IAI Webinar on Annuity and Beyond

Annuity Business

19th August 2020

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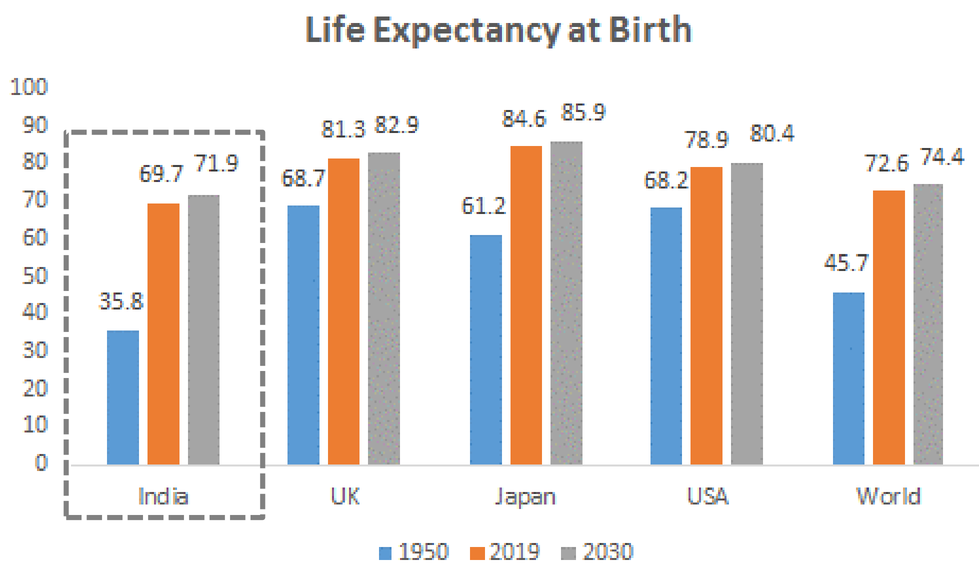
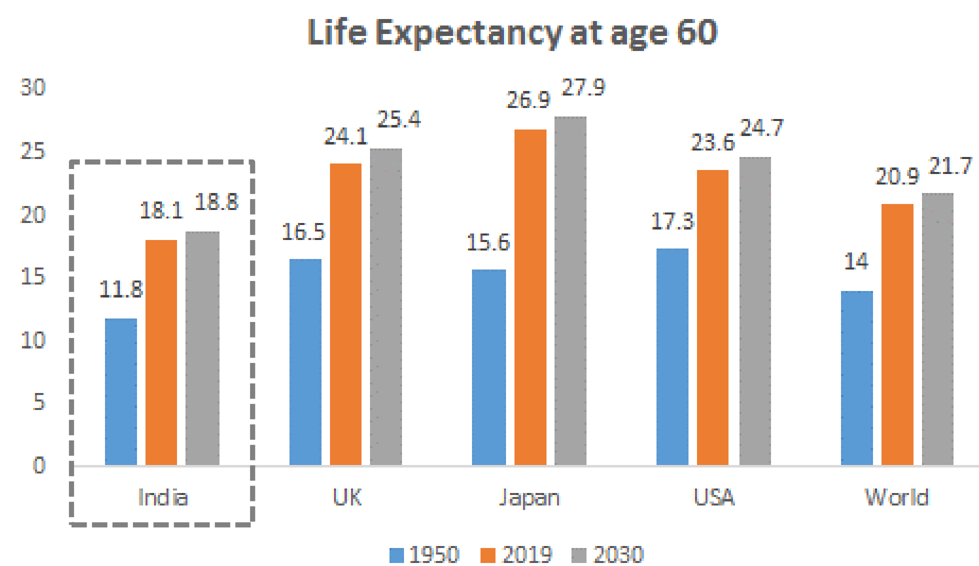
Institute of Actuaries of India

Disclaimer: The views expressed in this presentation are my personal views and do not represent in any way either the views of the Institute of Actuaries of India or my employer.

Annuities: World is living longer!



Average life expectancy is catching up the World's average



An average retiree is expected to live for at least **18 years,** i.e. up to age ~78

In last 6 decade, India has seen its life expectancy increase by **~ 53%**

Further expected increase by **~1 year. That's an extra year of survival**

Source: United Nation World Population Ageing 2019: Highlights

Annuities: Population aging in India

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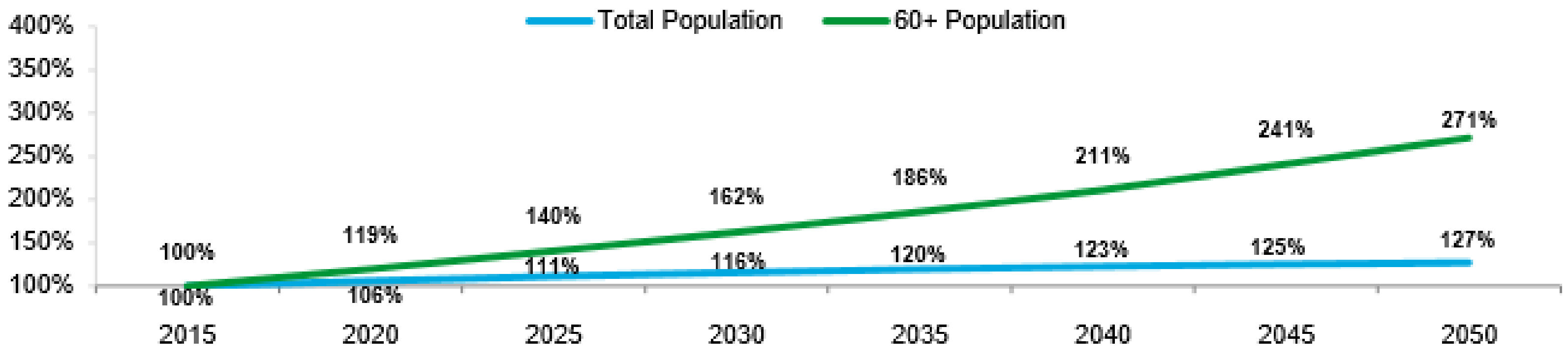
Figure 1 — Overall Population Growth Versus Age 60+ Population Growth*



