9th Techtalk – Employee Benefits

23 January 2024

Decumulation strategies – a technical overview for practitioners

Kulin Patel, FIAI, FIA

Institute of Actuaries of India

Speaker's Profile

Kulin Patel

CEO/Partner

K.A. Pandit Consultants & Actuaries

- He is a fellow of Institute of Actuaries of India & IFoA
- He is currently working as CEO (Partner) at M/s. K. A. Pandit Consultants & Actuaries
- He has had various leadership roles covering broader client relationship and actuarial roles during his career. He has been part of the retirement and human resources consulting industry for over 25 years, including experience in the global pension sector.
- Kulin has worked in UK, Americas and across Asia on a variety of actuarial and non-actuarial aspects of pensions, employee benefits, rewards and insurance related projects in his consulting career. He has worked with government bodies in the UK such as the Department of Works and Pensions, The Pensions Regulator and Pension Protection Fund on various pension reform and implementation of legislation.
- In the last decade, Kulin has been a member of various Government Task Forces at EPFO, Ministry of Labour and was a member of the PFRDA Advisory Committee for several years. He has been a member or Chairperson of the Advisory Group on Employees Benefits, Pensions and Social Security since 2008/2009

Housekeeping Points

Mute

Q&A

IAI support

Recording

Feedback

CPD

Broad Agenda

Context Setting	**Deeper Dive into Phased Withdrawal**
Something Different	**Q&A and Discussion**

Poll Question 1

What proportion of the pension assets in the largest countries in the world are DC assets?

a. approx. 20%
b. approx. 30%
c. approx. 40%
d. approx. 50%
e. approx. 60%

2019 saw DC assets overtake DB assets*

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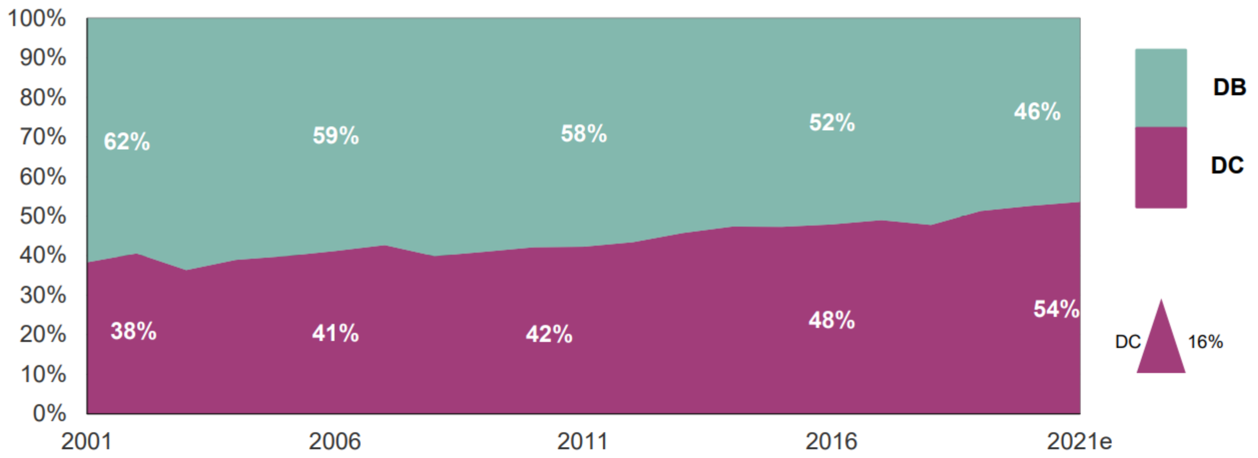


During the last ten years, DC assets have grown by 9.0% pa while DB assets have grown at a slower pace by 4.8 % pa.

The growth rate of DC assets for the last 20 years is 8.2% pa and 5.1% pa for DB assets.

P22

The study covers 22 pension markets in the world (P22). They have pension assets of **USD 56,575 bn**

P22 markets

Australia, Brazil, Canada, Chile, China, Finland, France, Germany, Hong Kong, India, Ireland, Italy, Japan, Malaysia, Mexico, Netherlands, South Africa, South Korea, Spain, Switzerland, UK, US

P7

A deeper analysis is performed for the P7, with assets of **USD 52,169 bn**

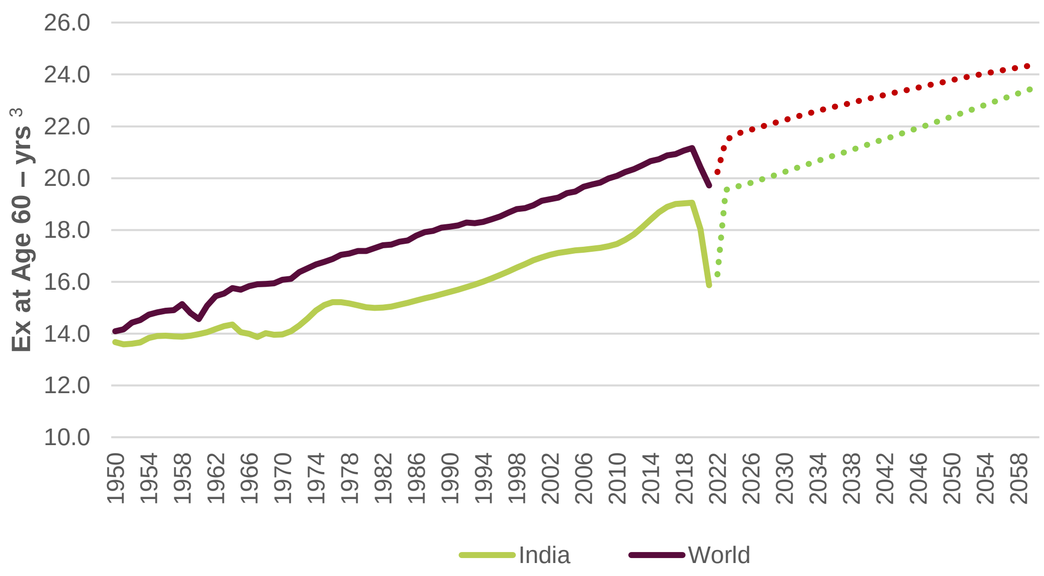
P7 markets

Australia, Canada, Japan, Netherlands, Switzerland, UK, US

*Thinking Ahead Institute, Global Pensions Assets Study – Top7 countries

We have a long way to go…… BUT

c. 10.5 Lakh Crore AUM[1] in NPS (USD$126bn+)	c. 20.75 Lakh Crore AUM[2] in EPFO/EPS (USD$249bn+)



Sources:
1. AUM and Subscriber Base | NATIONAL PENSION SYSTEM TRUST (npstrust.org.in) – 31 December 2023
2. https://www.epfindia.gov.in/site_docs/Annual_Report/Annual_Report_2022-23.pdf
3.United Nations, Department of Economic and Social Affairs, Population Division (2022). World Population Prospects 2022, Online Edition. Projections – Medium Variant

TIME TO TALK ABOUT INCOME “IN OLDER AGE”

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OPTIONS FOR INCOME IN OLDER AGE?

- Retirement products such as Annuities
- Interest from savings and private investments
- Social Security / Occupational Schemes
- Keep working
- Support from family

Decumulation Strategies

- Decumulation is the process of converting pension savings into an income for retirement.
- The process involves investing the pension savings in the financial market, as it is expected to increase the value of the pension fund.
- Words like withdrawal, income and consumption are used interchangeably in this presentation. Although they do not have identical meanings.

What does one look for in older age income?

- Secured Income for life?
- Death benefits / Bequest?
- Protection for inflation?

