UNSW Business School

Risk and Actuarial Studies

Annuity design – what's new?

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Why second pillar retirement schemes?

What is the purpose of the second pillar?

– to smooth well-being

How do retirees actually spend down their money?

What is the impact of financial or health shocks on expenditure and well-being?

How should we design drawdowns to ameliorate these impacts?

One paper and three projects

Asher, A, Meyricke R, Thorp S and Wu S (2017) “Age pensioner decumulation: Responses to incentives, uncertainty and family need”, *Australian Journal of Management DOI: https://doi.org/10.1177/0312896216682577*

Anthony Asher, Gaurav Khemka, Steven Roberts, “Enhancing well-being in retirement: addressing negative shocks”, Working paper almost completed

Actuaries Institute Retirement Incomes Working Group, “How financial advisors elicit risk and spending preferences”

UNSW Honours project, “Drawdown behaviour

What do we know about drawdowns?

About 70% of Australians receive all or part of the Age Pension.

We analysed a 1% sample (20 000) pensioners from 1999 to 2007.

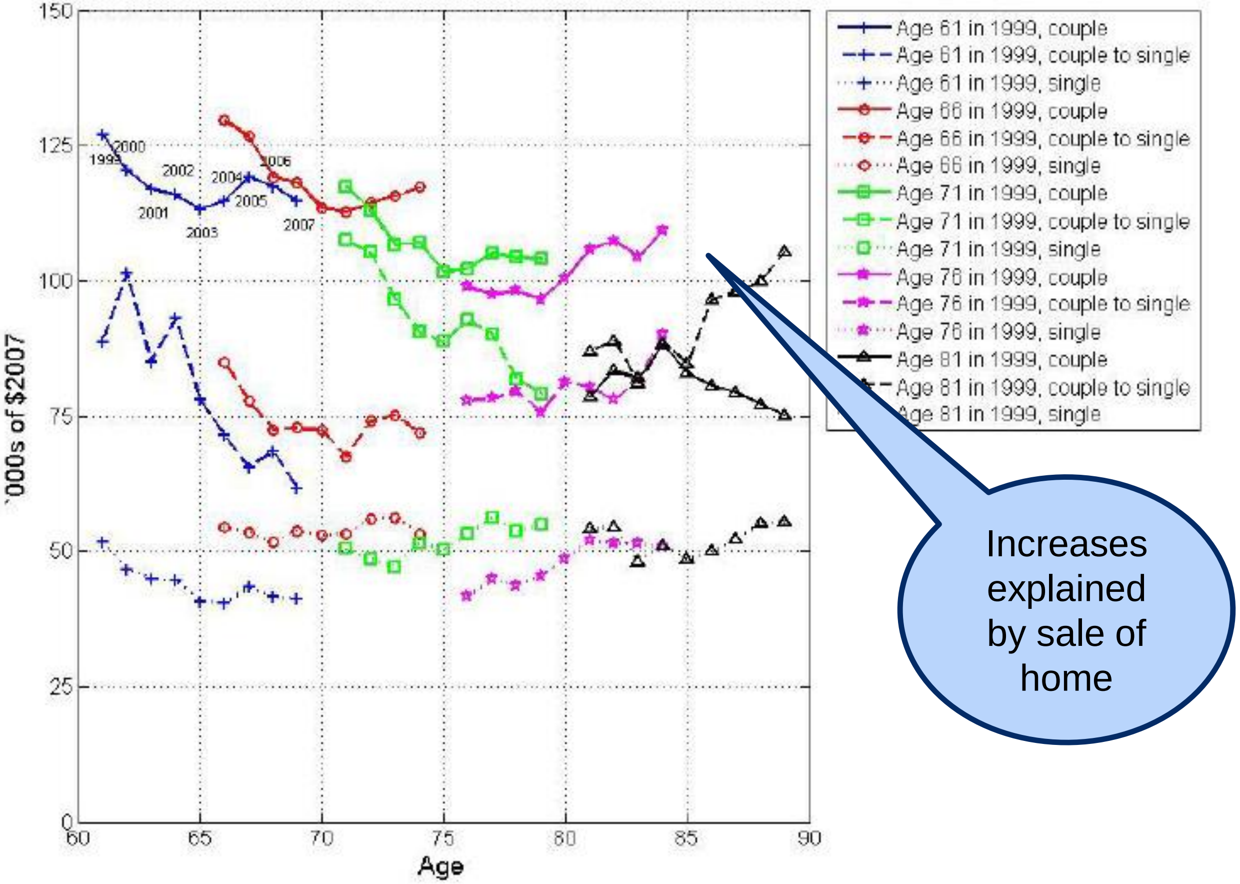
- Most of those who died had 90% or more of the assets with which they started, but 10% of the singles had exhausted 90% of their starting assets.
- Those with greater assets tended to draw down; those with less than average attempted to save.