*The overall population growth and growth of age 60+ population has been rebased to 2015. Data accessed 2017.

Source: UN Population Division — 2017, LIMRA International Research.

India to see an exponential increase in its Old age population in next 3 decades

Source: Spotlight on Retirement 2018: India by SOA and Secure Retirement Institute

Annuities: Life Expectancy in India

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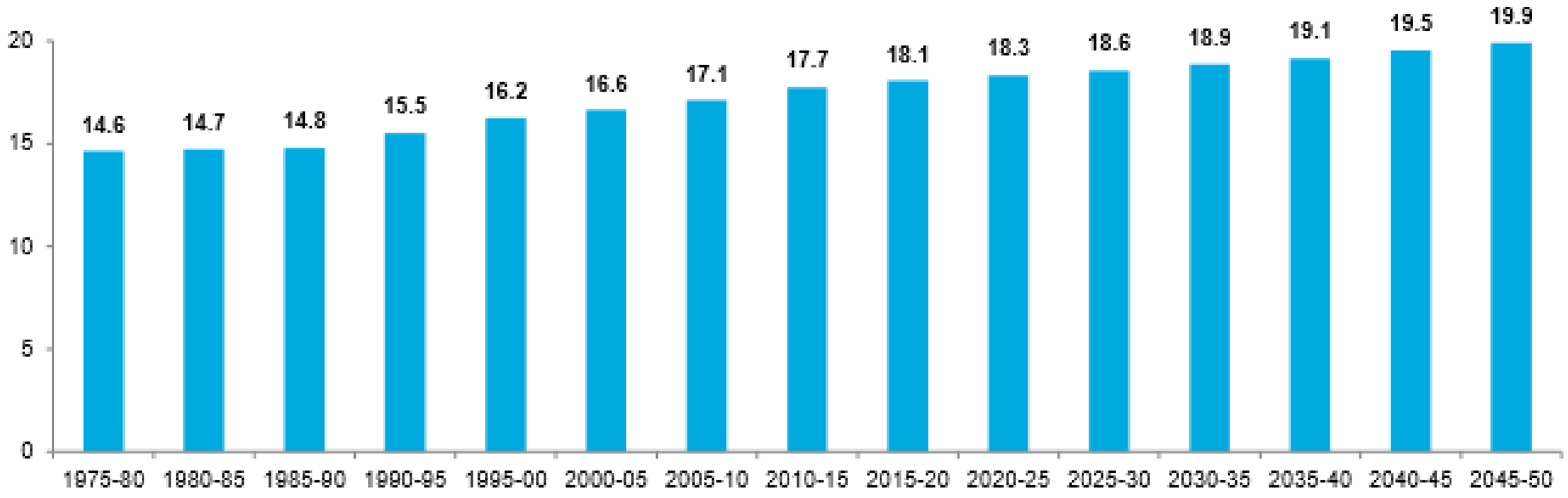
Figure 8 — Life Expectancy at Age 60 (in Years)



UN Population Division — 2017 data, LIMRA International Research.

India to see an increasing life expectancy of people achieving age 60

Source: Spotlight on Retirement 2018: India by SOA and Secure Retirement Institute

NPS Market in India

Number of subscribers and AUM as on 31 July 2020 - NPS (Combined NCRA & KCRA)

Sector	No. of Subscribers	Total Contribution (Rs in Crs)	AUM (Rs in Crs)
Central Government	21,17,126.00	1,07,341.86	1,57,581.45
State Government	48,30,846.00	1,80,316.71	2,44,203.48
Corporate Sector	10,25,232.00	36,121.79	49,164.39
All Citizen	13,29,814.00	16,527.05	15,740.25
NPS Swavalamban	43,22,253.00	2,748.66	4,074.18
Total	**1,36,25,271.00**	**3,43,056.07**	**4,70,763.75**

Number of Subscribers and AUM as on 31 July 2020 - Atal Pension Yojana (APY)

Sector	No. of Subscribers	Total Contribution (Rs in Crs)	AUM (Rs in Crs)
Atal Pension Yojana	2,21,42,151.00	10,659.97	12,260.12

Source: http://www.npstrust.org.in/assets-under-management-and-subsribers

Annuities – Why do we need them?

