

11th Capacity Building Seminar in General Insurance Mumbai 19th & 20th December 2024

Investment Approach under Ind AS 117 and RBC

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Ind AS 117



Poll Question



In the context of Indian market, do you believe accounting under Ind AS will be similar to cash basis accounting

- a) Yes
- b) No
- c) I am clueless!!

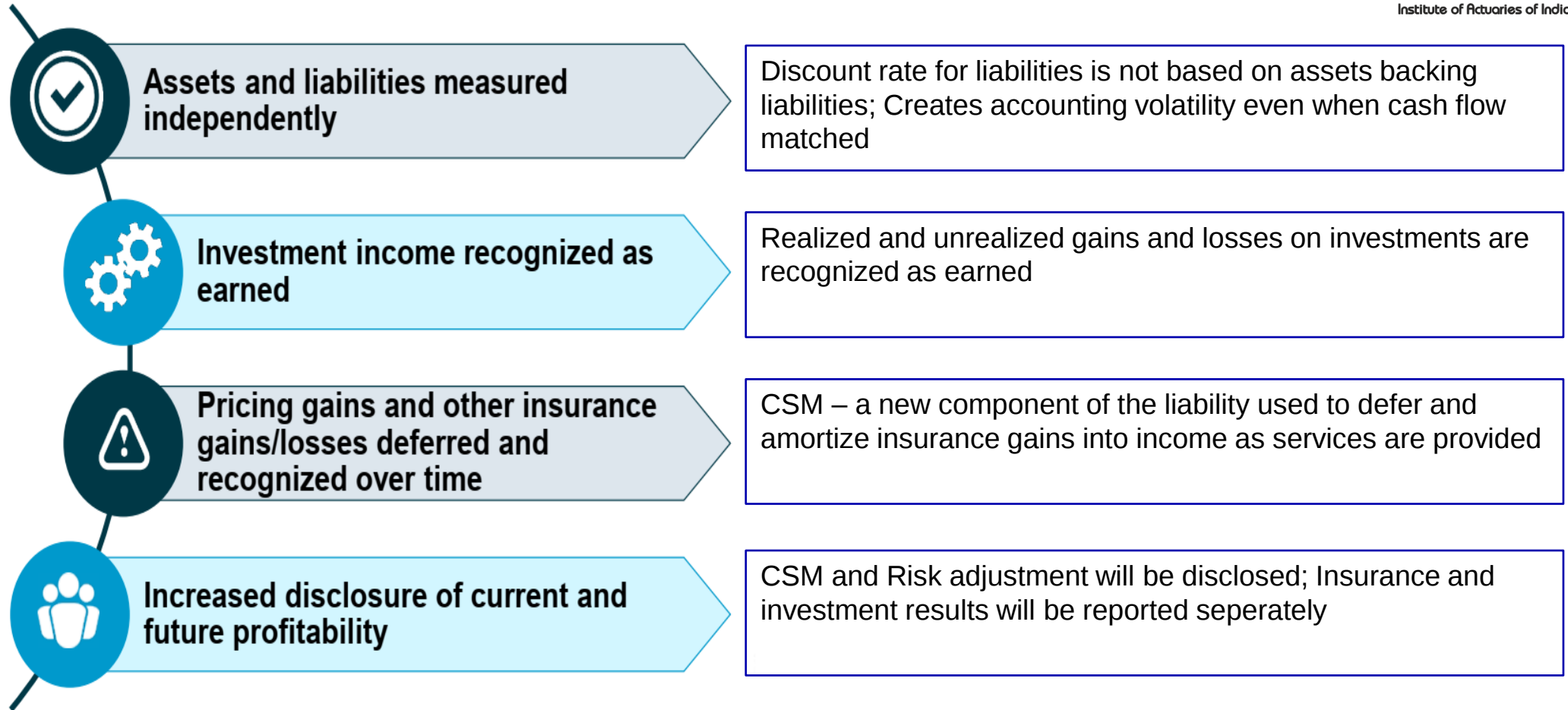
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Policy tenure v/s Contract boundary, loss component, DAC provisions for insurance acquisition cash flows etc. mean Ind AS accounts will be farther away from cash basis accounting