Existing Examples

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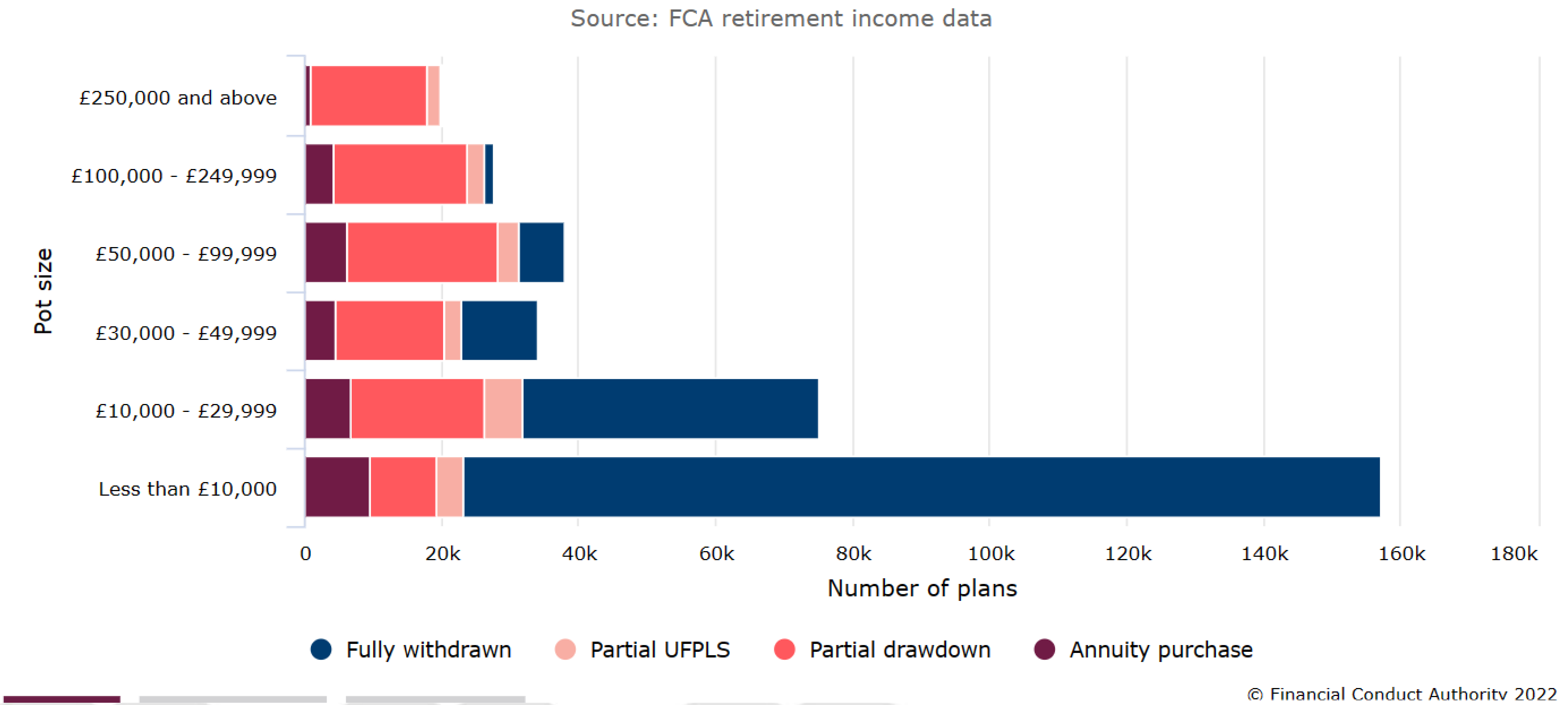
Retirement product	Protection offered			Benefits provided	
	Longevity risk	Investment risk	Inflation risk	Bequest	Liquidity
Fixed real-life annuities	Yes	Yes	Yes	Limited	No
Fixed nominal life annuities	Yes	Yes	No	Limited	No
Escalating real life annuities	Yes	Yes	Yes Plus	Limited	No
Escalating nominal life annuities	Yes	Yes	Partial	Limited	No
Variable life annuities, guaranteed benefits	Yes	Yes	Possible	Limited	No
Variable life annuities,	Shared	No	Via investment	Limited	No
Phased withdrawals	No	No	Possible	Yes	Possible
Lump sum/self-annuitization	No	Possible	Possible	Yes	Yes

UK – Choice made by retirees

Number of pension pots accessed first time, by choice and by pot size



Broad Agenda

Context Setting	Deeper Dive into Phased Withdrawal
Something Different	Q&A and Discussion

Let’s look at Phased withdrawal

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पेंशन निधि विनियामक एवं विकास प्राधिकरण
PENSION FUND REGULATORY AND DEVELOPMENT AUTHORITY

Circular

Circular no: PFRDA/2023/30/SUP-CRA/10 **27th Oct, 2023**

To

All NPS Stake Holders

Subject: Facility of Systematic Lump sum Withdrawal (SLW) for NPS Subscribers

As per the existing exit guidelines, the subscribers post 60 years/superannuation can defer availing of annuity & withdrawing the lump sum on any combination till 75 years of age. The lump sum amount can be withdrawn in a single tranche or it can be withdrawn on an annual basis. If withdrawn annually, the Subscriber has to initiate the withdrawal request each time and authorized.

2. In accordance with Regulation 3 and Regulation 4 of PFRDA (Exits and Withdrawals under the NPS) Regulations, 2015 and amendments therein, it is proposed to provide the option of phased withdrawal of the lump sum through Systematic Lump Sum Withdrawal (SLW) facility. The subscribers are allowed to withdraw up to 60% of their pension corpus, through the SLW on a periodical basis viz. monthly, quarterly, half-yearly or annually for a period till 75 years of age as per the choice

3. All Nodal offices, Points of Presence, NPST and Corporate can disseminate the information about SLW for the associated Subscribers who superannuate or reaching the age of 60 years and plan to exit from NPS. Central Record Keeping Agencies (CRAs) can publish FAQs and release educational podcasts on SLW, highlighting its benefits and explaining the process of initiating SLW on their websites and social media platforms.

This circular is issued in exercise of powers conferred under section 14 (1) of The Pension Fund Regulatory & Development Authority Act, 2013.

Digitally signed by
K MOHAN GANDHI
Chief General Manager

बी – १४/ए, छत्रपति शिवाजी भवन, कुतुब संस्थागत क्षेत्र, कटवारिया सराय ,नई दिल्ली – ११० ०१६
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Phone : 011 - 26517501, 26133730 ,26133730 Fax: 011 – 26517507 website: www.pfrda.org.in

Azadi Ka Amrit Mahotsav

The concept has been introduced in a simple way in NPS?

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Simple Approach - 1

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- Simple Amortisation
- Estimate a time-period e.g. 25 or 30 years
- Balance at Retirement divided into equal amounts "tranches"
- Each year a trance is consumed

- **No longevity protection**
- **Value of Tranches will fluctuate**

- **Simple to explain**

Simple Approach – 2

- Rules of Thumb Approach
  - "4%"? e.g. 1 crore balance = INR 4lakh income.
- The idea is to maintain the real value of the income withdrawn in the first year of retirement.
- Each year the original amount increased with inflation.
- Past literature suggests it equates to an inflation-increasing income that is expected to last for at least 30 years in 90% of all market scenarios.

