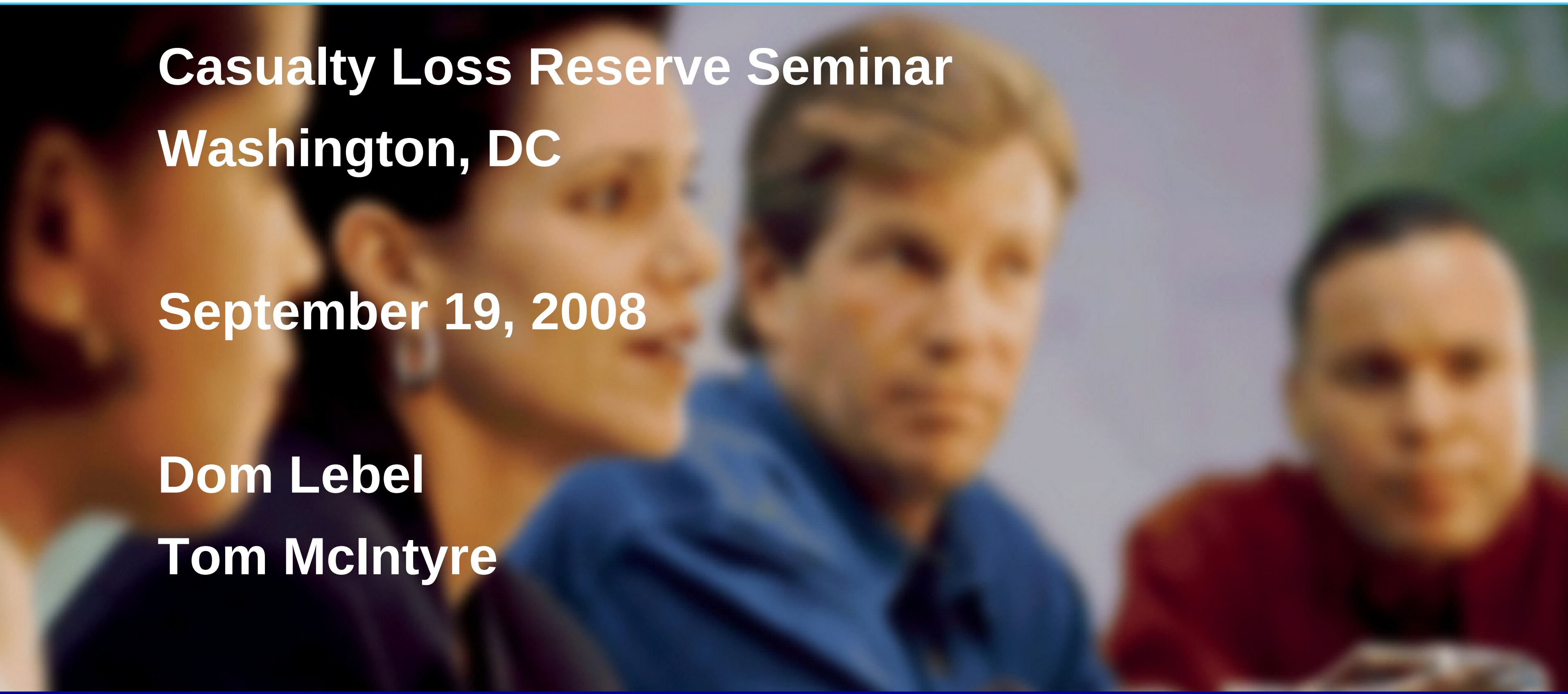
ERM 3 –
Risk Based Financial Management



Casualty Loss Reserve Seminar

Washington, DC

September 19, 2008

Dom Lebel

Tom McIntyre

Discussion Outline

- Introduction
- Valuation issues
- Performance measurement
- Targeting
- Risk based pricing
- Summary

Introduction

"Enron is laser-focused on ***earnings per share****, and we expect to continue strong* ***earnings performance****."*

2000 Letter to Shareholders

Many different performance measures exist in the financial services industry

Sample P&C insurance performance statements

"Our combined ratio for the calendar year is 94.3%"

"Excluding catastrophe losses, our accident year loss ratio was 60.7%"

"This year we achieved a GAAP ROE of 14.5%"

"This year's RORAC exceeded 17%"

Typical performance metrics used vary be sector

PC companies

- Combined ratio
- RORAC

Life companies

- Delta TEV, MCEV
- New business value

Asset manager

- ROE approaches
- More recently, NPV approaches

Banks

- RORAC
- VAR approaches for investment banks

External pressure is mounting

Rating Agencies – S&P

- "All firms will need to have at least a Strong ERM assessment before we will consider undertaking an economic capital review
- These insurers will have demonstrated to us that their Economic Capital Model (ECM) is an integral part of the way in which they manage their businesses and thus will tend to have better defined and more robust capital models
- It is important that management relies on ECM as a key management tool and not just as a determinate of capital adequacy. "

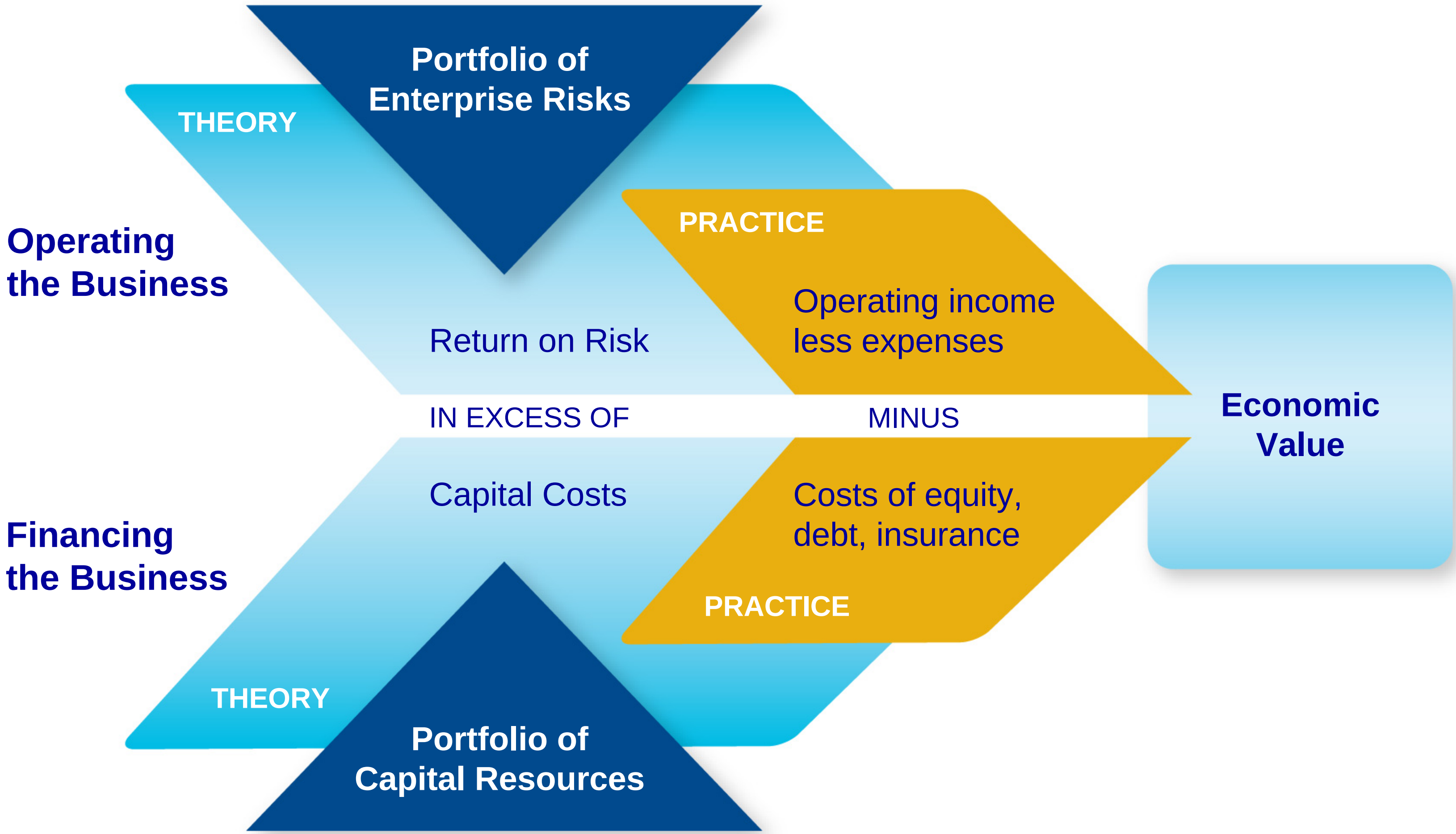
Rating Agencies – A.M. Best

- Companies seeking upgrades above A- are expected to demonstrate robust implementation plans for continued enhancements to their ERM capabilities
- A+/A++ insurers are expected to be under ratings pressure over time if they are deemed to lack superior ERM and Economic Capital modeling capabilities