Ind AS 117 – Key differences from IGAAP

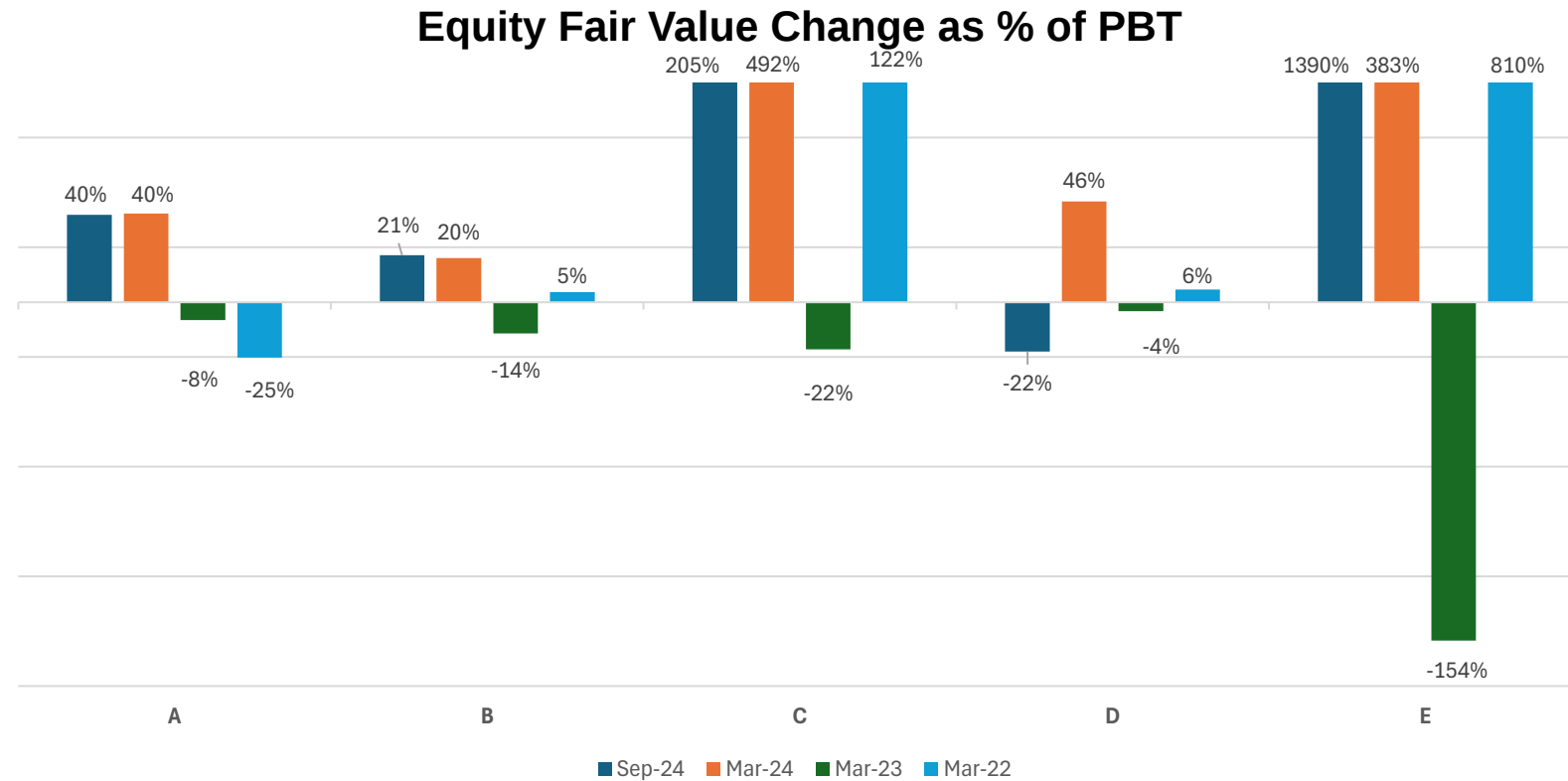


Asset classification will impact ALM interaction with Ind AS 117 liabilities

FVPL	Measured at fair value, changes in fair value flow through P&L directly; applicable for Debt, non-fixed income assets and derivatives	Changes due to discount rate through P&L
FVOCI with no recycling	Measured at fair value, with unrealized gain/loss accumulated in OCI. Accumulated gain/loss cannot be recycled in P&L upon sale of assets; applicable to non-fixed income assets	Changes due to discount rate through OCI
FVOCI with recycling	Measured at fair value, with unrealized gain/loss accumulated in OCI. Accumulated gain/loss recognized through P&L upon sale of assets; applicable to debt instruments	
Amortized Cost	Measured at cost, interest income calculated using effective interest, applicable debt instruments	

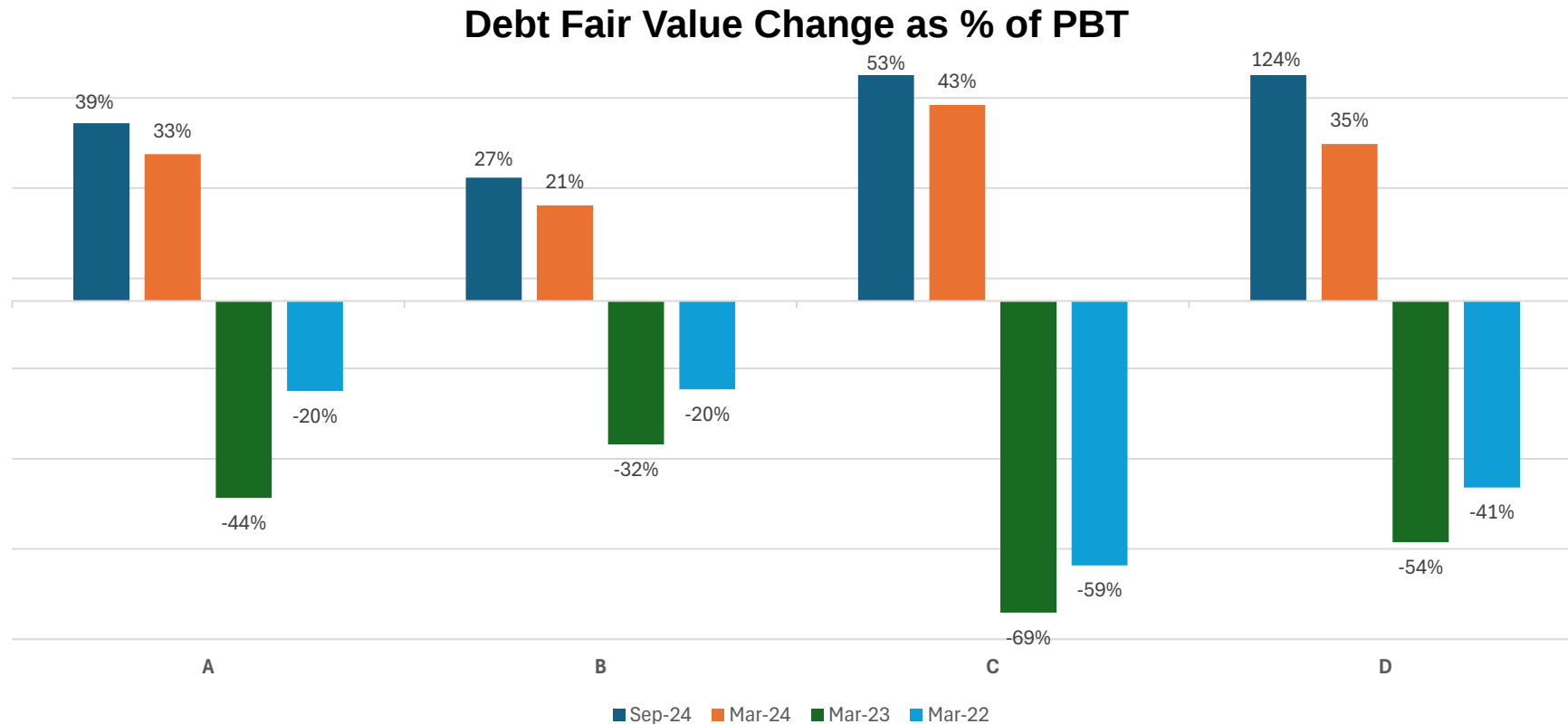


P&L implications – Sample GI Companies (1)



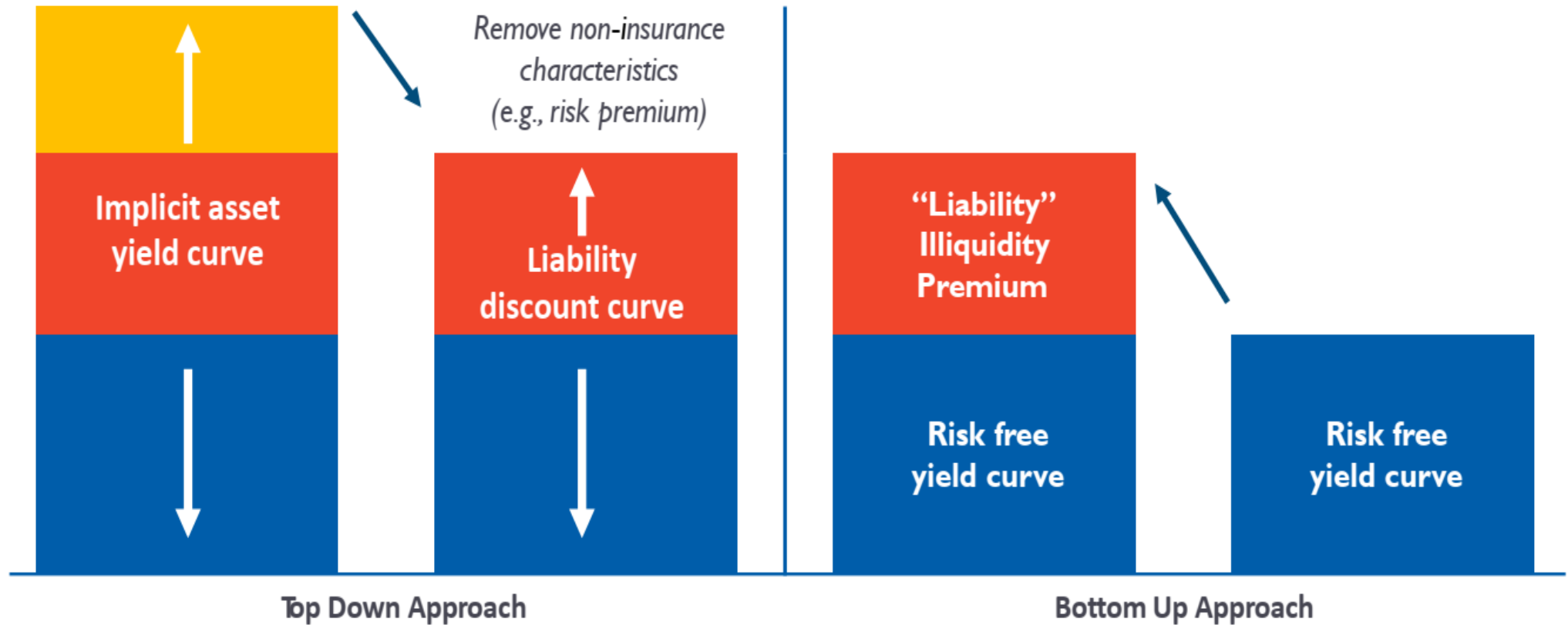
Assuming all assets backing liabilities are classified as FVPL under IFRS 9; On the liability side, entity chooses to put changes due to discount rate through P&L

