aussie* worker.

Based on the numbers above the ASIC calculator projects the following superannuation *account balances* for the *median Aussie* when retiring at age 67:

TABLE 1: Super Account balances *(ASIC dollars)*

	Current System	***Alternative System***
Retiring now	**$200,000**	**$200,000**
Retiring in 2040	**$245,000**	**$110,000**
Retiring in 2050	**$275,000**	**$65,000**
Retiring in 2060	**$300,000**	**$20,000**

Note: These account balances are in ASIC dollars adjusted for both rising prices AND rising real incomes.
Under the "current system" the ASIC calculator increases the second pillar contributions to 12% during 2021-2025.
Under the "alternative system" compulsory contributions are zero from 2020 but current workers will continue to have legacy account balances until around 2060.

Now we can derive the total retirement income at age 67 for the *median Aussie,* assuming this total consists of the age pension plus income drawn from these accounts:

TABLE 2: Total Retirement Income *(ASIC dollars per annum)*

	Current System	*Alternative System*
Retiring now	**$35,000**	**$45,000**
Retiring in 2040	**$36,000**	**$41,000**
Retiring in 2050	**$37,000**	**$39,000**
Retiring in 2060	**$38,000**	**$37,000**

Note: The maximum age pension is constant over the next 40 years when measured in ASIC dollars.
For singles it is $25,000 under the current system and $36,000 under the alternate system.
We assume that the income drawn from the superannuation account is 5% of the balance.
We apply the income test for the age pension assuming 3% deeming rate for the balance.

Thus, for the *median Aussie* the current system provides both a much lower age pension income AND less total retirement income over coming decades when compared to the alternative system. And the current system costs workers 10% of their pay up to retirement. And half of Australians do worse than this *median Aussie.*

Our simple modelling provides a *prima facie* case for ending the second pillar and the associated tax concession on contributions. The second pillar trades away a certain and much higher age pension for the risky accumulation of uncertain wealth and a lien on personal income over the decades to retirement. And then adds to this investment and longevity risks during retirement. All for the sake of LESS total retirement income according to our modelling.

Note on sustainability:

In the short term the 44% increase in the pension under the alternative system has zero net cost to the federal budget: the $22 billion in extra expenditure is paid for by the $22 billion in extra revenue from ending the second pillar and the associated concessional tax on contributions.

However over the long term the proportion of the population over 65 will increase. Despite this increase, over the next 40 years the alternative system would go from zero net cost now to providing many billions in extra tax revenue. So the alternative system is more sustainable than the current system *(see Annex)*.

Opportunity Cost to Living During Retirement

The previous section focused on the *income* side of an individual's *adequate income*. In this section we focus on the *adequate* side in relation to home ownership, which provides secure housing and a big cut in expenses once the home is free of mortgage. It also can boost retirement income through downsizing or a reverse mortgage. So home ownership has a key role in voluntary retirement savings.

We take the *age range 65-74* as our proxy for *retired households*. Currently for these households:

TABLE 3: Costs of Housing During Retirement

	proportion of households	***median annual costs***
Own home *free of mortgage*	**70%**	**$3,000**
Own home *with a mortgage*	**14%**	**$11,000**
Renter	**16%**	**$13,000**

Note: based on ABS data, see Annex.

So almost one third of retired households now pay rent or a mortgage and incur a median of $9,000 extra in annual housing costs. This extra housing cost is a large proportion of the age pension and so of the income of many retirees. And the trend is for more to enter retirement paying this extra cost: the proportion of "older" over 55 households with mortgage debt has tripled since 1995 from 7% to over 23%.

Clearly *home ownership free of mortgage* is a key factor in determining the adequacy of retirement incomes.

We now examine the opportunity cost to future home ownership of the loss in take-home pay under the second pillar. In this analysis we use ABS data for the *median Aussie household*:

- monthly gross household income is the median $7,600;
- monthly household compulsory contribution is $800; *and*
- monthly household mortgage payment is $1,850 over 30 years.

And assume the end of compulsory contributions with:

- resulting $800 increase in pay is taxed at marginal rate 30%; *and*
- resulting extra $550 in take-home pay is all used to pay the mortgage.

So in this median case the monthly mortgage payment increases from $1,850 to $2,400. This increase would reduce the term of the mortgage from 30 years to 20 years if paid over the full period. And, for renters, this extra take-home pay is 30% of the average mortgage payment and so makes buying a home more affordable.

This simple analysis indicates that ending compulsory superannuation would give homeowners the option of paying off their mortgage in a much shorter time. And would assist renters with starting a mortgage.

Once again our analysis indicates that the opportunity cost of the second pillar is high. We recommend that the Panel include in its fact base estimates of the effect of the second pillar on home ownership during retirement. And of its associated effect on living costs.

SECOND PILLAR

We now focus on the functioning of the second pillar. We also touch on history and past practice, in the belief that this context assists comprehension of today and the way forward.

The impetus for compelling saving by citizens into Australia's retirement system appears to have been political. The apparatus selected emerged as an appendage of industrial relations policy without open research of options, knowledge of risks, existence of adequate skill base or consultation. It would have been be an extraordinary accident for it not to be blemished.

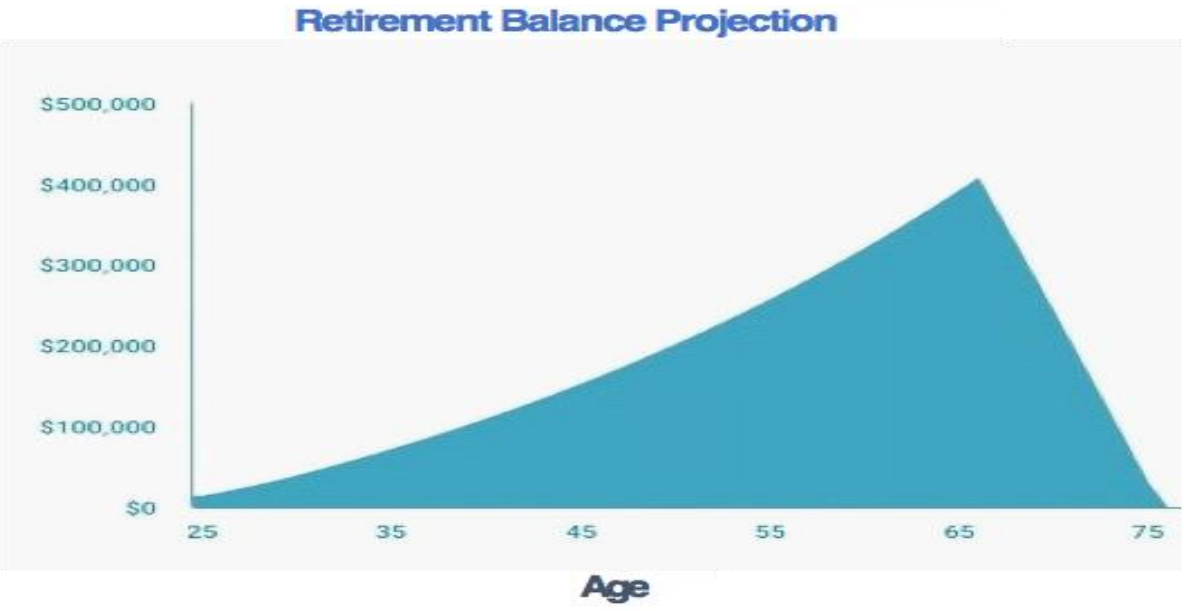
The second pillar installed third-party intercession in the savings process by creating multitudinous trust funds. Citizens affected were given a subservient role with little responsibility or transparency.