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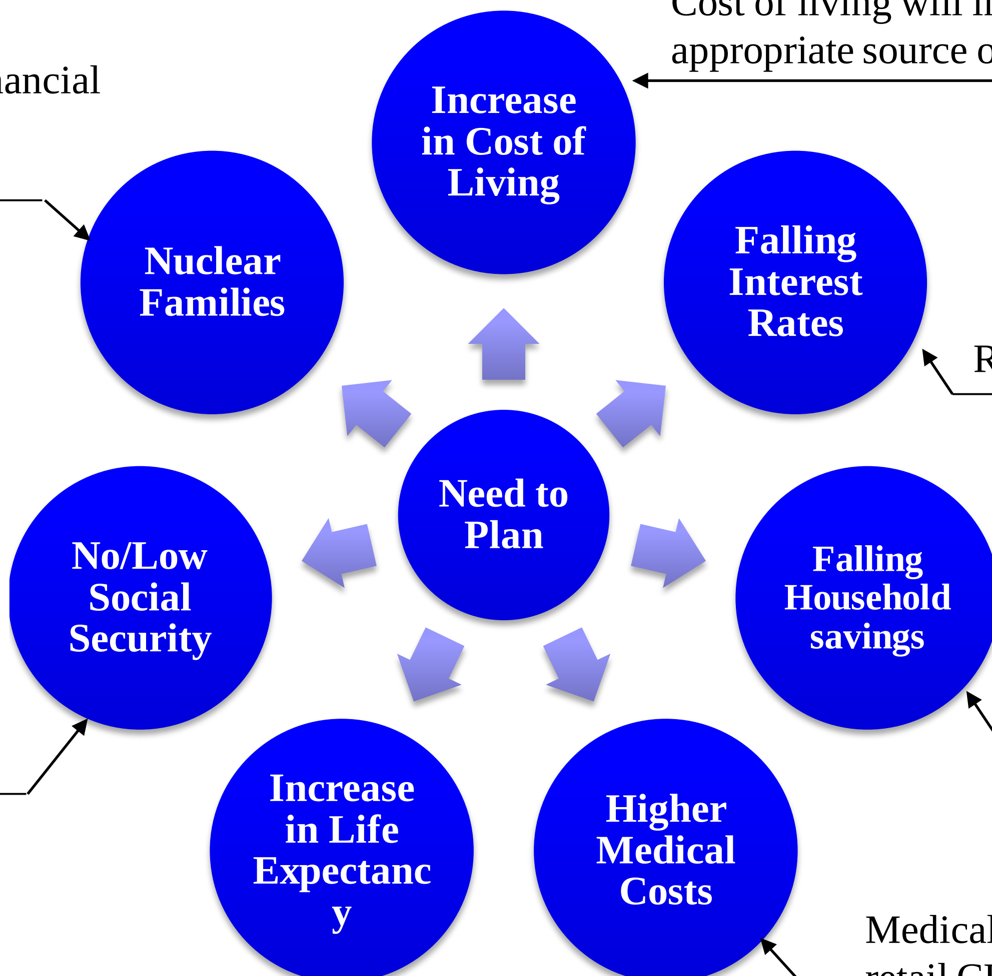
Cost of living will increase with inflation, hence appropriate source of income is needed

Increase need for financial independence post retirement



Rising cost of Annuity

No State Pension (Atal Pension Yojna provides pension of INR 1-5k and is mainly for un-orgainzed sector

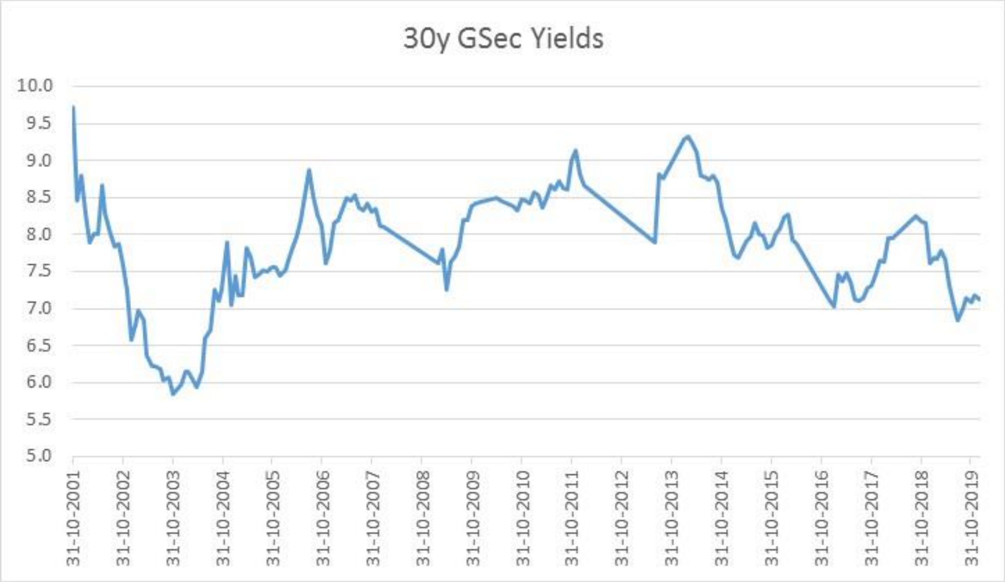
Household savings fell to 6.5% of GDP from 7.14% since FY11