P&L implications – Sample GI Companies (2)



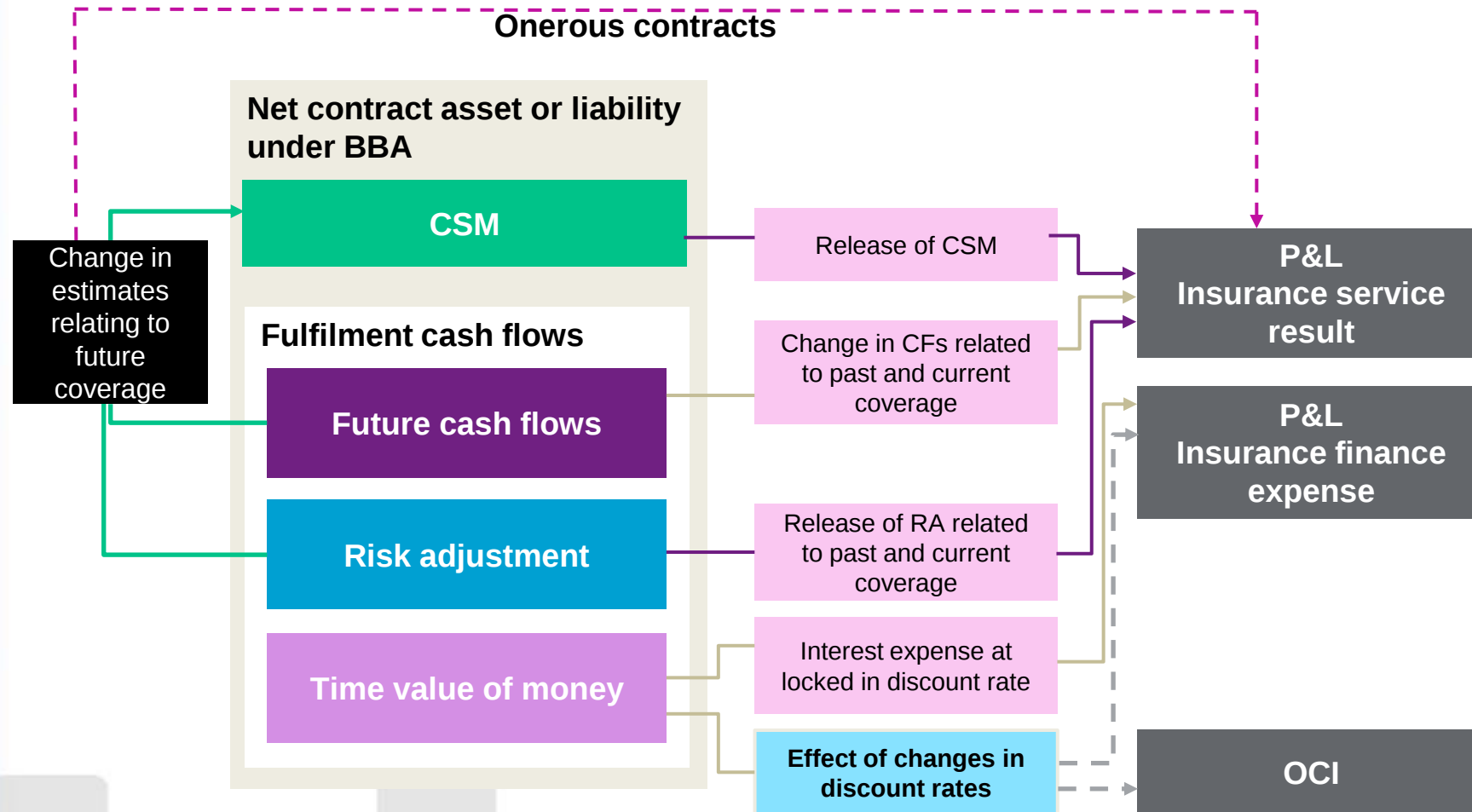
Assuming all assets backing liabilities are classified as FVPL under IFRS 9; On the liability side, entity chooses to put changes due to discount rate through P&L

Ind AS 117 - Discount Rate Methods



- Valuation of liabilities is de-linked from assets i.e. choice of assets does not impact discount rate
- Discount rate should be consistent with the timing, currency and liquidity of the liabilities and observable current market prices (where available)

Change in discount rates – choice of allocation



- *Given the high rate of discount, Indian insurers will need to choose where to allocate the effect of moving discount rates i.e. P&L or OCI*

Illustrative Example #1– Base



1. Total Liability cash-flow of INR 100crs having annual payment pattern of 30%:60%:10%
2. Reference portfolio mirroring the liability cashflow has yield of 5%
3. At Time $t=0$, MV for liability is INR 91.6crs

All figures in INR crs

Time (t) ->	0	1	2	3
Undiscounted Liability	100			
Payment Pattern		30%	60%	10%
Undiscounted cash flow		30	60	10
Liability Yield	5%			
Discounted cash flow		28.6	54.4	8.6
Discounted Liability	91.6			

Illustrative Example #1– OCI

1. Total Liability cash-flow of INR 100crs having annual payment pattern of 30%:60%:10%
2. Reference portfolio mirroring the liability cashflow has yield of 5%
3. At Time t=0, MV for liability is INR 91.6crs

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Liability Yield	5%			
Discounted cash flow		28.6	54.4	8.6
Discounted Liability	91.6			

4. Under Ind AS 117 assets and liabilities are de-linked. When electing the OCI option, assume both the Asset (Ind AS 109) and Liability (Ind AS 117) elect the OCI Option
5. Assume 1 day before T1, the return yield for liability reference portfolio is 8% and no change in payment pattern.
6. Thus, the liability market value is INR 64.1crs @ 8% new yield against INR 66.2crs @ original 5% yield.
7. If the OCI option is elected, the difference between the initial assumptions (5%) and the current assumption (8%) i.e. INR 2.1crs go through OCI

All figures in INR crs

Time (t) ->	0	1	2	3
Actual cf		30		
Liability Yield		8.0%		
Disc c/f original yield			57.1	9.1
Disc c/f new yield			55.6	8.6
Unwind		4.6		
Yield Curve Change		(2.1)		
Change in FF cf		-		

Ind AS 117 ALM Challenges - Liabilities



- Liability discount Rate
 - Independent of insurer's underlying assets
 - Changes in credit spreads may cause additional P&L volatility when assets are classified as FVPL
 - Changes in matching position (e.g. due to asset trades) no longer directly impact liability and may reduce P&L volatility

Ind AS 117 ALM Challenges – Assets



- Choice of Assets
 - Asset choice / Investment strategy do not impact liabilities
 - Can focus on economic results and long-term best interest of Company
 - Companies may reduce use of non-Fixed income assets
 - Existing Equity exposure needs to be managed as part of transition i.e. managing the volatility and classification into OCI or P&L
 - CSM has no interest sensitivity
 - view and treat CSM as available surplus *OR*
 - Match together with fulfilment cash flows *OR*
 - Match with shorter term assets

Poll Question



In the context of Indian market, do you believe under Ind AS 117 the investment income will be lower than current IGAAP

a) Yes

b) No

c) Don't think CEOs / CFOs will be convinced even if I am!!