In the beginning profit appeared to have no part in discharging the trust obligation. That began to be eroded with the introduction of choices, in the name of equity, competition and efficiency. Pretence at foregoing gain has disappeared finally, now that industry funds declare themselves to be "profit for member" instead of "not for profit". Funds, with force-fed income, generally have adopted the trappings of commercial corporations.

Here we introduce another thematic principle: competency or fitness for purpose. Funds now seem competent enough operationally. Financial flows within super are enormous. The financial logistics - receiving, processing, and distributing money more or less mechanically - seem to work. But it will be shown that conceptually funds have feet of clay, flawed in arguably their most important responsibility - making money through investment strategy.

Conceptual Immaturity of Investing

The second pillar is mostly about investment, which everybody knows is risky. One might expect therefore that chance and probabilistic thinking would be prominent in the super industry's culture. But no. The mentality of the super industry is deterministic. Little more than lip service is paid to the probabilistic essence of the investment challenge facing Australians.



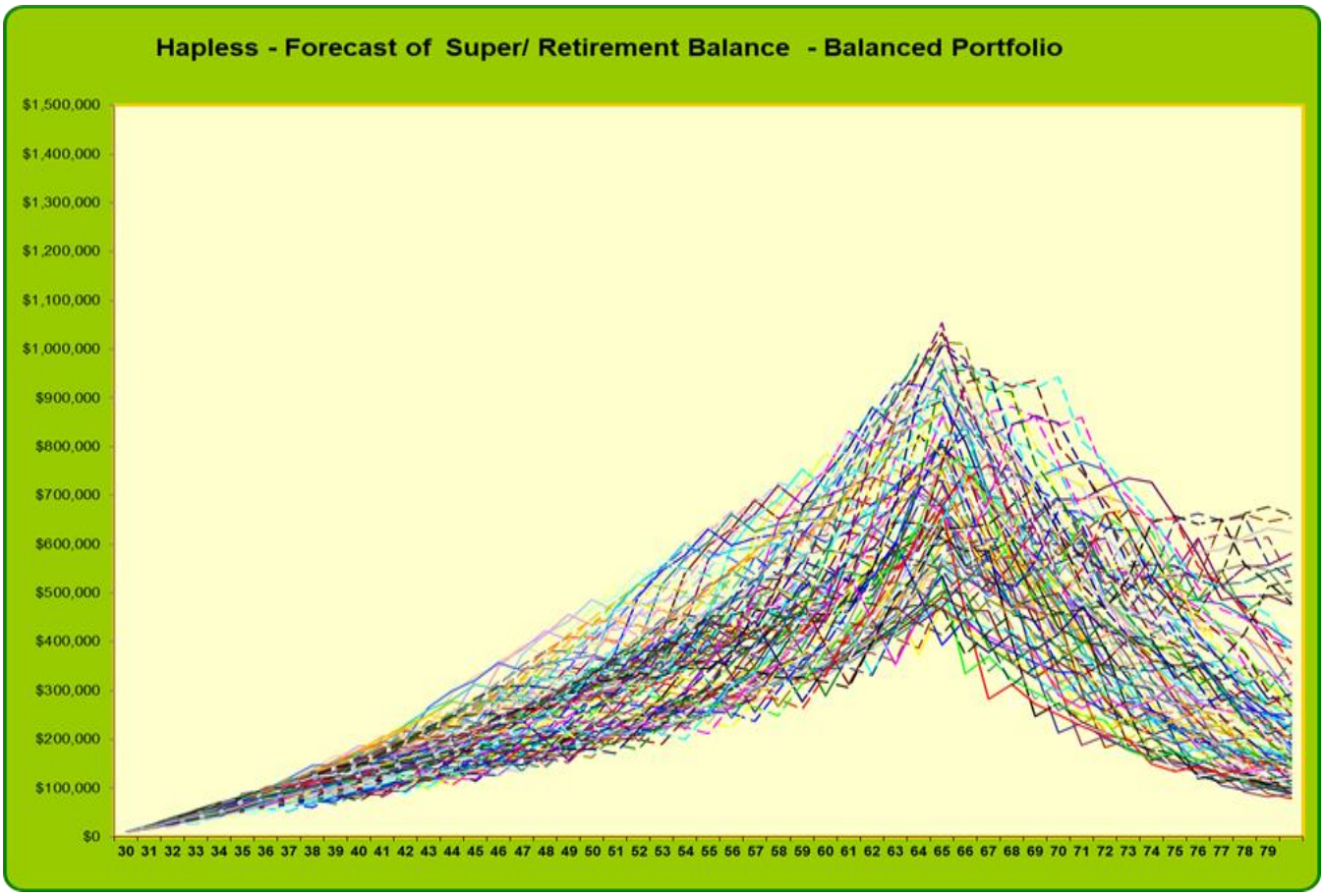
This point is made amply by funds' approach to informing members on the results of their savings ie estimating future account balance. Above is reproduced the form of that information provided to industry

funds members through a "Retirement Balance Projector" available online:
https://www.industrysuper.com/retirement-info/retirement-calculators/retirement-balance-projection/

It is not the detail in this chart which is important but the clean flowing shape. It is meant to convey a steady accumulation of balance followed by a steady fall during drawdown in retirement (along the upper surface of the solid blue shape). A comforting picture of predictability. However, the projection has zillions to one chance of occurring. The only reliable value is the starting account balance. Reliability deteriorates with every year into the future. By the time of retirement and thereafter, the information offered is highly misleading. And it's not just the individual who is in the dark. Trustees know little more than is offered here. Missing is any attempt to convey risk.

The second pillar is just a shell, mere pretence, unless trustees comprehend and specify the risks that they invite on individuals' behalf. Conveying the risks at the heart of the second pillar is as important as proclaiming a dollar outcome.

An example helps. Let's look at the prospects of "**Hapless"** – a thirty-year old just kicked out of home, with his first steady income of $60,000 whose SG by default is directed into a "balanced" portfolio for life:



Our stochastic modelling of this individual's future balance identifies a range of possible pathways, including in drawdown after retirement. It is highly unlikely that the Hapless super journey will fall outside the upper and lower boundaries shown at any time. Each path shown is equally likely, with only a small chance of eventuating (less than 1%). Only by analysing the probability distributions of balance embedded in this data can risk be specified sensibly eg X% chance of balance greater than $Y.

Contrast this picture with the single comforting line offered by the super industry with negligible chance of occurring, offering no idea of variability or of boundaries, much less specification of chance.

Why Investment Strategy Is Critical

Is it credible that a well-funded, experienced industry has missed the point of the second pillar? Let's look at investment strategy, the importance of which is driven by the well accepted principle that strategic asset allocation is the main determinant (92%) of long-term portfolio return (Brinson and Ibbotson, "*Global Investing*", Mc Graw – Hill, 1993).

But first, does the law help? The Superannuation Industry Supervision Act (SIS) gives trustees a flying start on investment strategy. In SIS s52 (6) funds are required to address risk and likelihood when setting investment strategy:

> *(6) The covenants referred to in subsection (1) include the following covenants by each trustee of the entity:*
>
> *(a) to formulate, review regularly and give effect to an investment strategy for the whole of the entity, and for each investment option offered by the trustee in the entity, having regard to:*
>
> *(i)**the risk involved** in making, holding and realising, and the **likely** return from, the investments covered by the strategy, having regard to the **trustee's objectives** in relation to the strategy*

(emphasis added)

If one assumes that "trustee's objectives" are the same as fund members', investment strategy should seek to maximise accumulation of portfolio wealth. A rational trustee would pursue that goal while having regard also to factors peculiar to Australia's design, especially the long investment horizons with no premature benefit withdrawal ie long holding periods generally.