- **May not last the 30 years**
- **Is 4% appropriate in India?**

- **More stable income**
- **Inflation proofing**

New Zealand also suggests 6% fixed nominal rule of thumb

Simple Approach – 3

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- Fixed date amortisation
- Pick a date to exhaust the funds
- Each year take out the current value of the balance divided by the number of years left to that date

- **Each year income will vary**
- **Choosing a date difficult**

- **Easy to understand**
- **Known length of time**
- **Date could be adjusted**

Intermediate Approach

- Reflect expected lifetime
- Each year take out the current value of the retirement savings divided by the average remaining life expectancy at that time

- **Each year income will vary**

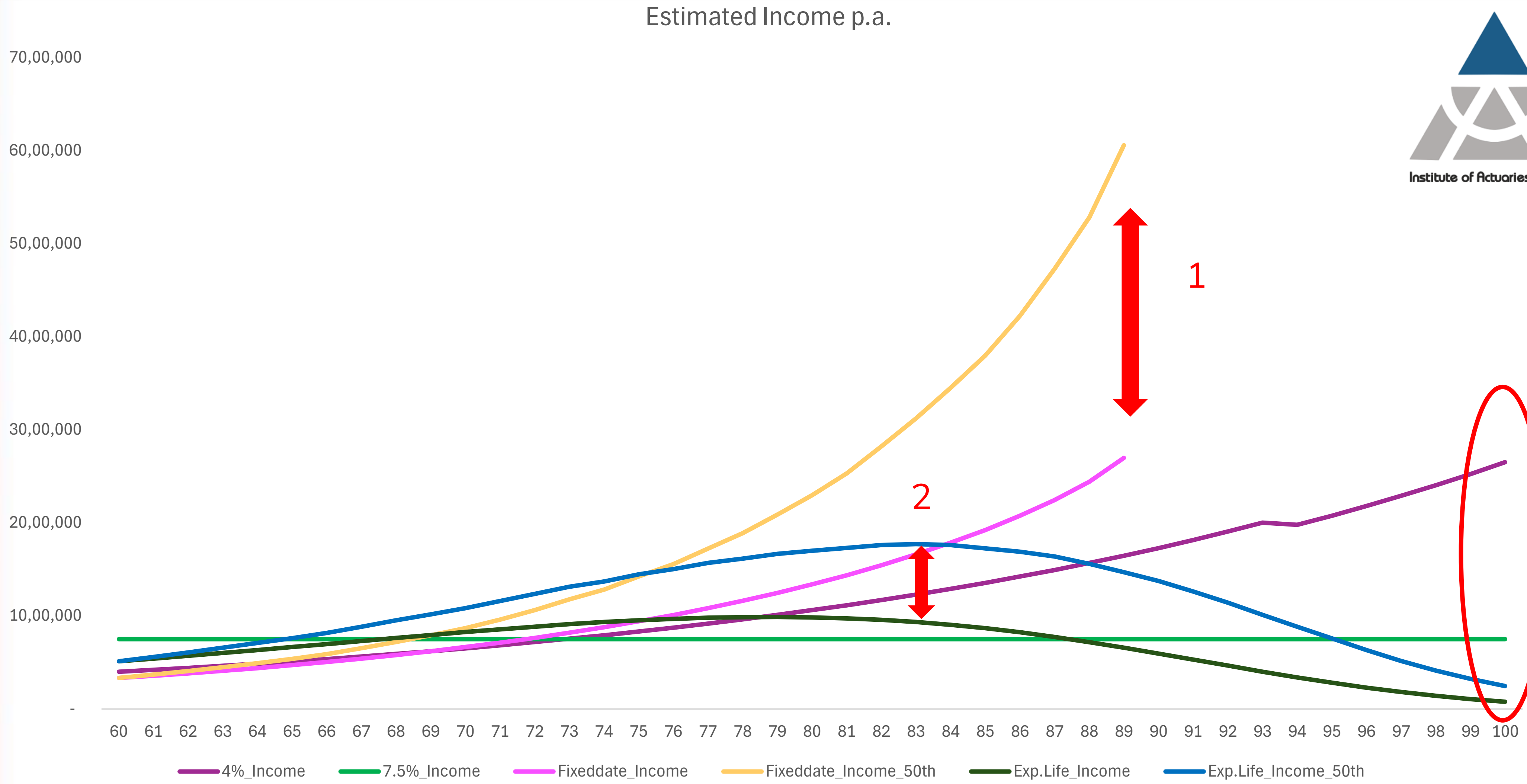
- **Funds last until death**

Poll Question 2

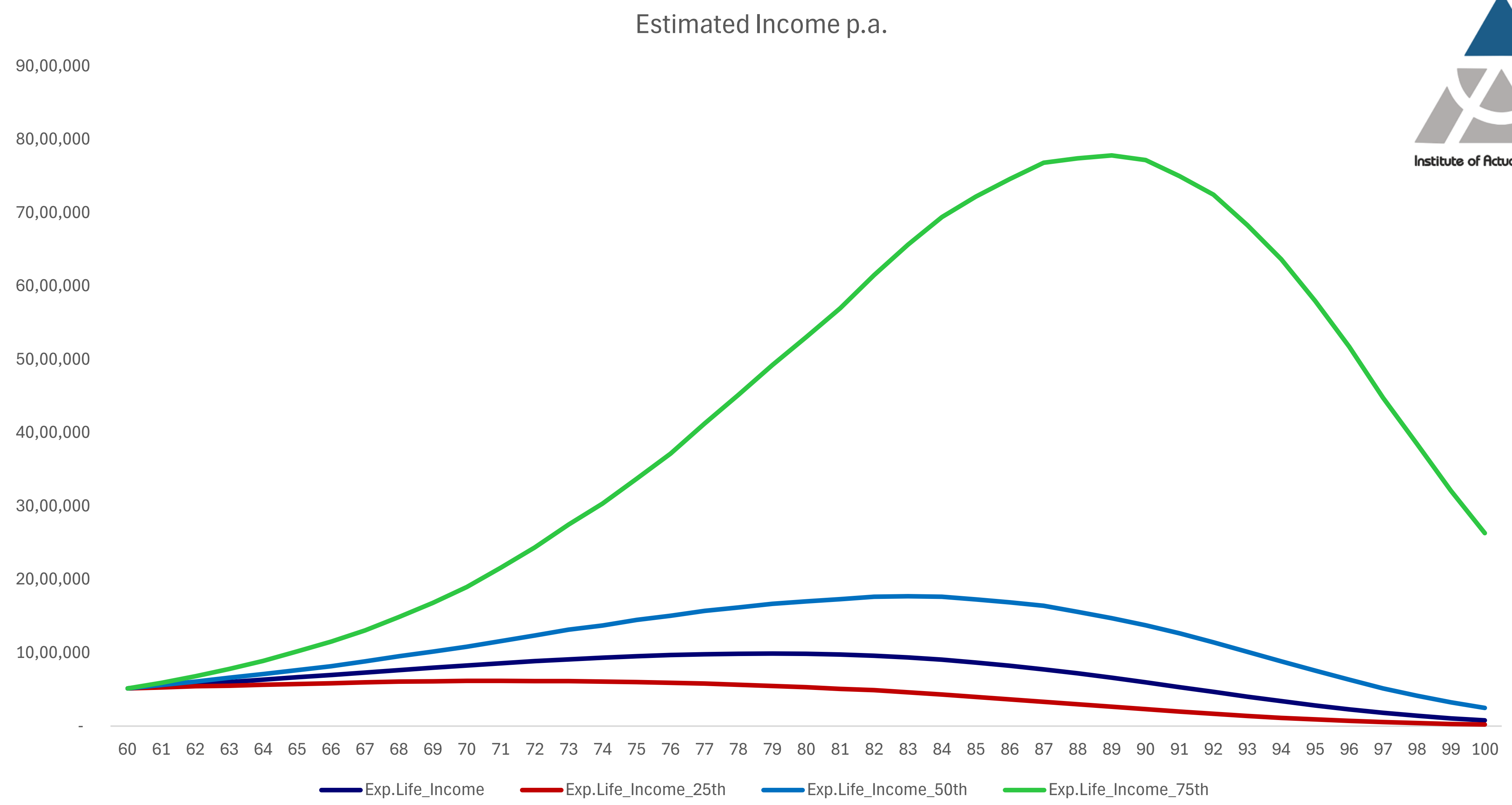
At its peak, which method may give the highest peak income in a year in future?

