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2019 **ANNUAL
MEETING**
& EXHIBIT

October 27-30
Toronto, Canada

Session 057: ALM Exposed Under IFRS 17

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ALM Exposed under IFRS 17

Les Rehbeli

October 28, 2019



SOCIETY OF ACTUARIES

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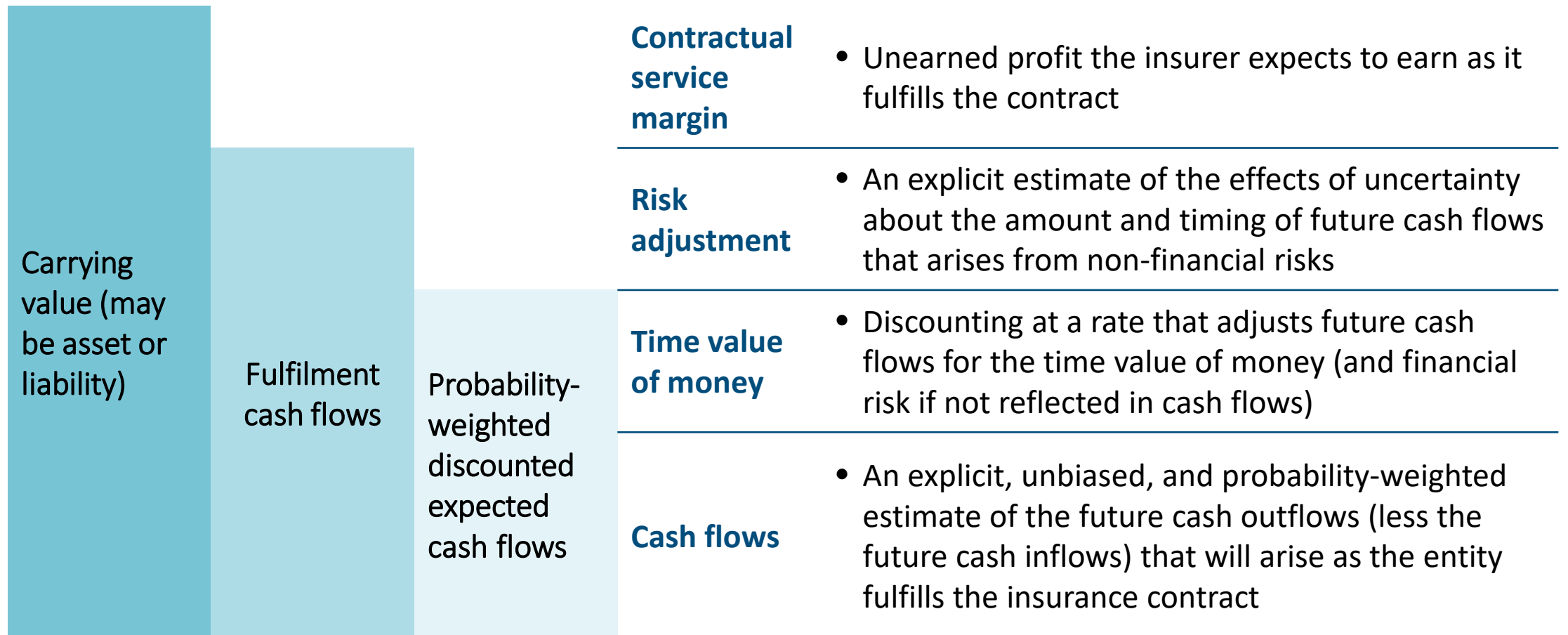
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IFRS 17 – a cash-flow valuation method intended for investors



Key goal: separate “insurance” and “financing” components of insurance contract...

IFRS 17

P&L – Income Statement	20X1
Insurance revenue	\$
Incurred claims	\$
Insurance service result	\$
Investment income	\$
Insurance finance expenses	\$
Net financial result	\$
Profit or loss	\$
Other comprehensive income	\$
Comprehensive income	\$

VS

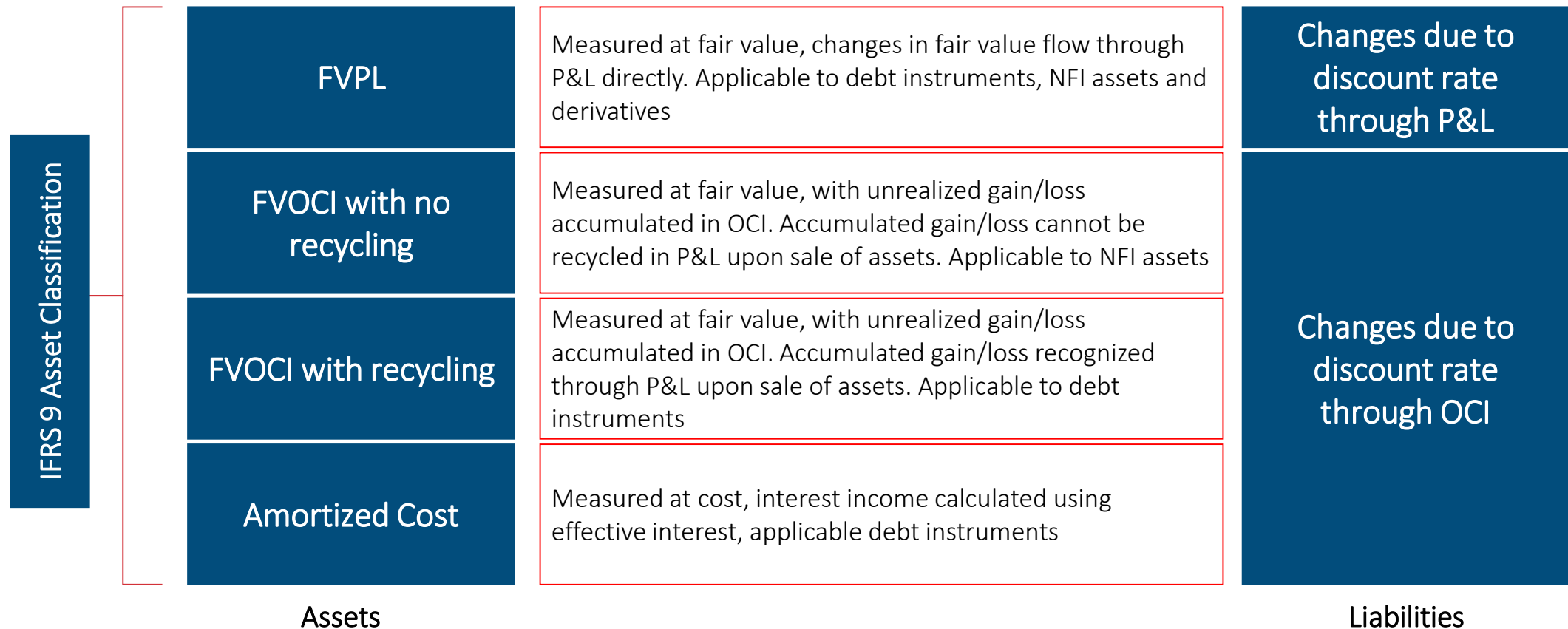
IFRS 4

P&L – Income Statement	20X1
Premiums	\$
Investment income	\$
Incurred claims	\$
Change in insurance contract liabilities	\$
Profit or loss	\$
Other comprehensive income	\$
Comprehensive income	\$

... And recognize P&L as “services are provided”

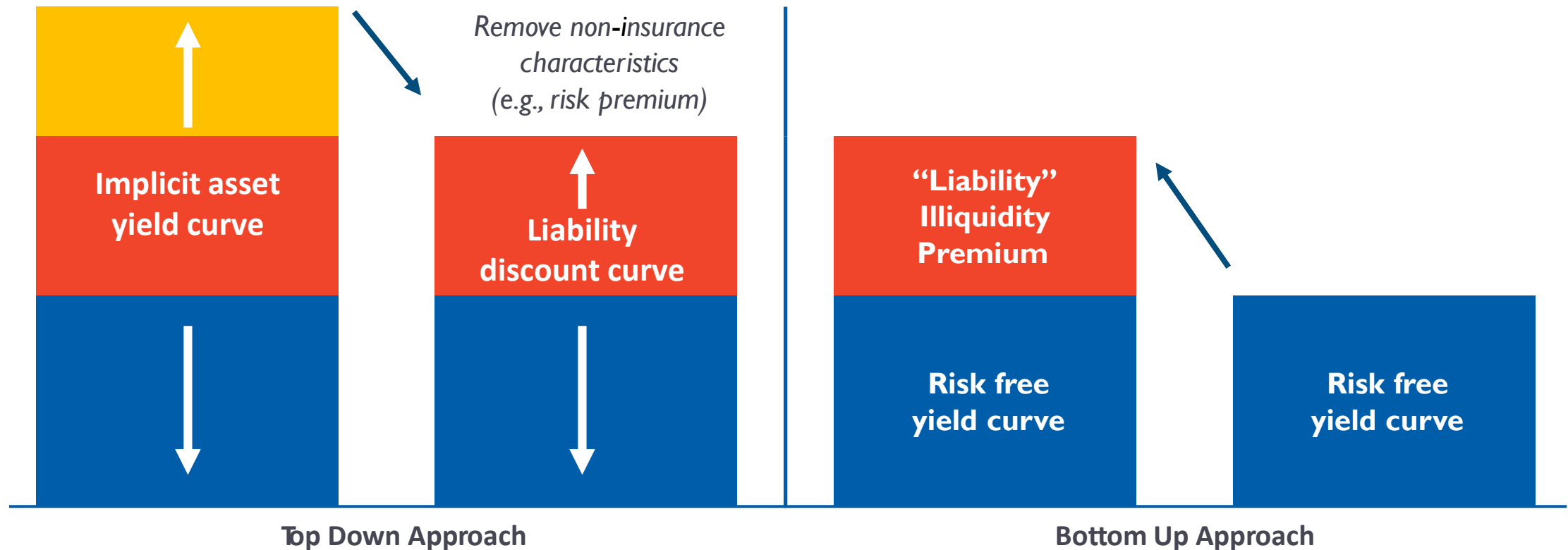
1. IASB publication – IFRS 17 Effects and analysis