That is, strategy is required simply for continuous accumulation of invested savings to maximise a distant outcome. The primary risk focus should be at that end-result.

The super industry might argue that its practice fulfils the SIS requirement. Many funds set investment strategy in risk and return terms within a framework known as mean-variance optimisation (MVO). And it could argue that specifying portfolio risk is central to that optimisation, being the volatility of average annual returns of portfolio assets (combined with cross-correlations). That is, the super industry's strategic risk measure is the average of single-year portfolio returns.

It follows then that, in setting investment strategy this way, trustees know nothing of the time dimension, as MVO is a single period optimisation. The method is incapable of addressing the objective of accumulating benefits over long holding periods. Surely, it is the risk to end-benefits which is of most of interest to members, not the volatility of annual portfolio returns. So why is the variability of accumulated benefit not the risk measure employed in setting investment strategy? Why is it that trustees and their members have no insight into downside risk of future benefits?

The answer is, in short, that the super industry has adopted concepts designed for commercial money management without reflecting on its own responsibility, relying upon an investment culture more about displaying prowess year-by-year than optimising for members' wealth decades hence. And given the SIS legislations requirement to "review investment strategy regularly" the industry has been re-affirming this misconception for nearly three decades. This conceptual deficiency has disadvantaged Australians systematically, because truly optimal investment strategy varies with investment horizon, bringing financial and risk consequences. As investment horizon lengthens the downside risk for a shares portfolio reduces relative to a "defensive "portfolio.

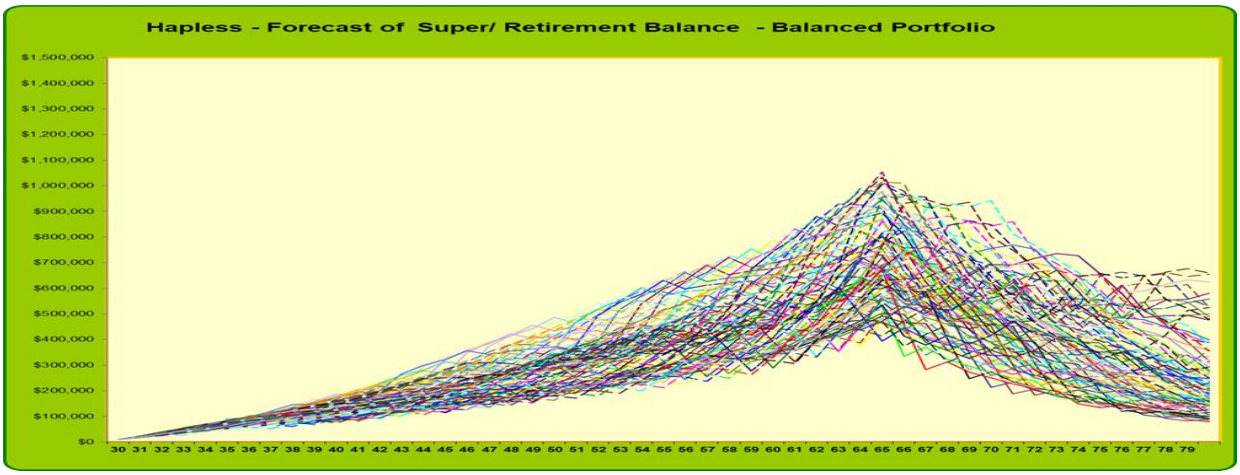
The Strategic Benchmark for Super Investing

The historic behaviour of major asset classes shows that the strategic investment benchmark for super generally should be a portfolio of 100% equity. With the correct measure of risk, the trade-off between risk

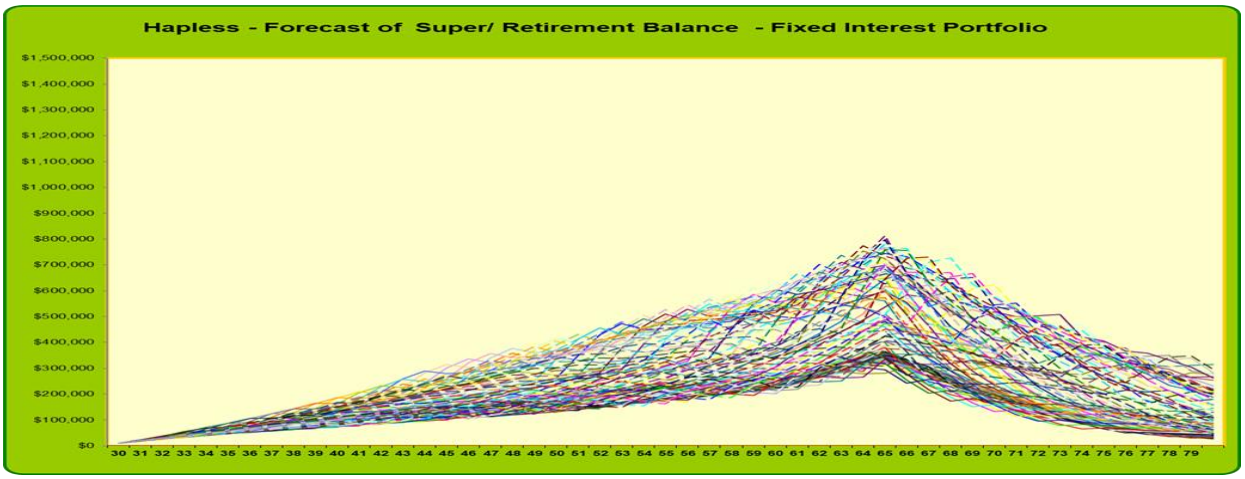
and reward disappears over long holding periods, and so is irrelevant to most Australians in super. A visual comparison of retirement journeys, through the prism of accumulated balance, is shown below for three strategic portfolios –all shares, balanced and fixed interest.

SHARES

BALANCED



FIXED INTEREST



No need for statistical analysis: visual inspection shows that the most relevant risk (ie worst case at the retirement end) is preferable for the all-shares portfolio and least favourable for fixed interest. Against shares, the balanced portfolio sacrifices upside while worse on the downside. The upside for the shares portfolio easily is the most favourable. Hence, a **super portfolio of 100% shares has the unique property of maximising end-balance whilst minimising downside risk.**

It is rudimentary management practice to benchmark performance of a financial system, in order to measure competence against objectives. So, one expects to find a strategic investment benchmark for the super industry, created from analysis of objectives and asset behaviour, with regulatory involvement and accountability mechanisms. Yet no such benchmark exists. Some $3 trillion of Australians' retirement money graces the second pillar without a strategic yardstick for investment competence.

An apparently reinvigorated regulator APRA has just released results of its reflection on fund accountability through a "heatmap" exercise.
https://www.apra.gov.au/sites/default/files/MySuper%20Product%20Heatmap%20-%20Data%20Insights.pdf

But nothing strategic is to be found here, being simply an attempt to benchmark financial products ie various Mysuper products offered by funds. The exercise is silent on how such products rate strategically against super's special investment circumstances. But then APRA does not even define a standard for the "balanced" portfolio, despite the drifting strategic asset allocations observed over super's lifetime. Since super's inception the default investment strategy has drifted from being 60% equity/ 40% defensive (60/ 40) to around 70/30 commonly found today. No rationale or debate of a strategic kind has accompanied this shift. One assumes it is inertia, as equity outgrew the defences.