a. 4% inflation proof rule of thumb
b. 7.5% fixed nominal rule of thumb
c. 30 year tranche approach
d. 30 year fixed date approach
e. expected lifetime approach

- Earning rate: 7%p.a
- Inflation: 5% p.a.
- Exp Life: UN Projections
- Starting balance 1 crore



- Mean Earning rate: 9.8%p.a.
- Std Dev.: 9%
- Inflation: 5% p.a.
- Exp Life: UN Projections
- Starting balance 1 crore
- 1000 scenarios



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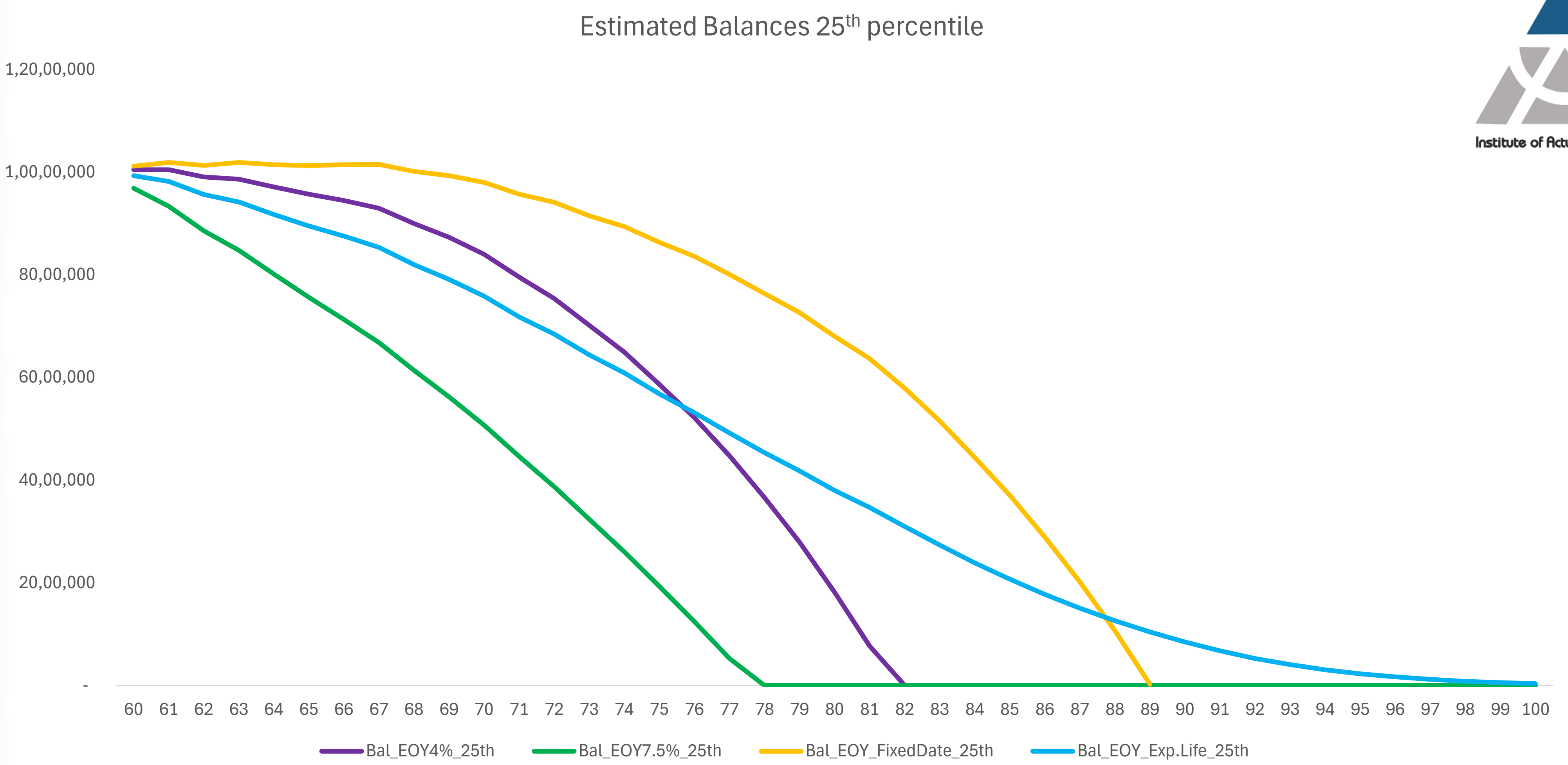

- Mean Earning rate: 9.8%p.a.
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- Starting balance 1 crore
- 1000 scenarios

Of course, it's not that simple

- Investment allocation will play a huge role
- Bequest?
- Projections will look very different if mortality expected adjusted
- Needs to have stochastic modeling
- Probability of ruin is a very important factor
- Risk aversion of the retiree
- Financial planning like this can never be done in isolation
- How do you optimize? – that's where the real maths happens!

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UK – Rate of withdrawal by put size

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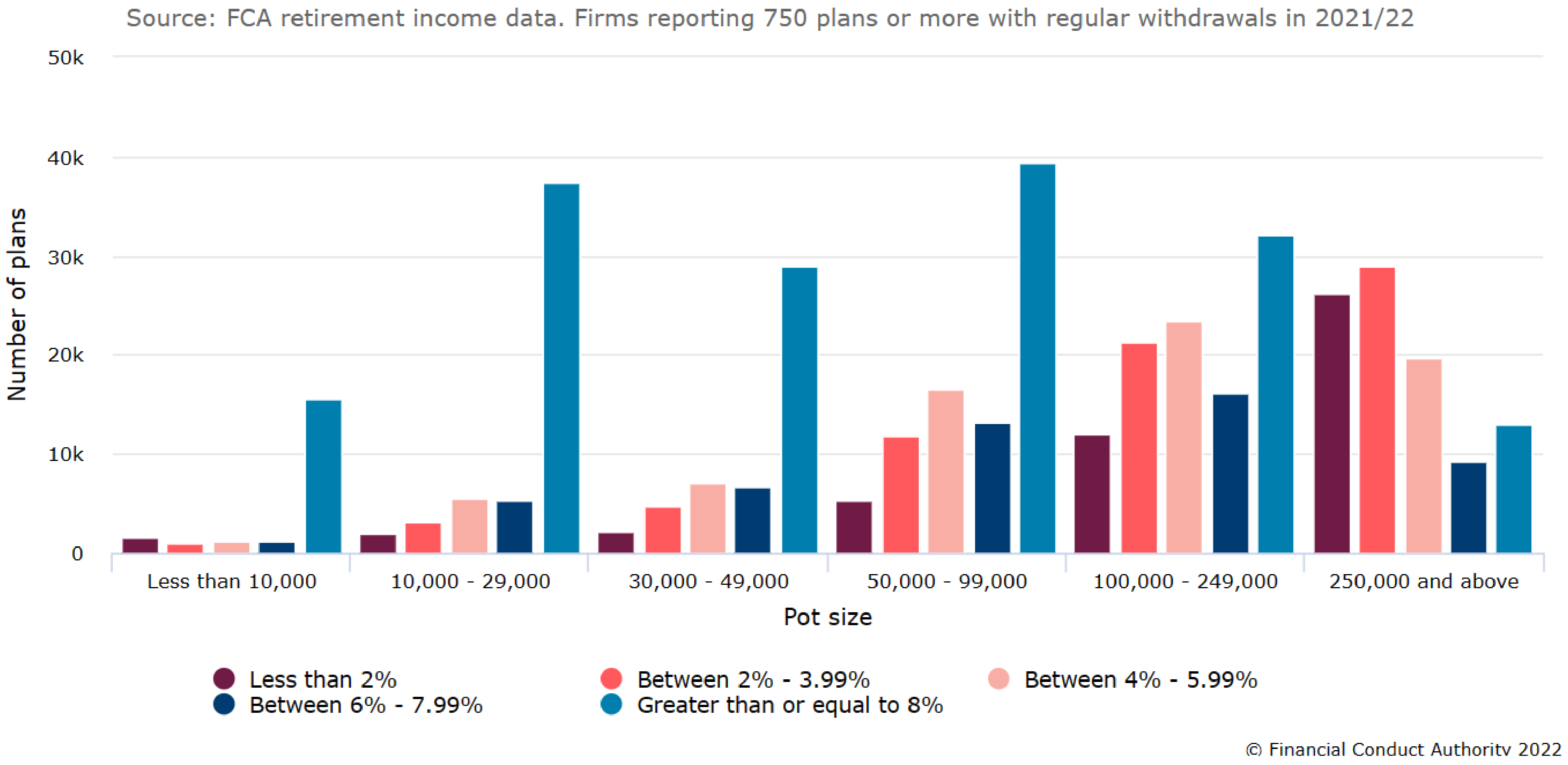