RBC



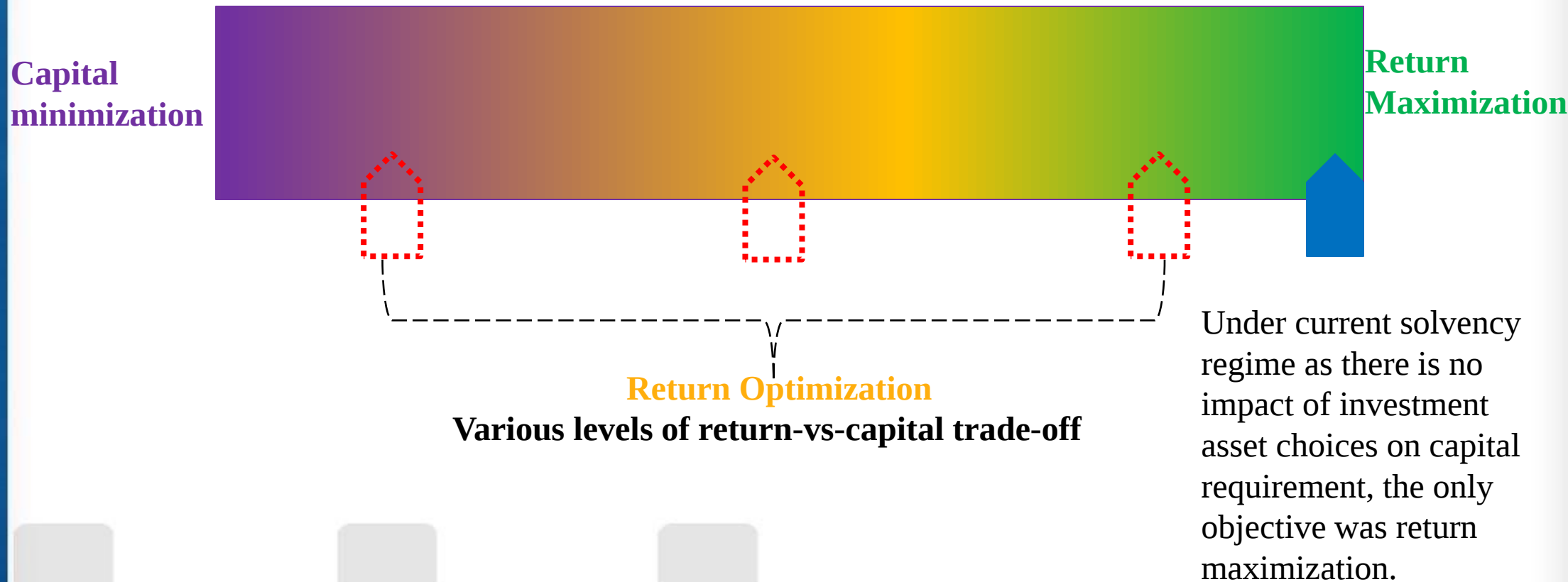
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Comparison of Proposed RBC and Current Solvency Regime



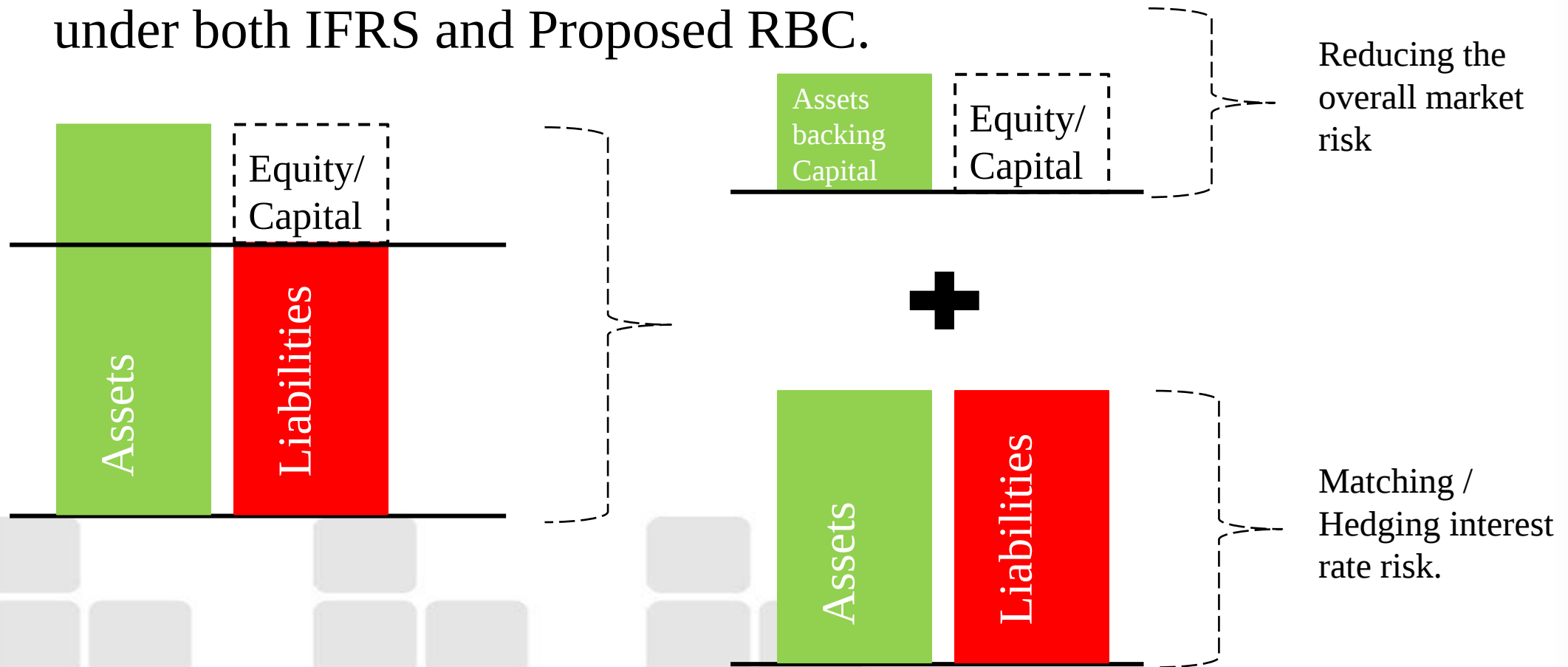
		Current Solvency Regime	Proposed Solvency Regime
Available Capital	Valuation of Assets	Book Value	Market Value
	Valuation of Liabilities	Undiscounted prudent estimate	Market Value : Discounted best estimate + Risk Margin
Required Capital	Market Risk	✗	By Stressing the complete balance sheet for interest rate, credit spread, equity and property values.
	Insurance Risk	Factor applied to the Written Premium and Financial Incurred Claims as per Indian GAAP. Max of above two at LOB level is selected.	Factors applied at specified LoBs for reserve risk and premium risk separately. CAT risk to be modelled.
	Counter Party Default	✗	✓
	Operational Risk	✗	✓

Implication of the change on investment decision



Capital Minimization

- Interest rate movement impacts both assets and liabilities value under both IFRS and Proposed RBC.



