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7 August 2017

Superannuation
Productivity Commission
Locked Bag 2, Collins St East
Melbourne VIC 8003

http://www.pc.gov.au/inquiries/current/superannuation/assessment

Dear Commissioners,

EFFICIENCY AND COMPETITIVENESS OF THE SUPERANNUATION SYSTEM
Productivity Commission Stage 3 Issues Paper

This submission focuses on three matters from the Stage 3 Issues Paper relating to the historical investment performance of the superannuation system:

1. Which reference portfolios would most meaningfully inform the benchmarking analysis? *[see the first and second pages of this submission]*
2. What is the best way to ensure that equivalent taxes are netted out of returns to a reference portfolio? *[see the second page of this submission]*
3. Is it adequate for the assessment criteria to focus solely on long term historical average net investment returns and their variances, over 5, 10 and 20 years? *[see the first and third pages this submission]*

I am an Actuary with approximately 50 years' experience in Australian superannuation and investment. I am also the owner and designer of the *Austmod* historical and stochastic investment simulation model which includes Australia's longest (i.e. the oldest) multi-asset class investment performance database.

The *Austmod* database is organised on a quarterly basis and now covers 58 years of performance data for 11 investment sectors (asset classes) and four financial indicators. The basis of the database is described in sections 3 and 4 of my paper "Australian Investment Performance 1959 to 2013 (and Investment Assumptions for Stochastic Models)". The paper was presented to the International Congress of Actuaries 2014 in Washington DC. To access the paper – click here.

The above paper is currently being revised, jointly with Tom Sneddon, for presentation to the International Congress of Actuaries 2018 in Berlin, Germany. The second attachment to this submission is a one-page summary showing three charts which summarise some of the "Balanced" portfolio results up to 30 June, 2017. These indicate that rolling averages over 5, 10 and even 20 years vary considerably.

Benchmarking Technical Questions for Participants

Page 19 of the Stage 3 Issues Paper asks the question:

- *In the context of the approach set out in the stage 1 Study to compare long-term net investment returns to a set of passive, liquid reference portfolios, which reference portfolios would most meaningfully inform the analysis?*

I suggest that the *Austmod* database could usefully be considered for part of your further investigations – for specific asset classes and/or for composite portfolios.

Page 19 of the Stage 3 Issues Paper also asks the question:

- *What is the best way to ensure that equivalent taxes are netted out of returns to a reference portfolio?*

The *Austmod* database is set up on a before tax, before fees basis, but the investment simulation model can then be used to determine net of tax results (and if required, net of fees results). The methodology it uses for taxation might be suitable for your purposes, and is set out on Page 84 of "Australian Investment Performance 1959 to 2013":

"Taxation.

The input for each sector includes two tax rates and information for imputation credits. The *income tax rate* is applied to the long term expected income yield and imputation credits. The *deferred tax rate* is applied to the total before tax yearly return less the long term expected income yield. This is equivalent to assuming, for tax purposes, that all fluctuations in investment returns are due to fluctuations in the capital appreciation component. The *after tax standard deviation* for each sector equals the *before tax standard deviation * (1 - deferred tax rate).*"

Page 31 of the Stage 3 Issues Paper states:

Efficiency: system level objectives, assessment criteria and indicators

Assessment criteria	*Indicators*	*Assessment methods*	*Expected data sources*
***Objective 1*: The superannuation system contributes to retirement incomes by maximising long-term net returns on member contributions and balances over the member's lifetime, taking risk into account**			
E1. Are long-term net investment returns being maximised over members' lifetimes, taking account of risk?	• Long-term (5, 10 and 20 year) historical net investment returns from the system and market segments compared to benchmarks (output) • Long-term (5, 10 and 20 year) historical net investment returns to specific asset classes from the system and market segments compared to benchmarks (output) • Variance of historical net investment returns (over 5, 10 and 20 years) from the system and market segments compared to benchmarks (output)	• Trend analysis • Trend analysis • Trend analysis	• Regulator data; research firms • Research firms; regulator data • Regulator data; research firms • Regulator data; research firms

I question whether it is appropriate to disregard the significant skewness and kurtosis which exists for many Australian asset classes. Page 45 of "Australian Investment Performance 1959 to 2013" classifies long term skewness kurtosis assumptions as set out on the third page of this submission.

(a) **minimal** between -70% and +70% skewness and kurtosis.
(b) **moderate** between -71% and -200% skewness or kurtosis, or between +71% and +200% skewness or kurtosis.
(c) **extreme** over 200% skewness or kurtosis.

Sector		Skewness	Kurtosis	Classification
N	Inflation Linked Bonds	-48%	37%	Minimal
S	Australian Shares	-28%	53%	Minimal
G	Semi govt (0 to 3 yrs)	28%	-34%	Minimal
L	Loans/corp credit	67%	-3%	Minimal
H	Hedged Intl Shrs	-78%	113%	Moderate
BalncdBalanced		-73%	111%	Moderate
CapStb	Capital Stable	-54%	99%	Moderate
I	Inter'nl Shares (uh)	-46%	96%	Moderate
D	10-Year Bonds	47%	-98%	Moderate
C	Cash	75%	-56%	Moderate
X	CPI	77%	-19%	Moderate
B	90-Day Bills	88%	-13%	Moderate
Q	Property Trusts	-237%	963%	Extreme
P	Direct Property	-145%	260%	Extreme
J	Inter'nl Fixed Interest	-86%	235%	Extreme
F	Austn. Fixed Interest	-85%	257%	Extreme
W	AWOTE	182%	393%	Extreme

Although this classification is only illustrative, the number of assumptions that fall outside the minimal classification sounds a warning for those who use normal or lognormal models or analyses in relation to investment performance.

On 9 August 2017, I am going overseas for 6 weeks' holiday. If you wish follow-up any aspect of this submission during that time please contact my co-author Tom Sneddon

Yours sincerely,

Colin Grenfell

cc Tom Sneddon

[one attachment]