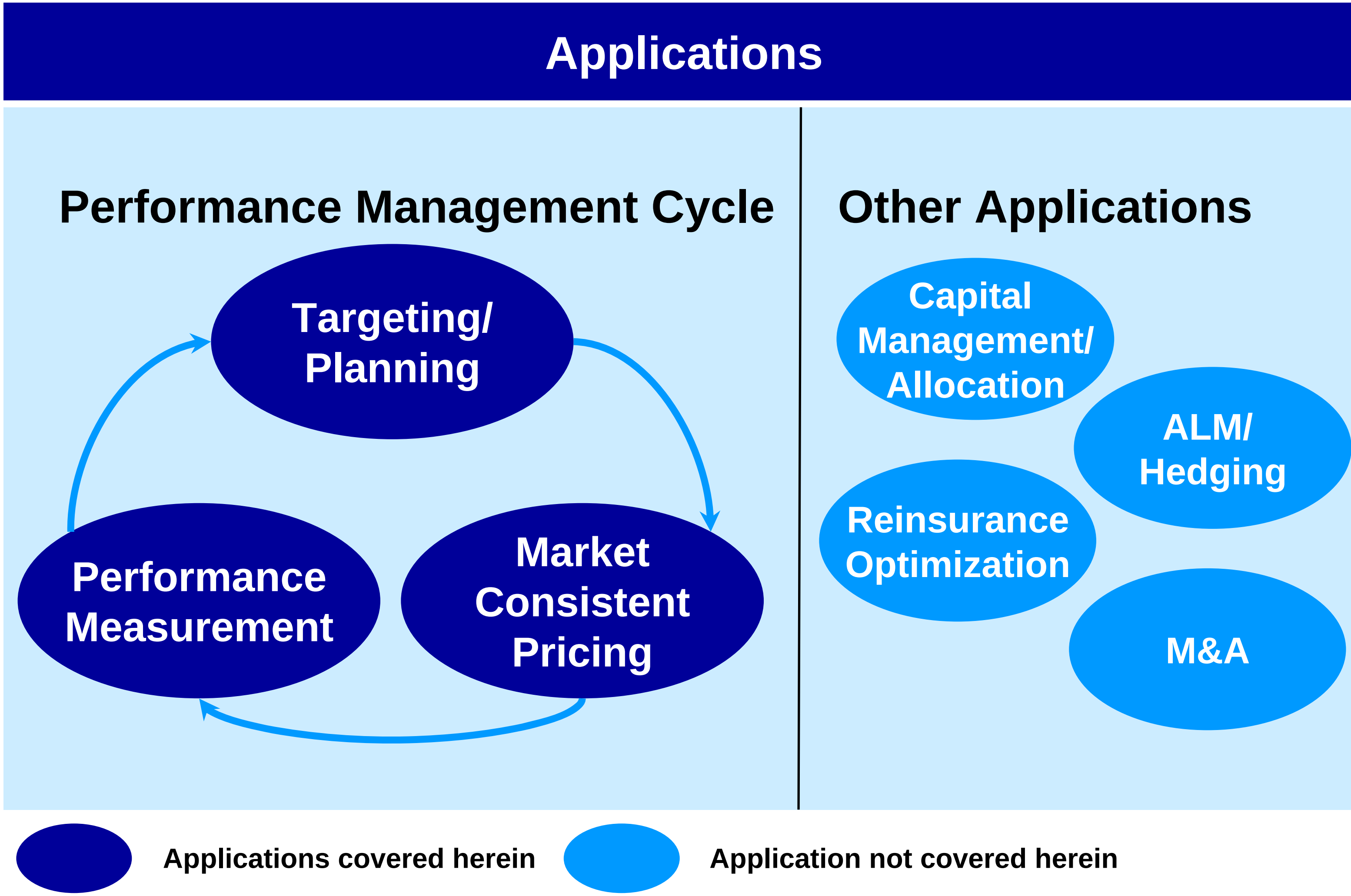
We expect more companies to start developing a unified Risk Based Financial Management framework

ERM Value Framework

Towers Perrin's ERM Risk-Value Framework



Performance Management Cycle, within an RBFM Framework



Introduction

"We run our business on the ***underlying economics****, not to achieve accounting results. Accounting results are just a constraint that we have to live with. I trust that if we make decisions at all levels based on economic value maximization, the* ***accounting results will take care of themselves****."*

CEO of major reinsurer

Valuation issues

Traditional performance metrics omit important components of value generation

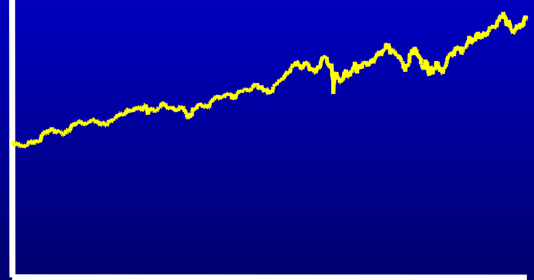
Metric \ Reflects …	Changes in historical reserves	New business volume	New business profit-ability	Invest-ment income	Cost of capital to support business	Changes in franchise value
Combined Ratio	x		x			
Underwriting Gain	x	x	x			
Most Recent Accident Year Loss Ratio	x		x			
GAAP ROE	x	x	x	x		
Sales Growth		x				
Risk Based Performance Measurement	x	x	x	x	x	

- Internally focused metrics cannot directly measure changes in franchise value
- Before we can discuss a more cohesive means of measuring performance, let us first recognize the basic structural aspects of an insurance company

Linking internal performance measures to shareholder value

Actual shareholder value

Total Shareholder Return (TSR)



- Observable, but only at the overall enterprise level
- Subject to forces beyond management's control

Proxy shareholder value

Market Consistent Tangible Value Added (MCTVA)

— Growth in tangible value during the period

— Market consistent balance sheet valuation

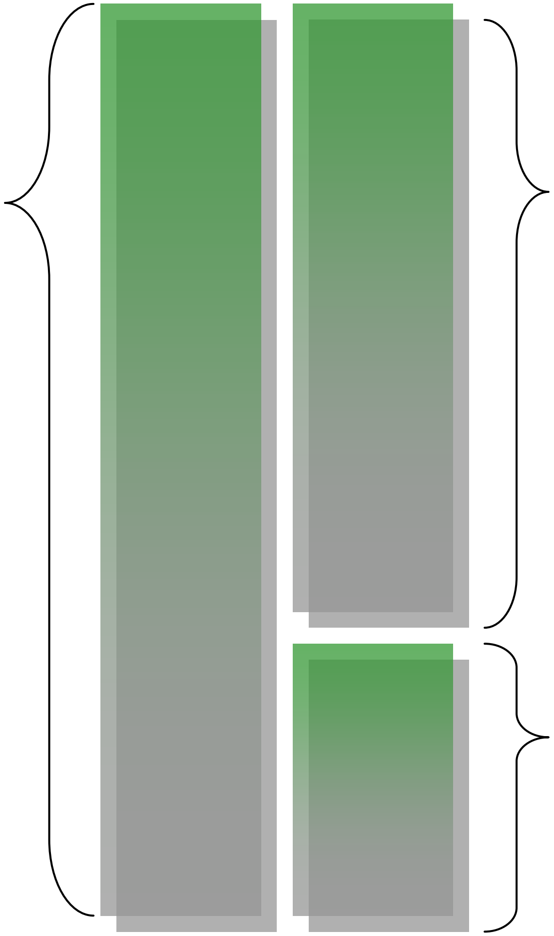
- Abundant theory; many practical implementation issues
- Stable and directly reflective of management activity

Actual shareholder value versus Market Consistent Tangible Value

External Market View

Market Value

- Observable in capital market
- Risk (β) estimable
- Reflects external perceptions
  - About company
  - About sector
  - About equity market



Internal Economic View

MC "Embedded" or Tangible Value

- Calculated using market-consistent valuation principles
- Reflects tangible value of contracts written and assets held

Franchise Value

- Future customers and other intangibles
- Inferred, not observable

Internal and external return targets need to be consistent

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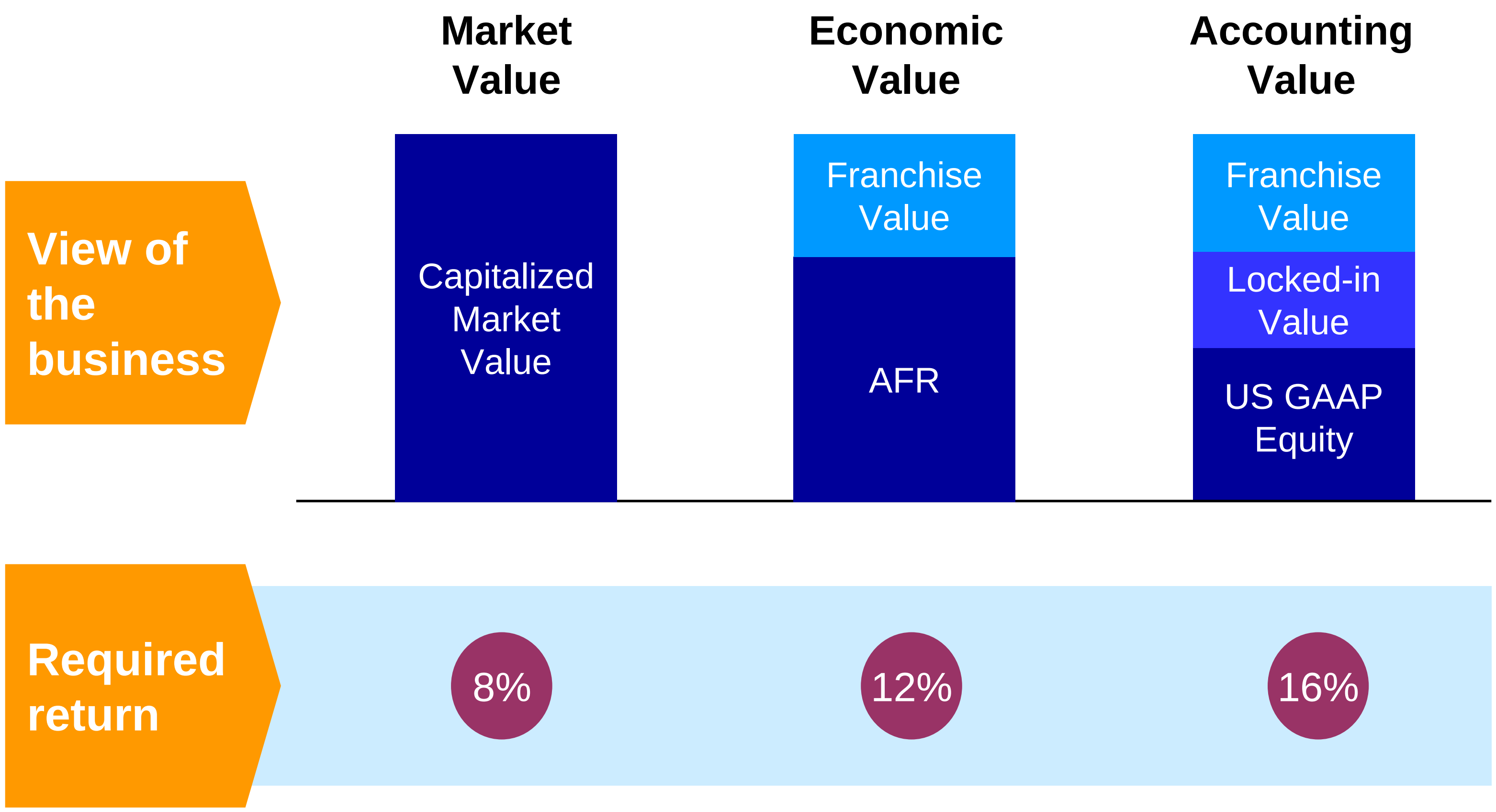
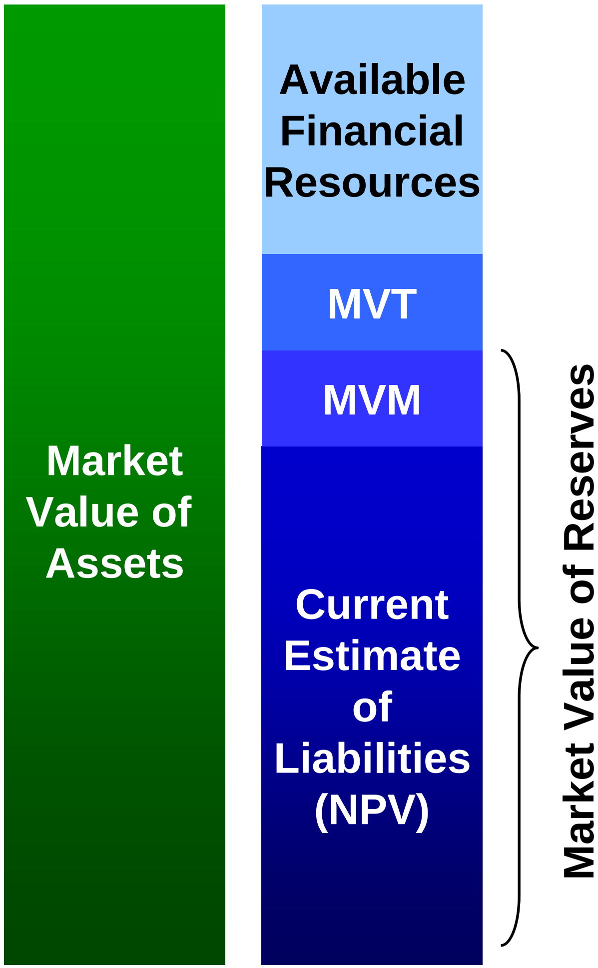