IFRS 9 – changes in asset classification will impact ALM interaction with IFRS 17 liabilities



Two methods to determine discount rates

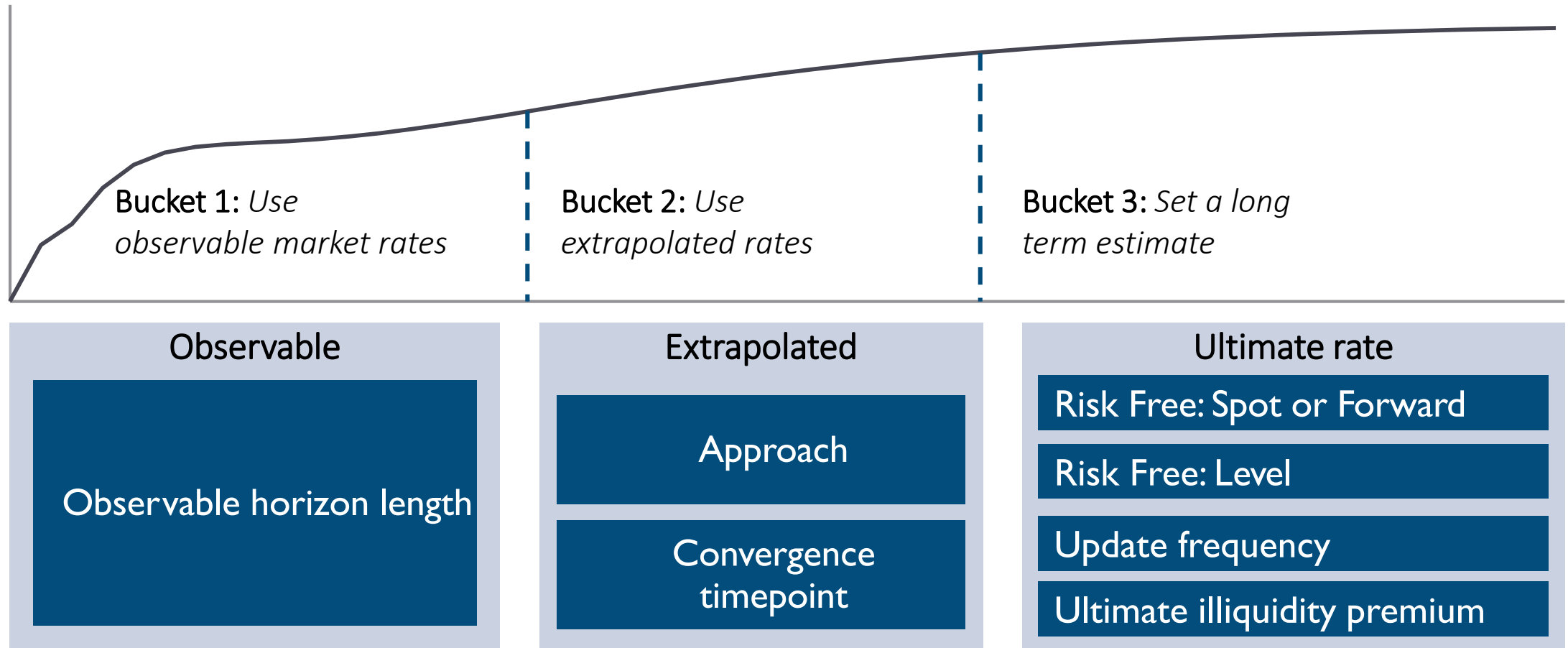
Top-down vs. bottom-up



Discounting at a rate that adjusts future cash flows for the time value of money, and financial risk (if not reflected in cash flows)

Core decisions for discount rates

CIA providing guidance for Canadian liabilities



Comparison of discounting: IFRS 4 vs IFRS 17

IFRS 4

- Canadian Asset Liability Method (CALM)
- Value of liability = Value of assets required
- Scenario Tested – prescribed by CIA Standards
 - Future reinvestments are assumed
 - Purpose is to establish provision for C3 risk
- Selection of assets directly impacts valuation of liabilities
 - Asset spreads capitalized in valuation
 - Trading activities

VS

IFRS 17

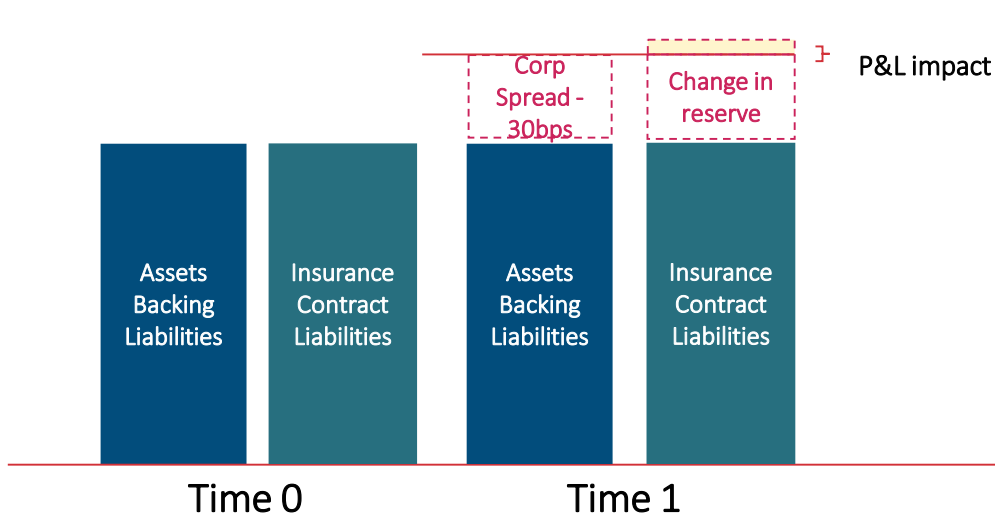
- Valuation of liabilities is de-linked from assets
- Choice of assets does not impact discount rate, in principle
 - Some companies might consider a “Top-Down” approach, using their own assets as a reference portfolio
 - Reference portfolio yields to be adjusted to remove asset specific characteristics

P&L implications from discounting

- Graph below assumes all assets backing liabilities are debt instruments and classified as FVPL under IFRS 9
- On the liability side, entity choose to put changes due to discount rate through P&L

IFRS 4 (CALM)

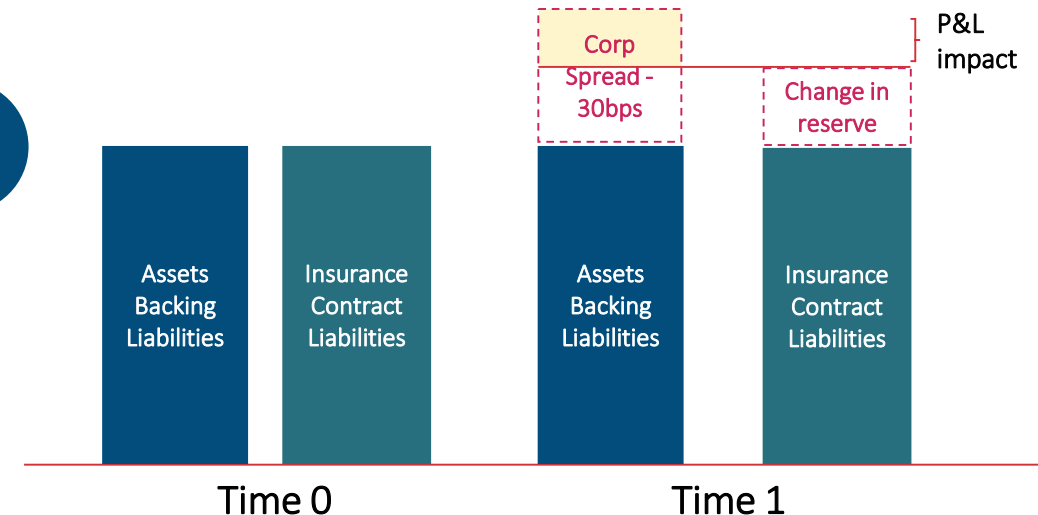
- Changes in risk-free rates and spreads MOSTLY absorbed in liabilities
- Small P&L impact due to imperfect matching



VS

IFRS 17

- Changes in risk-free rates absorbed in liabilities
- **Credit** spread component is NOT offset
- **Liquidity** component of spread IS offset



Likely more volatility in P&L under IFRS 17, as changes in credit spread not absorbed as much by change in liabilities

Some ALM issues created by IFRS 17 – AA perspective

	IFRS 4 treatment	IFRS 17 treatment	Impact of change
Development of discount rate	<ul style="list-style-type: none"> • Liabilities equal to statement value of supporting assets (CALM) • No direct discounting of liabilities, although common to derive equivalent discount rate • Explicit provision for ALM (C3) risk 	<ul style="list-style-type: none"> • Independent of insurer's assets • Discount rate to be consistent with observable yields on traded instruments with same timing, credit and liquidity characteristics as insurance contracts to be valued, or adjusted for differences • No provision for C3 risk 	<ul style="list-style-type: none"> • Changes in credit spreads may cause additional P&L volatility when assets are classified as FVPL • Moving from a non-market consistent valuation of liabilities to a more market consistent view • Changes in matching position (e.g. due to asset trades) no longer directly impact liability and may reduce P&L volatility

Some ALM issues created by IFRS 17

– Investment management perspective

	IFRS 4 treatment	IFRS 17 treatment	Impact of change
Choice of assets	<ul style="list-style-type: none"> Promotes use of riskier assets with higher net returns Leads to lower IFRS 4 liability 	<ul style="list-style-type: none"> Does not affect IFRS 17 liability as discount rate is de-linked from assets 	<ul style="list-style-type: none"> Companies may reduce use of NFI assets Potentially higher liability at transition
Trading of assets	<ul style="list-style-type: none"> Asset trading activities can have a material impact on IFRS 4 liability, as overall asset spread and cash flow profile changes 	<ul style="list-style-type: none"> Does not affect IFRS 17 liability as discount rate is de-linked from assets 	<ul style="list-style-type: none"> Removes a constraint in the asset trading decision, i.e. no longer need to consider impact on liability Asset trading can be based more purely on economic ALM considerations