Thus, the super industry has set its own strategic investment benchmark based on a money management product designed to moderate short term risk; then ignored it, all the while benchmarking itself against itself. Regulators look on.

Yet Australia's fledging super industry could not have asked for a better start conceptually. First, Brinson had demonstrated that investment strategy is the driver of long-term wealth accumulation. Secondly, the requirements for investment strategy are laid out lucidly in the founding SIS legislation. This law is no recipe, but strategy stripped to the fundamentals identifying the elements requiring thoughtful attention. And thirdly, along came a US academic Jeremy Siegel with a rational exposition of the strategic factors in long term investing (which inspired our own work crystallised above in Hapless). What could be a better conceptual base for defining a strategic investment benchmark for the second pillar?

Shorter Investment Horizons

Nevertheless, many Australians in the retirement system have shorter investment horizons. This is what so-called "lifecycle" products are about - progressively controlling risk of short-term volatility with ageing. But whatever the investment horizon, the only way to assess future portfolio outcomes is probabilistically. That is, to define the chances. For each point along the retirement journey a probability density function can be derived (ie from the data in Hapless charts) to specify the chance of any outcome. This is a discussion for another time - suffice to say that optimal investment strategies at lesser holding periods can be derived largely formulaically for any given level of confidence. Any other approach is guesswork. It is unexceptionable that people compelled to save under our retirement structure should be informed frankly of the confidence attached to their strategic investment settings, routinely and intuitively.

Second Pillar Has Feet of Clay

How is it that a three-decades old, respected industry with three trillion dollars of public savings entrusted to it suddenly appears to have serious faults?

Is it because new data has come to light which reshapes thinking on investment strategy? The answer is no. Exactly the same historical investment data used by the industry in developing its adopted culture underlies the conclusions above. Nothing fundamentally has changed. So is it that the industry has failed to embrace its job single-mindedly in the interests of Australians? Probably, because research germane to the objective of the second pillar surfaced during its formative years and was widely promulgated for about a decade. In

1994 Jeremy Siegel of the Wharton School in Pennsylvania explained the influence of holding period in US investment markets. The research was published in "*Stocks for the Long Run*" (McGraw-Hill). Siegel found:

"The fact that stocks, in contrast to bonds or bills, have never offered investors a negative real holding period return yield over periods of 17 years or more is extremely significant." But Siegel identified a quandary:

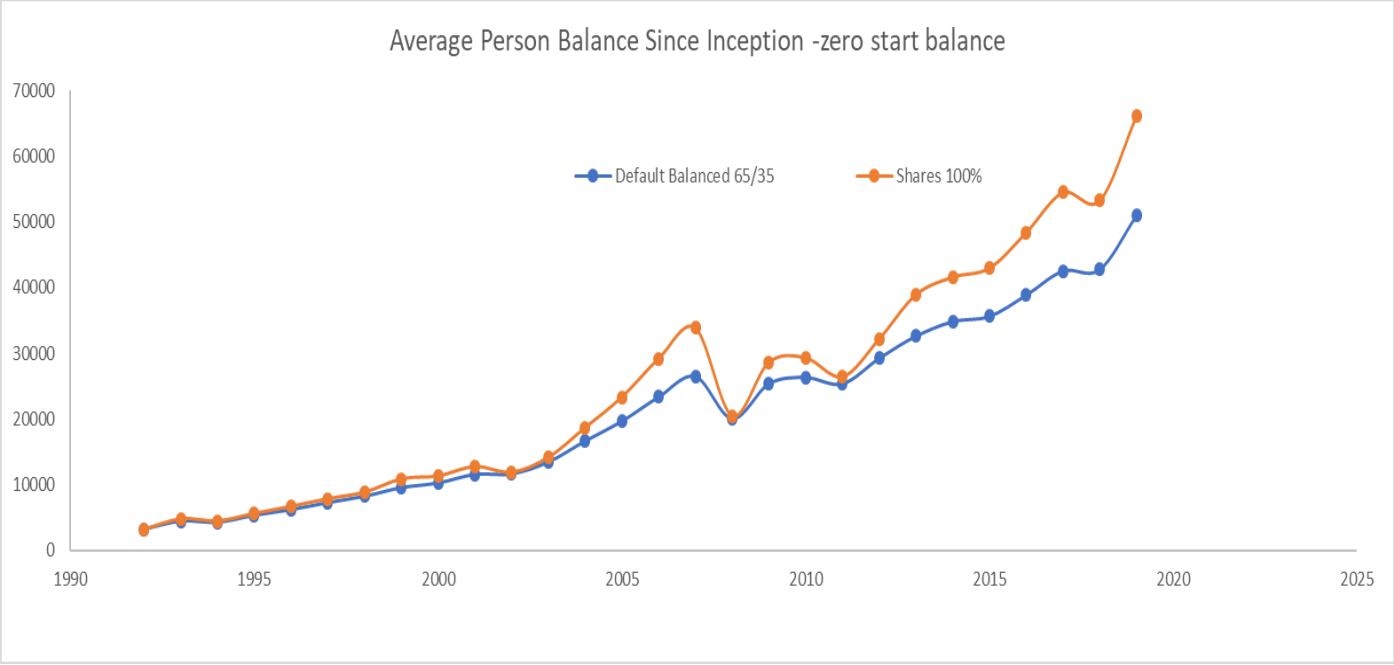
"Although the dominance of stocks over bonds is readily apparent in the long run, … high risk of underperforming fixed-income assets in the short run is the primary reason why it is so hard for many investors to stay in stocks"

This tension was of course well known and explains why Siegel's findings were judged by the money management industry to be of little use, given its sensitivity to negative returns. Interest in the long term receded. Super funds strengthened their jostling in the beauty parade of previous year's balanced portfolio results. Competitive aspirations of funds sensitive to peer risk have been on display for decades.

Arguably, the strategy-setting practice of trustees is testing the law. But that is not the point. It is the absence of reflection by trustees on why they should adopt near-term investment strategy, repeatedly over almost three decades, which most speaks of lack of competence. Which begs the question of fitness-for-purpose of APRA regulated funds as the engine room of the second pillar. Which suggests that consideration be given to individuals taking direct responsibility for their retirement.

Benefits Foregone

What is the cost of this systemic trustee deficiency compared to the benchmark portfolio? While it is a big task to be precise about dollars foregone across the industry since inception; the significance can be illustrated. For the case of a person with average income in 1992, the figure below shows growth in balance (1992 dollars) since inception of super to end-2019 taking account of compulsory contributions, tax and real income growth for two investment portfolios: a default balanced portfolio of shares and fixed interest (65/35, ie average 'balanced' over period) compared with an Australian shares total-return portfolio.



This average Australian would now have a balance around 30% greater if invested in the Australian share index, compared to the balanced portfolio (35% composite bonds hedged). This is despite the period coinciding with highly favourable conditions for fixed interest, due to secular decline in interest rates.

Note that investment difference takes time to unfold - most of the growth in the early stages is simply contributions. If this investor had begun with a balance of 10% of income the difference widens to 35%. And the more a person contributed throughout, the greater the shortfall against the true benchmark of 100% shares.

Our research findings on Australia's strategic investment assets coincide with Siegel's findings on US assets. The default investment strategy imposed upon funds' members has been disappointing as its inadequacy should have been anticipated, and must be expected to continue that way.