Medical inflation is at 7.14%, double of retail CPI inflation for FY18-19

Average Life Expectancy is ~ 69 yrs and increased by 5.5 yrs since 2000

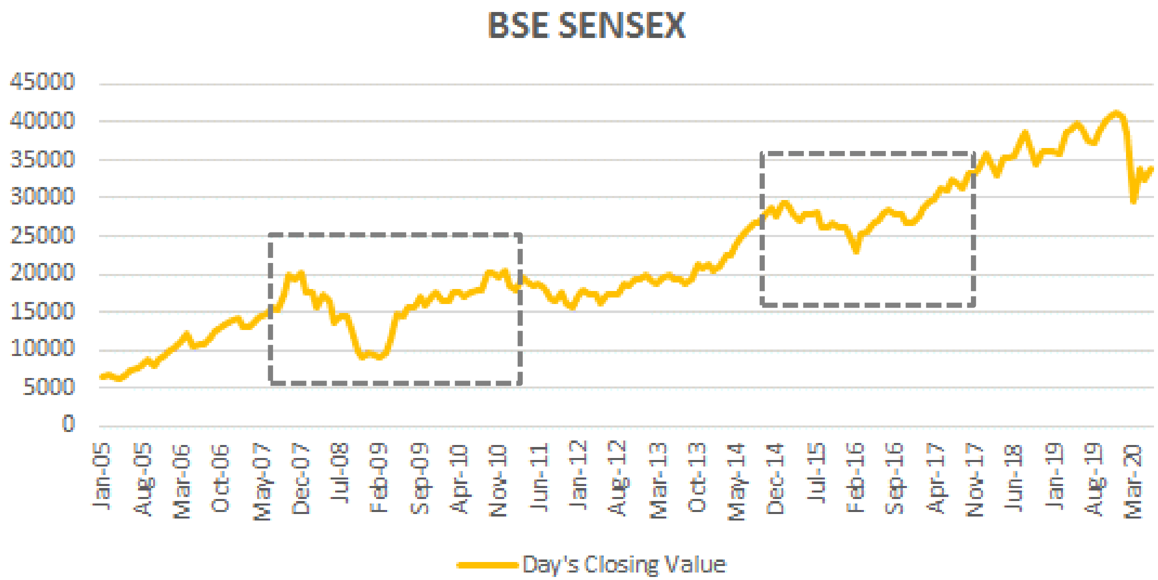
Annuities: Interest Rate Trend

10 yr rates have moved from high of 12% to low of 5.13%



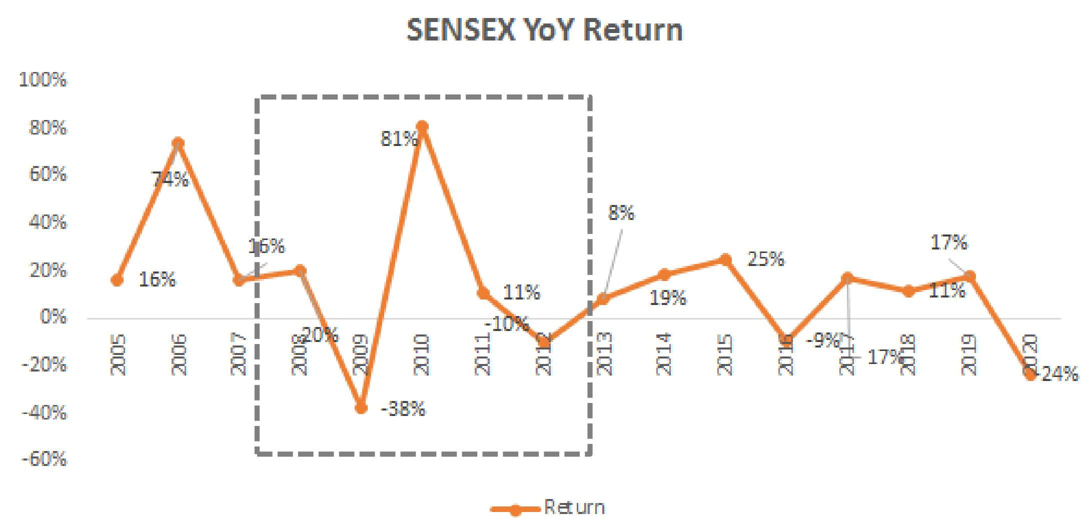
30 yr rate have moved from high of 9.72% to low of 5.84%

Annuities: Equity Trend



Equity is risky as an Asset class

High but volatile return makes equity not a suitable choice for fixed cash flow requirements



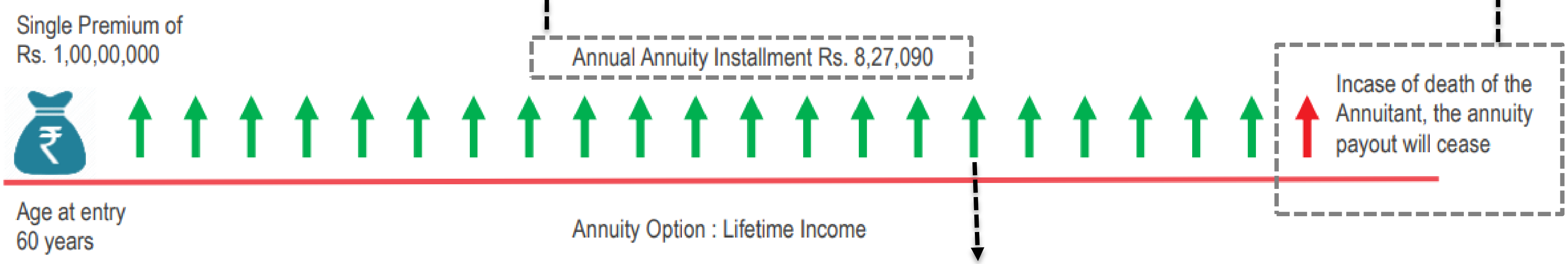
Annuities: Basic Cash flow

Guaranteed Returns

- No requirement to manage investment
- No Equity and Debt risk
- Fixed cash flows