Some ALM issues created by IFRS 17 – Assets backing CSM

	IFRS 4 treatment	IFRS 17 treatment	Impact of change
Assets backing CSM	<ul style="list-style-type: none">• No equivalence under IFRS 4	<ul style="list-style-type: none">• CSM has no interest sensitivity	<ul style="list-style-type: none">• Multiple views on asset selection to back CSM in order to manage the lack of interest sensitivity on CSM• Match with shorter term assets• Match more holistically, i.e. together with fulfilment cash flows• View and treat CSM as available surplus

Some ALM issues created by IFRS 17

– Assets backing RA

	IFRS 4 treatment	IFRS 17 treatment	Impact of change
Assets backing RA	<ul style="list-style-type: none"> Asset strategy generally determined at the total liability level (e.g. use the same assets backing PfADs as those backing best estimate liabilities) PfADs include provisions for financial risks 	<ul style="list-style-type: none"> RA does not include financial risks RA is not required to be discounted Entity is not required to disaggregate the change in RA for non-financial risk between insurance service result and insurance finance income or expense 	<ul style="list-style-type: none"> Asset may have to be re-allocated if company currently uses different assets backing PfADs vs. best estimate liabilities under IFRS 4 Additional volatility in insurance service results vs. finance results if change in RA is not disaggregated

Given IFRS 17 liabilities are de-linked from assets, asset strategies, including matching strategies, can more easily be performed at the total liability level (e.g. Portfolio level), not distinguishing between assets backing BEL, RA and CSM

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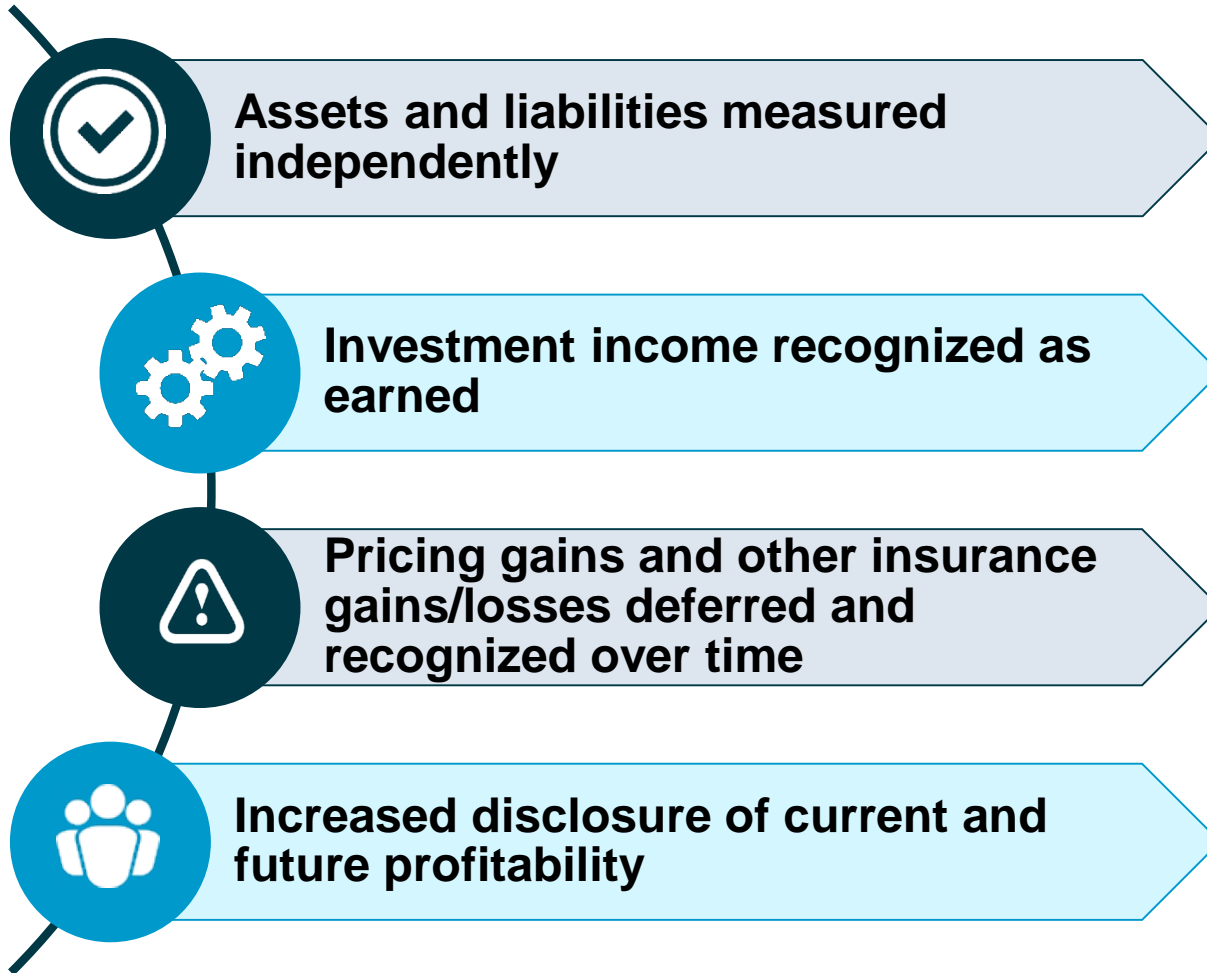
ALM UNDER IFRS17 – INSURANCE COMPANY CONSIDERATIONS

JOHAN JANSE VAN VUUREN



How is ALM/Investments Impacted – Project and Implementation Considerations

IFRS 17 - Key differences from today



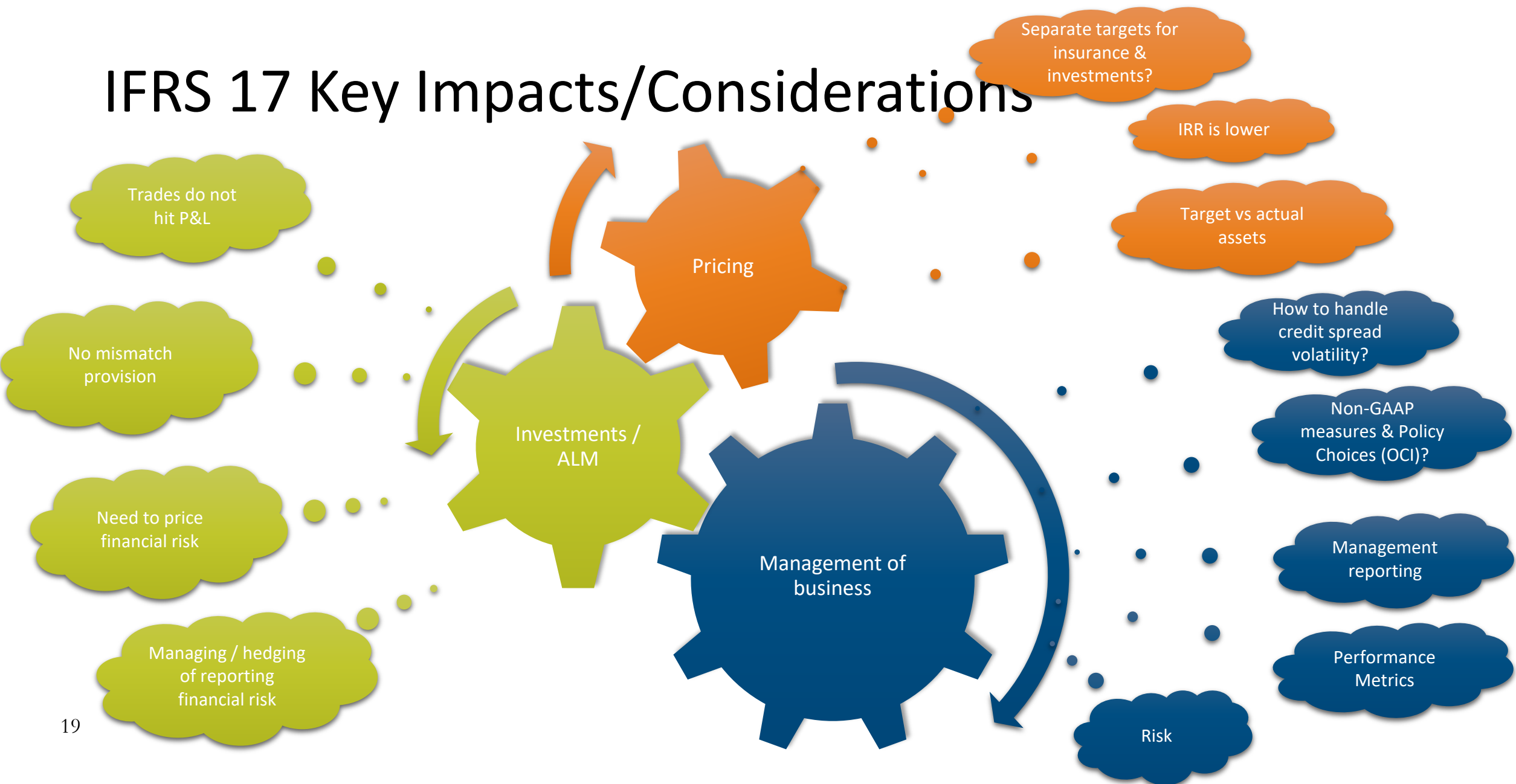
Discount rate for liabilities is not based on assets backing liabilities
Creates accounting volatility even when cash flow matched

Present value of net asset spread eliminated
Realized and unrealized gains and losses on investments are recognized as earned

“Contractual service margin” (CSM) is a new component of the liability used to defer and amortize insurance gains/losses into income as services are provided