Pension Decumulation Strategies

A State-of-the-Art Report

Thomas Bernhardt* and Catherine Donnelly†

https://risk-insight-lab.com/

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29 April 2018

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Contents

However, are times changing? What about?

- Better value
- Flexibility
- Choice
- Accessibility
- Transparency

- **Lifelong income a critical and missing component of many pensions systems**
- **Many challenges for traditional annuities to fix the problem**

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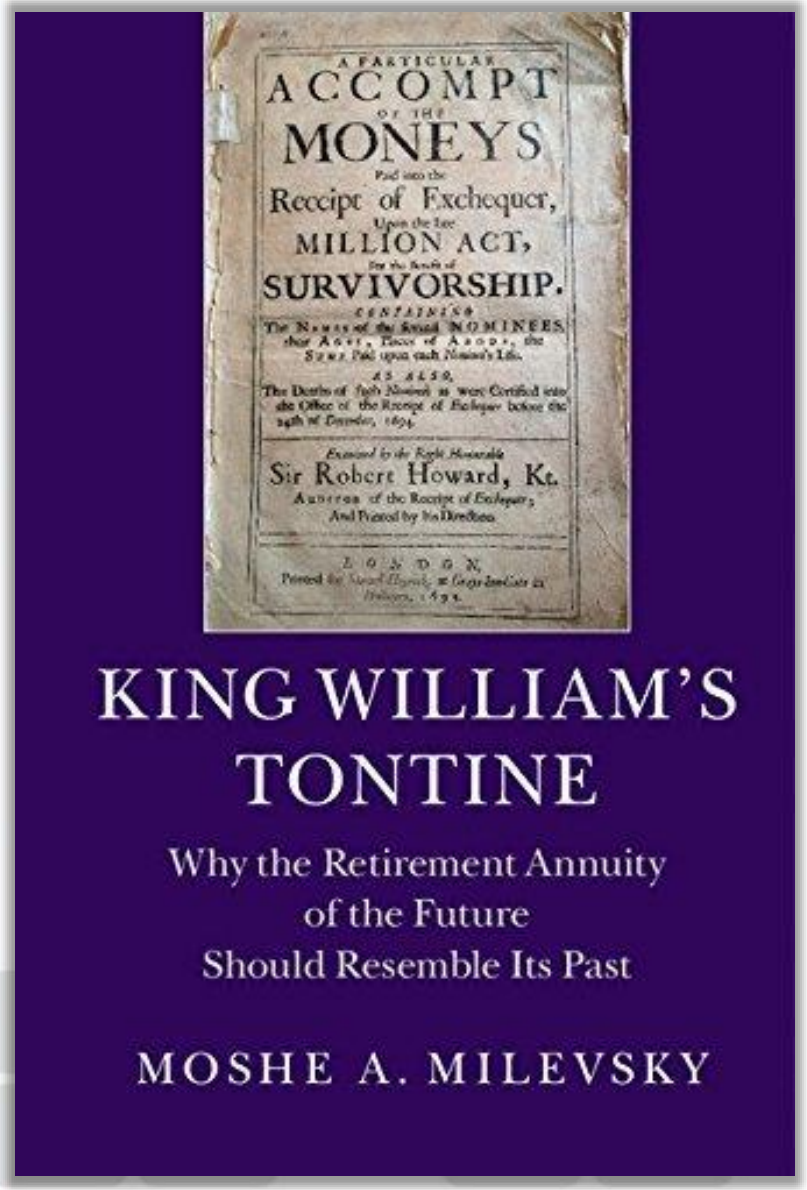
Broad Agenda

Context Setting	Deeper Dive into Phased Withdrawal
Something Different	Q&A and Discussion

A past concept… renewed?



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So what is a tontine?

- Concept dates back on mid 1600s
- A tontine is a financial arrangement in which members form an asset pool
- Mutually and irrevocably agree to ***receive payouts while living forfeit their accounts upon death forfeiture*** proceeds apportioned among the surviving members.
- Payouts depend on investment performance ***and the mortality experience of the membership pool***

Source: CFA INSTITUTE RESEARCH FOUNDATION / BRIEF
TONTINES - A PRACTITIONER'S GUIDE TO MORTALITY-POOLED INVESTMENTS RICHARD K. FULLMER, CFA

A past concept… renewed?

Why Useful?

- Employers that wish to offer defined benefit–like employee pension plans that can never become underfunded
- Defined contribution plans that wish to offer assurance of annuity-like lifetime income while avoiding the fiduciary liability and counterparty risk
- Investors who wish to increase their returns without increasing investment risk

Source: CFA INSTITUTE RESEARCH FOUNDATION / BRIEF
TONTINES - A PRACTITIONER'S GUIDE TO MORTALITY-POOLED INVESTMENTS RICHARD K. FULLMER, CFA

A past concept… renewed?

SOME MATHS

A fair game payoff as follows:

- Stake of “s” in a game
- Probability of losing is q
- To be fair, the following equation must hold each time the game is played, for each player: $-qs + (1 - q)c = 0$

A past concept… renewed?

Now consider:

- **"s"** is member's account balance
- Expected mortality in that year is **q**
- The **expected mortality credit** is **(1-q)c** if member survives

$$c = \underbrace{\frac{qs}{1-q}}_{\text{Gain}} = \underbrace{\left(\frac{q}{1-q}\right)}_{\text{Gain rate}} s$$

- Expand formula to each member
  - Age
  - Gender
  - Account balance
  - Time period under consideration

A past concept… renewed?

WHAT HAPPENS NEXT?