We have another sample of a few hundred thousand drawing allocated pensions. Most are being conservative but a similar percentage may run out.

Financial Balances

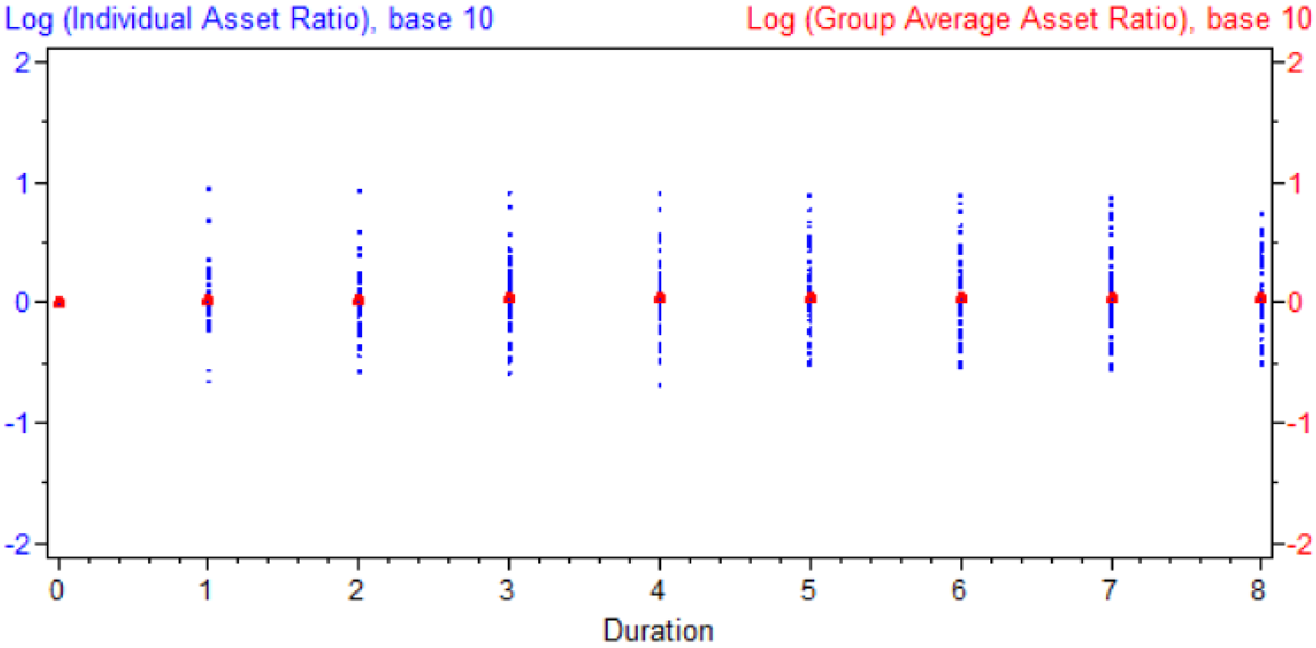
Evidence of a decline with age - on average.

Meaning significant numbers are declining. 10% of singles appear to run out.



