

# Current issues in life assurance

## Mumbai

### 19 December 2019

## Interest rate management



Philip Jackson  
Partner, Milliman Advisors LLP

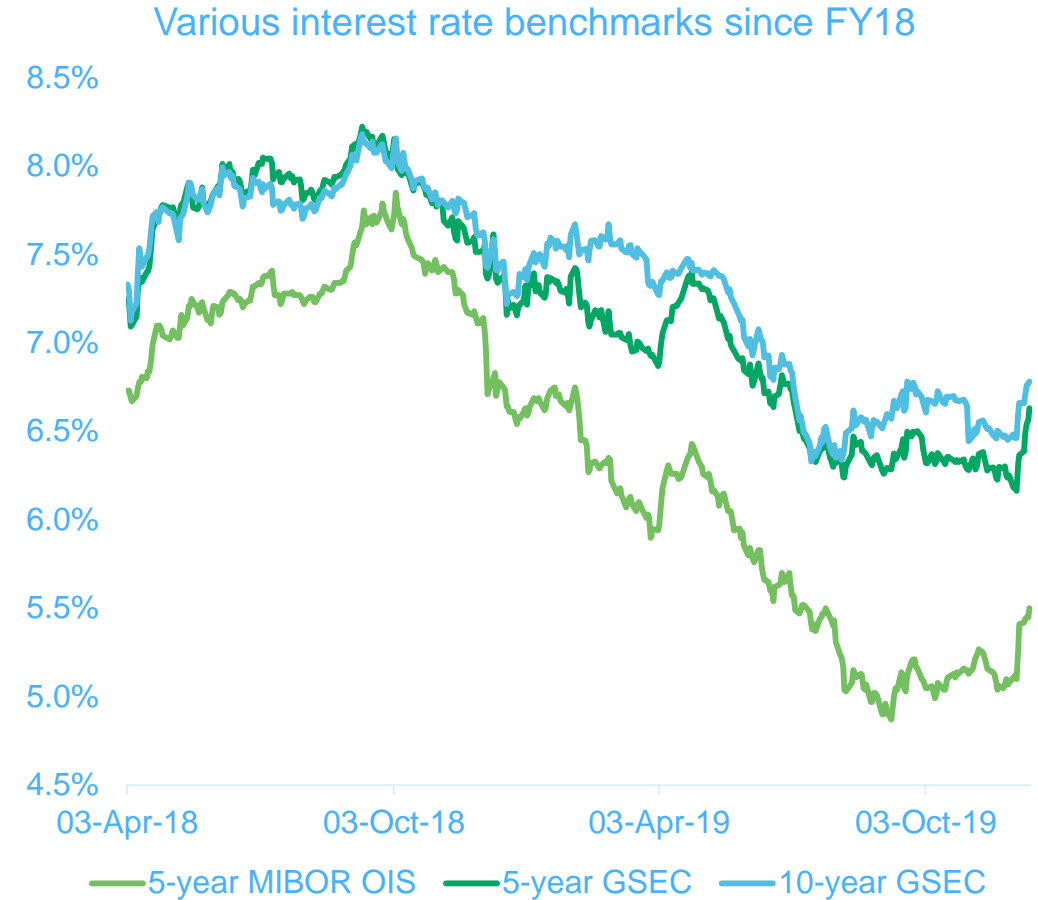
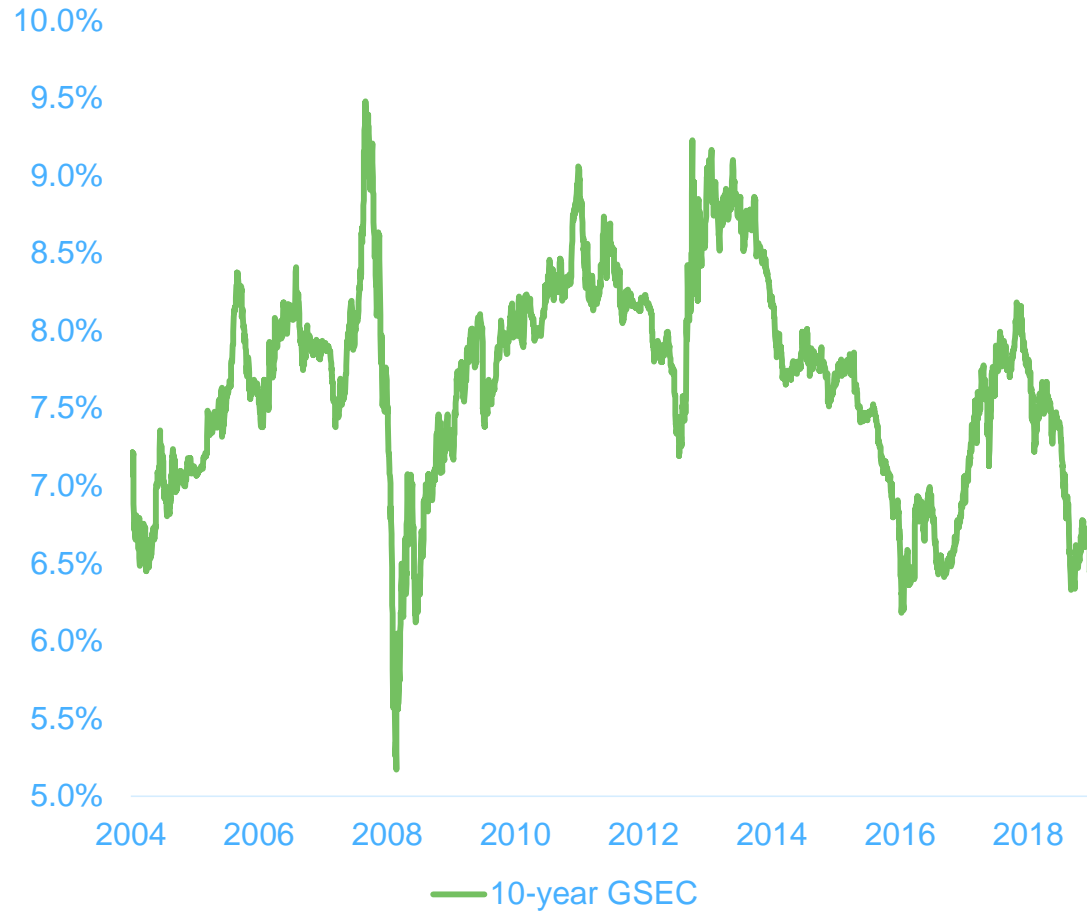
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# Historic volatility