Many Option

- Joint life option provides cover to surviving spouse
- Return of Premium provides for wealth transfer



Income is for life

- Helpful with increasing life expectancy

Annuity rates above do not represent current prevailing rates and have been used for representation purpose only

Annuities: Types

Annuities

Types of Pay-out

- Fixed payment during the term
- Fixed payment increase at a defined rate
- Inflation linked payment

Time Pay-out Starts

- Immediate – Payment start once the policy is taken
- Deferred – Payment starts after the accumulation period is over

Duration of Pay-out

- Life Annuity – payment till the annuitant lives.
- Term Certain –Payment till a certain term and life there after

Number of Lives covered

- Single Life – Only the Annuitant is covered
- Joint Life/Survivor – Surviving spouse is covered

Annuities can be with or without Return of Premium (ROP). Under ROP, at the end of the term/death of Annuitant, premium paid to insurance company is returned back to the nominee.

Annuities: Pricing Challenges

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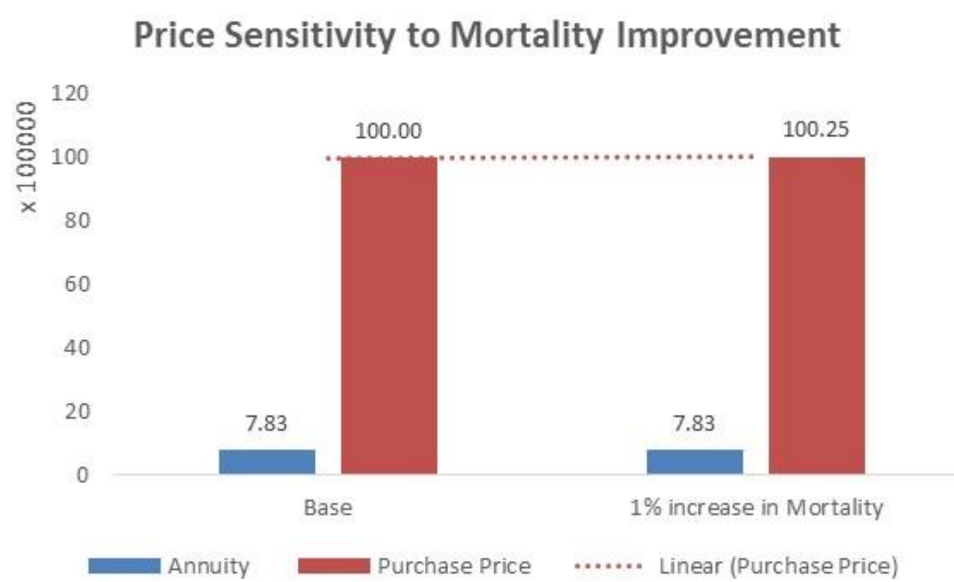
- **Product Design:**
  - Annuity rates are to be guaranteed. **Guarantees make product expensive**
  - Lack of relevant annuitant data for appropriate experience analysis and assumption setting
  - Competitive pressure for innovative design
- **Interest Rate and Inflation Assumptions**
  - One of the key assumption as Annuity rate are guaranteed for the whole term of policy
  - Guarantees make the **product interest rate sensitive**
    - Small change in interest rate will result in significant change in Annuity liabilities
  - Interest rates have moved from 13%-14% to 5%-6% in last 3 decade.
  - Unavailability of sufficient long dated bonds and swaps to make an assumption
  - Uncertain future inflation rates
- **Mortality/Longevity Assumptions**
  - Medical advancement, Health awareness, Sanitation program, Improved government medical facilities etc. are all contributing to lower mortality and increased longevity
  - Lack of past data to make an appropriate future assumptions for **mortality improvement**

Annuities: Sensitivities & Pricing

1% fall in interest rates leads to **~11% increase** in Purchase price



1% improvement in mortality rates (YoY) leads to **~0.25% increase** in Purchase price

Life Annuity INR 7.83 lac | Purchase price INR 1 cr. | Age 60

Annuities: Asset Market in India

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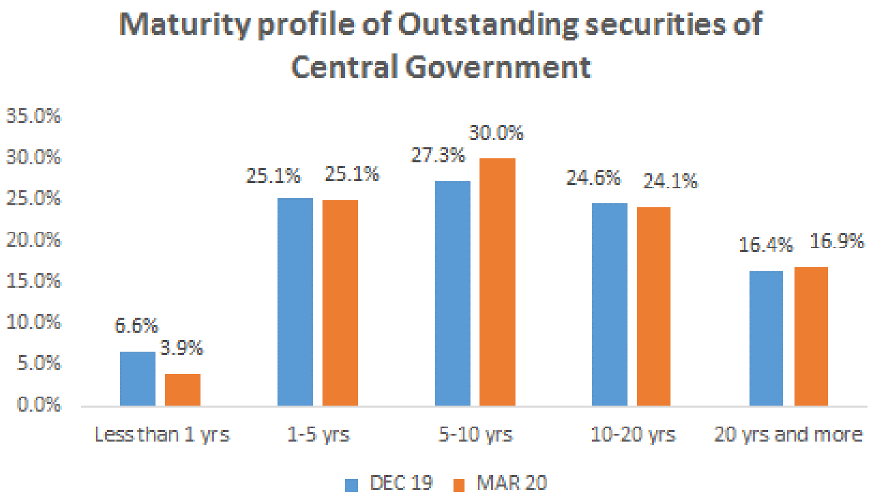
Kind of Debt Instruments available:

Type	Key Issuers	Tenure Available
Government Securities	Government of India	91 days - till 40 years
State Development Loans	State Government	Mostly 10 years
Near Government Securities	PFC, REC, IRFC, NHAI, NABARD, EXIM etc	Mostly 10 years
Corporate Bonds	HDFC, RIL, Tata Sons, LIC HOUSING etc.	Mostly 10 years

Summary of Government of India Securities outstanding:

Government Bonds are only long dated Asset available but there supply is relatively small.