Considerable heterogeneity

Middle Quintile



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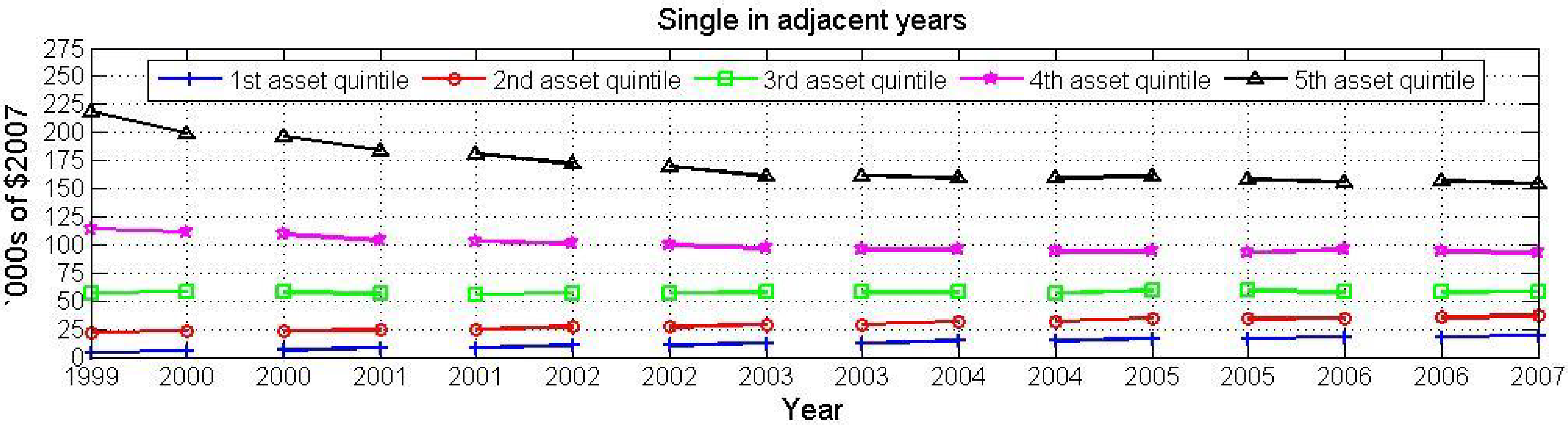
The rich spend; the poor save



What do we know about well-being?

Money is a factor in well-being:

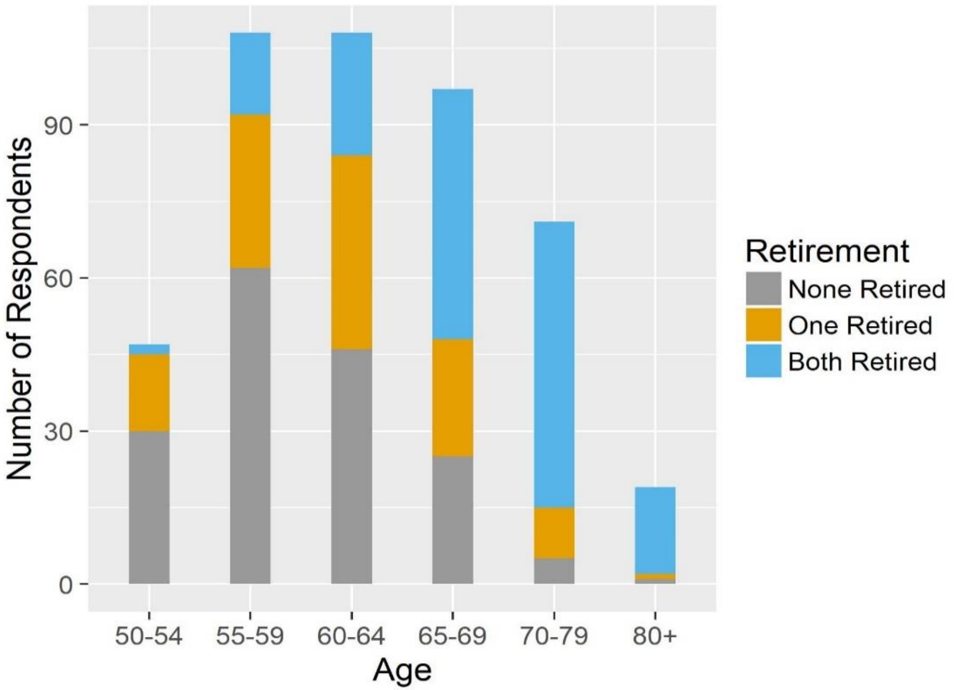
- But relative to past and peers.
- Planning is probably good, although ignorance is bliss.
- Health costs are significant in US, but not when there is health insurance.
- Income and Wealth, but not well-being, declines with age.
- Giving feels good.