Why Raise the Super Guarantee?

We have no shortage of protagonists for increasing SG from 9.5% to 12%. However the case for increase rests upon retaining moribund investment strategy practice. With competent investment strategy the debate on SG is transformed. The most productive avenue for increasing expected retirement wealth is simply to adopt the benchmark investment strategy.

Let's go back to the *median Aussie* worker, aged 37 who will retire in 30 years at age 67. Our baseline for comparison has 9.5% SG and a portfolio of 70% shares. We increase this proportion to 100% shares and assess the expected increase in future super balance.

SG	Growth Assets	Balance Increase
9.5% Baseline	70%	0
9.5% mysuper	100%	15%
12% planned	70%	16%

An investment strategy change from the standard *balanced* portfolio to *high growth* provides an expected retirement balance increase about the same as increasing SG to 12% - without cost.

The evidence points to scrapping the planned contributions increase and getting serious about investment strategy, instead of burdening Australians with a further obligatory retirement impost.

An Industry Unable to Describe Its Product

Up to this point we have made use of the ASIC MoneySmart calculator for policy analysis. But that is not the purpose for which this calculator is intended. Its purpose is to enable people to understand and plan their super future by estimating the dollar balance available on ceasing work ie what people see as the primary product of their super. As already explained, the MoneySmart calculator is not fit for this purpose as it ignores risk. Providing a single central estimate of the product, with no attempt to define its likelihood or percentile boundaries is at best unprofessional.

Setting aside the omission of risk, it is disturbing that available forecasts of balance differ widely eg the industry funds' calculator and ASIC's MoneySmart provide markedly different estimates for even that simple "risk-free" projection. The table below shows forecasts given for a 30 year old, current balance $10,000 and income of $80,000 (balanced portfolio).

CURRENT BENEFIT FORECASTS	
MoneySmart (ASIC)	$335,309
Industry Super Funds	$524,700

Observe that the same person receives a markedly different benefit estimate. Industry funds' estimate is 56% greater than ASIC's, with the same inputs. For the average Australian there is no obvious reason why the MoneySmart forecast is much less. Few would go to the lengths of comparing the two, or maybe even knowing another exists. It requires penetrating to finer detail and enough technical knowledge to suspect "then-year" vs current dollars, much less "ASIC dollars".

The industry funds' estimate presumably is inflated by a guess about future price increase. And defining benefit in 'then-year' dollars unnecessarily tests one's capacity to grasp reality into the far future. Is expecting consistency, clarity and even honesty across the super industry on its product asking too much?

In any case, the benefits provided are said to be risky without any attempt to enumerate risk in even the simplest terms. Because the compounding calculation relies upon the mean of annual investment returns, the benefit estimate has a hefty chance of being optimistic (around 50%), with substantial downside. All of which can be specified but is left unsaid. Not even simple sensitivity analysis is offered.

The evidence is that Australia's super industry has not yet managed to describe its product. Which gets back to the industry's lament that Australians won't engage with their super, the roots of which lie in its own conduct. People cannot engage with confusion.

PRINCIPLES AND ALTERNATIVES

Inequity of a Fragmented Second Pillar

We have already covered the dominant inequity in our retirement system - trading away cost-free certainty of a substantial increase in age pension for lower-income Australians in favour of risky, investment-led accumulation of wealth through lien on personal income which later requires management of longevity risk.

The industrial relations origin of this retirement system has distributed employed individuals across varied APRA funds, on no financial basis. For some, their SG-driven investments benefit from large economies of scale, for others less so. Some find themselves in funds which chronically underperform peers. And those not in the workforce miss out on the lottery anyway.

Almost everybody in APRA funds has savings affected by pooling. This is said to enable efficiency, but that can be more for some at the expense of others. Pooling generally requires sharing of tax on investments realised whereas individuals in accumulation have no need to incur such costs. Moreover, pooling raises issues of whether funds' expenditures are always in members' interest, particularly given the trend towards overt commercial behaviour by all funds and the lack of transparency to resolve concerns. It is disappointing that the Hayne Royal Commission did not have time to provide insight here especially on vertical integration. Generally, the notion that pooling ambiguities are a small price to pay for economies of scale might have some merit, but this is diminished in Australia's system where savings are compulsory.

In any case it seems untenable to continue the inequity of forcing people into quite different retirement systems on the basis of the industry they work in, thereby creating a spectrum of competence across APRA funds (as "heatmaps" demonstrate). It is unexceptionable that the goal should be for all Australians to be offered the same retirement structure.

Lessons Learnt and Individuals

Having found that the system of APRA regulated funds has proven unfit for purpose and that the mechanisms of the second pillar are inequitable, how can continuation of compulsion be justified? Do alternatives exist which might warrant defaulted receipt of compulsory retirement saving?

It seems sensible to build on the lessons learnt from these decades of super. Some principles have emerged.

First, isn't it time to show confidence in Australians' capacity to take responsibility for their retirement? The preferred default would always be to place responsibility for savings with the people who are doing the sacrificing and who bear the consequences. To depart from that principle is sensible only when some other way is believed to be superior. However, the way chosen no longer has credibility.

Second, we should be confident of a structure centred on individuals because it is clear that, while investment strategy is risky, fulfilling the legislated requirements is neither complex nor onerous given thoughtful intuitive information which explains and guides each person's life journey, the retirement payoff and the risks. That has been missing for three decades.

Third, if the second pillar is to be retained, its saving mechanism should apply universally.

Finally, it is obvious that any new system should be sustainable, and seen to be. Part of empowering individuals is to explain and demonstrate that the system recognises their investment risk and automatically moderates that risk when it matters – upon reaching retirement, via age pension supplementation.

Let's recall that when today's retirement system was crafted the personal digital age was in its infancy and inaccessible to most. Today digital technology is ubiquitous. Using it as a daily management tool and information source is second nature to most people. Three building blocks which enable individuals to take charge have emerged since the current retirement system was created.

In 1999 a vehicle enabling individuals to take responsibility for investment was introduced, namely the self-managed super fund (SMSF) – a trust of up to five trustee members. Self-managing has long been viewed as expensive and only for very large portfolios, guided by financial advisers. However, over the last dozen years, do-it-yourself super has become accessible for any individual, conducted online. The providers of this service seem to have originated in the accounting profession (eg https://www.esuperfund.com.au/home).