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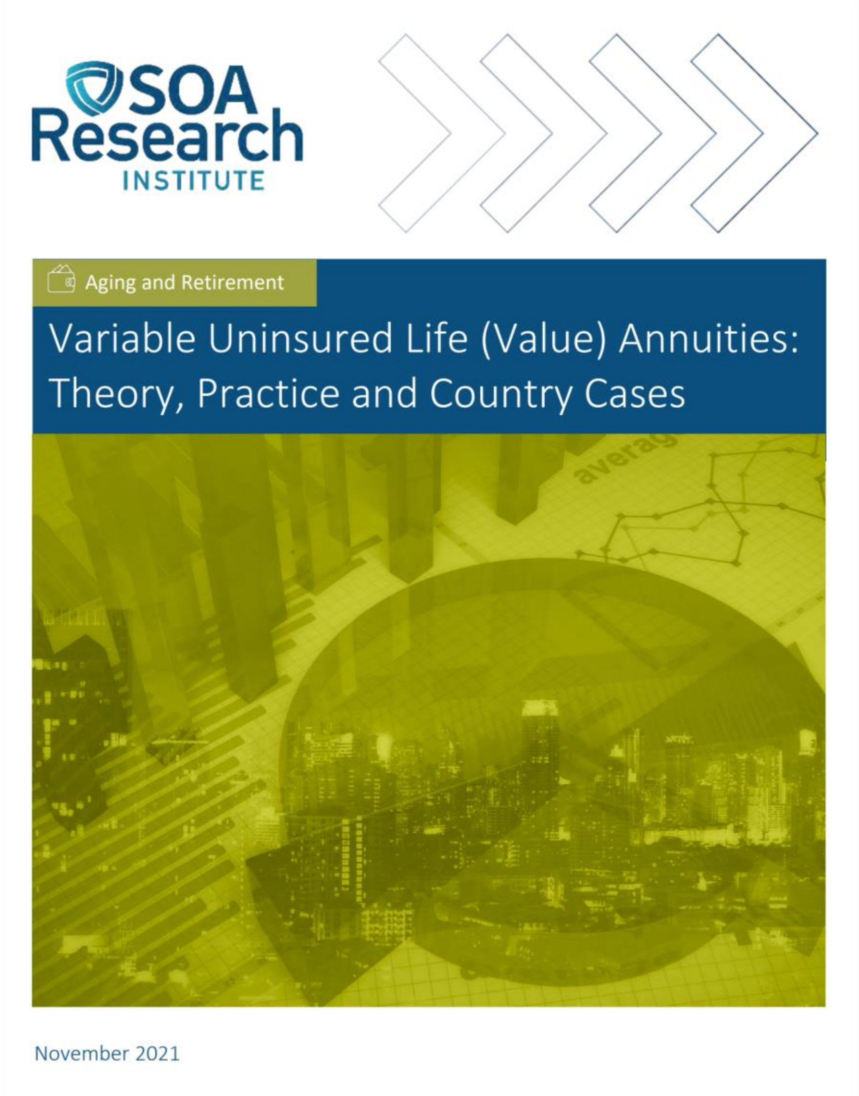
- Actual will be different to expected
- **Actuaries role to set Mortality** assumptions, Group Gain calculations to ensure fairness and stability
- **Group Gain** is calculated based on the actual deaths in the year.
- **Sum of the balances** of those who died during the period **divided** by the **sum of the nominal tontine gains** of those who survived the period.
- Over and above this would be any investment return of the pool to be allocated

Recent Research

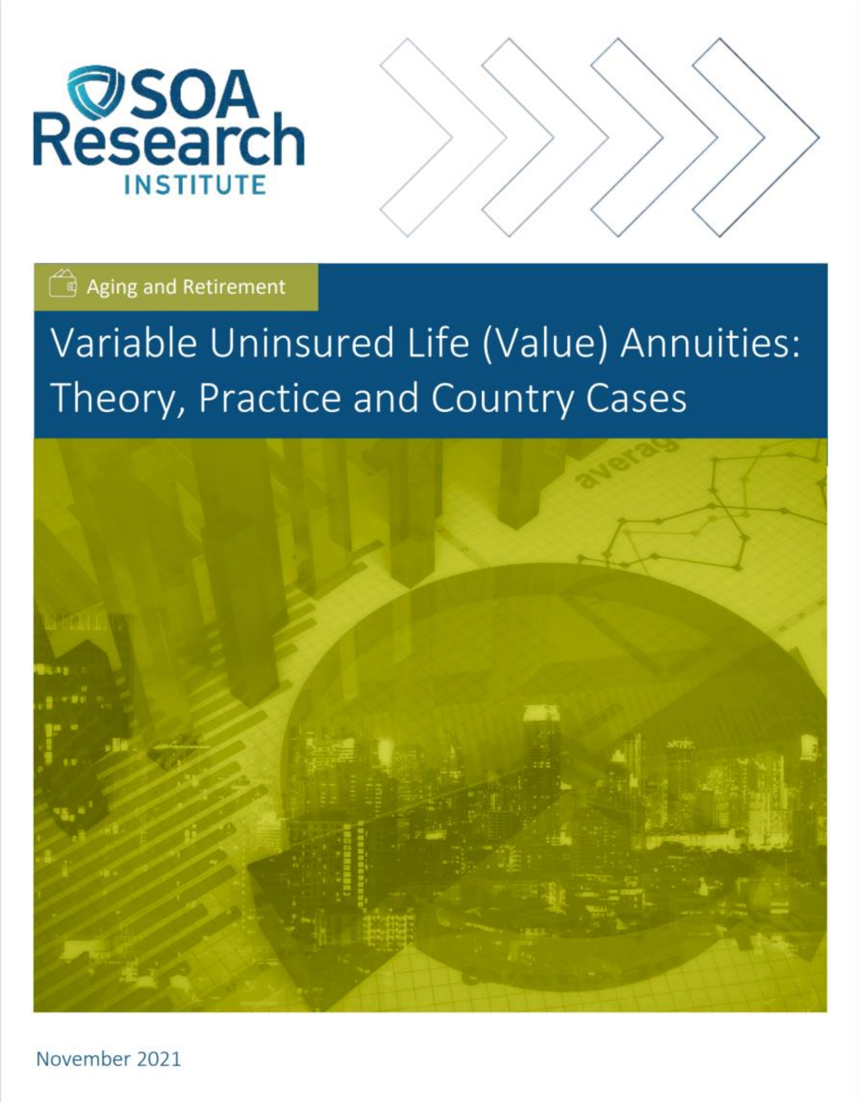
Practical Model with Administration tool

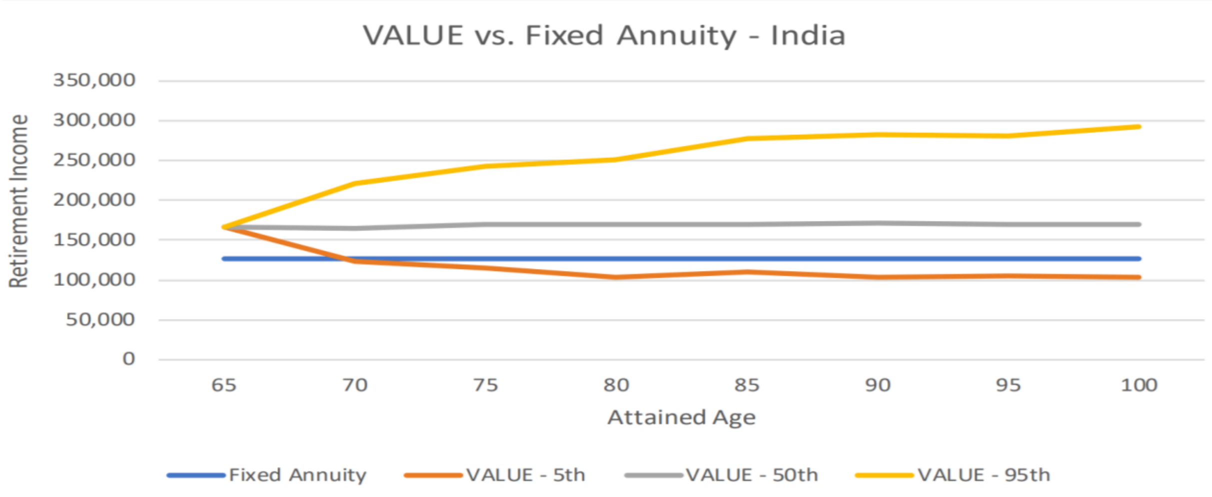
- Using longevity pooling mechanics
  (calcs and tool part of the research)
- Creating old age income positioned as more efficient and better for retirees, as compared to traditional annuities
- Payouts can be adjusted
- Guaranteed elements could be incorporated in a design (e.g. basic level of income, bequests)
- Will just mean different level of potential credits to share
- Member still see own account balances so communications are transparent