What did we do?

National Seniors survey

- 3,500 replies from 15,000 in 2010.
- What was the effect of wealth and health shocks on spending?
- What were the covariates of well-being?
- Lots of covariates.

We reduced the dataset for analysis where variables were missing. A 2nd analysis was made where we had the gender of financial manager.



About 350 people experienced one of our shocks

After a wealth shock?

In order of declining elasticity:

1. Gifts (Almost 50% reduced)
2. Alcohol/tobacco and “Other” (30%)
3. Food, Housing and Utility and Household goods and services (20%)
4. Health (5%)

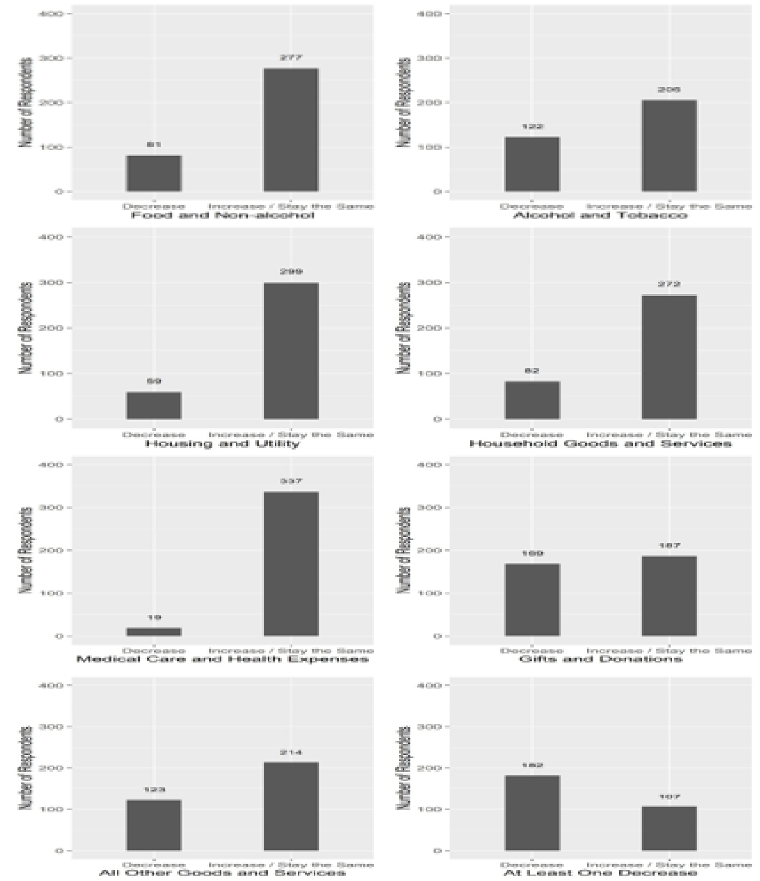


Figure 5-1 Reduction after financial loss be category

Covariates of reduced spend after wealth shock

- Feelings of lower well-being related to lower spending – causation both ways?
- Age & wealth. Evidence of linear "mental annuitisation" (ie higher cuts to spending at younger ages).
- Women more responsive, particularly where they have more power.

Items below the diagonal based on second analysis of reduced dataset.

	Lower Well-being	Younger	Lower income (I) or Wealth (W)	Female (F)/ F Manage (FM)	Renting	Financial aware-ness	Other
Food & non-alcohol drink	Y	Y		F / F & FM			
Alcohol and Tobacco			/ W				Less gambling
Housing and Utility	Y			/ FM	Y		
Household goods & services	Y	Y		/ FM			
Medical care and health		Y					Insurance /
Gifts and donations	/ Y	/ Humped	I /		Y /	Y /	
All other goods & services	/ Y	/ Y	W /			/ Y	
At least one item	Y						Annuitised wealth

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After a health shock?