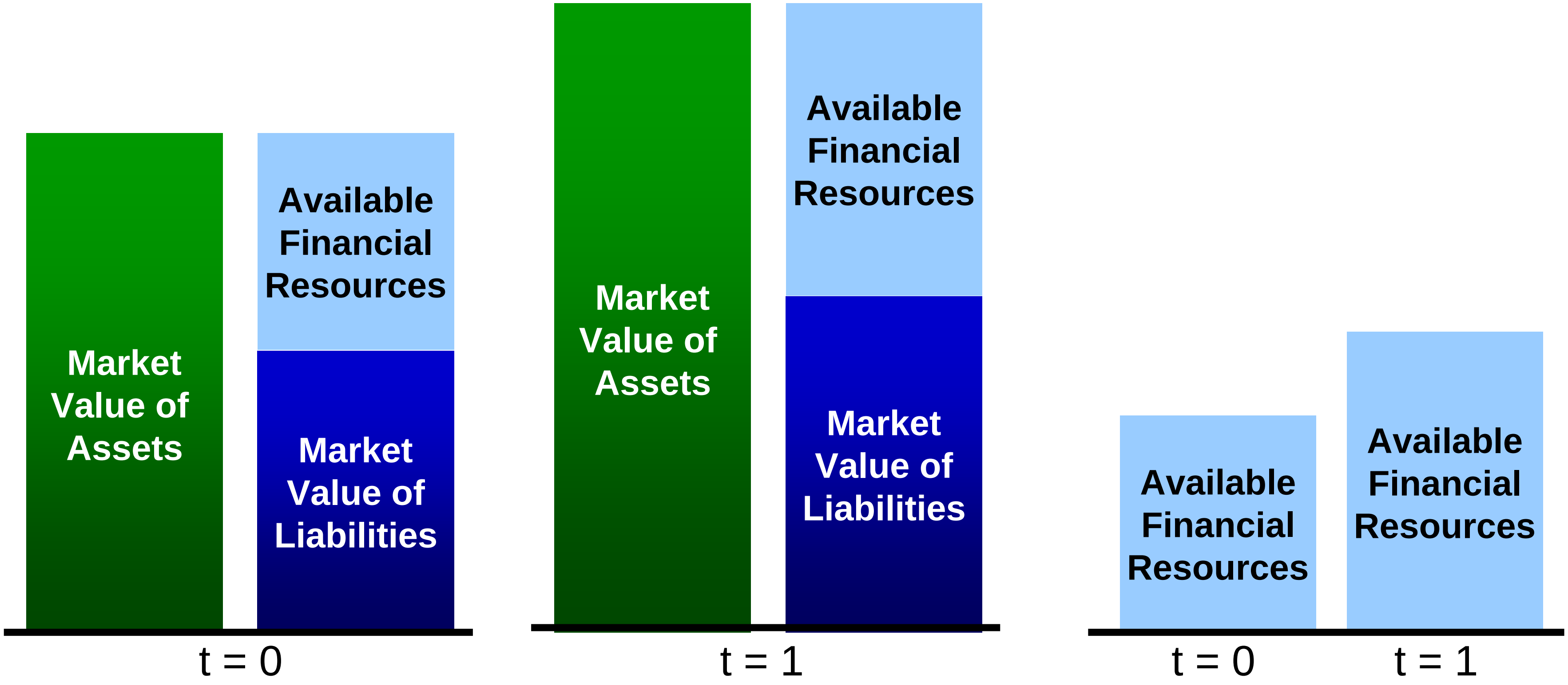
Different "returns" are required to support the same market value

The Economic Balance Sheet



- **Market Value Assets (MVA)** starts with the actual balance sheet, removes intangibles, and marks all remaining assets to a market-consistent values
- **Market Value Liabilities (MVL)** includes
  - The **Current Estimate of Liabilities (CEL)**, equal to the present value of the expected liabilities discounted at the risk free rate
  - A **Market Value Margin (MVM)** that compensates the liability holder for the capital required to support the associated risk
- **Market Value Taxes (MVT)** are the taxes that will be paid on the MVA when their current values are realized
- **Available Financial Resources (AFR)** is the excess of assets over liabilities.
  - **Calculated properly it is synonymous with Market Consistent Embedded Value (MCEV), which is the tangible value of the business**