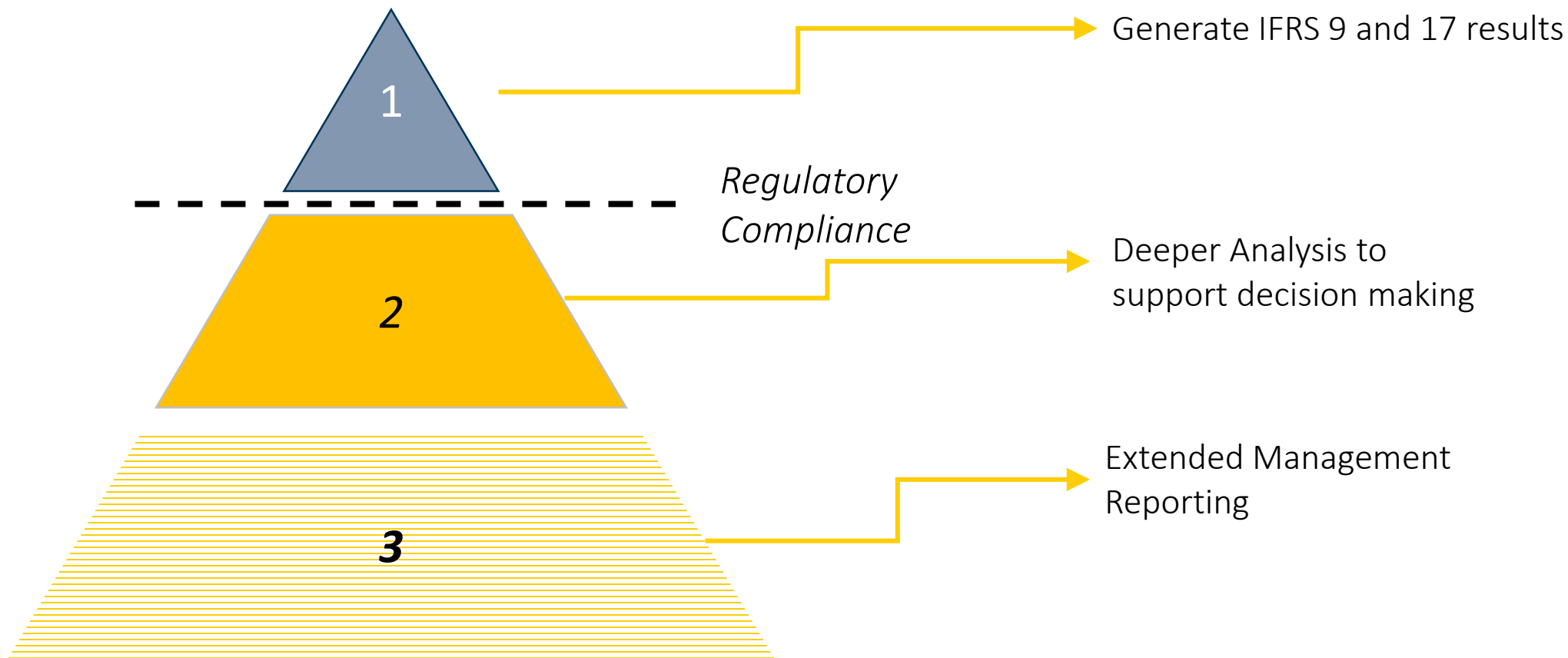
CSM and Risk Adjustment (new PfAD) will be disclosed
Insurance and investment results will be reported separately

IFRS 17 Key Impacts/Considerations



What to take on?

Scope and ALM Activities – Compliance vs Compliance + and Future State



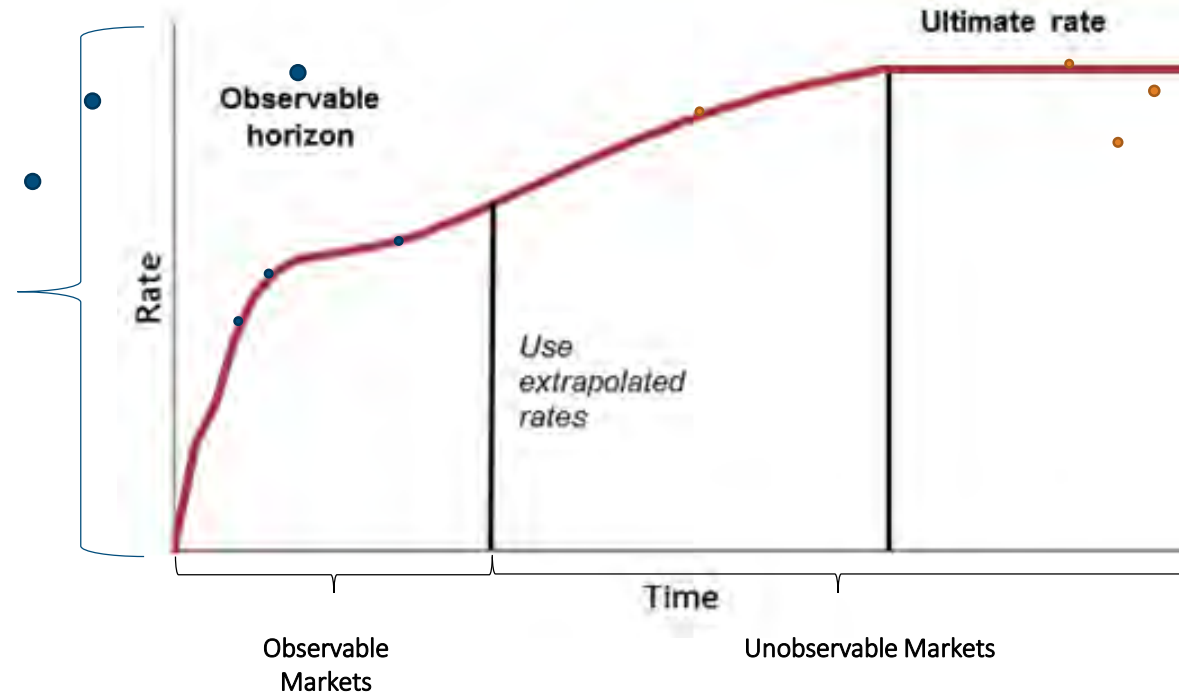
Interaction with Discount Rates

Discount Rate – Construction Decisions

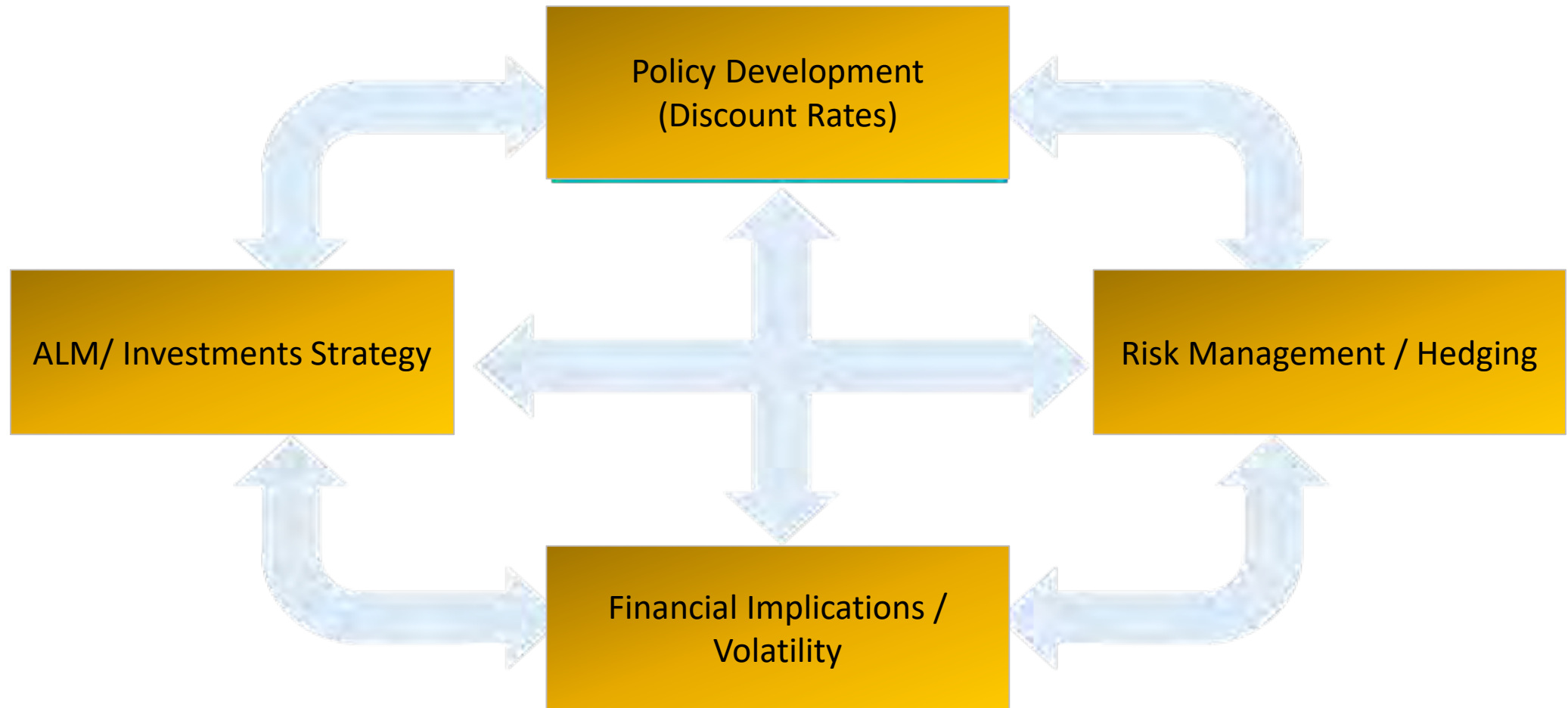
- 1. Observable Period?
- 2. Risk Free Reference?
- 3. Interpolation?
- 4. Forward vs Spot?
- 5. Extrapolation?
- 6. Ultimate Rate Term – Risk Free and Liquidity

- 7. Ultimate Rate Level – Risk Free and Liquidity

- Top down vs Bottom Up
- Reference Portfolio
- How to deal with cashflows that vary with underlying items and financial risk



ALM interactions with Discount Rate Policy



Illustrative Example #1 – Base

Single Period Example (T0 -> T1)