Insurance companies account for ~ 25% of O/S securities



Source: Quarterly Report on Public Debt Management for the Quarter January - March 2020

Annuities: Asset Market in India

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Table 4.2: Yield and Maturity of Dated Securities of Central Government

Year	Issues during the year		Outstanding Stock*	
	Weighted Average Yield (%)	Weighted Average Maturity (years)	Weighted Average Coupon (%)	Weighted Average Maturity (years)
1	2	3	4	5
2010-11	7.92	11.62	7.81	9.64
2011-12	8.52	12.66	7.88	9.60
2012-13	8.36	13.50	7.97	9.66
2013-14	8.48	14.28	7.98	10.00
2014-15	8.51	14.66	8.09	10.23
2015-16	7.89	16.07	8.08	10.50
2016-17	7.16	14.76	7.99	10.65
2017-18	6.98	14.13	7.85	10.62
2018-19	7.77	14.73	7.84	10.40
2019-20 Q1	7.21	15.86	7.81	10.49
2019-20 Q2	6.93	15.93	7.80	10.57
2019-20 Q3	6.86	16.47	7.73	10.55
2019-20 Q4	6.70	16.87	7.71	10.72
2019-20	**6.85**	**16.15**	**7.71**	**10.72**

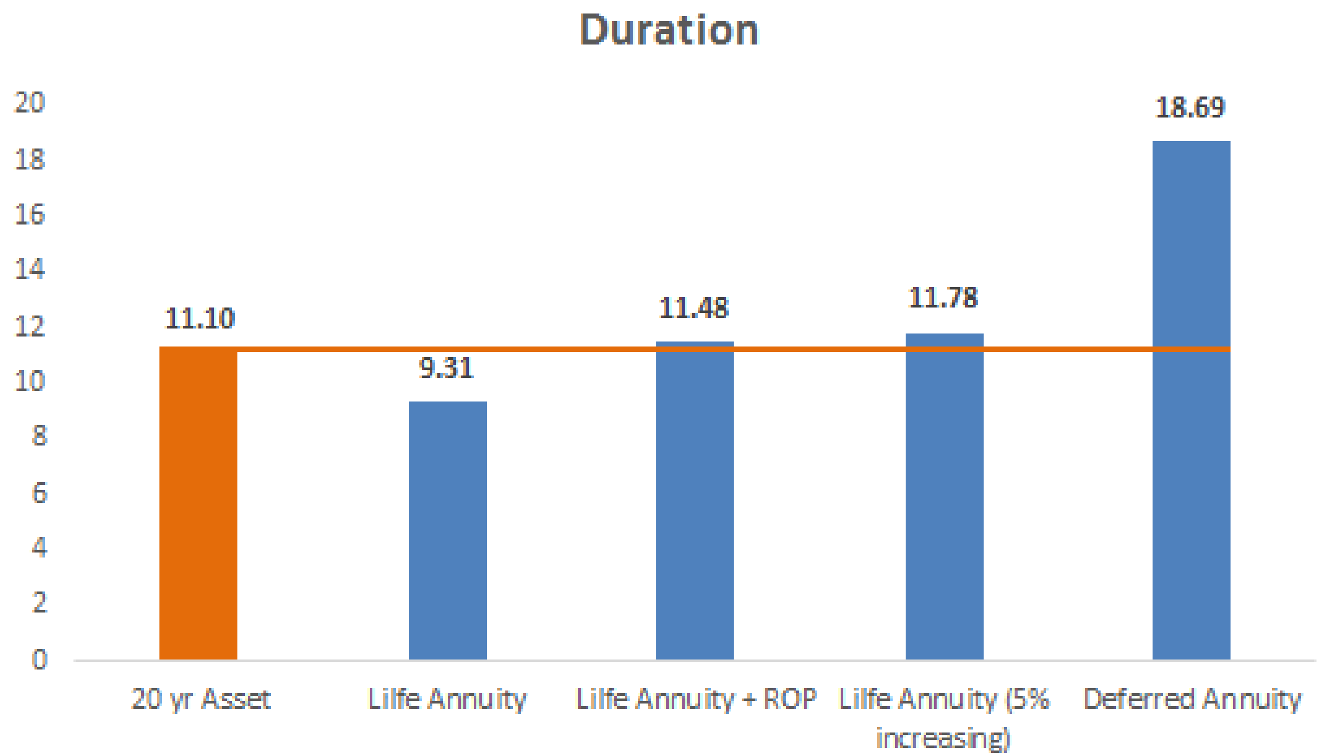
* As at end of period

– Average O/S of Government Securities have been ~ 10 yr. over the last decade

– Impacts the Duration that is available to meet the Insurance Long term Liabilities