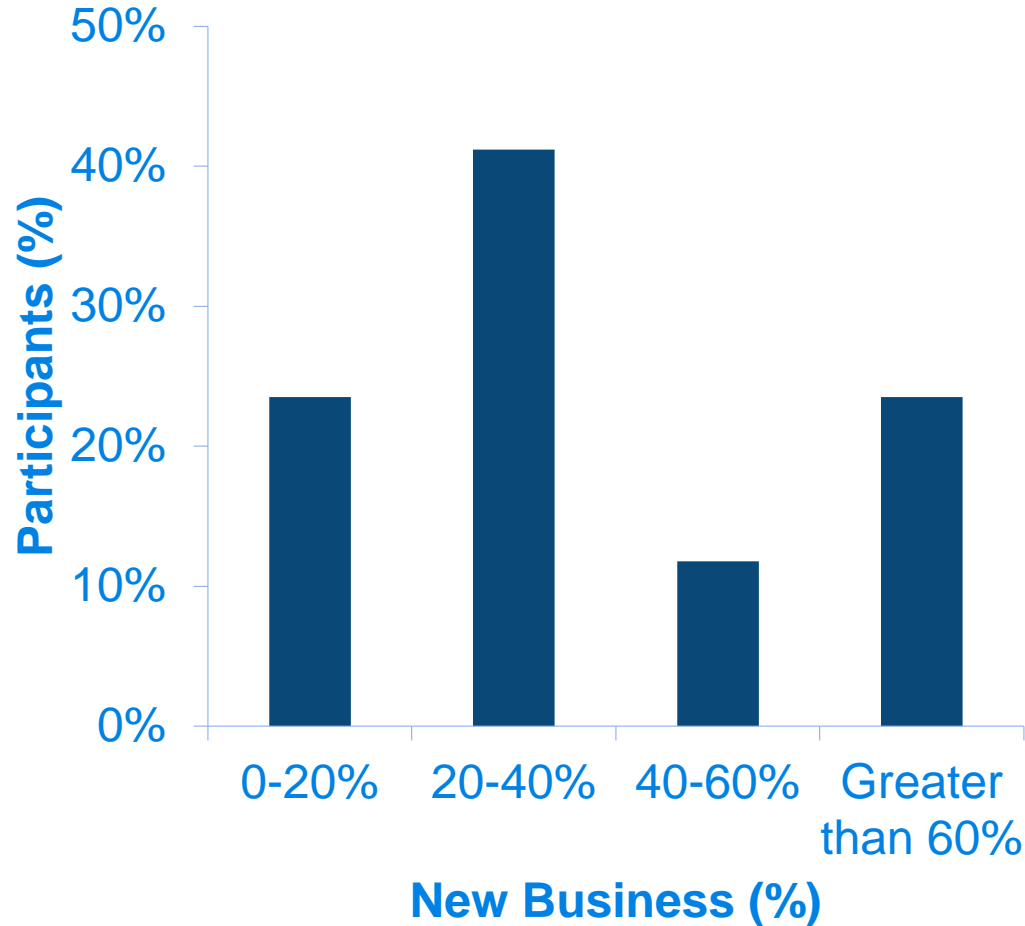
Significant historic volatility in interest rates in India – Company new money exposed