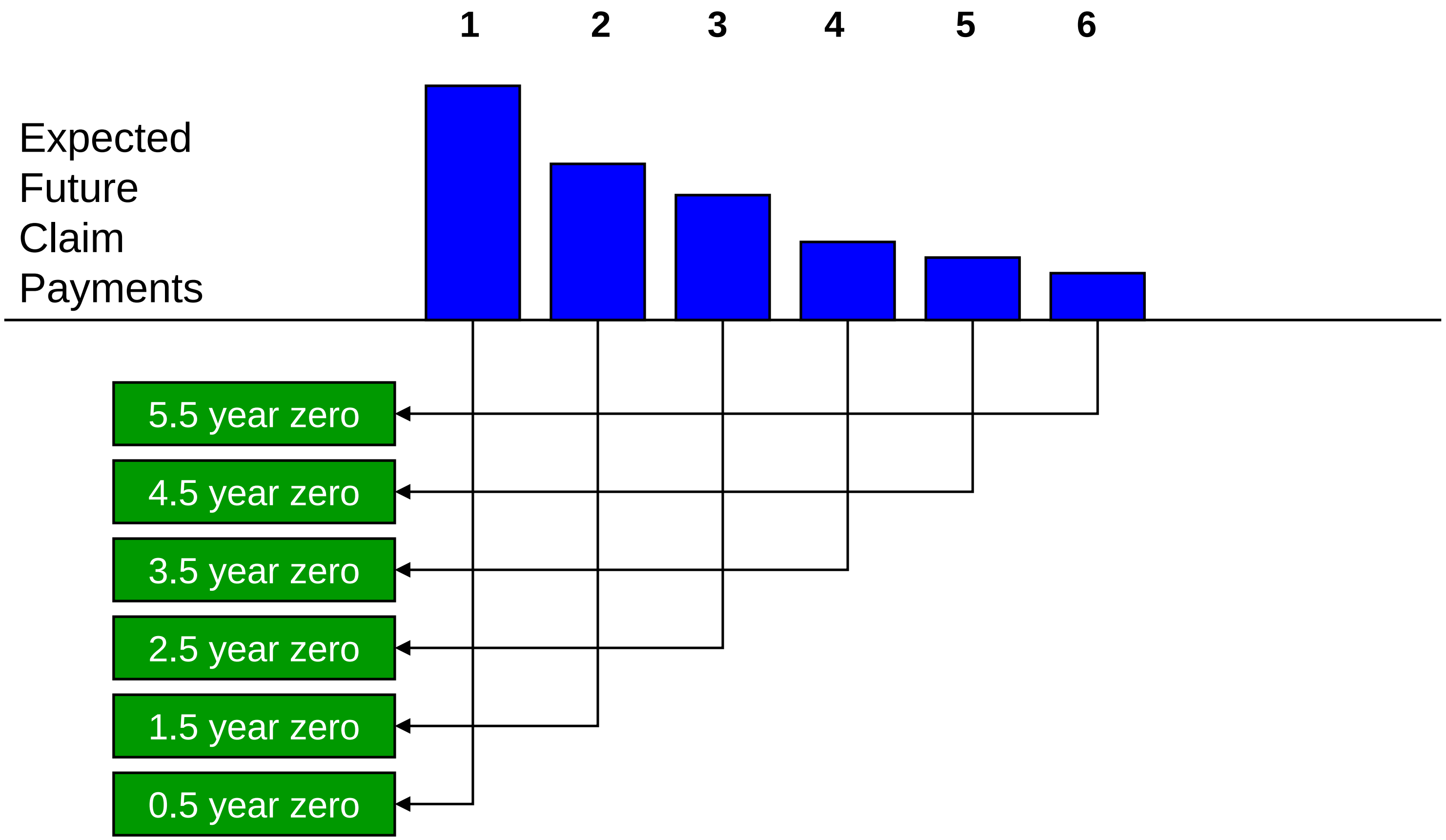
Market Consistent Tangible Value Added



- Thus the economic balance sheet provides the basis for performance measurement

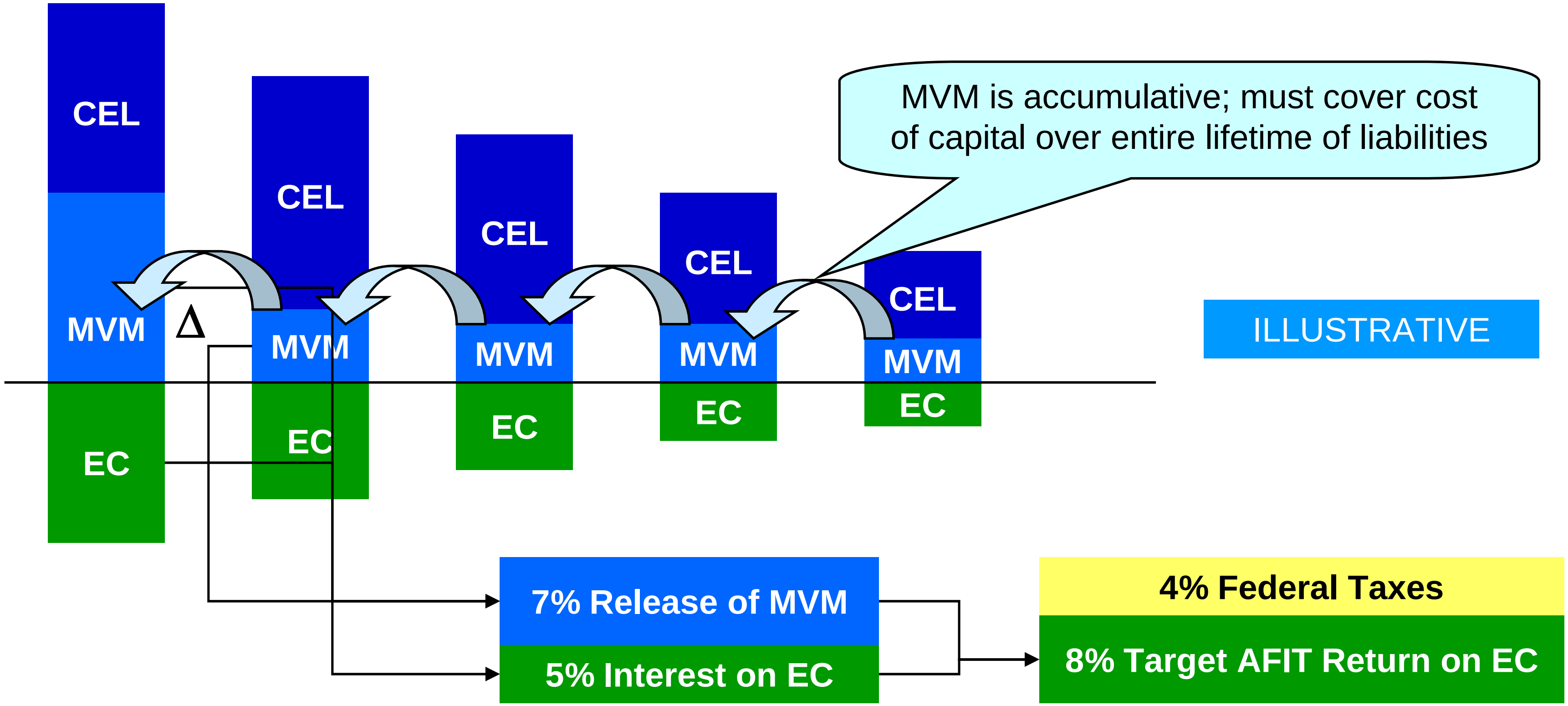
Current estimate of liabilities

- Swap rates are a better indicator of the true risk-free rate than government bonds, because the latter often reflect liquidity premiums



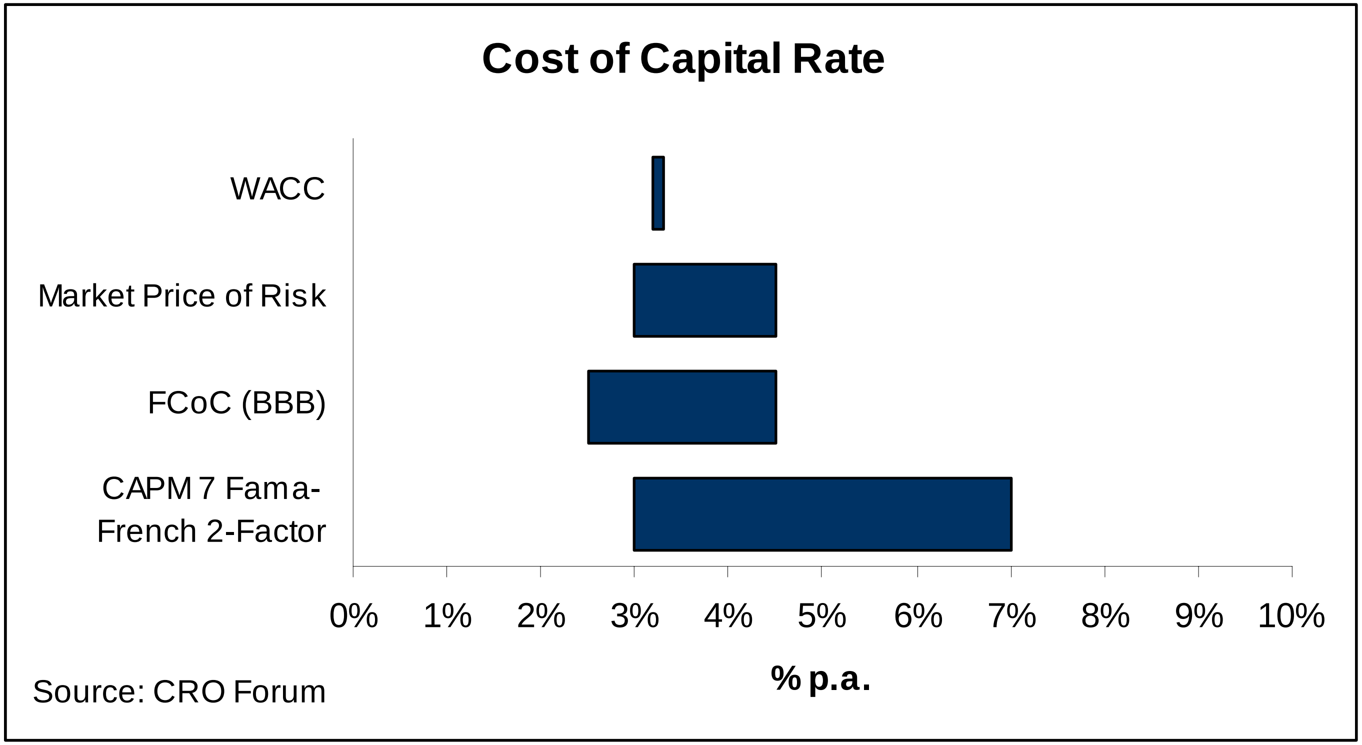
MVM covers the capital cost of EC required to support the insurance risk

- Shareholders provide required economic capital; seek a target after-tax return on that capital
  - Their capital is invested and earns a return directly
- Policyholders provide a margin that "tops up" the investor's return
  - Provides a "spread" between the interest rate on the capital and the target return



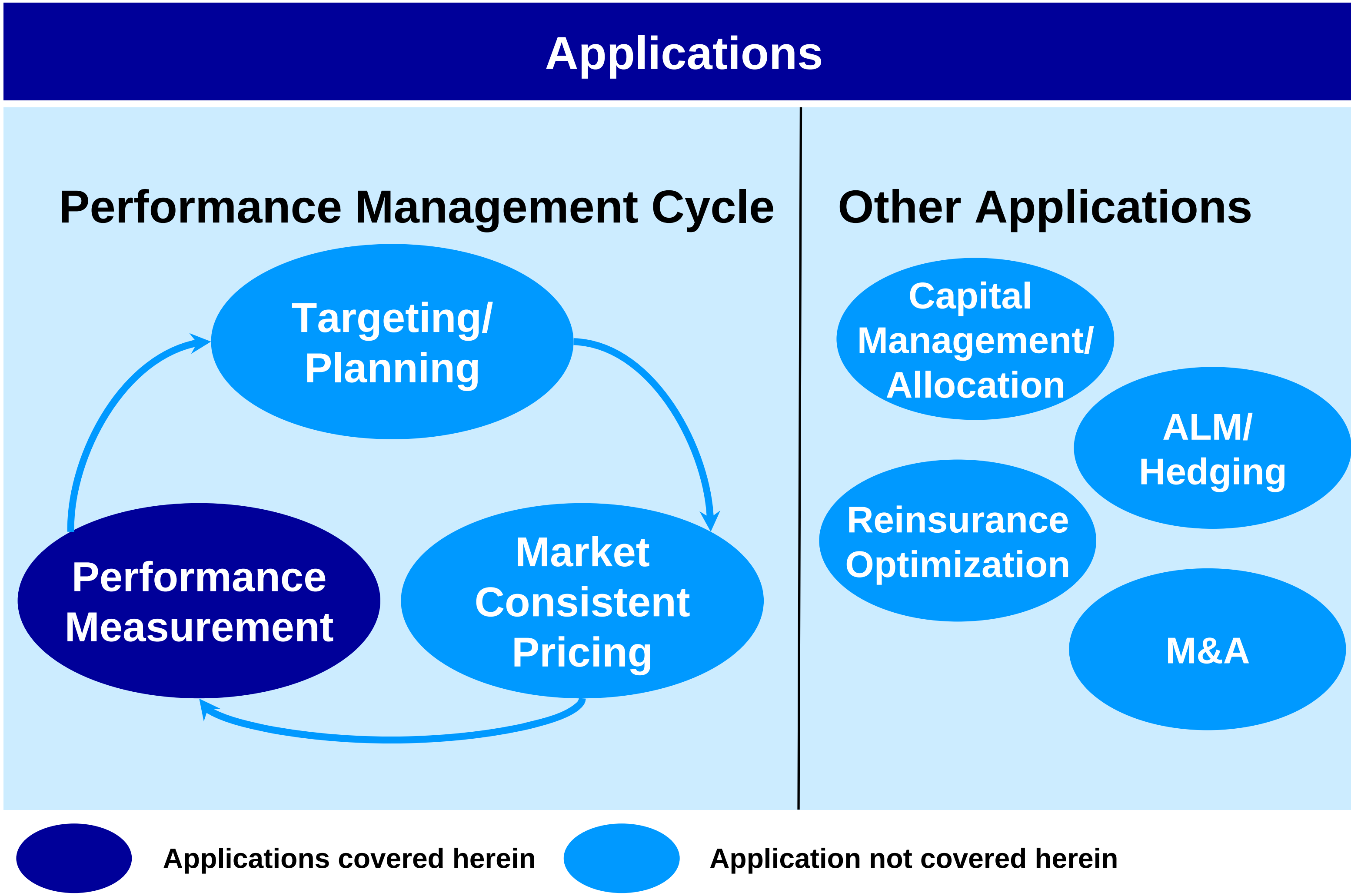
Questions remain on capital charges

- Cost of capital is representing a market-value margin, i.e. an add-on to the best estimate liability required to derive market prices
- What is the right annual charge? Frictional costs only or higher charge required by investors for uncertainty?