In order of declining elasticity:

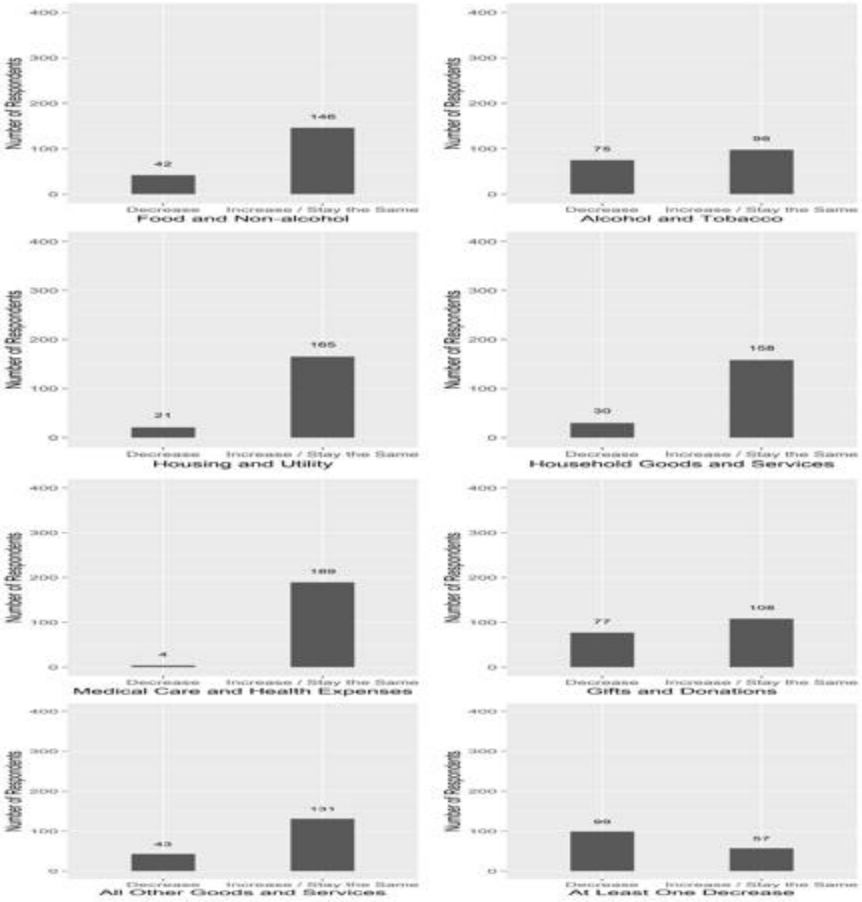
1 Gifts & Alcohol/tobacco (40% reduced)

2 Food and “Other” (20%)

3 Household goods and services (15%)

4 Housing and Utility (10%)

5 Health (2%)



Covariates of reduced spend after health shock

- Feelings of lower well-being still related to lower spending – causation both ways?
- Age & wealth. Less evidence of linear “mental annuitisation” (perhaps lower life expectancy).
- Gender less important.
- U-shaped house value possibly related to Age Care lump sums.
- More cautious investors also cautious on spending.
- Lower socio-economic postcodes reduce alcohol & tobacco.

	Lower Well-being	Younger	Lower income (I) or Wealth (W)	Female	Net House value	Lower risk invest-ments	Lower income postcode
Food & non-alcohol drink			W / AW	Y /			
Alcohol and Tobacco	Y		/ W				/ Y
Housing and Utility	Y /						
Household goods & services	Y /	Y			U Shape /	Y	
Gifts and donations		Y /	I & W / I		/ Y	/ Y	
All other goods & services	Y /		W		/ U Shape		
At least one item	Y					/ Y	Y

Items below the diagonal based on second analysis of reduced dataset.

Other factors relating to well-being

Confirms that:

- Income and wealth (with mental annuitization) are relevant.
- Reduction in giving is painful.

Also:

- Financial awareness (checking balances) is comforting.
- Health impacts on reduced alcohol & tobacco consumption is also painful.