Matching vs Hedging of Interest Rate Risk (1/3)



$$\text{Value of Liabilities} = \sum_{t=1}^n \frac{CF_t^{Lia}}{(1 + y_t^{rf})^t}$$

$$\text{Value of Assets} = \sum_{t=1}^n \frac{CF_t^{Asset}}{(1 + y_t)^t}$$

Where ,

t = time period in years

y = interest rate

CF = Cash Flow

rf = Risk Free

- We can broadly bifurcate the liability into two parts and understand the effectiveness of matching:

	Unearned Premium / Liability for Remaining Coverage	Claims Liabilities / Liability for Incurred Claims
Amount of Liability	How well can we predict the loss ratio? Impact of Catastrophes.	Uncertainty in IBNR Projection
Timing of Liability	More uncertain than LIC	Linkages with settlement strategy Beyond once control like court judgements.

- Pure matching thus in General Insurance may not be effective.

Matching vs Hedging of Interest Rate Risk (2/3)



$$\text{Value of Liabilities} = \sum_{t=1}^n \frac{CF_t^{Lia}}{(1 + y_t^{rf})^t}$$

$$\text{Value of Assets} = \sum_{t=1}^n \frac{CF_t^{Asset}}{(1 + y_t)^t}$$

Where ,

t = time period in years

y = interest rate

CF = Cash Flow

rf = Risk Free

Instead, what if we hedged the interest rate risk by matching the sensitivity of asset and liability value to change in interest rate.

$$\begin{aligned} \Delta Liab(y) &= Liab(y + \Delta y) - Liab(y) \\ &= \frac{d Liab}{d y} dy + o(dy) = -MD * Liab * dy \end{aligned}$$

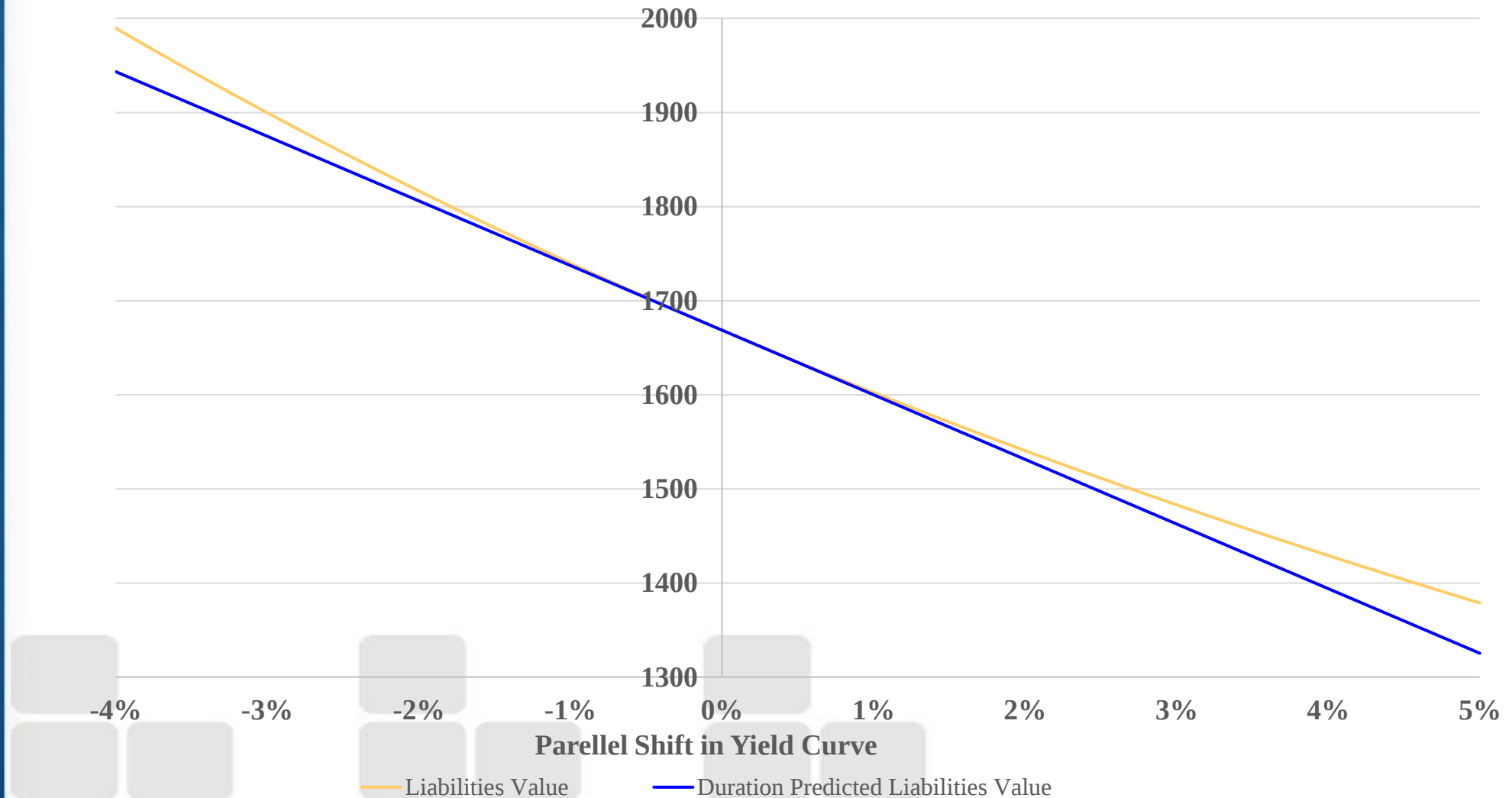
Interest Rate Risk Hedging – Case Study



Scenario:

- A GI Company has been writing only Motor TP line of Business from last 5 years with starting year premium of Rs. 500 Cr.
- Growth rate of 15%.
- Expected Loss Ratio 85%.
- Discounted Value of Liabilities – Rs 1669 Cr.
- Macaulay Duration of Liability – 4.42 Yrs.
- Modified Duration of Liability – 4.12 Yrs.

Interest Rate Risk Hedging – Duration



Matching vs Hedging of Interest Rate Risk (3/3)



$$\text{Value of Liabilities} = \sum_{t=1}^n \frac{CF_t^{Lia}}{(1 + y_t^{rf})^t}$$

$$\text{Value of Assets} = \sum_{t=1}^n \frac{CF_t^{Asset}}{(1 + y_t)^t}$$

Where ,

t = time period in years

y = interest rate

CF = Cash Flow

rf = Risk Free

Instead, what if we hedged the interest rate risk by matching the sensitivity of asset and liability value to change in interest rate.