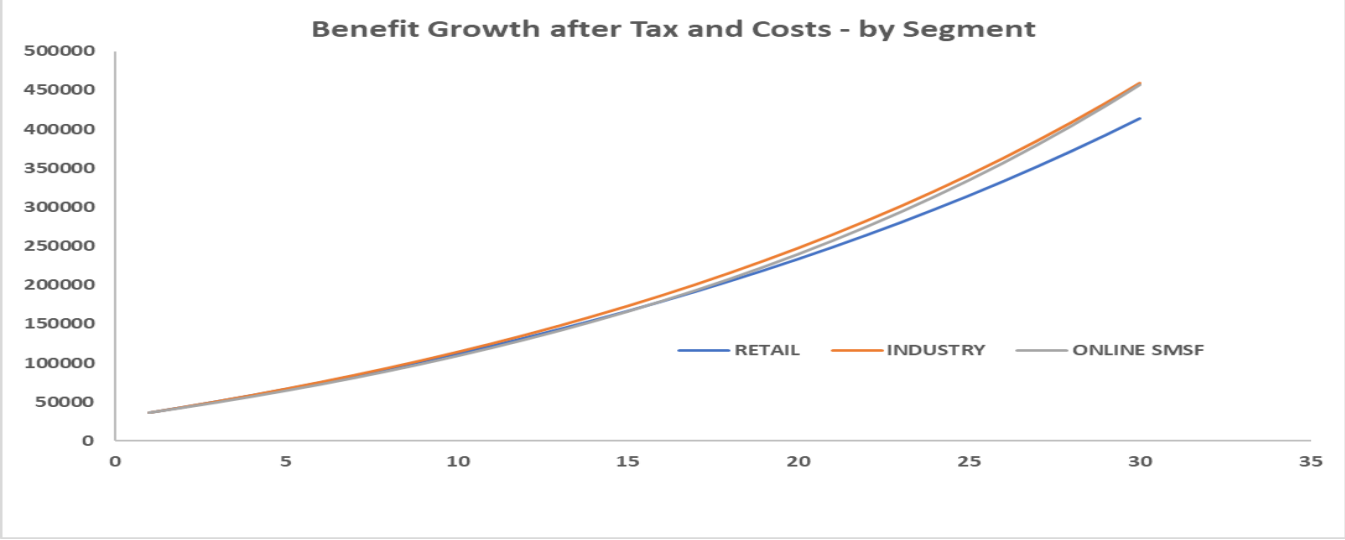
Around 2005, online broking introduced domestic share trading cheaply for individuals. Then the final building block enabled online trading of the major asset classes of a global portfolio, in the form of exchange traded funds (ETF). Whereas at the inception of super the task of creating and managing a portfolio of global assets required teams of specialists, international travel and constant manager monitoring, the same result can be achieved today by an individual from home, with little effort and at modest cost. A miner in Marble Bar can construct global portfolios, as easily as a hedge fund manager in Manhattan.

The structure and services exist, for individuals to take responsibility, and are well tried, "commodified" even. In essence, each Australian could be assigned a retirement account, linked to a bank account set up by a service provider to receive contributions, purchase investments, receive dividends, pay tax etc. All transaction records would be open to the individual. An online broker would invest contributions on digital orders, while providing custody. The provider oversees tax liabilities. As now, the ATO could be the primary regulator.

Indeed, the workability of this mechanism has been recognised by certain APRA funds. A "member-direct" service now is provided as an alternative to trustee-driven pooled products with all the ingredients specified above:
https://www.australiansuper.com/investments/your-investment-options/member-direct
While not diminishing the challenge of such a transition universally, let's be clear that individuals' investment task would not be 'share trading' because building a super portfolio requires buying only. Apart from 'buy and hold' being sound investment practice, selling triggers a tax liability and therefore should be entertained rarely. The task reduces to investing income (mainly contributions, dividends) periodically. The operations can be automated. In the near term most Australians could be expected to opt for such a default.. Of course, serious development work remains, including legal hardening. And valid concerns exist about cost.

Cost of Individual Responsibility

Current cost structures mean that most service providers could have a cost disadvantage compared to APRA funds. The difference is largely fixed cost, driven by economies of scale bestowed through privileged access to clients over decades. Perhaps measures would be required to level the playing field, for a transition period. It is not our place to speculate on such. We simply note the challenge.



Any cost levelling would be transitory because the burden of the fixed cost diminishes with time. And missing from much of the cost debate in super is recognition that after-cost comparisons have not focussed also on after-tax outcomes, over long holding periods. The chart above shows a case analysis of today's costs - online self -managing becomes less costly than retail funds but is more costly than the best of industry funds.

The Personal Investment Challenge

Our modelling shows that for individuals below about age fifty investment strategy should be deemed to be a benchmark portfolio of all-equity investments. No further strategic deliberation is required to maximise benefit at least risk. What remains is portfolio construction and management - allocating to various equity indexes to define a strategic asset mix, passively investing contributions through ETFs, and rebalancing periodically. This is an important subject which would need working through to outline principles (eg global portfolios through passive exposures), options and constraints in order to set defaults.

Shifting responsibility to individuals is facilitated by the simplicity of the second pillar's design - no withdrawal, creating an undisturbed long investment horizon. Under these conditions a benchmark portfolio of diversified equity is managed most effectively by "set and forget" strategy. No doubt odd investment wizards will insist that value can be added by tinkering and market- timing, but informed consensus is sceptical and academic evidence is non-existent.

For citizens beyond about age 50 years a trade-off between risk and return has to be dealt with, determined by life expectancy. This can be addressed logically and formulaically only by exposing risk and reward at the margins of the benchmark portfolio. Most life-cycle strategies offered today are arbitrary because risk is not measured.

Decision tools to derive life cycle strategy can be online, linked to each account and primed by the defining account data. They should be complemented by graphic performance reporting, portraying progress against prior forecasts, risks ahead and in later years, drawdown options in intuitive terms eg identifying probability of achieving goals eg 70 or 90 % chance of balance X at age 90 (or whatever) with Y income on drawdown. The retirement industry's perpetual anguish about retirement drawdown is due to an inability to articulate its risk and so express reality in familiar terms (like the weather).

Regulators

The Australian Securities and Investments Commission (ASIC) and the Australian Prudential Regulatory Authority (APRA) each have had roles in the second pillar, and contributed to dysfunction.

In 2005, ASIC was tasked by the Minister for Superannuation and Corporate Law Sherry to develop the means of informing Australians of the product of their compulsory savings. Public submissions were called for and presented. No reasoned report or response has been issued.

Eventually a crude calculator was posted online by ASIC, the forerunner of that now at MoneySmart. ASIC was advised of the strategic investment risk issues during that review. It persists to this day with no apparent interest in risk to benefits.

APRA also appears untroubled by super's long-run investment risk. How a regulator responsible for overseeing funds ability to deliver Australians' retirement money decades ahead can function without knowledge of this risk is bewildering. APRA seems to have been pottering about in funds sub-strategically, building an admirable database which tells us that its funds are taking over $5billion for admin annually.

Both regulators have stood by while the super industry enslaved itself to barely relevant investment practice.

So, regulators have failed variously, ASIC the more as it eschewed explicit advice while under ministerial directive to define the product of super.

The Australian Tax Office (ATO) regulates self-managed super, apparently effectively though not equipped to address performance. This role mirrors the US where retirement saving through 401(k) is regulated from a tax perspective. However, 401(k) permits withdrawals from accumulated savings which have to be discounted to recoup prior tax concessions. Thus, US has a more tax-intensive system while foregoing the investment advantage of undisturbed long holding periods. Interesting differences, which explain partly why US has not embraced long horizon investment practice.

With a shift to individuals taking responsibility, considerable savings could be found by relieving current regulators of super oversight. It would seem sensible for ATO to continue, preferably complemented somehow to address performance and portfolio construction boundaries.

This is not to diminish the operational complexities of transitioning to individual responsibility. Transfer of funds' assets to a member's account seems straight forward but would take time – driven chiefly by liquidity, but also tax. Certain funds could be expected to over-imagine barriers particularly with off-market assets. Care and expertise would be required.

Sustainability

The Consultation Paper defines sustainability as *"whether the system is able to continue to meet its objectives into the future and maintain broad community support"*. The question is posed: *"what factors should be considered in assessing how the current settings (eg tax concessions, contribution caps and means testing) affect its fiscal sustainability"* (p23).