	Covariate	Mean (SD) significance
Whole dataset	Intercept	-0.70 (0.14) ***
	Income^2	0.013 (.0016) ***
	Renting	-0.49 (0.17) **
	Annuitised wealth	4.42 (0.49) ***
After financial loss	Intercept	-2.70 (0.60) ***
	Reduction in giving	1.14 (0.30) ***
	Financial awareness	1.10 (0.49) *
	Income^2	.01 (.003) ***
	Net wealth	0.22 (.05) ***
After health shock	Intercept	-0.77 (0.36) *
	Alcohol & Tobacco spend	1.17 (0.39 **
	Renting	-1.21 (0.48) *
	Net wealth	0.22 (0.06) ***

Ancient historical context

Pillar II (occupational) schemes are neither poverty relief nor optional savings for bequests.

History goes back to Augustus's funded scheme for Roman soldiers. A lump sum of about 13 years of income at age 46 which was equal to Ulpian's life expectancy. The cost estimated at 15% of the military budget.

From about the 18th century, schemes have been created for other civil servants and employees of larger institutions.

Scheme objectives to encourage loyalty, and facilitate retirement (thus minimising the dissatisfaction of healthy late middle aged males). Minimal concern for widows (including de facto & divorcees).

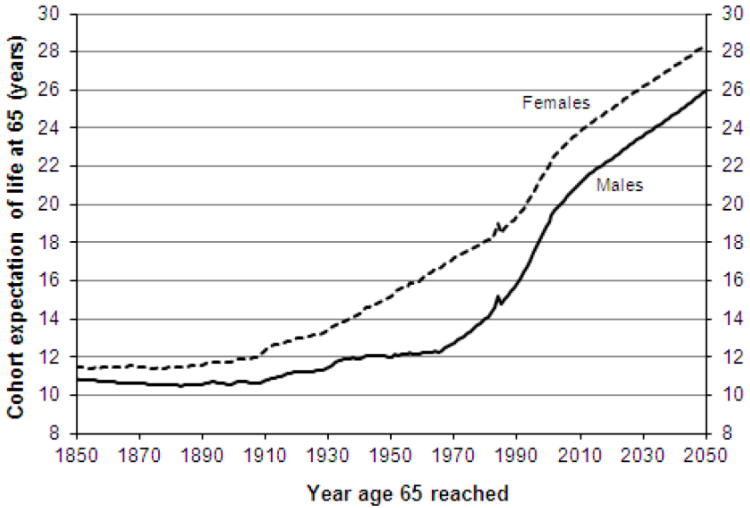
In the last century, earnings related national schemes have emerged for all employees, but women's interests seldom salient.

Recent historical context

The last half century has seen declining retirement ages and increasing longevity at 65, such that time in retirement has doubled for males.

Last 25 years decline in DB schemes partly due to costs of longevity and guarantees, but also the declining importance of employee loyalty – and the efforts of the financial sector to extract economic rents.

The net impact is members have lower benefits and are exposed to overcharging and (especially widows) higher risks.



Cohort expectation of life at age 65 according to historic and projected mortality

This is figure 4.7 from http://www.ons.gov.uk/ons/dcp171776_253938.pdf

Implications for design 1

Arguments for annuitisation:

- Evidence of "mental annuitisation" means that people are spending assets in early retirement that they may want later if they live beyond their life expectancy.
- There is a need to protect widows, who have lower balances and family "power". Introducing a reversionary annuity as a default in USA funds increased the proportion of joint annuities from 48% to 64%, and mandating reversionary annuities without written spouse consent increased the percentage to over 70%.

Not in this paper: Annuities offer the financial sector (financial advisors and capital markets) less opportunity for over-servicing because of their longer term, set and forget nature. They are therefore not encouraged. See Taylor, Sue and Asher, Anthony and Tarr, Julie-Anne (Forthcoming) "Accountability in Regulatory Reform: Australia's Superannuation Industry Paradox" *Federal Law Review*

Implications for design 2

Arguments for less investment risk because well-being depends on relative expenditure:

- Limiting differences in investment strategy so limiting variation within cohorts
- Choosing investments that produce lower volatility in returns so limiting variation between cohorts
  - Smoothing investment returns
  - Lower volatility investments such as annuitised infrastructure loans, turnover linkages, human capital contracts …

Not in this paper: These strategies also offer the financial sector less opportunity for over-servicing because of their longer term, set and forget nature. They are therefore not encouraged.

Comments and questions?

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