Source: Quarterly Report on Public Debt Management for the Quarter January - March 2020

Annuities: ALM Challenges



LA: Lifetime Income | LA – ROP: Lifetime Income with Cash Back

- **For effective Liability Driven Investment (LD) Strategy, Assets with similar Duration as Annuities Liabilities are needed**
- **This is mainly for managing Interest Rate sensitivity of the cash flows**
- **For Longevity risk, mortality bonds/swaps are needed**

Annuities: Level CFs

CFs – Cash Flows | These are for representation purpose

Option 1 - Level Annuity payment of INR 8.27 Lac starting at age 60 and with expected payment upto age 99

Annuities: Level CFs + ROP

CFs – Cash Flows | These are for representation purpose

Option 2 - Level Annuity payment of INR 6.32 Lac starting at age 60 and with expected payment upto age 99 and Return of Premium (INR 1 cr.)

Annuities: Level CFs + Min Tenor 20 yr.

CFs – Cash Flows | These are for representation purpose

Option 3 - Level Annuity payment of INR 7.74 Lac starting at age 60 and with expected payment upto age 99 and min. term guarantee of 20 yr.

Annuities: ALM Challenges

- **ALM Mismatch:** **Duration and Reinvestment Risk**
  - Investments are for shorter duration than annuity liability and yields are lower when the funds need to be reinvested
  - Investments are for longer duration than annuity liability and the company makes a loss due to high interest rates when liquidating assets

- **ALM Mismatch leads to:**
  - Due to Interest Sensitive nature of Annuity Liability
    - Deferment of Profit
    - Higher Capital Requirement
  - Impact on Investment strategy due to need to liquidate assets to meet the cash flow gaps

Challenges to efficiently manage interest and longevity risks, makes it difficult for the companies to aggressively explore the Annuity market

Annuities: What is needed

- **Development of Bond Market:**
  - Zero Coupon bonds
  - Supply of STRIPS in line with demand
  - Sufficient supply of long dated Government bonds
  - Sufficient supply of derivatives to hedge Annuity cash flows
    - Longevity swaps to hedge the longevity risk
  - Development of Inflation linked bonds to design and match inflation linked annuity

- **Government /Regulatory Support:**
  - Pension Premium does not enjoy the same tax benefit as provided to NPS contribution
  - This will help utilize a large network of distributors of Insurers to supply pension products

- **Customer Education:**
  - Need to create awareness for making retirement planning as one of the key goals

Annuities: Way Forward

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- **Introduce Variable Annuities (VA)**
  - It allows you to choose from a selection of investments, and then pays you a level of income in retirement that is determined by the performance of the investments you choose.
  - Allows customer to participate in Market Growth

- **Guaranteed Minimum Income Benefit (GMIB)**
  - It is a rider benefit which offers guarantees that the annuitant will receive a minimum value of payments on a regular basis, regardless of other circumstances
  - Mainly used with VA to offset Market risk

- **Inflation Protection Annuity (IPA)**
  - It guarantees a real rate of return at or above inflation thus protecting annuitants from inflation erosion of purchasing power of money

THANK YOU

Annuities: Ownership Pattern

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Table 4.4: Ownership Pattern of Government of India Dated Securities

(Per Cent of Outstanding Dated Securities)

	2018				2019				2020
	March	**June**	**Sep**	**Dec**	**March**	**June**	**Sep**	**Dec**	**March**
1. Commercial Banks	42.7	41.8	41.4	40.5	40.3	39.1	39.7	39.1	40.4
2. Non-Bank PDs	0.3	0.3	0.4	0.3	0.3	0.4	0.4	0.4	0.4
3. Insurance Companies	23.5	24.2	24.6	24.6	24.3	24.9	24.9	24.9	25.1
4. Mutual Funds	1.0	1.1	1.4	0.6	0.4	0.6	0.8	1.5	1.4
5. Co-operative Banks	2.6	2.6	2.5	2.4	2.3	2.2	2.0	2.0	1.9
6. Financial Institutions	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.1	0.5
7. Corporates	0.9	1.1	1.0	1.0	1.0	1.0	0.9	0.8	0.8
8. FPIs	4.4	3.8	3.7	3.6	3.2	3.3	3.3	3.3	2.4
9. Provident Funds	5.9	5.8	5.7	5.5	5.5	5.4	4.9	4.9	4.7
10. RBI	11.6	11.6	11.8	13.8	15.3	15.7	15.0	14.7	15.1
11. Others	6.3	6.6	6.6	6.6	6.5	6.6	7.1	7.2	7.2
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Insurance companies are key Investor in G Sec (partly driven by Regulation)

Source: Quarterly Report on Public Debt Management for the Quarter January - March 2020

Annuities: Investment Regulation, 2000

Institute of Actuaries of India

S no.	Type of Investment	Percentage
(i)	Government securities, being not less than	20%
(ii)	Government Securities or other approved securities inclusive of (i) above, being not less than	40%
(iii)	Balance to be invested in Approved Investments as specified in **Schedule I** and to be governed by Exposure/ Prudential Norms specified in Regulation 5	Not Exceeding 60%

Regulation mandates Insurance companies to mainly use Government bonds to manage its Annuity book, hence the need for long dated Govt. bonds