Because sustainability rests on risky investment markets and wider fiscal and demographic parameters which also are uncertain, it is not logical to think in terms of a guarantee. It is about levels of confidence - in the current system firstly. Weighing sustainability requires probabilistic thinking eg x% chance that future demands for retirement income can be met fiscally. Such insight comes only from stochastic modelling of system, demographic and fiscal parameters interacting with asset behaviour over long time horizons. We started on such a model a dozen years ago.

The seminal work publicly available was done in Treasury at about the same time, taking a deterministic view of a central "base" case. Risk was assessed through limited sensitivity analysis, as reported to *The Twentieth Colloquium of Superannuation Researchers, University of NSW, 12-13 July 2012.*

https://treasury.gov.au/publication/modelling-the-sustainability-of-australias-retirement-income-system

That paper finds: *"Australia is in a very strong position in relation to the sustainability of its retirement income arrangements compared with almost any other country in the world. However, given the significant part of the government's budget involved, the increasing costs as the population ages and the many factors influencing sustainability, this relative strength should not lead to complacency."*

At the same time it observes*:*

Analysis has been carried of a scenario with consistently lower returns of 1 percentage point across all account types. This has a ***significant projected impact on age pension costs****: in 2050 these are projected to be about 6.5% higher (or 0.25 percentage points of GDP….Accumulated superannuation is projected to be lower by about 12 per cent.*

The "strong position" conclusion seems overly sanguine for today's circumstance. Note that it is strong only in relation to others. The work demonstrated that sustainability is quite sensitive to asset returns. Since super's inception, asset returns have been well above long run averages, the result of economic growth combined with falling discount rate. Prospects for that to continue have slimmed, if only because monetary options are now confined.

If the second pillar is to be retained, a reasonable level of confidence in system sustainability is critical. For the system to be credible it is important that the risk moderation offered through age pension supplementation is reliable. That interaction is what enables risk-taking, which in turn rewards taxpayers with lower age pension liabilities. Risk-taking benefits both individual and taxpayer.

The case for a probabilistic knowledge base for retirement policy has not been stronger. We would be pleased to provide our modelling services to help calibrate the current system, enabling probabilistic analysis of parametric change, should the Panel wish to assess sustainability more seriously.

Adequacy

We have written about "adequacy' debate in similar terms. Because benefits always have been forecast around central-case investment outcomes, matching of benefit estimates with consumer "need" is not "like-for-like". To make sense of adequacy issues, any benefit estimate must be qualified by a level of confidence (often of about 50%), as explored in *"Superannuation Tax, Adequacy and Uncertainty", Agnes Pentland, Tax Policy Journal 2008* (copy available)

Cohesion

The Consultation Paper depicts cohesion as *"all elements of the retirement system working together to support the outcomes the system intends for individuals"*. Which we take to mean uncompromising effort by all elements to maximise retirement benefit and income deriving from savings and taxpayer underwriting.

The body of work described here shows that cohesion is eroded by the major elements being able to go only so far in pursuing stakeholders' interests - resulting in sadly sub- optimal outcomes, generally influenced by self- preservation but perhaps also just by incapability. Regulators' part has been influential.

Funds and their members have expressed separate frustrations. Trustees note that members won't engage while members could not enjoin even if they tried, because information is inadequate, confusing and even misleading. After three decades, most people begin to engage only at retirement when they have no alternative.

We have said nothing about efficiency to this point. By definition inefficiency exists in the myriad fund system, and is exacerbated by patronising lobbying entities. One wonders how efficiency can be taken seriously in a fund with twenty-odd directors. Or when transparency is denied into vertical integration, or when regulators deny FOI into discharging their obligations. Suffice it to say the current system has demonstrated resilience in protecting structural privilege.

The controlling elements of our hotch-potch retirement system, whether funds or advisers servicing self-management, have been unable to deliver maximal retirement outcomes. Today, new structures and intellectual capital exist for individuals to take responsibility, and to maximise the chances of their savings achieving specified and demanding objectives. Thereby, a quantum step in cohesiveness is in offing, aligning implementation structures with true ownership.

We would welcome an opportunity to share with the Panel our research and graphics tools designed to enable individuals to understand, create and manage their full retirement journey.

CONCLUSIONS

1. Today's retirement structure with its risky second pillar of compulsory superannuation arose without public debate of options including more certain means of enhancing retirement income.

2. A revised retirement system which ends the second pillar could deliver more than 40% increase in age pension now and higher total retirement income for low to middle income Australians over the next 40 years. Doing this also would end both the loss in take-home pay and inescapable uncertainty in retirement incomes - at no net cost to the federal budget.

3. Mortgage payments or rent are a major living cost for many retirees. The extra take-home pay from ending the second pillar would give homeowners the option of paying off their mortgage in a shorter time. And assist renters with starting a mortgage. Both changes would make it easier for future retirees to live free of housing costs.

4. From this holistic perspective the second pillar *reduces* rather than increases retirement income for workers. And it does this by *reducing* the current incomes of workers. Because of this huge opportunity cost the second pillar should at least function to the highest standards. It falls well short.

5. The determining discretionary instrument of the second pillar's efficacy is investment strategy. At the outset the super industry adopted an investment culture designed for money management, thereby foregoing the advantages of undisturbed long holding-period investing required for Australians. Funds have been unable to conceive and implement strategy which maximises accumulated wealth with acceptable risk against SIS legal requirements.

6. The consequences of ignoring the objectives and parameters of the second pillar has been retirement wealth foregone by all Australians compelled to contribute, and added taxpayers' liability for the age pension.

7. Performance evaluation has been no more than peer comparison. A true benchmark for super investing has not ever been addressed much less acted upon, or indeed achieved. Current industry clamor for increasing SG contributions to 12% is symptomatic of this trustee shortcoming – diligent execution of investment strategy could achieve the same result.

8. Product description as end-benefit is inept, confusing and deficient in the critical dimension of risk. Australia has a retirement industry which cannot describe its product in essential terms. Regulators have either been complicit in this strategic failure (ASIC) or incidental (APRA).

9. Thus, the retirement interests of individuals and those entrusted with pursuing those interests on their behalf have not aligned adequately over three decades of operating the second pillar. Compulsion of personal savings into APRA funds is at issue. Interposing funds has failed. If the second pillar is to be retained, the obvious alternative is for stakeholders to take responsibility.

10. Technology has created the building blocks for individual responsibility, largely digitally automated. Missing has been authentic, intuitive decision information on strategic investment choice, outcomes and risks. For the second pillar to continue credibly, in whatever form, requires that Australians be provided with the planning information essential for rational participation.

AUTHORS

Michael Gilligan took science at the Australian National University. Then a PhD from University of Leeds on propellant combustion in 1972, sponsored by UK Rocket Propulsion Establishment, Ministry of Technology.

Joined Central Studies Establishment in Department of Supply, on defence operations research. In 1976 joined Force Development and Analysis Division, Department of Defence for the rest of a public service career, reaching divisional head. In between seconded to Pentagon's Program Analysis and Evaluation, Office of US Secretary of Defence, Washington DC (1979-81).

After a short period back at ANU, in 1995 became General Manager, Investment Strategy at Commonwealth Funds Management responsible for the CSS and PSS portfolios, then about the largest portfolios in Australia. Continued in that role until takeover by a US actuarial firm in 2000.

Since then: various consulting, educational gigs and researching super strategy with long-time colleague Stuart Craig, whilst farming.

Stuart Craig graduated with a PhD in solid state physics from the University of Sydney in 1983.

He joined the operational analysis section of the Australian Department of Defence in 1984. In 1989 he became Principal Research Scientist leading the analytical evaluation of the Jindalee over-the-horizon radar network.