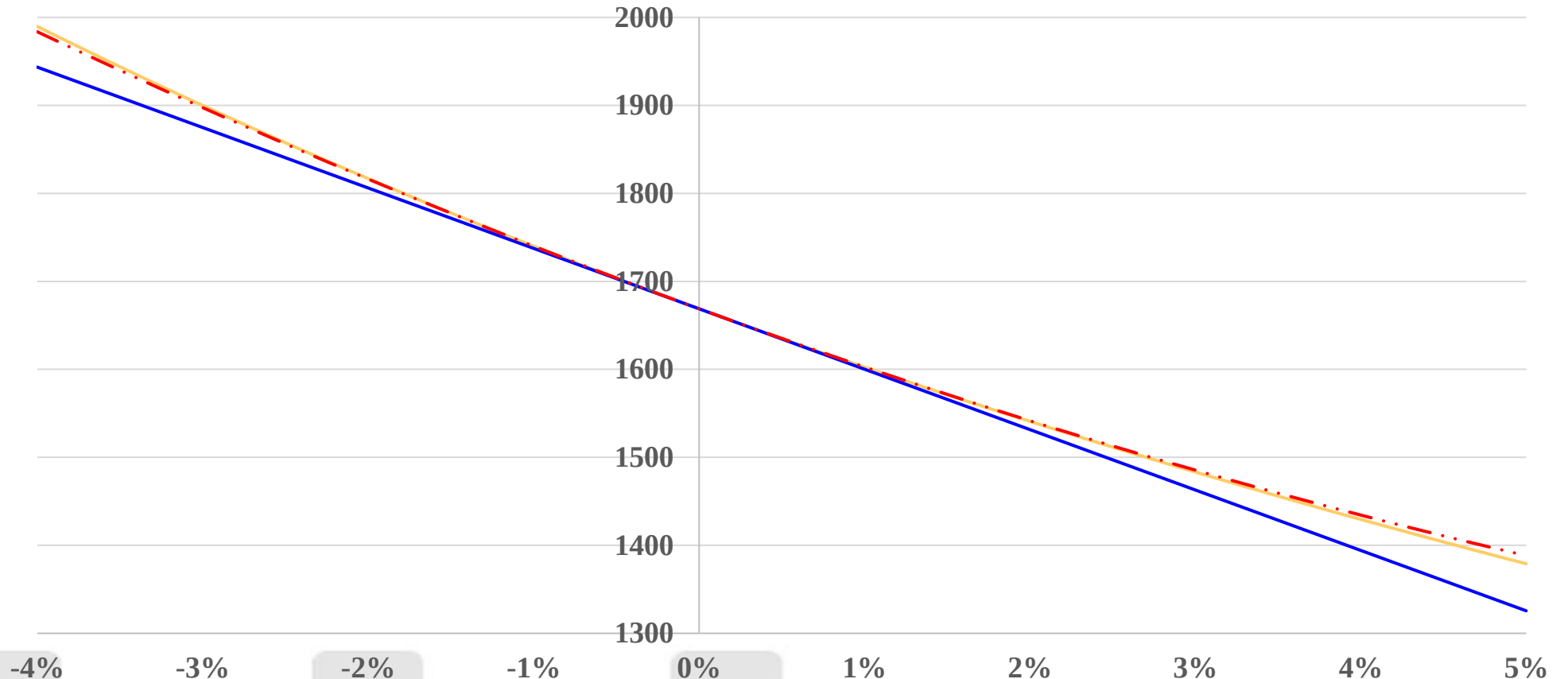
$$\Delta Liab(y) = Liab(y + \Delta y) - Liab(y)$$