Source: Society of Actuaries, Variable Uninsured Life (Value) Annuities: Theory, Practice and Country Cases - Price, Inglis, Ryder (2021)

A past concept… renewed?





Source: Society of Actuaries, Variable Uninsured Life (Value) Annuities: Theory, Practice and Country Cases - Price, Inglis, Ryder (2021)

Poll Question 3

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To what extent do you feel longevity pooling may work in India?

a. Not at all
b. to some extent
c. Definitely

Examples

- Longevity Funds introduced for Occupational DC schemes

- Variable payout DC products

- CPF Life pension options and adjustments per actuarial assessments

- Mandatory DC scheme (Occupational) – Variable payouts based actuarial adjustments

- Occupational DC scheme – Collective DC Schemes. Pooled in accumulation and payout phase.

Poll Question 4

Where do you see the maximum opportunity in India for income drawdown schemes?

a. NPS
b. EPF
c. CPS (Public Sector NPS)
d. APY
e. All of the above
f. Other

Variations

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RETIREMENT INCOME INSTITUTE
Alliance for Lifetime Income

RESEARCH PAPER
DECEMBER 2023
Retirement Income Institute Original Research-#025-2023

ABSTRACT

Interest in strategies that provide longevity risk pooling without an explicit guarantee from an insurance company, typically referred to as tontines, has been increasing globally. In this paper, we introduce the concept of a "protected modern tontine" that combines a traditional fixed annuity with a tontine in a single product that generates lifetime income. This particular structure allocates the mortality and duration risks optimally between the insurance company and tontine pool to maximize the income benefit, minimize the fees, and provide a structure that may be more appealing than either product individually. This hybrid approach can enhance interest in tontines and change the narrative around how tontines can be used as part of an efficient retirement income solution.

PROTECTED MODERN TONTINES: A NEW APPROACH TO AN OLD AGE PROBLEM

DAVID BLANCHETT AND GABRIEL RICHARDS

INTRODUCTION

Financial advisors, defined contribution (DC) plan sponsors, and retirees are increasingly looking for strategies that can simplify the process of generating retirement income, especially that which is protected for life. While insured solutions like annuities are the predominate lifetime income strategies used today, there are structures that provide longevity risk pooling without the explicit income guarantee, typically referred to as tontines, that have been making a global resurgence.

Despite the widely acknowledged potential benefits of tontines (Fullmer 2019), questions regarding their legality in the U.S. remain. Even when the legal barriers are inevitably addressed, overall demand for strategies that provide longevity protection with an uncertain benefit is unclear, especially in the DC space given the relatively risk adverse nature of plan sponsors.

- Introduces the concept of mixing longevity pooling mechanics with traditional protected income solutions
- Their conclusion is to allocate a portion of the balance for a protected annuity (immediate or deferred). The remainder to be allocated to a longevity pool
- Modelled income outcomes

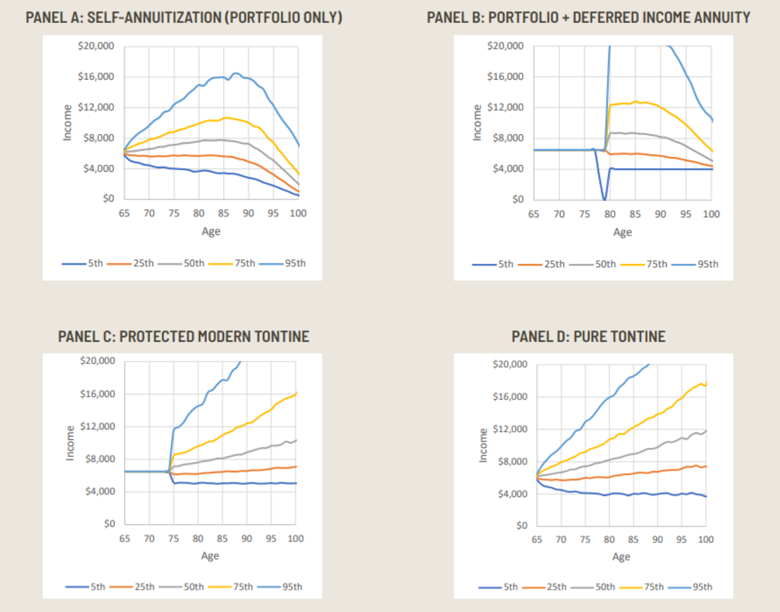


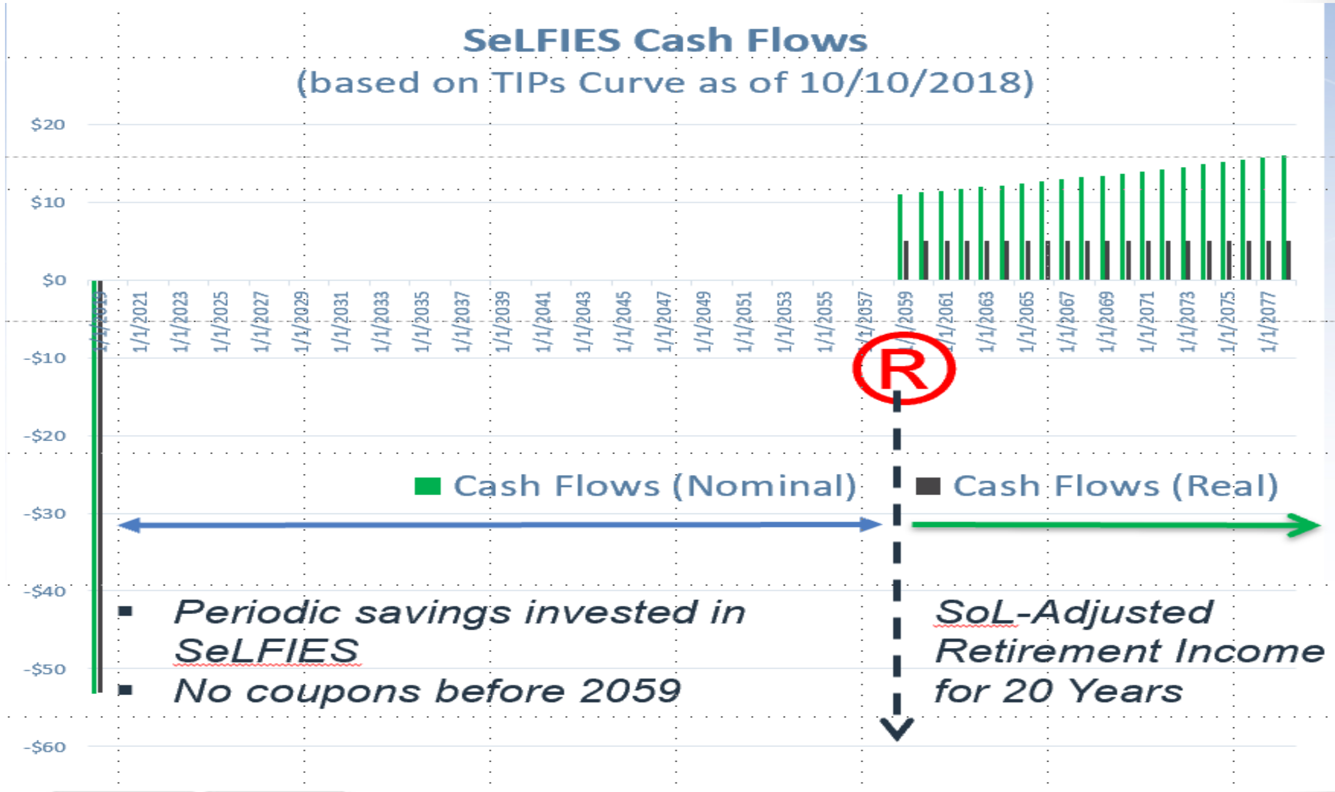
EXHIBIT 3. *Strategy Income Differences*