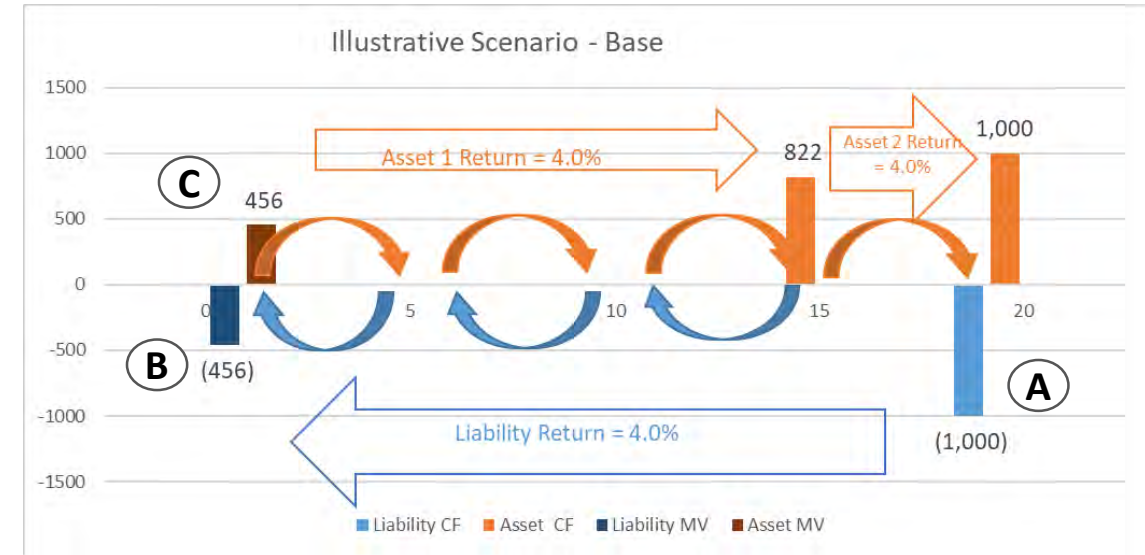
Graph:

- Take a single Liability cash-flow of \$1000 at year 20. There is only one benchmark for the Liabilities which is expected to earn 4.0%. In this example there are no adjustments for credit adjustments to the liability.
- This creates a MV for the liability to be \$456 at time 0.
- This means we have a MV of assets of \$456 at time 0 to invest (i.e. $MV_A = MV_L$). We invest the assets in a 15 year asset which earns 4.0% which has a maturity value of \$822 when it expires in year 15 and we expect to invest in a 5 year asset at that time that earns 4%, which will give an asset CF at time 20 of \$1000 to perfectly cash-flow match.

Table:

Based on these assumption,

- $Asset\ MV_1 = Liability\ MV_1$ because $Asset\ Return = Liability\ Return$



Illustrative Example #1 – OCI

Single Period Example (T0 -> T1)

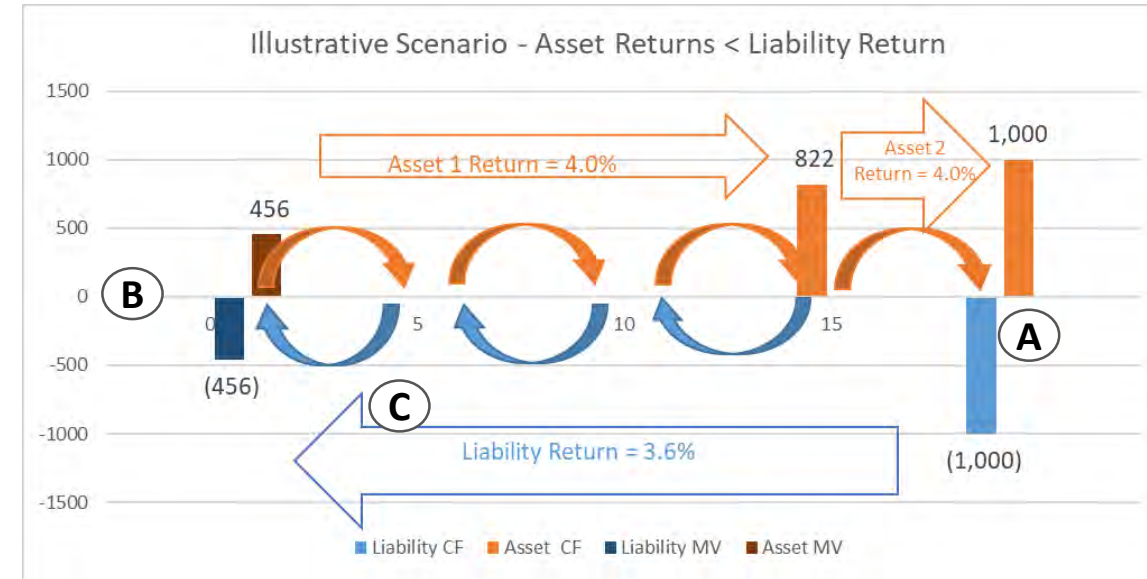
Graph:

- Base assumptions: Take a single Liability cash-flow of \$1000 at year 20. There is only one benchmark for the Liabilities which is expected to earn 4.0%. In this example there are no adjustments for credit adjustments to the liability. This creates a MV for the liability to be \$456 at time 0. This means we have a MV of assets of \$456 at time 0 to invest (i.e. $MV_A = MV_L$). We invest the assets in a 15 year asset which earns 4.0% which has a maturity value of \$822 when it expires in year 15 and we expect to invest in a 5 year asset at that time that earns 4%, which will give an asset CF at time 20 of \$1000 to perfectly cash-flow match.
- Under IFRS17 assets and liabilities are de-linked. When electing the OCI option, assume both the Asset (IFRS9) and Liability (IFRS17) elect the OCI Option
- Assume 1 day before T1, the liability return is 3.6%. This means that the liability market value is \$511 ($511 = 1000/1.036^{19}$). The difference between \$475 ($475 = 1000/1.04^{19}$, the initial liability discount rate) and \$511 is \$(36).

Table:

Based on these assumption,

- If the OCI option is elected, the difference between the initial assumptions (4%) and the current assumption (3.6%) go through OCI.
- The OCI Option reduces earnings volatility but does not change the overall balance sheet volatility



Return Assumption	Initial	Current		
Liability Return	4.0%	3.6%		
Asset 1 (15 Year asset)	4.0%	4.0%		
Asset 2 (5 Year Asset in 15 Years)	4.0%	4.0%		
	P&L Elected		OCI Elected	
Balance Sheet	T0	T1	T0	T1
Asset	456	475	456	475
Liabilities	456	511	456	511
Total Equity	-	(36)	-	(36)
Retained Earnings	-	(36)	-	-
OCI	-	-	-	(36)

Key Takeaway: The OCI Option may reduce earnings volatility but does not change the overall balance sheet volatility. OCI Option moves market movement from retained earnings into Accumulated OCI

Illustrative Example #2 – Tactical Trading

Single Period Example (T0 -> T1)

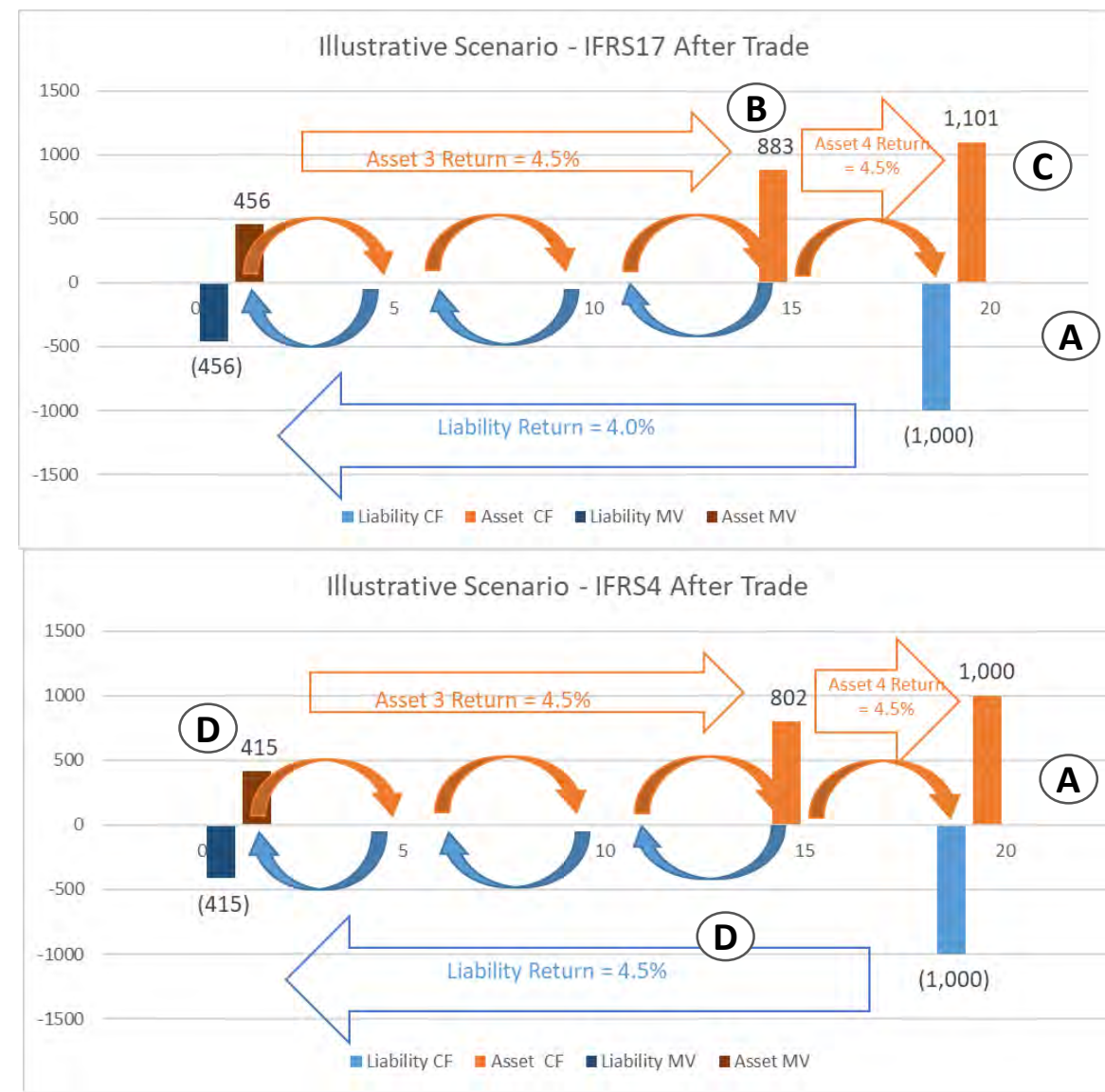
Graph:

- A. Base assumptions: Take a single Liability cash-flow of \$1000 at year 20. There is only one benchmark for the Liabilities which is expected to earn 4.0%. In this example we're ignoring credit adjustments to the liability. This creates a MV for the liability to be \$456 at time 0. This means we have a MV of assets of \$456 at time 0 to invest (i.e. $MV_A = MV_L$). We invest the assets in a 15 year asset which earns 4.0% (asset 1) which has a maturity value of \$822 when it expires in year 15 and we expect to invest in a 5 year asset at that time that earns 4% (asset 2), which will give an asset CF at time 20 of \$1000 to perfectly cash-flow match.
- B. Assume that there are 2 new assets available in the market. A 15 year asset that earns 4.5% (asset 3) and a 5 year asset available in 15 years that earns 4.5% (asset 4). We trade our \$456 of assets from asset 1 into asset 3 and when this asset matures, we expect to invest in asset 4.
- C. Under IFRS17, the starting market value of asset CFs is unchanged, but the projected future cash-flow has now increased as we're expecting to earn more spread. This means at time 20, we're expecting to have an additional \$101 ($101 = 1101 - 1000$, where $1101 = 456 * 1.045^{15} * 1.045^5$) earned because of investing in the higher yield assets.
- D. Under IFRS4, we adjust the market value of assets to \$415 (where $415 * 1.045^{15} * 1.045^5 = 1000$) to meet the future liability obligation and the difference is a P&L gain. This means that in order to get the liability CF of \$1000 at time 20, the liability return is 4.5%.

Table:

There is no impact to the IFRS17 liability due to trading. IFRS4 capitalizes future spread income within the liability.

Key Takeaway: Under IFRS17, assets and liabilities are de-linked. Trading will not influence the liability discount curve, and spread income will be earned over time



Liability	IFRS17	IFRS4	Difference (IFRS17 - IFRS4)
T0	456	456	0
T0 (After Trade)	456	415	41
Impact	0	(41)	41

Other Considerations

Implementation Company Perspective

Key challenges/Considerations

- LICAT
- Stakeholder Focus – CFO vs ALM vs Risk vs Investments
- IFRS17 is not CALM
- Significant Systems development required
- Timeline
- Competitive Environment



ALM Exposed Under IFRS 17

Charles L. Gilbert, FSA, FCIA, CFA, CERA

October 28, 2019



ALM objectives can vary

First step is determine what interest rate risk to manage

Protect
Economic Surplus
against changes in
interest rates

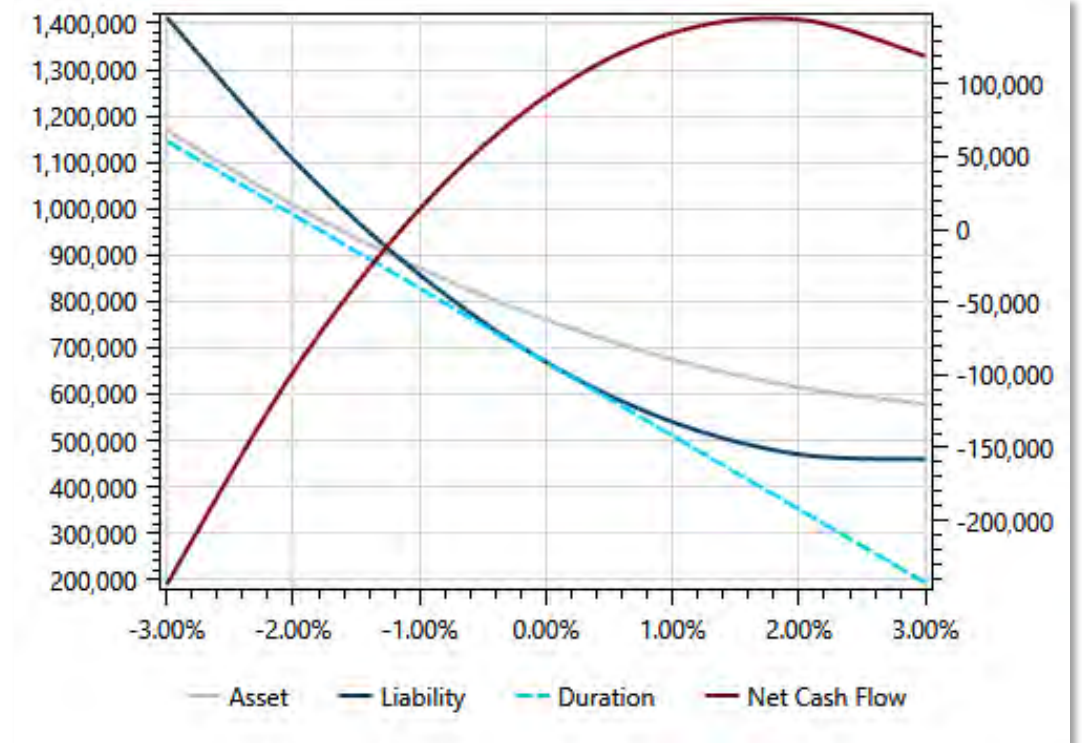
- PV Asset CFs – PV Liability CFs

Protect
Market Value
against changes in
interest rates

- MV Assets – MV Liabilities

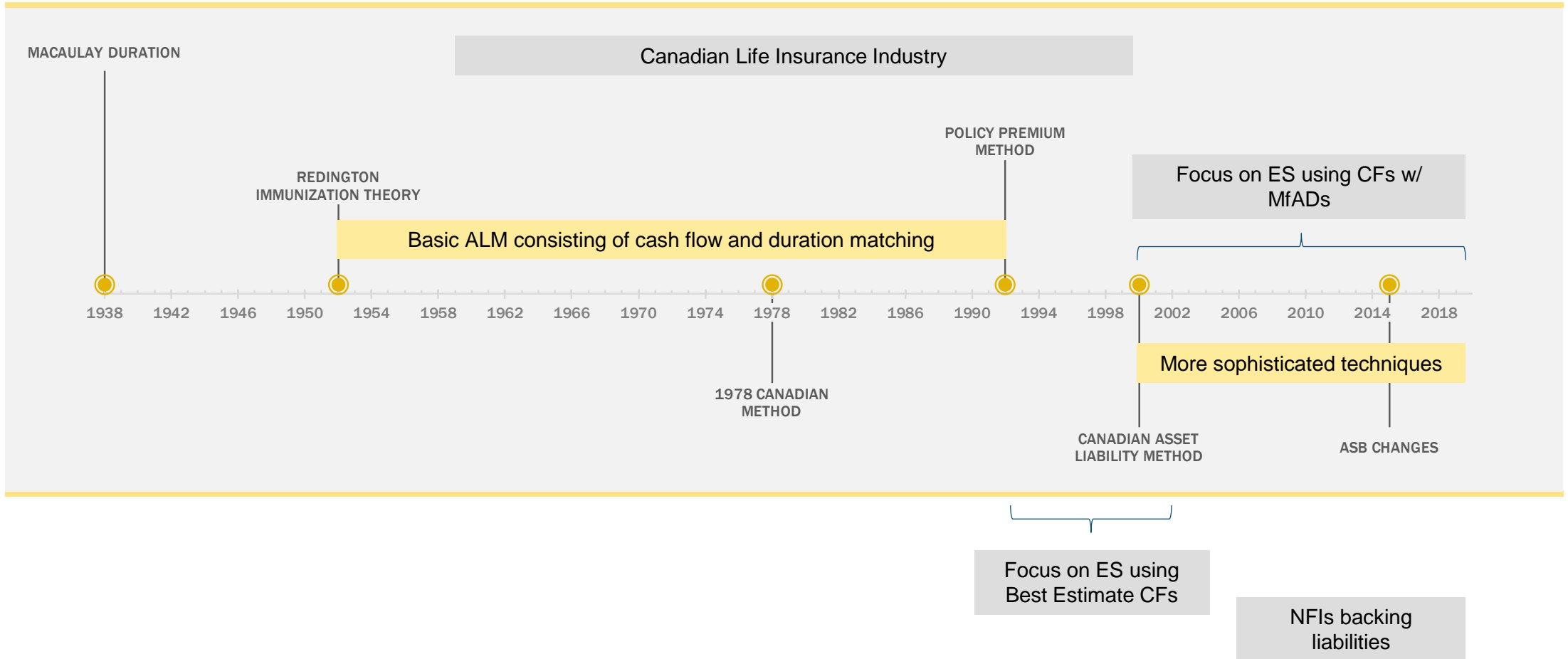
Protect
Accounting Results
against changes in
interest rates

- BV Assets – Reserves



The Great Disconnect

ALM has evolved with reserving standards



ΔES no longer a good proxy to $\Delta CALM \Rightarrow$ greater focus on $\Delta CALM$ reserves

Two General Approaches

ALM executed at a tactical or strategic level

- Approach 1: Purpose of ALM is risk mitigation only
 - Focus exclusively on Economic Surplus
 - Mitigation of interest rate risk exposure associated with changes in the present value of asset and liability cash flows
 - Focus exclusively on Accounting Results and/or Required Capital (LICAT)
 - Mitigation of interest rate risk exposure associated with changes in CALM reserves and C3
- Approach 2: Purpose of ALM is to formulate ALM and investment strategies to achieve financial objectives (both economic and accounting) subject to risk tolerances and constraints
 - Involves establishing ALM Conceptual Framework (i.e. defining financial objectives, risk tolerances and constraints)
 - Risk optimization analysis to evaluate risk / reward trade-offs on both economic and accounting bases

Current Industry Practice

Disconnect has been challenging for life insurers

- Insurers have historically presumed a greater alignment between CALM and their ALM metrics
- Connection has been gradually breaking down as long-term interest rates have continued to fall
- While many insurers want to focus on long term economic results, there may be little appetite for unexpected reserve strengthening due to "ALM" rebalancing actions
- Company actions to protect against low interest rates that would otherwise be considered “prudent” may carry with them a real cost in terms of higher reserves and a hit to financial statements