Performance measurement

Performance Measurement



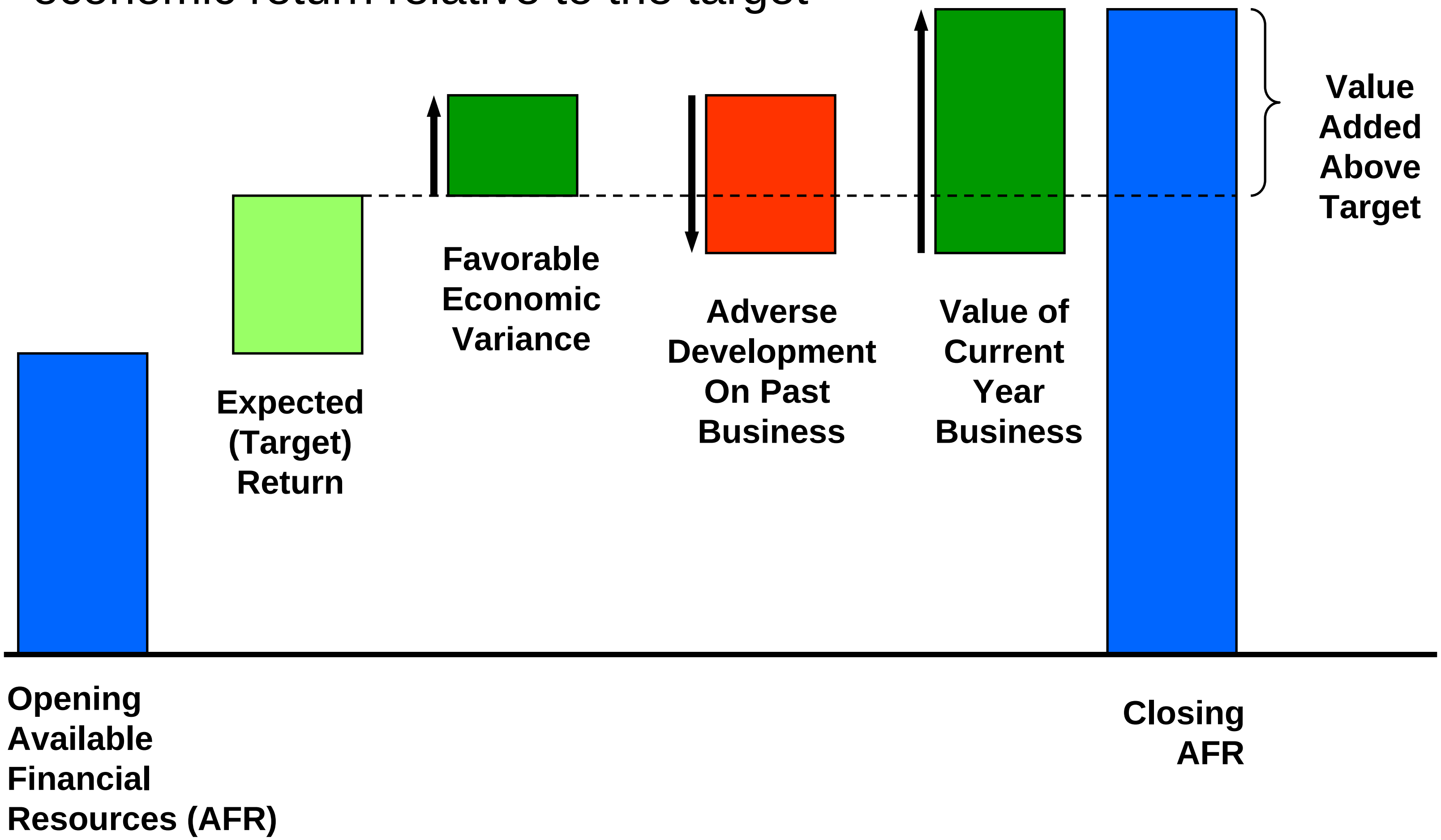
Performance measurement determines the value created in a certain period

What is Performance Measurement?	What are challenges?
Analysis of historic performance, i.e., movement analysis of balance sheet on Market Consistent basis	Traditional performance measures perceived adequate Suggestions not aligned with organisational and operational structure of company

Note that performance measurement is strongly dependent on measurement approach for assets and liabilities

The underlying components of value creation

- The key measure of performance is economic return relative to the target



A market consistent framework facilitates the analysis and management of the different components of added value

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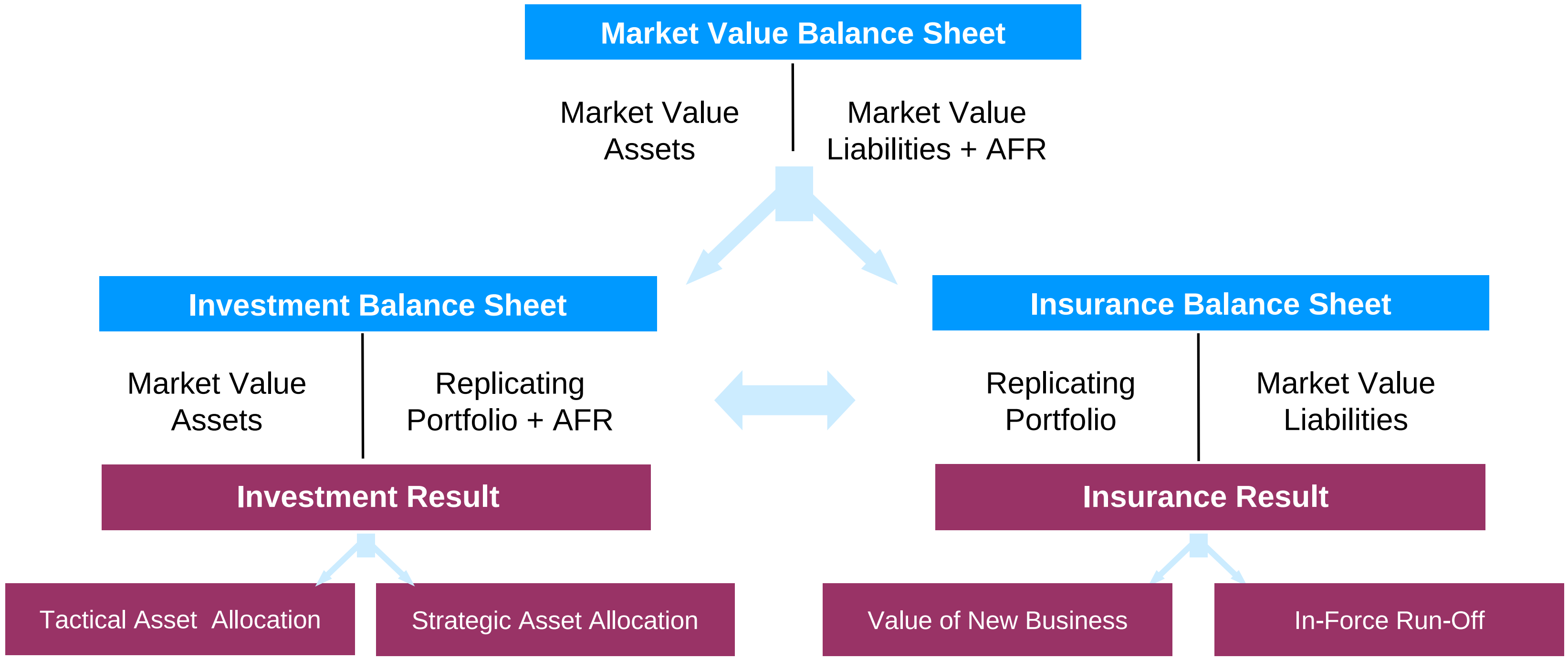
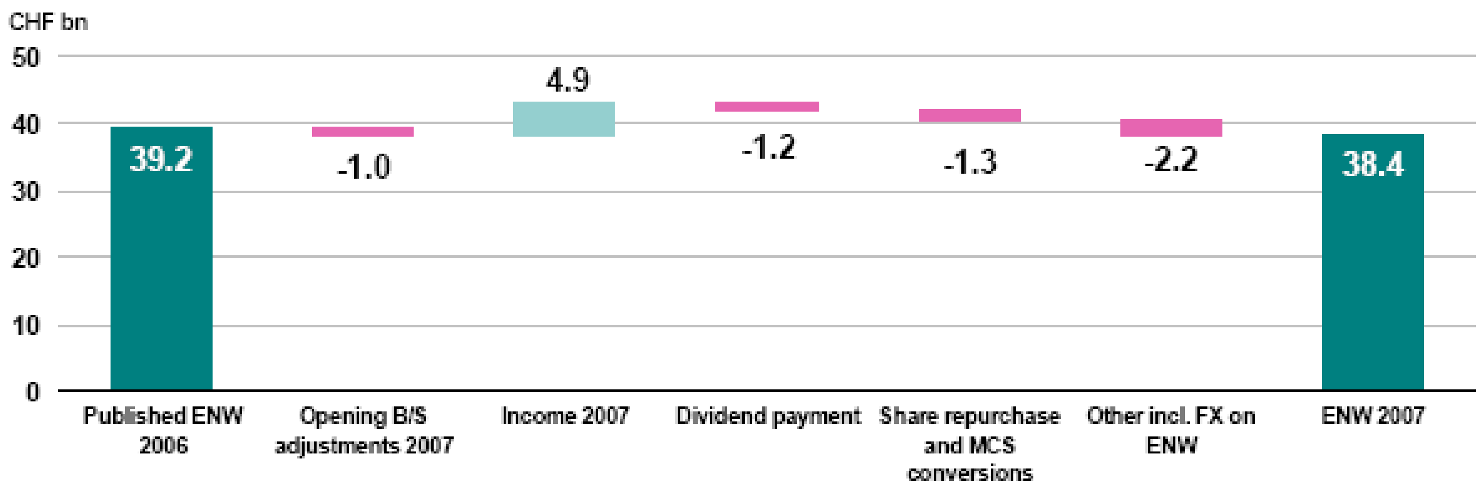


Swiss Re Published its Economic Value Management Results for the first time in 2008

Swiss Re

EVM 2007 economic net worth roll forward



- The EVM production process is not subject to the same control environment as annual and quarterly US GAAP reporting
- EVM 2006 is unaudited, EVM 2007 is subject to a moderate assurance review, in line with the International Standard on Review Engagements 2400 and the Swiss Auditing Standard 910

Slide 13

Swiss Re measures the performance of all of its businesses using an economic value methodology