Totally New

- What about combining it all –
  A New Retirement Bond (SeLFIES)

- **S**tandard of **L**iving
- **F**orward starting
- **I**ncome only
- **S**ecurity

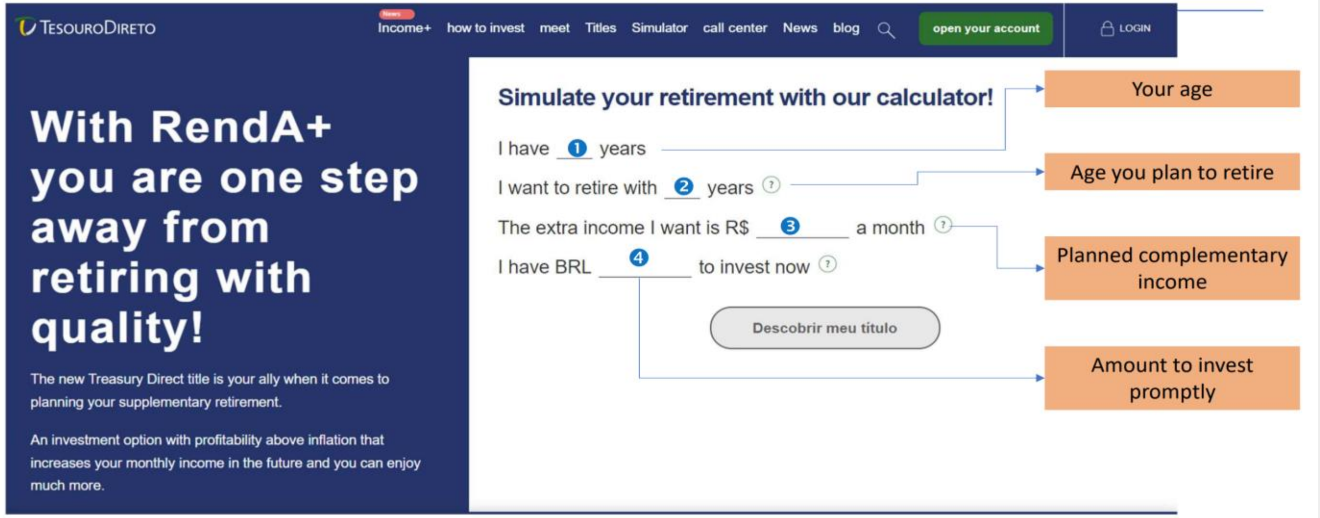
- Coupon fixed in real currency = $10 or Euro 10 or R$10
- Maturity = Life Expectancy of the Country
- Bequest to heirs
- Pays on the same date as Social Security payments
- Linked to appropriate inflation measure – VAT, Per Capita Consumption, CPI
- Issued in small denominations
- Tradeable
- Pure Market Instrument – Price = Currency of Retirement

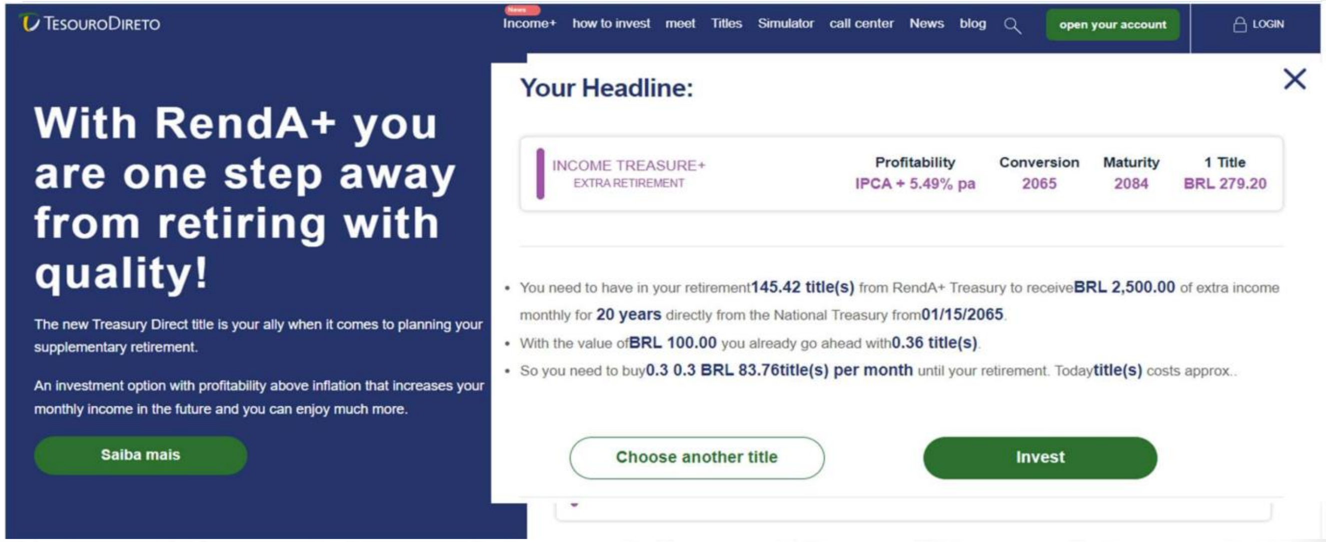


Source: “InDIAs”: Innovative Retirement Security Bonds for India, Dr Arun S. Muralidhar

Examples - SeLFIES

- RendA+ launched in January 2023
- A new bond to complement investors' Retirement from Social Security
- With just a few months of operation, the new bond has already reached
  - more than R$ 1.2 billion in outstanding
  - 62,000 investors
  - All done on a simple app
  - Can purchase in slices of as little at US$5 at a time





Source: SeLFIES: An Innovative Bond for Retirement Income International Retail Debt Management Symposium 2023, Brazil Oct 2023, Arun Muralidhar

In closing

- We know we have more people getting older, and for longer
- Annuities have their value, though popularity diminishing a little?
- Alternatives already exit
- Opportunity to evolve from Lump Sum and Annuities only?
- Opportunity for Actuaries
- Opportunity for Insurers
- Initiate more Asia specific research and engagement with policy makers and stakeholders

Broad Agenda

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Something Different	Q&A and Discussion

Q&A

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