Current Industry Practice

Recent observations of ALM practices in Canada

- Management decisions not to lengthen asset portfolio
 - Market views on interest rates
 - Do not want to lock in low interest rates
 - Limited accountability around interest rate decisions
 - Best practice to measure impact of taking market view
- Insurers revisiting how they are managing risk
 - Economic vs. accounting basis
 - Total company level including / excluding surplus
 - Use of NFI assets
- Reviewing ALM Conceptual Framework
 - Financial objectives, risk tolerances and constraints
 - Some insurers looking at changing basis they are managing interest rate risk exposure
 - Potentially large impact on asset portfolio
- Some companies approach ALM as compliance exercise
 - Lack adequate resources
 - Does not receive level of attention commensurate with risk exposure and potential impact

LICAT and IFRS starting to influence ALM practices of life insurers

Future Industry Practice

PV of Best Estimate Cash Flows

- Discount rate disconnected with assets
 - This is true even when using actual assets as reference portfolio (top down approach)
 - Change in Liabilities (P&L impact) does not equal change in Assets even if assets are FVPL
- Asset liability mismatch adjustments will reduce the discount rate using the top-down approach
- No longer rewarded for investing short
- There are 2 sources of mismatch
 - credit spreads can vary so the change in risk free curve is not the same as the change in the credit curve that the MV of assets would be based on
 - Even if credit spreads do not change / are constant, a given change in risk free rates will have different sensitivity on the assets and liabilities, assets will have a lower sensitivity to interest rate changes (i.e. will need to invest longer to achieve the same duration as liabilities; the implication being that a perfectly cash flow matched portfolio would have interest rate risk).
- Discount curve has a fixed URR so changes in interest rates are dampened
 - i.e. vs duration / in answer to the question what would be the impact of a 1% change in interest rates across the curve
 - Extrapolating to an 'ultimate' spot or forward rate from the last liquid spot or forward rate will reduce the duration of the liabilities

Risk optimization on an Economic Basis

What risk optimization on an Economic Basis can not do

✘ Increase Day 1 Economic Surplus

What risk optimization on an Economic Basis can do

✓ Increase portfolio yield

✓ Increase gain if rates rise / fall

✓ Reduce risk exposure

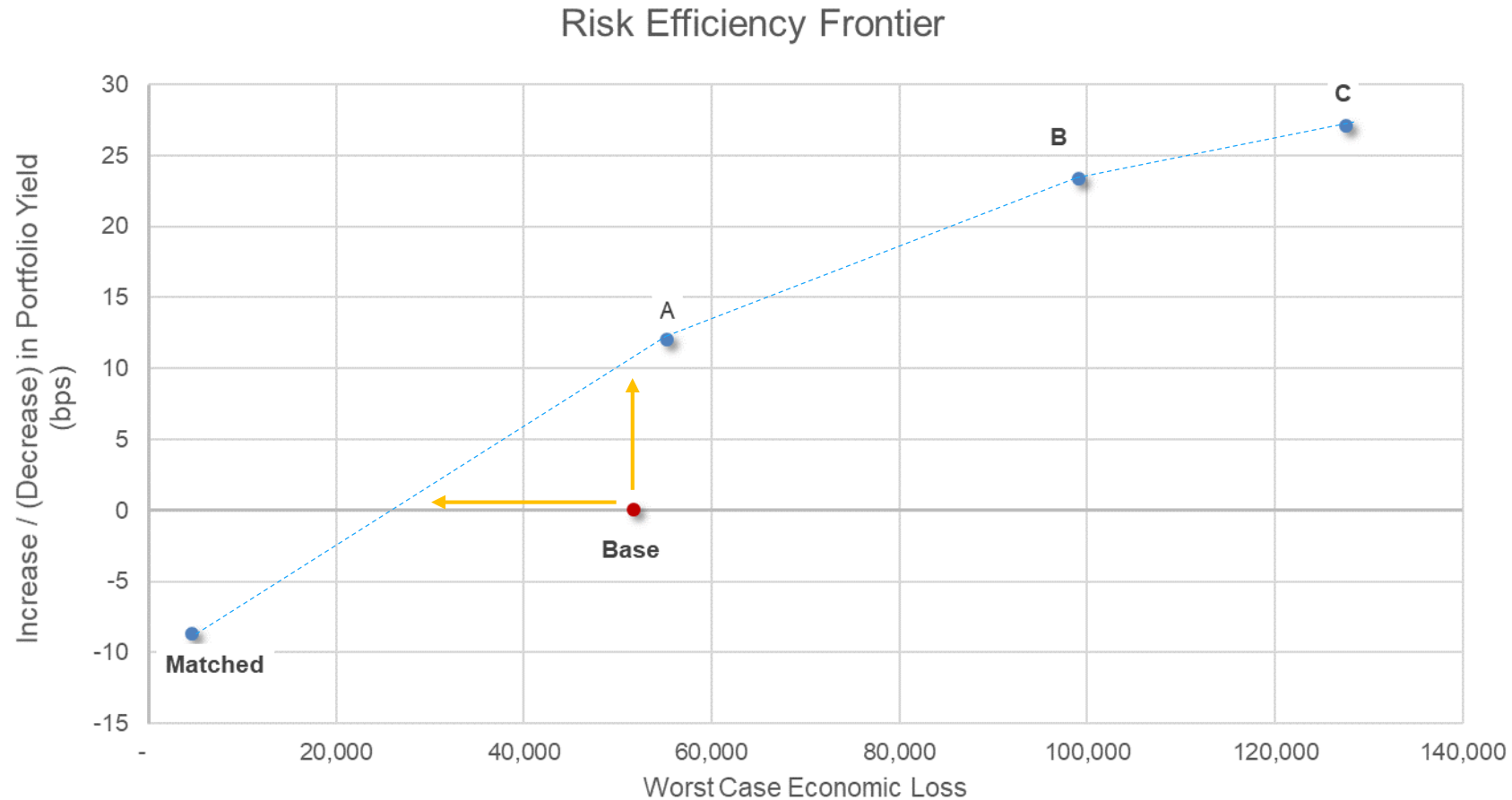
So that over time, Economic Surplus will increase