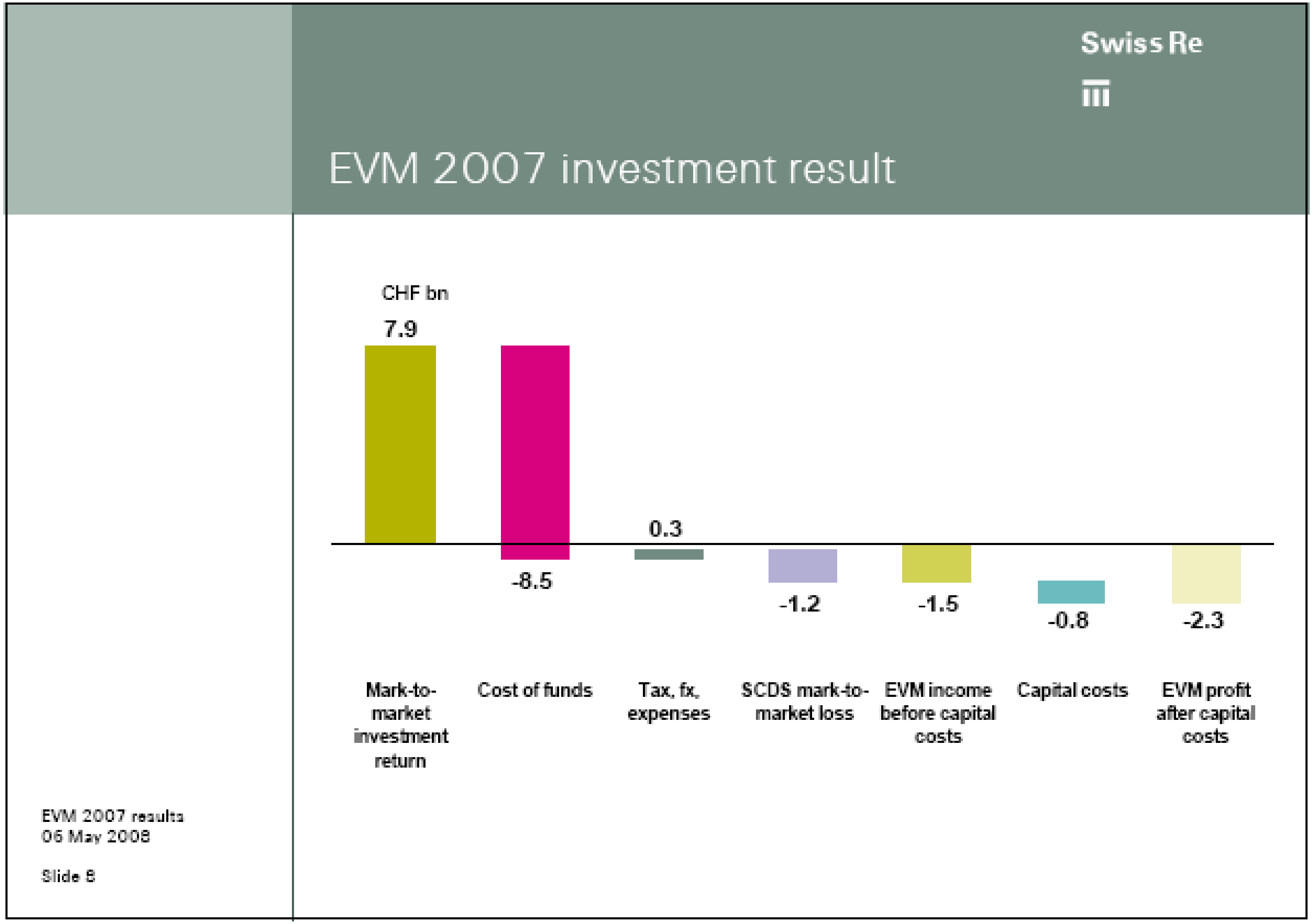
Swiss Re

EVM 2007 income statement

Business segments

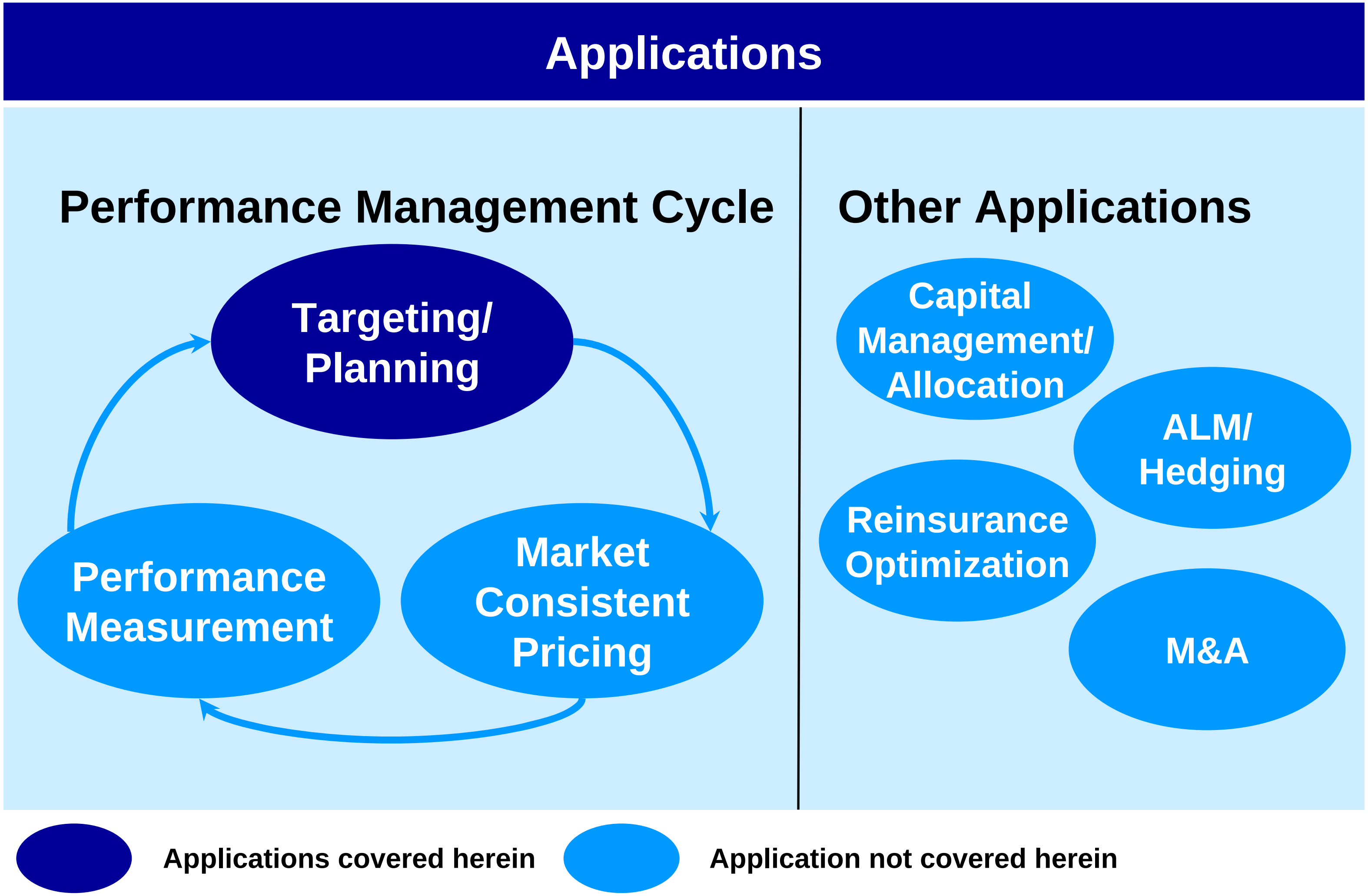
CHF m	Property & Casualty	Life & Health	Financial Markets	Group items	Total
2007					
New business profit	1 768	1 247	-2 301	70	784
Previous years business profit	851	-42	n.a.	100	909
Total profit after capital costs	**2 619**	**1 205**	**-2 301**	**170**	**1 693**
Release of capital costs	1 610	1 136	791	-341	3 196
Income before capital costs	**4 229**	**2 341**	**-1 510**	**-171**	**4 889**
2006					
New business profit	1 695	391	995	-71	3 010
Previous years business profit	137	328	n.a.	225	690
Total profit after capital costs	**1 832**	**719**	**995**	**154**	**3 700**
Release of capital costs	1 578	1 007	857	99	3 541
Income before capital costs	**3 410**	**1 726**	**1 852**	**253**	**7 241**

Since Swiss Re's actual investment return after capital costs was less than the return on the replicating portfolio, the investment result was negative



Targeting

Targeting


Applications
Performance Management Cycle
Other Applications
Targeting/ Planning
Performance Measurement
Market Consistent Pricing
Capital Management/ Allocation
ALM/ Hedging
Reinsurance Optimization
M&A
Applications covered herein
Application not covered herein

Target setting links external expectations to internal targets

What is target setting?

- Derivation of internal financial goals from external stakeholder targets
- Selection of suitable target range
- Setting of targets or goals at group level
- Allocation of group targets to operating entities

What are challenges?

- Understand and quantify external expectations
- Translate external expectations in internal goals
- Make targeting practical - how many targets are needed?

Note that target setting is dependent on strategic and capital management/allocation considerations

Economic value links external market value view with internal bottom-up calculations