$$= Liab'(y) d(y) + o(y)$$

$$= Liab'(y) d(y) + 0.5 * Liab''(y) (d(y))^2 + o((dy)^2)$$

$$= -MD * Liab * dy + 0.5 * Convexity * Liab * (d(y))^2 + o((dy)^2)$$

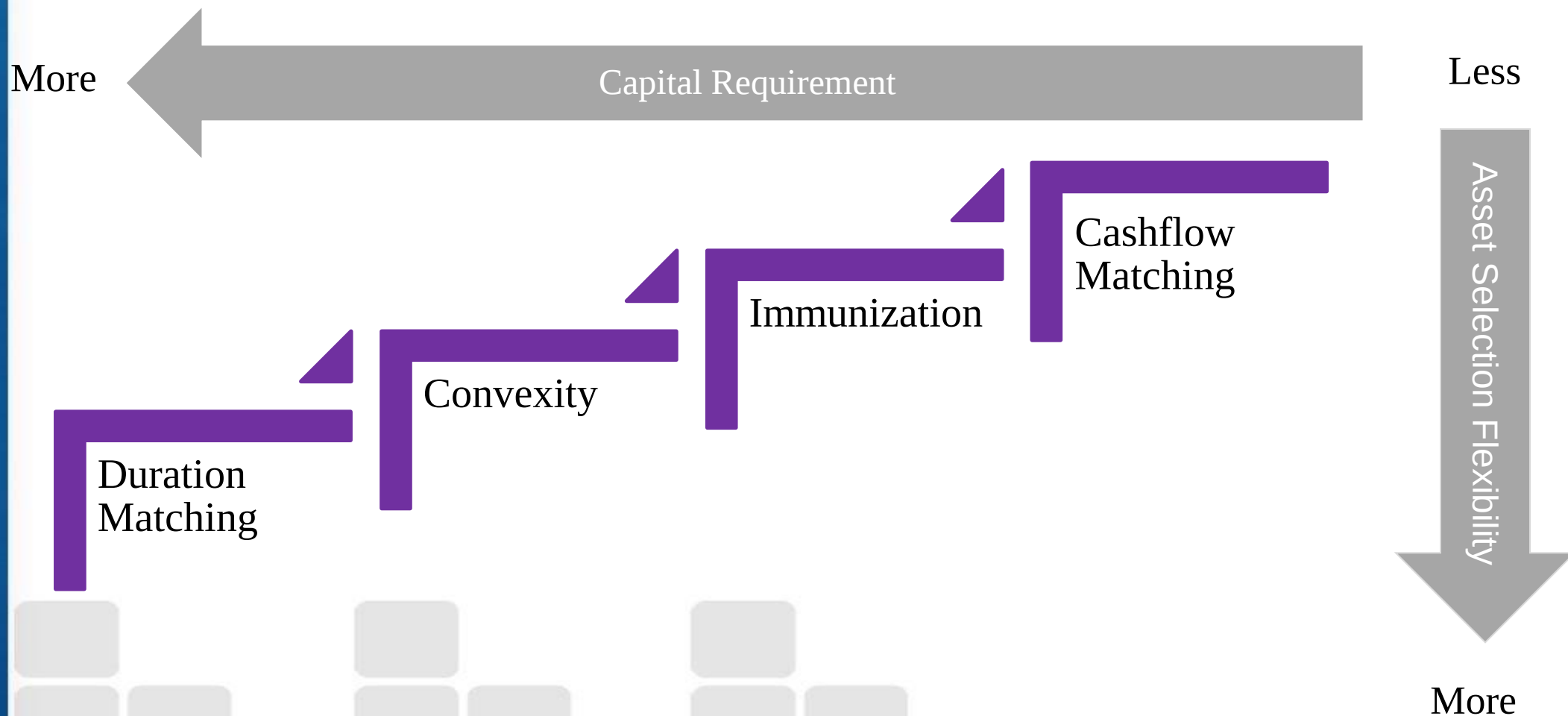
Interest Rate Risk Hedging – Convexity



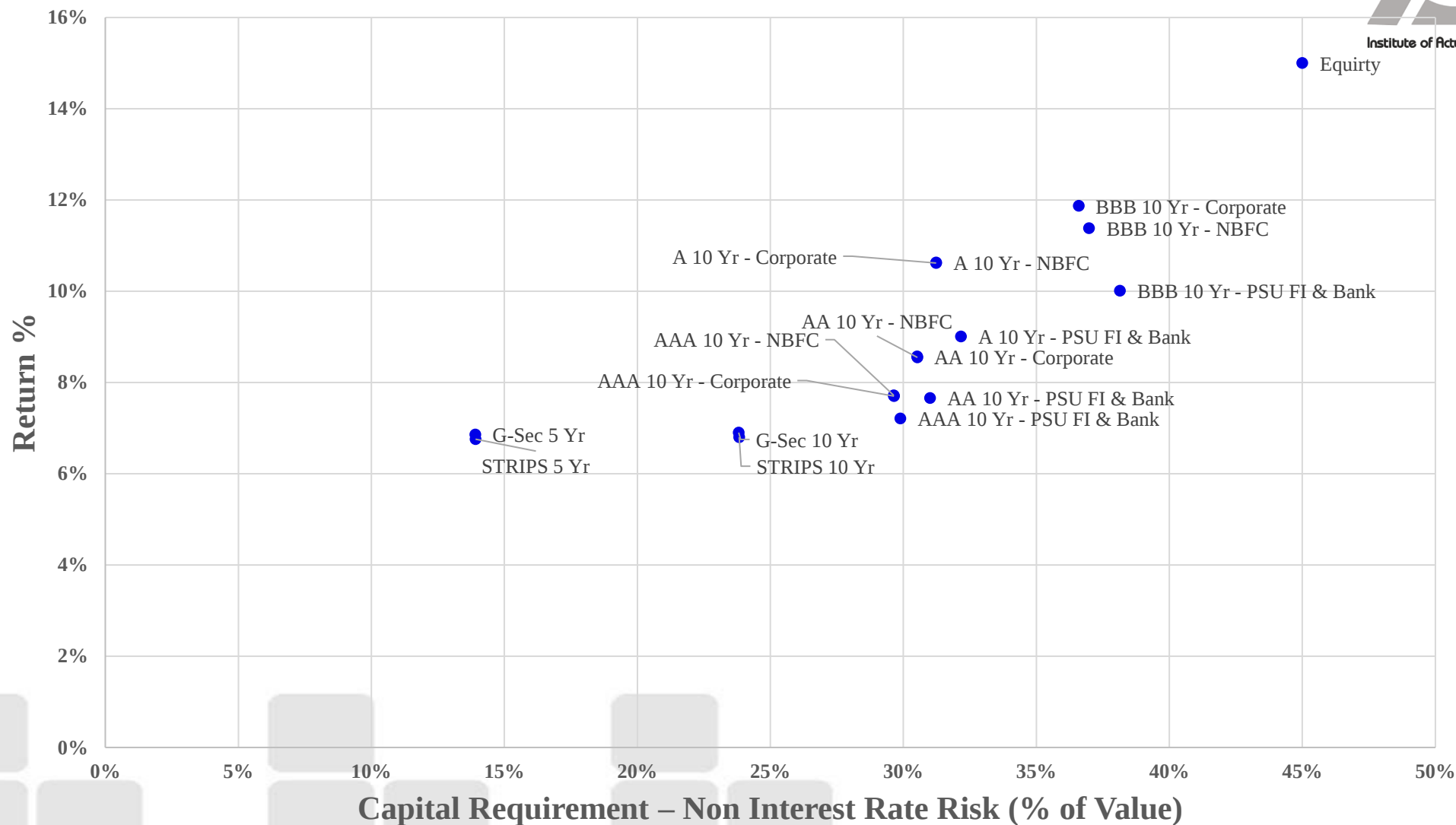
Parallel Shift in Yield Curve

— Liabilities Value — Duration Predicted Liabilities Value - · - Convexity Adjusted