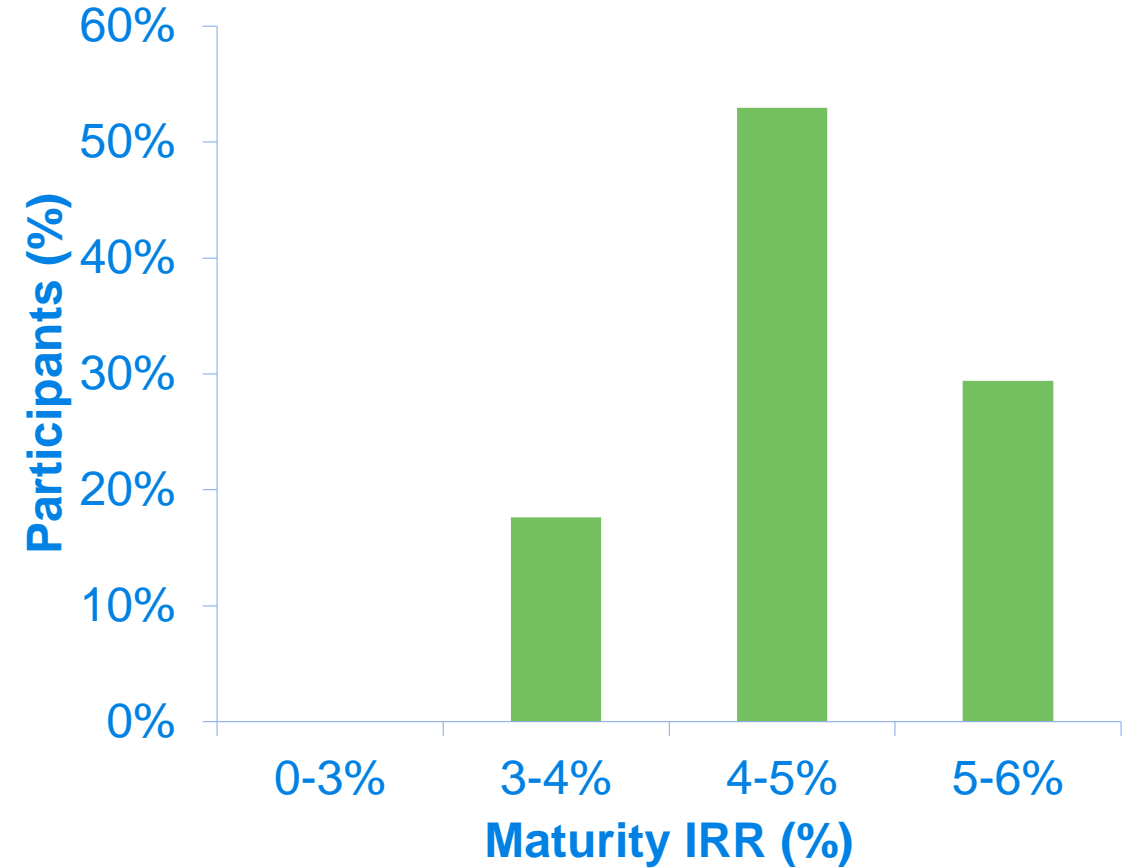
# Non-participating savings share

Is our appetite increasing for interest rate guaranteed products?

PERCENTAGE OF NEW BUSINESS APE FROM TRADITIONAL NON-PARTICIPATING SAVINGS PRODUCTS IN FY18-19



MATURITY IRR OFFERED ON TRADITIONAL NON-PARTICIPATING SAVINGS PRODUCTS



# Where are we generating interest rate risk?

Participating e.g.  
implied  
guarantees

Non-par  
protection e.g.  
ROP or very  
long-term policies

Annuities

Non-par savings

# What kinds of risks are we generating?

Participating -  
mostly 'tail risks'?

Annuities – mostly  
reinvestment risk?  
Duration availability  
exposure?

Non-par savings –  
mostly 'new-  
money' risks?