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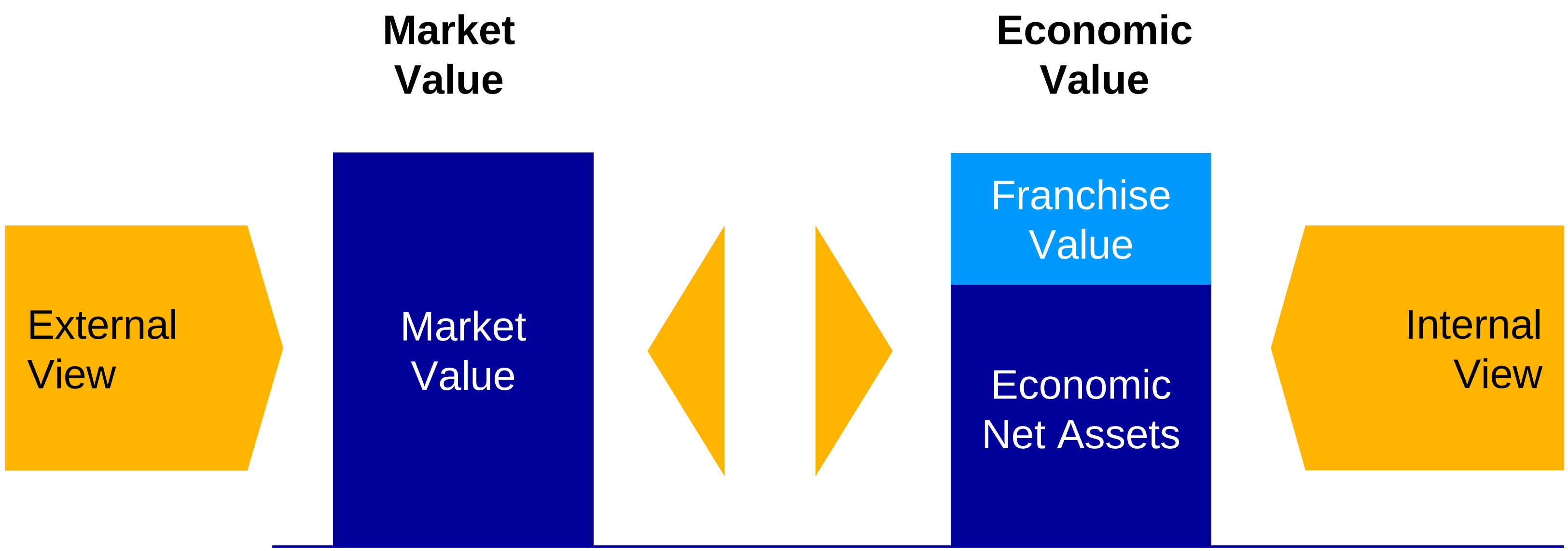
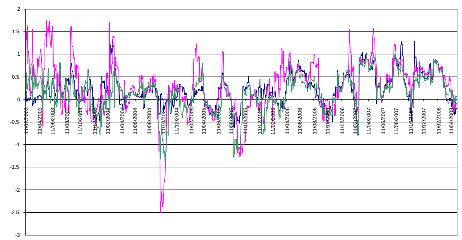


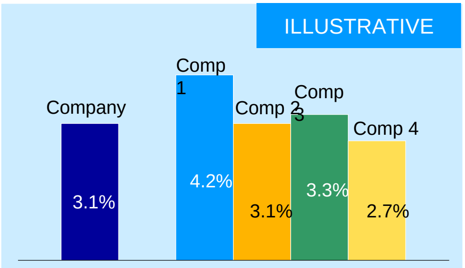
Return on franchise value is externally required

External view can be measured with benchmarking and capital markets data

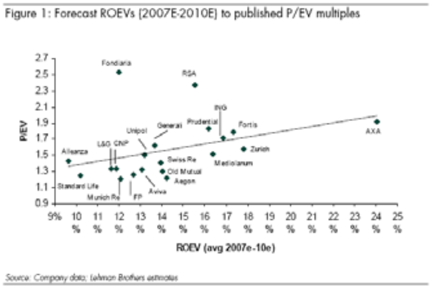
CAPM Approach



Benchmark Analysis



Analysts' Reports



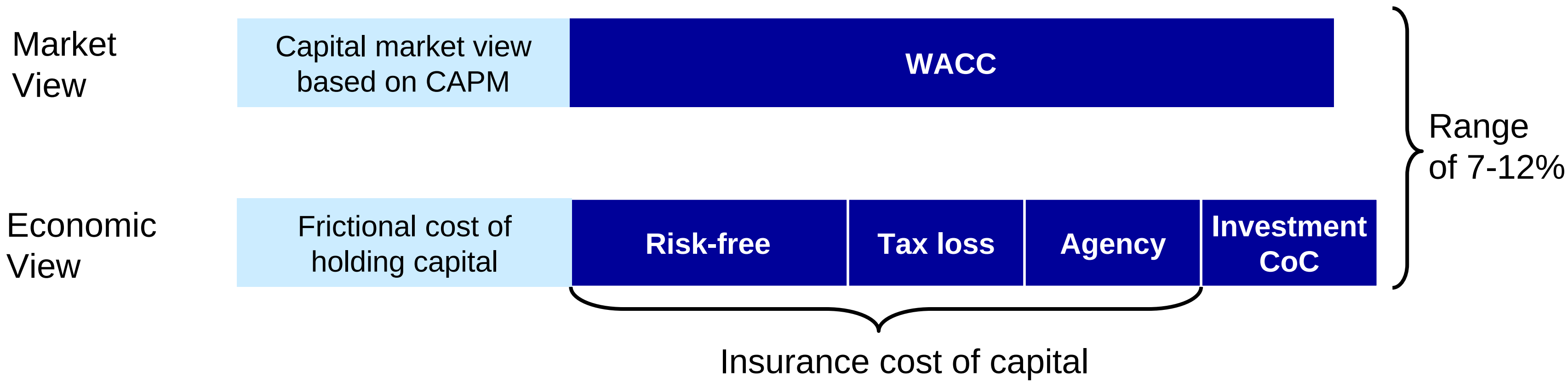
Results

- Beta/WACC estimates
- Return regressions with price/book
- Valuation-benchmarks for different operations

Aim is to derive key valuation parameters for external valuations

Cost of capital should be analysed in addition to value and return metrics

Market view and economic view of CoC in comparison



- Market view and economic view often aligned and in similar ball park
- Economic view allows clearer allocation to products/lines of business
- Cost of capital comparison valuable as reasonableness check

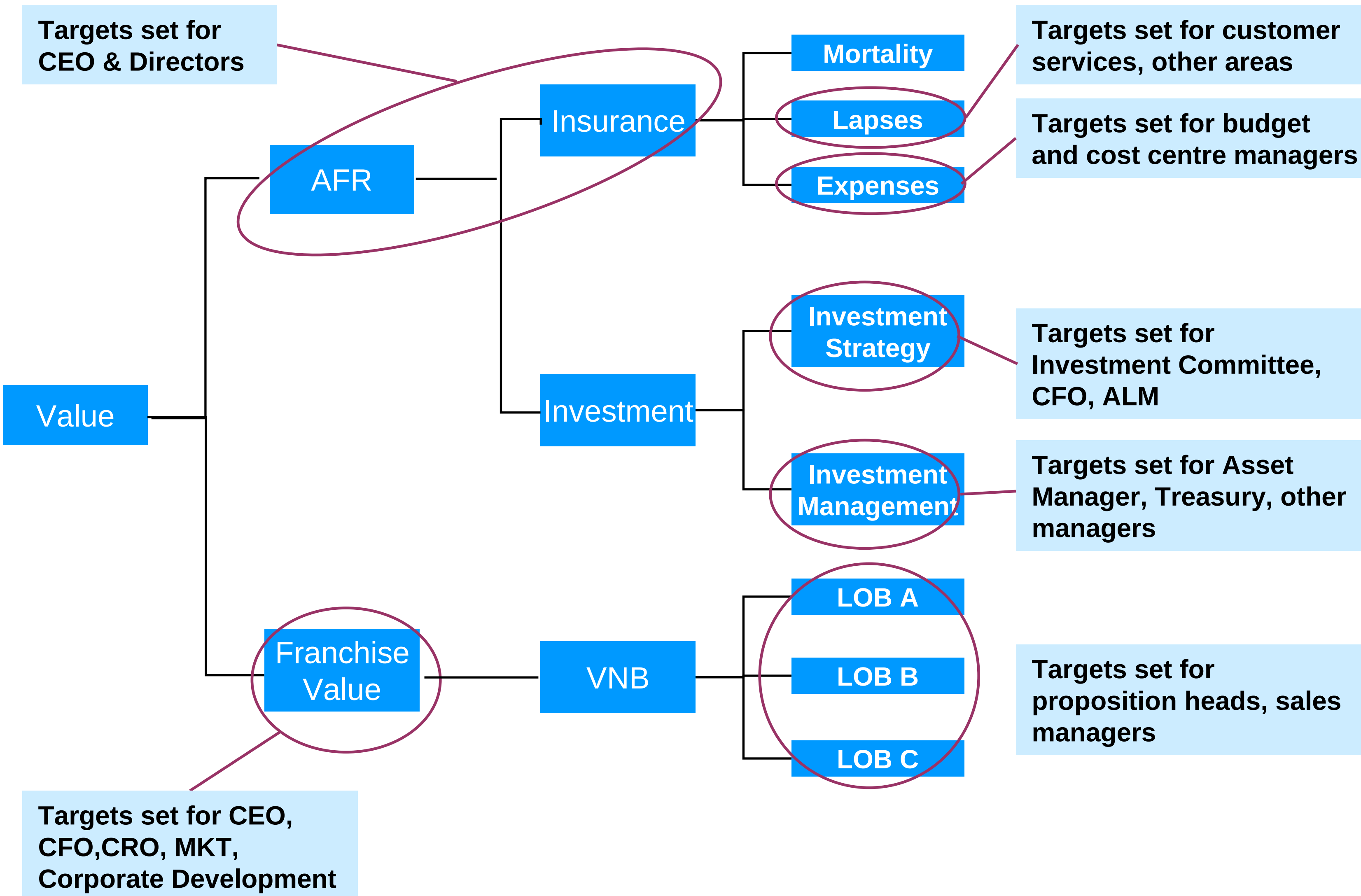
Target setting usually focuses on the value added by the current year of business

Value components	Target return	Focus of target setting
Total value added	7-18%	
=	=	
Value of current year business	2-8%	Underwriting activity of current period
+	+	
Gains/losses from run-off	0-1%	Efficiencies in administration and claims handling
+	+	
Catastrophe variance	+/-	
+	+	
Investment results	1-3%	Management of mismatch results
+	+	
Expected return	4-8%	

New Business goals are primarily an operating target value and not an actuarial target