Matching / Hedging Interest Rate Risk

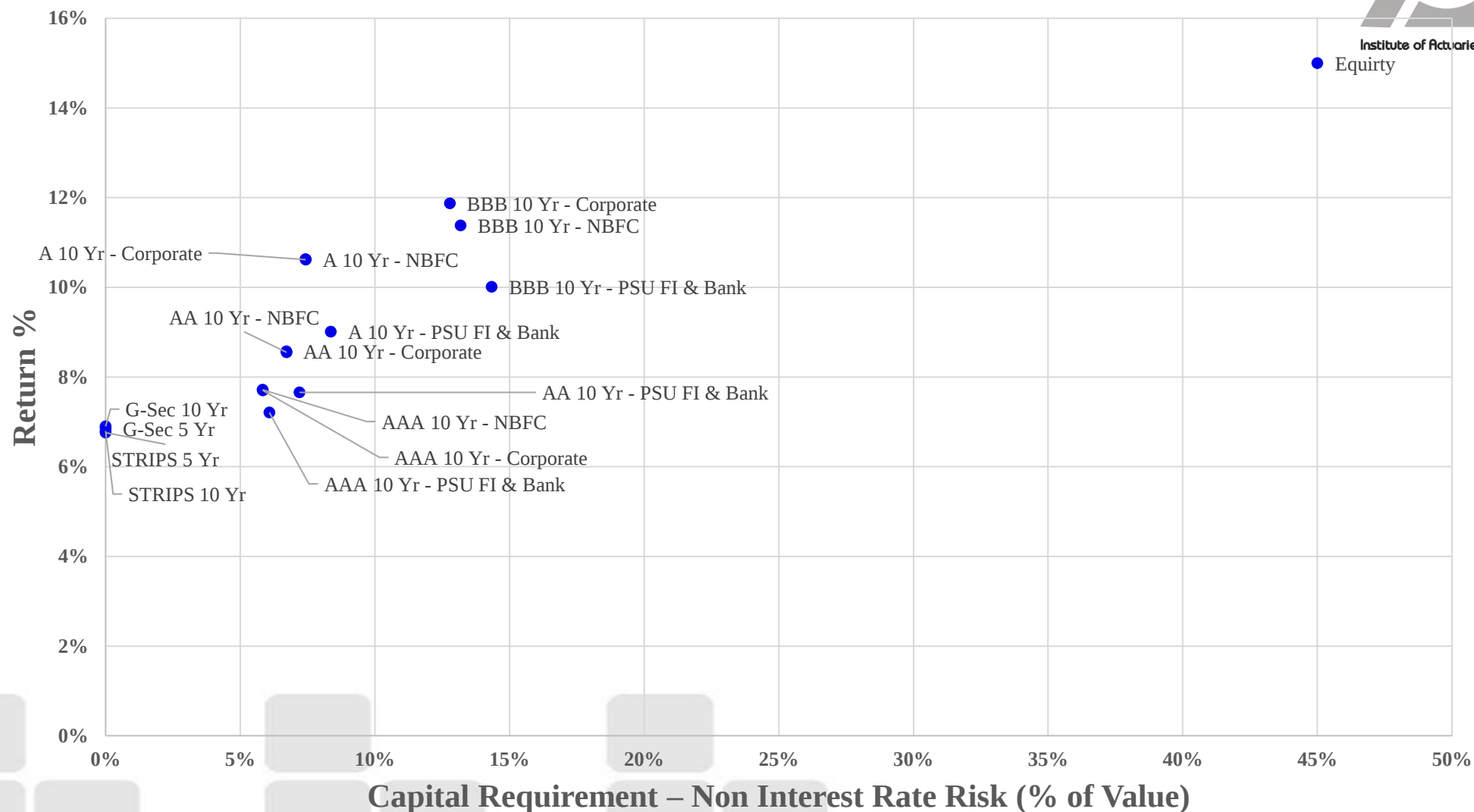


Return Optimization – Scanning the investment universe



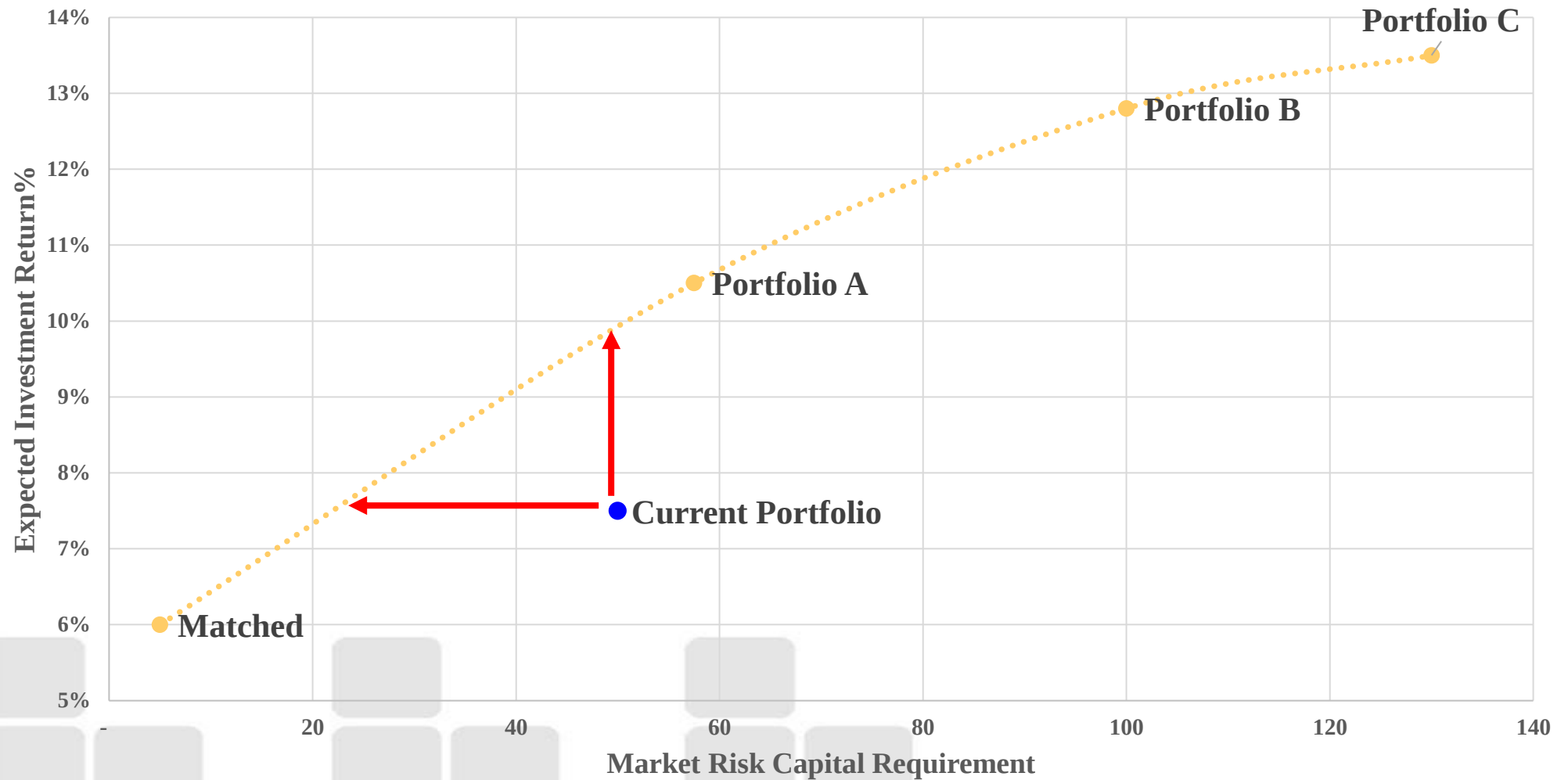
Source: FIMDA and CCIL Data is for 29th November 2024

Return Optimization – Scanning the investment universe

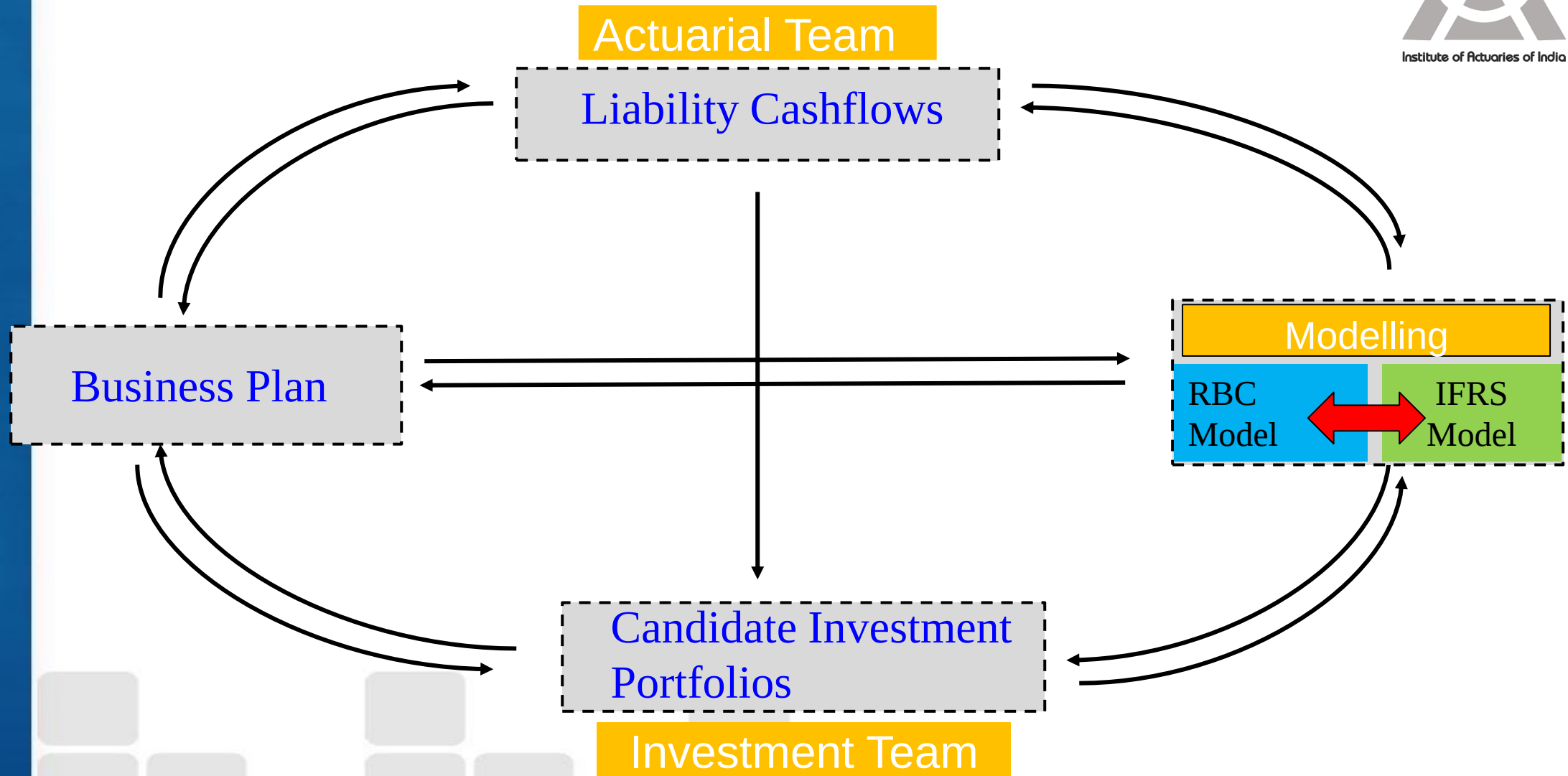


Source: FIMDA and CCIL Data is for 29th November 2024

Diversification benefit and search for efficient frontier



Putting it together



Key Considerations

- For any decision making one needs a good metric for evaluation, earning and capital requirements should be blended.
- One such metric could be Economic Profit :
 - Underwriting Profit + Investment Income – Cost of Capital
- One year profit vs Multi Year Profit
- Testing the yield curve and spread expectations impact on profit vs the capital requirement
- Account for transaction cost
- Testing of claims settlement strategies on economic profit like faster or slower claims settlement.

THANK YOU !!