**** Depends on future interest rates*

ALM typically used to mitigate interest rate risk

Risk optimization can maximize yield, reduce risk, gain if rates rise

Economic
Basis

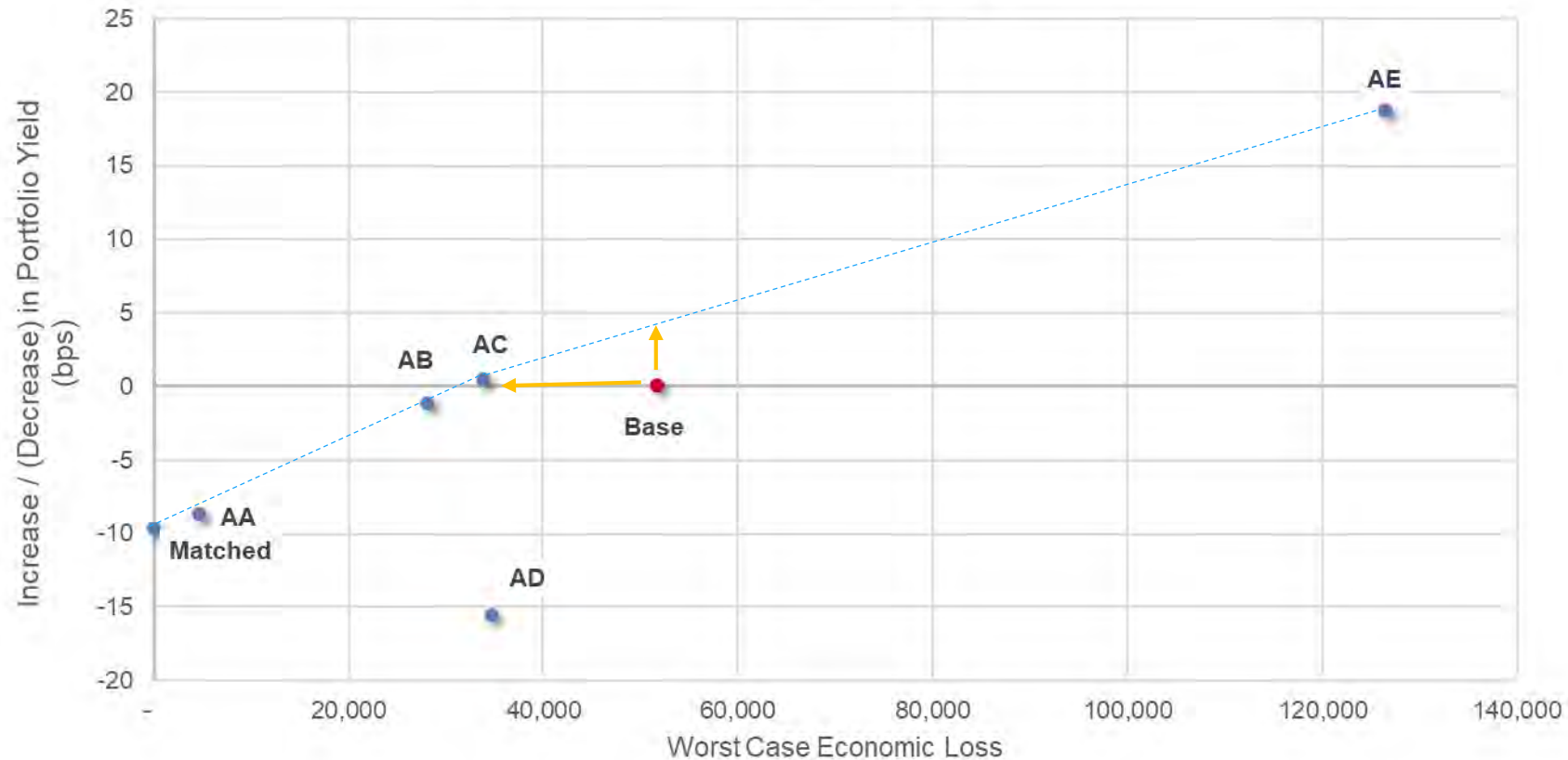


Illustrative example for hypothetical insurance company with 10 billion assets

Portfolios with identical duration

Can have different yield and/or risk exposure

Portfolios with Duration = 13 years



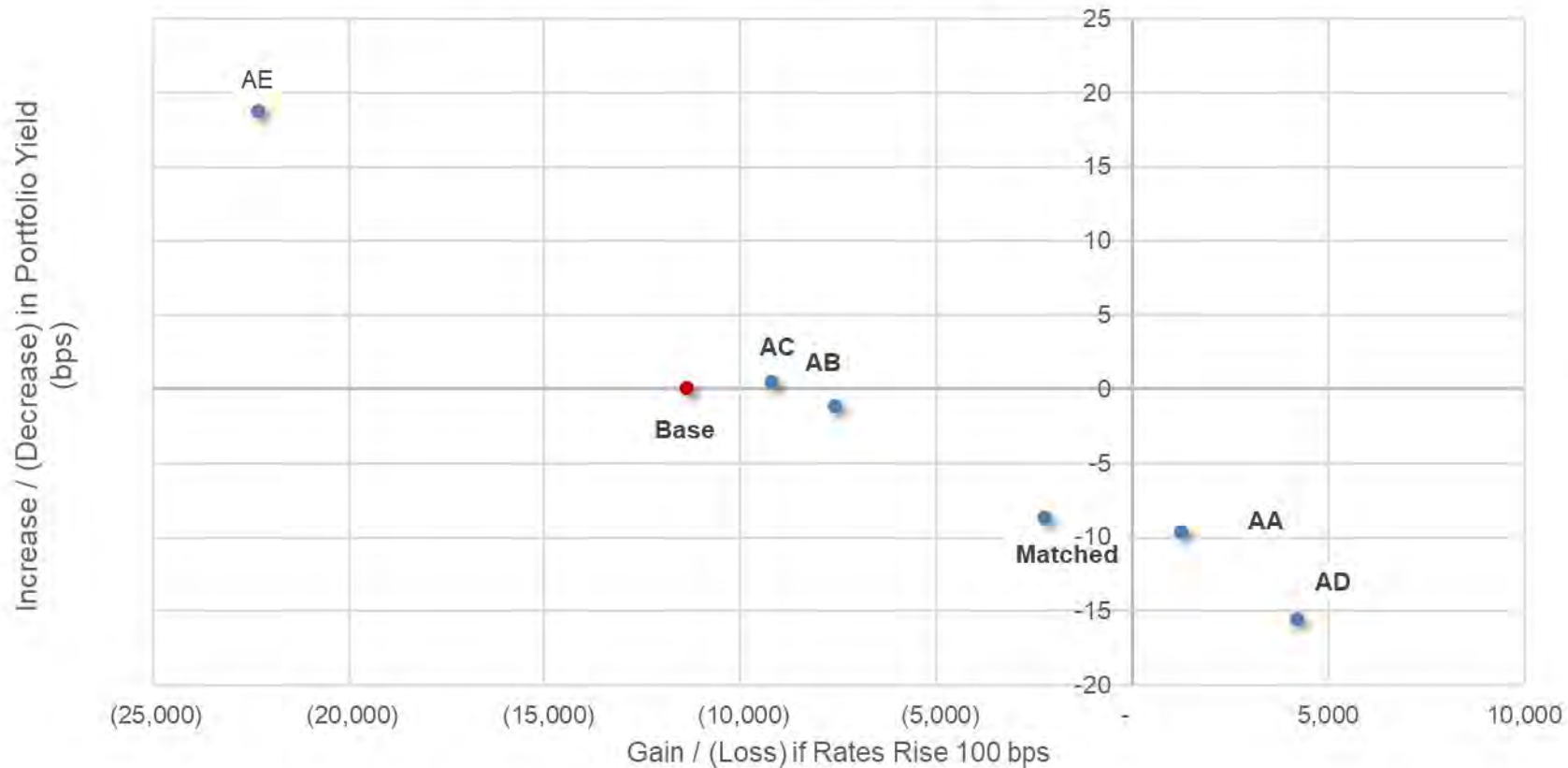
Economic Basis

Illustrative example for hypothetical insurance company with 10 billion assets

Portfolios with identical duration

Can have different exposure to rising rates

Portfolios with Duration = 13 years



Economic Basis

Illustrative example for hypothetical insurance company with 10 billion assets

Many insurers not optimizing on economic basis

- Due to disconnect with CALM reserves
- CALM penalizes insurers for lengthening / immunizing interest rate risk
- Maximizing yield, reducing risk on an economic basis may increase CALM reserve, decrease LICAT ratio

Risk optimization on Accounting Basis under IFRS 4

What risk optimization on an Accounting Basis can do under IFRS 4

✓ Reduce CALM reserve

✓ Increase net income

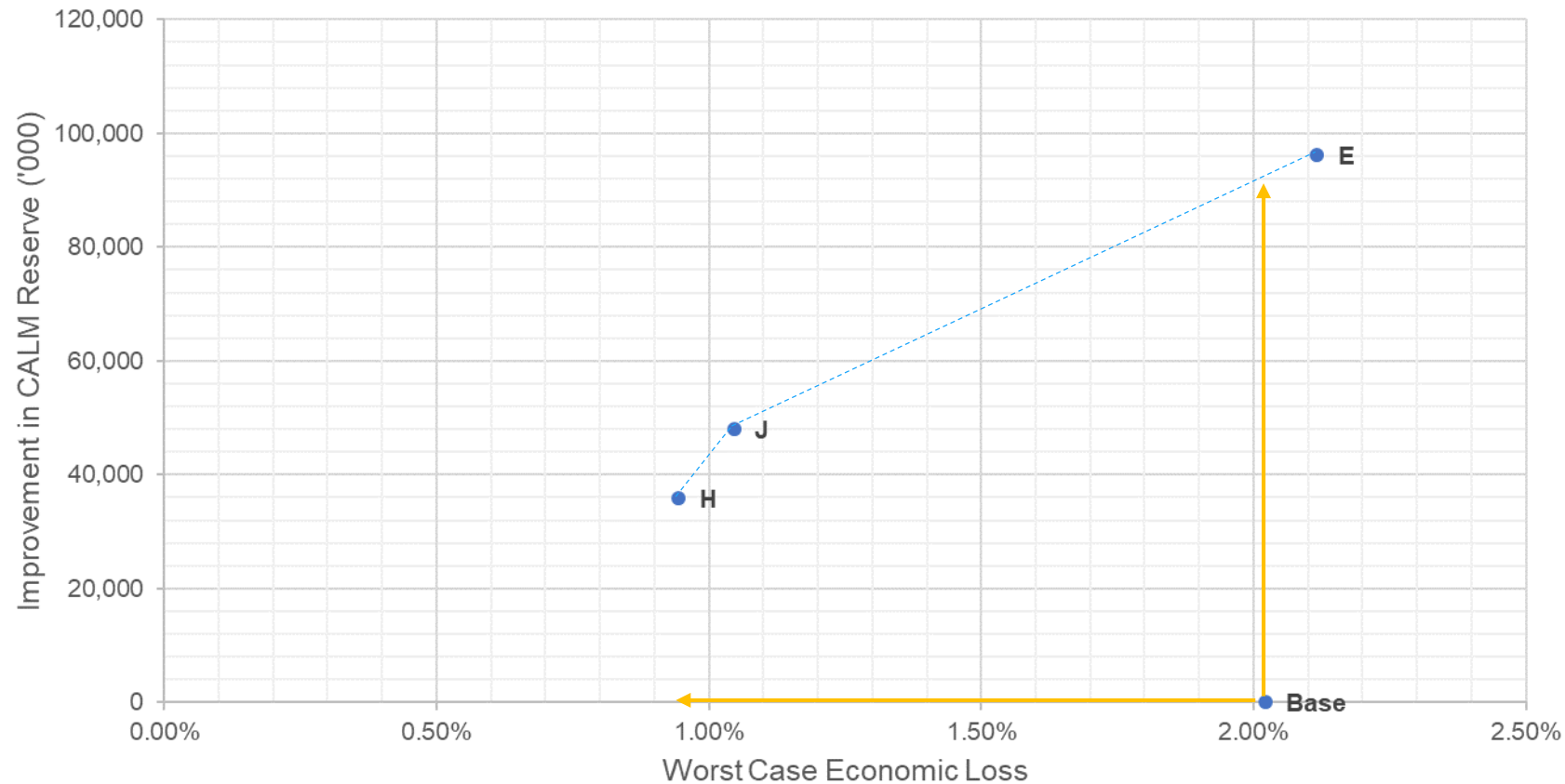
✓ Increase LICAT ratio

✓ Reduce earnings volatility

IFRS 4: ALM can immediately max financial results

Reposition asset portfolio and/or optimize ALM / Investment strategy

CALM Improvement



Accounting Basis

Illustrative example for hypothetical insurance company with 10 billion assets

IFRS 17: ALM has no immediate impact on P&L

Reposition asset portfolio and/or optimize ALM / Investment strategy

Accounting Basis



Illustrative example for hypothetical insurance company with 10 billion assets

Major implications under IFRS 17 for insurers

- ALM impacts both economic and accounting results under IFRS 4
 - companies wanted to focus on both economic results and accounting results but were forced to choose between the two
 - disconnect between economic and accounting results meant that insurers forced to choose between immunizing interest rate risk exposure on economic basis and optimizing financial statement results
 - maximizing yield, reducing risk on an economic basis could increase CALM reserve, decrease LICAT ratio
 - standard practice for Insurance companies to immunize asset and liability cash flows including PfADs to avoid higher C3 provision and reduce earnings volatility
 - PfADs are a non cash flow item; the release of PfADs represents profit
- ALM does not immediately impact accounting results under IFRS 17
 - selection of assets, investment strategy do not impact liabilities
 - no longer face negative reserve impact for lengthening asset portfolio in order to immunize interest rate risk
 - insurance companies able to immunize best estimate asset liability cash flows without negatively impacting accounting results
 - free to focus on economic results and long term best interest of company

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