# How might we be trying to manage these risks?

Participating -  
Bonus and  
estate  
management

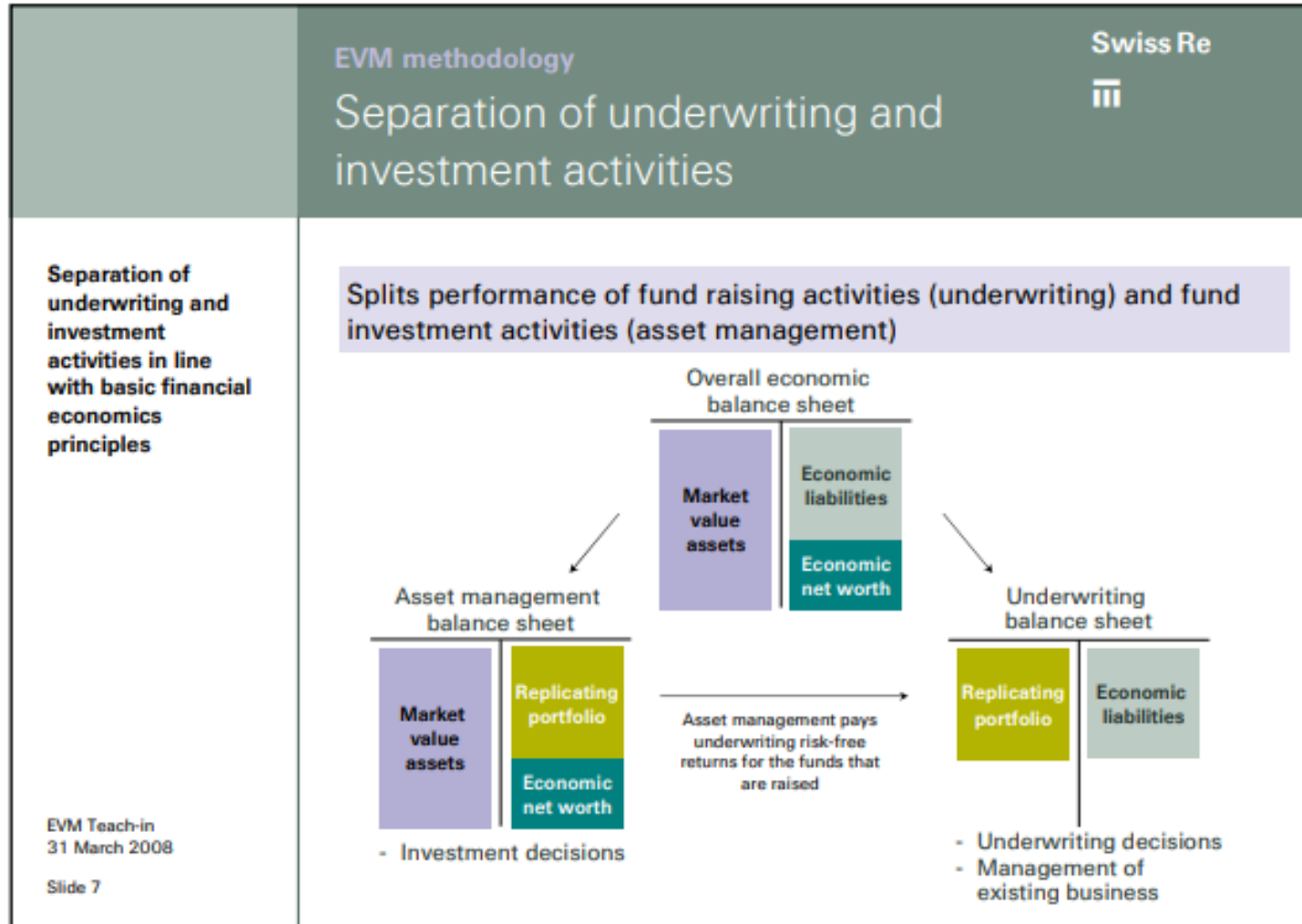
ALM

Annuities –  
Strips?

Non-par savings  
– pre-hedging?  
Derivatives?

# Separation of functions

Works to an extent, but close interaction still essential



Typical model may involve:

- Actuaries helping establishing a replicating portfolio
- Investment team deciding on investments based on this

This leaves freedom of investments to some extent in order to seek value generating investments (within some tolerance)

However significant interaction required when:

- Product depends on availability of investments
- Replicating portfolio moves with interest rates
- Significant uncertainty in the economic liabilities
- Mismatch required (e.g. for competitive reasons)



# How deep are we analysing our risks

## Duration matching

- McCauley duration
- Dollar duration

## Cash-flow matching

- Level of granularity

## Convexity matching

- Solved by CF matching?
- Policyholder behaviour?

# Potential derivative strategies

A few options on the table

## IRS

### Interest rate swaps

- Can be available to hedge 5 (or even 10) years of cash flows
- However basis risk remains between MIBOR and insurers required investments (typically GSEC)
- Swap spread has been historically large and volatile

## IRF

### Interest rate futures

- Basis risk may be reduced as contracts are available on 10 or 15 year GSECs
- Typically only liquid to hedge cash flows for short periods (e.g. one quarter)
- Roll over creates cost and additional risk

## FRA

### Forward rate agreements

- OTC contracts from a bank – hedge up to around 10 years of cash flows on an underlying of your choice
- Little basis risk if bonds are selected carefully
- Accounting is tricky for insurers in particular

# Impact of accounting requirements

Accounting impacts are not straightforward as 'typical' accounting can hurt solvency

## Cash-flow hedge accounting

- Fluctuations in the value of the derivative are passed to FVCA – so that P&L/solvency is shielded
- **Key challenge:** If FVCA is exhausted (interest rates up), the solvency margin is exposed

## No-hedge accounting

- Fluctuations in the value of the derivative are passed to surplus – so P&L becomes volatile
- **Key challenge:** Managing the surplus volatility and any surrender value floors? Regulatory views? Active VROI management?