Annuities: Investment Regulation, 2000

Source: IRDAI

Annuities: Investment Regulation, 2000

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‘Approved Investments’ for the purposes of Section 27A of the Act shall be as follows:

a. All approved investments specified in Section 27A of the Act except
a) clause (b) of sub-section (1) of section 27A of the Act;
ii) first mortgages on immovable property situated in other country as stated in clause (m) of subsection (1) of section 27A of the Act
iii) immovable property situated in other country as stated in clause (n) of subsection (1) of section 27A of the Act

In addition the Authority under powers given vide clause (s) of sub-section(1) section 27A of the Act declares the following investments as approved investments:

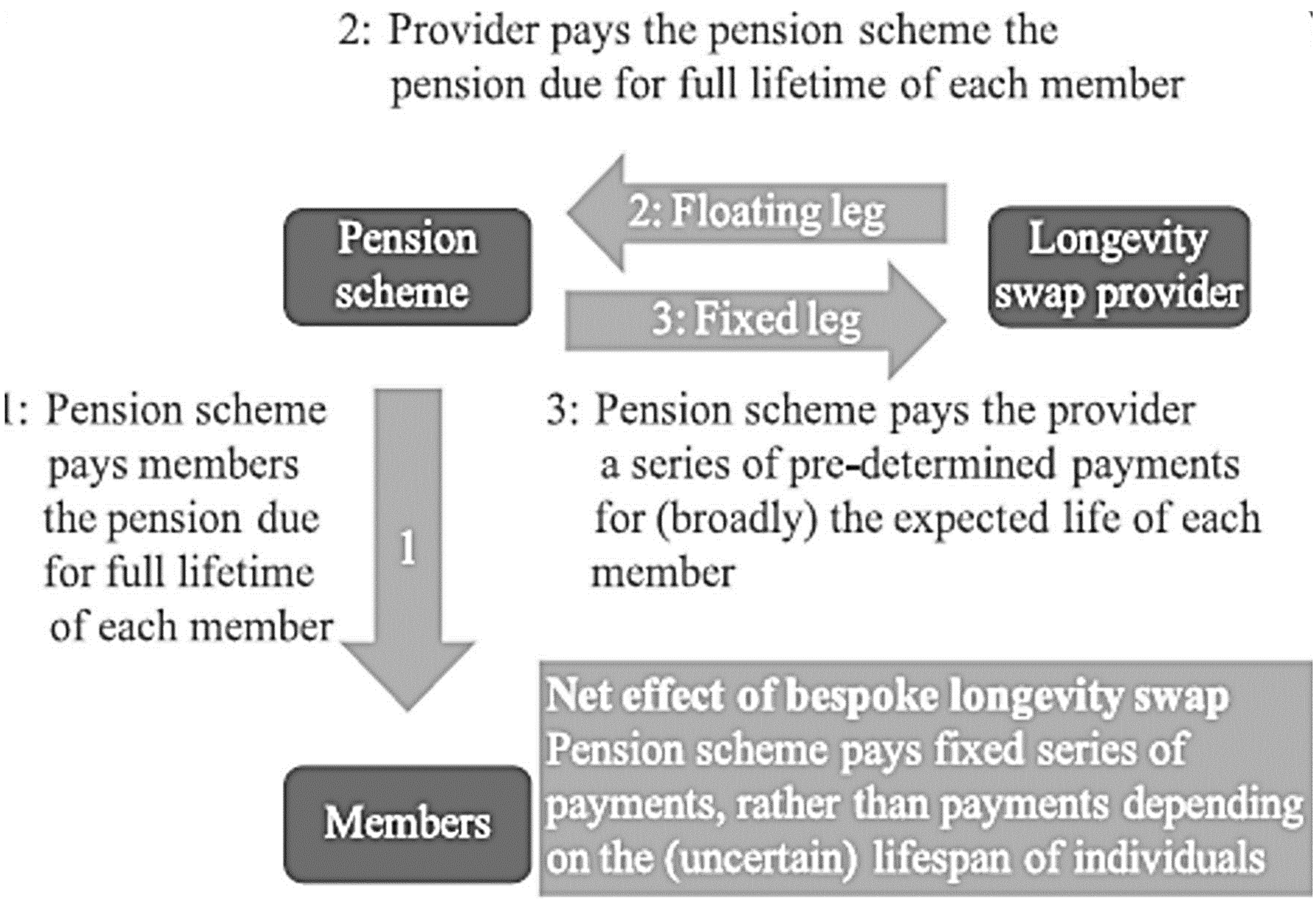
a. All secured loans, deposits, debentures, bonds, other debt instruments, shares and preference shares rated as ‘very strong’ or more by a reputed and independent rating agency (e.g. AA of Standard and Poor);
b. Deposits with banks (e.g. in current account, call deposits, notice deposits, term deposits, certificates of deposits, etc) and with Primary Dealers recognised by RBI included for the time being in the Second Schedule to the Reserve Bank of India Act, 1934 (2 of 1934);
c. Commercial papers issued by a company having a ‘very strong’ or more rating by a reputed and independent rating agency (e.g. AA of Standard and Poor);
d. Investments in Venture Capital Funds of such companies/ organisations which have a proven track record and have been rated ‘very strong’ or more by a reputed and independent rating agency (e.g. AA of Standard and Poor).

Explanation: For this purpose any investment in the shares or debentures or short or medium or long term loans or deposits with private limited companies shall not be treated as ‘approved investments’.

Annuities: Investment Regulation, 2000

Source: IRDAI

Longevity Swaps:



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