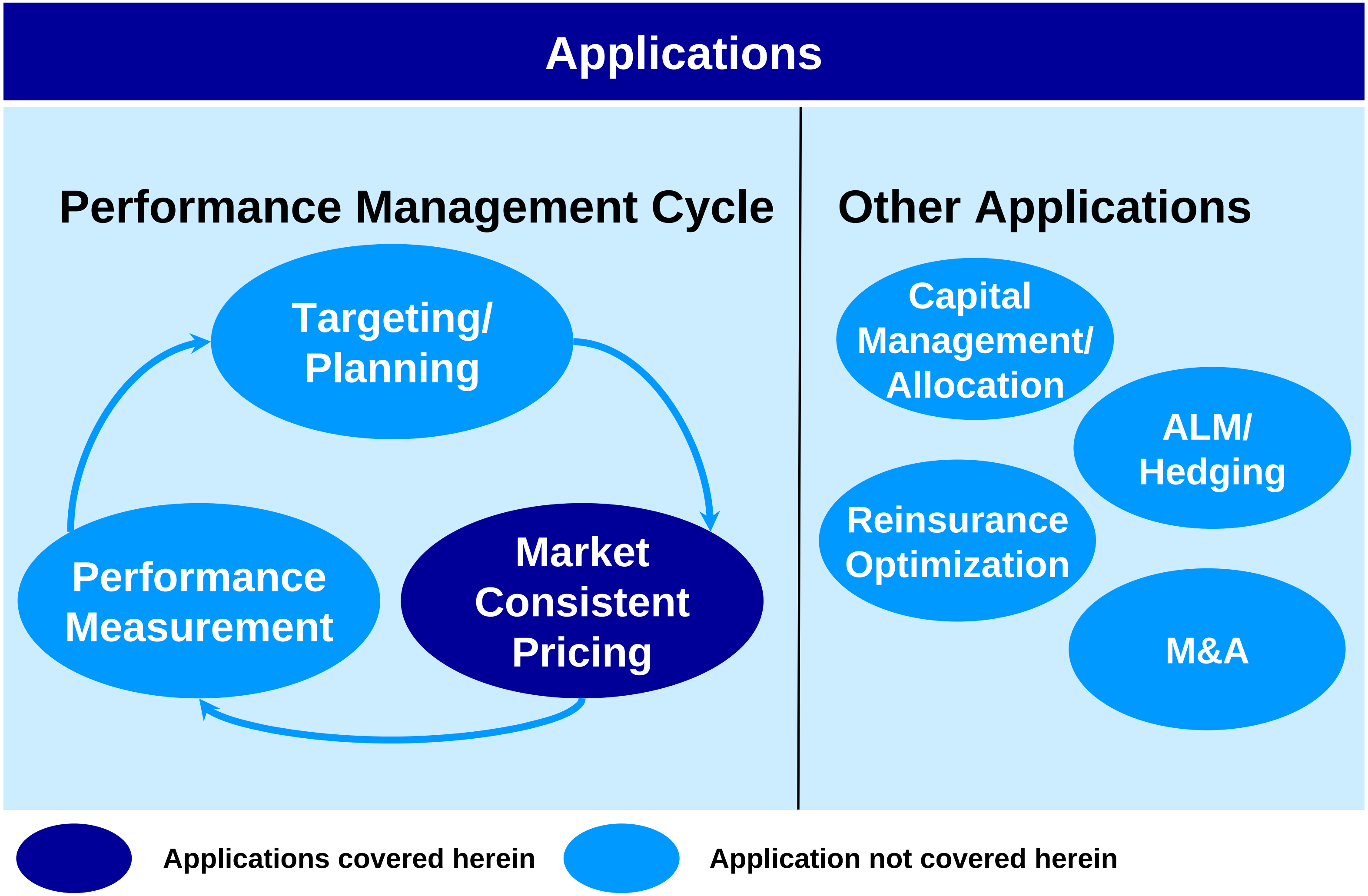
- Value of New Business must justify the Franchise Value on a group level. Two ways to determine:
  - How much new business is required for meeting the targeted Franchise Value, or
  - How much Franchise Value does this year's new business create?
- On a product and operating level, new business goals should consider a wide range of competition based factors:
  - Market conditions
  - Benchmarking of competitors
  - History of results
  - Negotiation during target agreement
- New business goals per product are primarily relevant for the different operations but not on a group level
- New business goals can be defined as a percentage of the economic capital or in relation to other limited resources (risk capital or cash) or can be translated into further relevant targeting measures for the operations.
- Note that this method cannot determine how much value or margin can be reached or might be optimal for a particular market segment.

The framework will create a clear line-of-sight between objectives and overall value creation



Risk based pricing

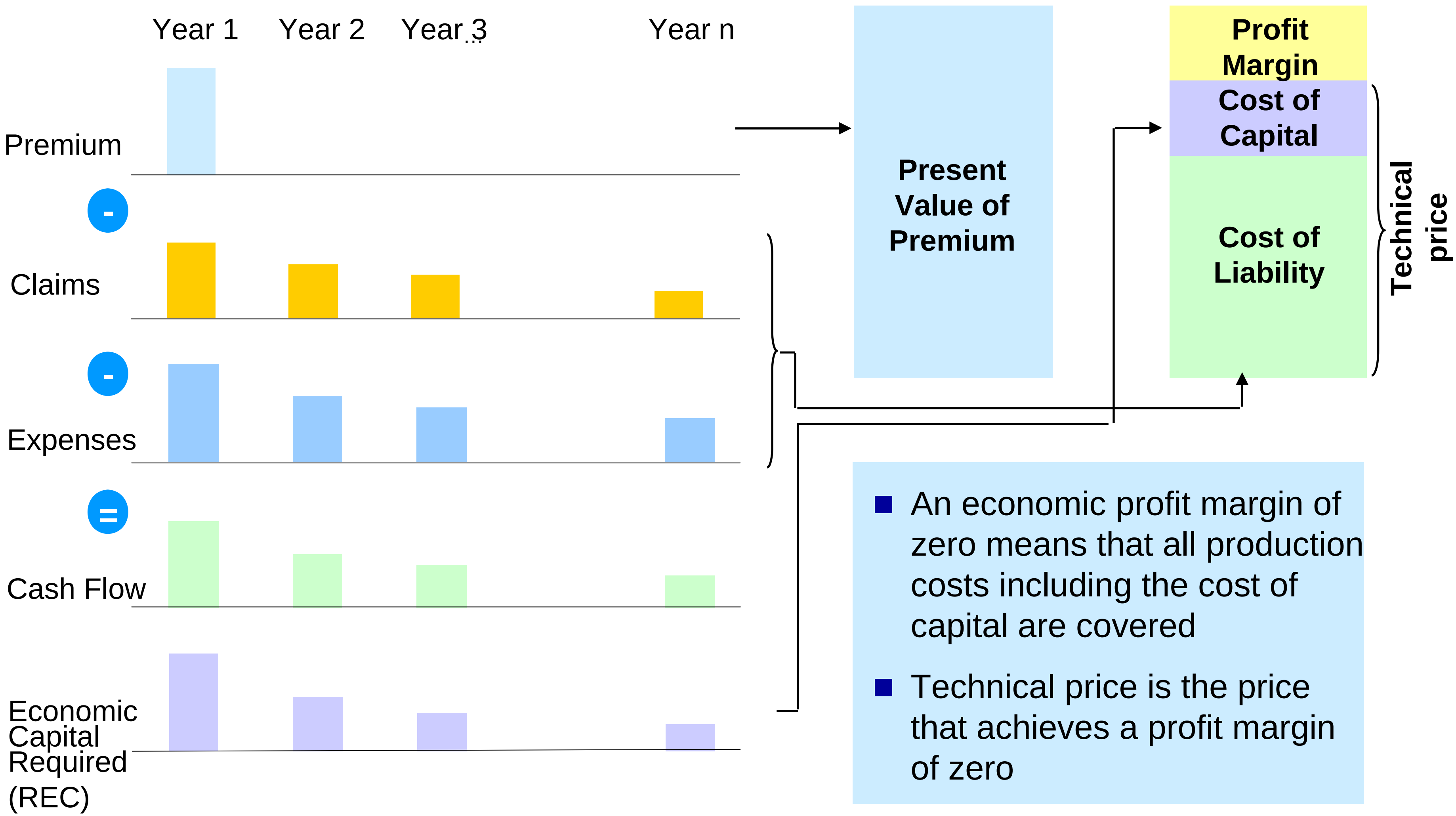
Pricing


Applications
Performance Management Cycle
Targeting/ Planning
Market Consistent Pricing
Performance Measurement
Other Applications
Capital Management/ Allocation
ALM/ Hedging
Reinsurance Optimization
M&A
Applications covered herein
Application not covered herein

Managing risks in pricing needs to consider both expected value and volatility of claims

	Managing risk at individual level	Managing risk at group level
Description	■ Identifying significant risk factors that are correlated with poor performance and insurance losses to improve rating plans and customer selection	■ Consistent framework to evaluate the effectiveness of a company's underwriting strategy ■ Measure of value creation after risk adjustments ■ Different underwriting strategies are evaluated on a like for like basis
Challenges	■ Respond to current price competition by shifting from a heavy reliance on underwriting alone (i.e. risk selection/ rejection) to a greater use of more accurate risk assessment and pricing ■ Managing change to complex pricing	■ Rationalize underwriting strategies consistently with risk and capital framework and company's targets ■ Implement Economic Capital into pricing decisions ■ Prioritise business with optimal risk/return
Optimization	■ Identification of risk factors and their relationship with expected losses	■ Volatility of results are embedded into pricing decisions
Key issues	■ Expected value of liabilities	■ Volatility of Risk capital

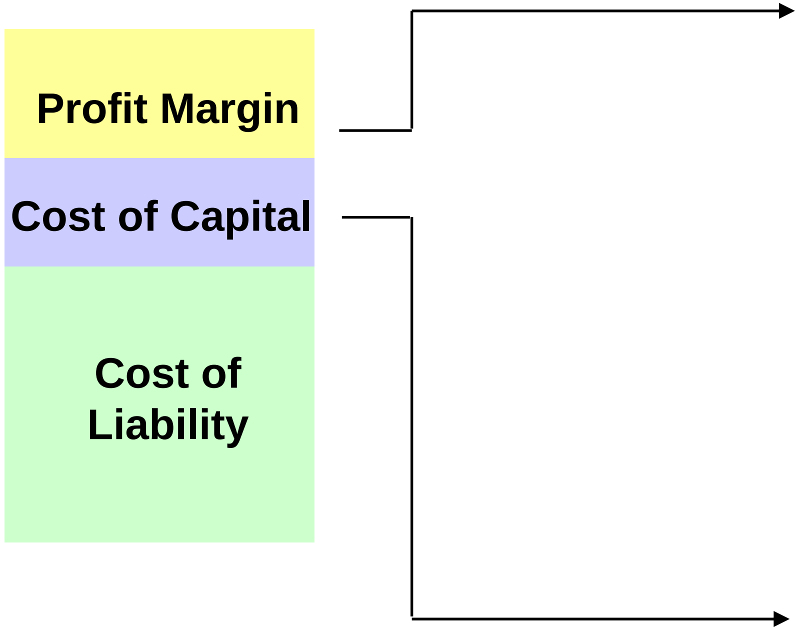
Risk Based Pricing framework



- An economic profit margin of zero means that all production costs including the cost of capital are covered
- Technical price is the price that achieves a profit margin of zero

Cost of capital = P.V. Annual charge x REC

Capital and profit margin calculation need careful consideration



- Need to differentiate between
  - Target price: Commensurate with overall target returns to maintain franchise value
  - Minimum price: “walk-away price” below which risks are not accepted

- Cost of capital calculation should allow for diversified capital requirements
- Capital should be determined in line with risk appetite of group

Risk based pricing is embedded in a company’s day by day pricing activity through the definition of a simplified set of performance metrics

Thank You

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