From 1992 to 1999 he was the Australian advisor to the Thai government on research program development and management. He retired from the Public Service in 1999. Since then he has engaged in consulting and analysis of diverse quantitative and science based issues, including superannuation risk analysis.

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Neither of us receives emoluments from any part of the retirement industry.

ANNEX

"KEY TRADE-OFFS WITHIN THE CURRENT SYSTEM"

References

1. ASIC MoneySmart "Superannuation Calculator" *(for ASIC dollars see its "Assumptions")*
www.moneysmart.gov.au/tools-and-resources/calculators-and-apps/superannuation-calculator

2. Australian Government "Treasury Expenditures Statement 2017-18", Table 3.2 on p13
treasury.gov.au/sites/default/files/2019-03/2017-TES.pdf *(for our full derivation see the Annex)*

3. ASFA Report "Better Retirement Outcomes: a snapshot of account balances in Australia"
July 2019 *(median balances for 2019-20 were extrapolated from the medians in Tables 1 and 2)*
ABS 6333.0 "Characteristics of Employment, August 2019", Summary, *Key Findings*
www.abs.gov.au/ausstats/abs@.nsf/mf/6333.0

4. AIHW Report "Older Australia at a Glance", Figure 1.
demographics-of-older-australians/australia-s-changing-age-and-gender-profile

5. ABS 4130.0 "Housing Occupancy and Costs, 2017-18", Table 2.1 and Table 3.2
in Downloads, DataCubes 2 and 3

6. ABS 4130.0 "Housing Occupancy and Costs, 2015-16", Summary
from "Older households" in *Across the generations: 20 years of housing*

7. ABS 6523.0 "Household Income and Wealth, 2017-18", Summary, *Key Findings*
www.abs.gov.au/household-income *(median income for 2019-20 was extrapolated from Table 1a)*

8. "What is the average mortgage size in Australia?"
www.echoice.com.au/guides/whats-the-average-australian-home-loan-size/
"Loan repayment calculator" www.echoice.com.au/loan-repayment-calculator/
(the $1850 is for the $385,000 average mortgage with 30 year term and standard interest rate)

9. We mostly used the fees charged by Australian Super as proxy for fund fees:
www.australiansuper.com/compare-us/fees-and-costs
www.australiansuper.com/investments/your-investment-options/pre-mixed-investment-choice
We based the ETF fees on Australian Super, *"Indexed Diversified" option*:
www.australiansuper.com/investments/your-investment-options/pre-mixed-investment-choice
www.australiansuper.com/compare-us/fees-and-costs
and on Vanguard:
www.vanguardinvestments.com.au/retail/ret/investments/product.html#/productType=etf

Calculation details

annual budget expenditures on the age pension and superannuation

The total budget expenditure for 2019-20 is $500 billion or 25% of GDP. Within this total the age pension spend is $50 billion of the $180 billion total spend on Social Security and Welfare.
From: "Budget 2019-20 Overview", Appendix A: Budget Aggregates
www.budget.gov.au/2019-20/content/overview.htm#appendices
and "Budget Review 2019-20 Index", Figure 1 and Table 2
/Parliamentary_Library/pubs/rp/BudgetReview201920/SocialSecurityWelfare

The foregone tax revenue data below is for 2017-18. Both the total budget expenditure and GDP have increased 8.5% since then and we apply this increase in the 2020 extrapolations below:

Tax revenue foregone in 2017-18 ($ billion) due to the concessional taxes on superannuation

CONTRIBUTIONS		
employer contributions	16.9	(90% or **15.2** of this is from compulsory contributions)
personal contributions	0.8	
low income measures	0.2	
insurance premiums	2.4	
Total	**20.3**	(we assume ending the concessional tax would recover **18.5** of this)
INVESTMENT RETURNS		
earnings	19.3	
capital gains	1.4	
Total	**20.7**	(we assume **22** in 2020 based 20.7 X 1.085 = 22.5)

From: "Treasury Expenditures Statement 2017-18" Table 3.2 on p13.
treasury.gov.au/sites/default/files/2019-03/2017-TES.pdf *(for the foregone revenue)*
and "Superannuation Statistics December 2019" table 'Funds with over 4 members'.
www.superannuation.asn.au/resources/superannuation-statistics *(for the 90% proportion)*

Estimated tax revenue foregone in 2020 from the concessional tax on contributions
Under the current compulsory contribution rate of 9.5%
$20.1 billion *(18.5 X 1.085)*
Under the planned compulsory contribution rate of 12%
$24.4 billion *20.1 + [(15.2 X (12 / 9.5) - 15.2) X 1.085 = 4.3 billion increase]*

So the "full" gain from ending the concessional tax on contributions would be over $24 billion. In our calculation of the age pension below we use the middle value of **$22 billion**.

boosting the age pension by 44% under the "alternative system"

The age pension now costs $50 billion. So under the *alternative system* the $22 billion revenue gain would proportionally increase all current age pensions by 44%.

*Note 1: this $22 billion is conservative as it does not include the future tax foregone on investment returns from the **future** contributions that would be made under the current system (and **not made** under the alternative system).*

*Note 2: making the same **proportional** increase for both the maximum pension and part pensions would involve making changes to the income and asset tests.*

fiscal sustainability of this boost

In the short term the 44% increase in the age pension under the *alternative system* has zero net cost to the federal budget: the $22 billion in extra expenditure is paid for by the $22 billion in extra tax revenue from ending the concessional tax on contributions.

Over the longer term the proportion of the population on the age pension will increase due to the rising proportion of older Australians. Because of this rise the incremental budget cost of the pension boost would increase from zero now to some **$15 billion*** in 2060. This is a rough minimum as the proportion on the age pension will likely increase under the *alternative system*.

However this extra cost is dwarfed by extra revenue. Under the *current system* tax would be foregone on the investment returns from ***future*** employer contributions. This rises to **$45 billion**** in annual foregone revenue by 2060. But under the *alternative system* there would be no such future employer contributions and so $45 billion in extra annual revenue by 2060.

So over the next 40 years the *alternative system* would go from zero net cost now to adding ***many billions in net gain*** to the budget. Fiscal sustainability is ***not*** a problem and even provides the opportunity to further boost the age pension.

Incremental budget cost in 2060 of $13 billion (rounded to $15 billion) in ASIC dollars is based on:
the proportion of the population aged over 65 will increase from 16% now to 22% (4), plus
assuming a corresponding 40% increase in the proportion on the age pension, plus
a population increase of 60% and a working population increase of 50% based on ABS projections, plus
a corresponding 50% increase in the $24 billion of foregone contributions tax to $36 billion; plus
a corresponding increase in the cost of the 44% rise in the pension to $49 billion (22X1.4X1.6),
So a net additional cost of $13 billion ($49 - $36 billion).

****Tax foregone in 2060 of $44 billion (rounded to $45 billion) in ASIC dollars is based on:***
$100 billion*** in current employer annual contributions and the SG increase to 12%, plus
assuming 1% for the long term annual increase in size of the workforce (from ABS data), so
the corresponding employer contributions over the next 40 years add to some $6000 billion, plus
$22 billion tax is now foregone on investment returns from the current $3000 billion*** in super assets,
So the corresponding tax foregone on the annual returns from the future contributions will be $44 billion.
(6000/3000 X 22, here we ignore the opposing effects of compounding investment returns and withdrawals after retirement)

*** *Superannuation Statistics December 2019*, statistics tables
www.superannuation.asn.au/resources/superannuation-statistics