Quantifying an Enterprise Risk Management Framework

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Contents

Introduction

Enterprise Risk Management - Process

Identify critical risks

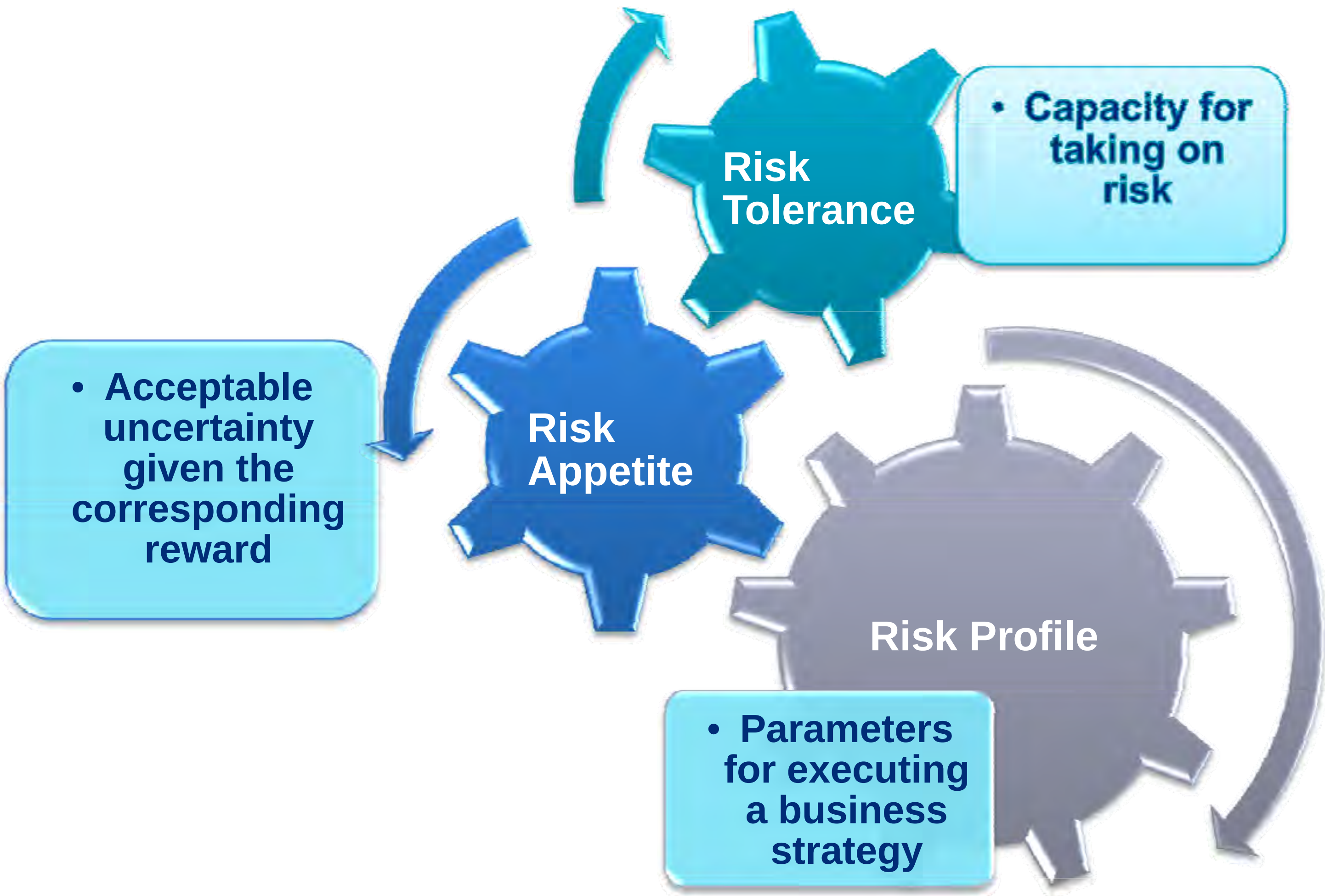
Assess and quantify their impacts, where possible

Implement integrated strategies to mitigate, manage, and price risk.

Thereby maximizing enterprise value

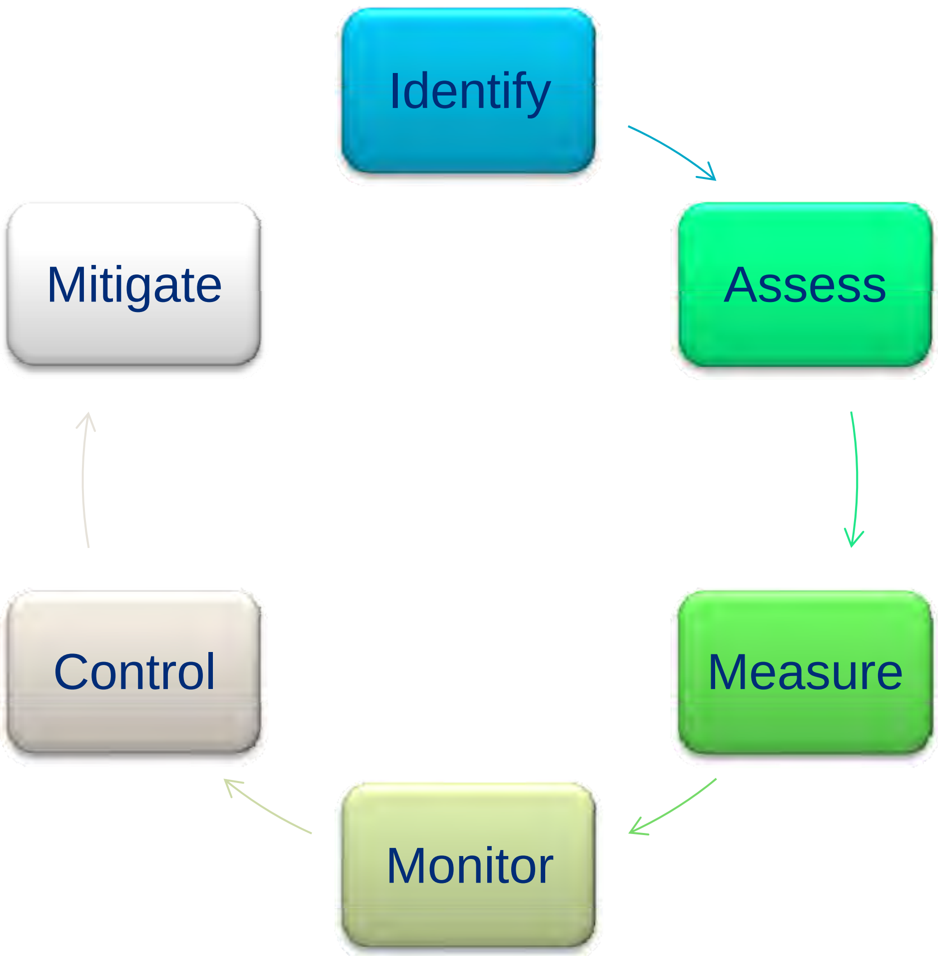
Introduction

Enterprise Risk Management – Establishing Risk Thresholds



Introduction

Enterprise Risk Management – Establishing a Framework

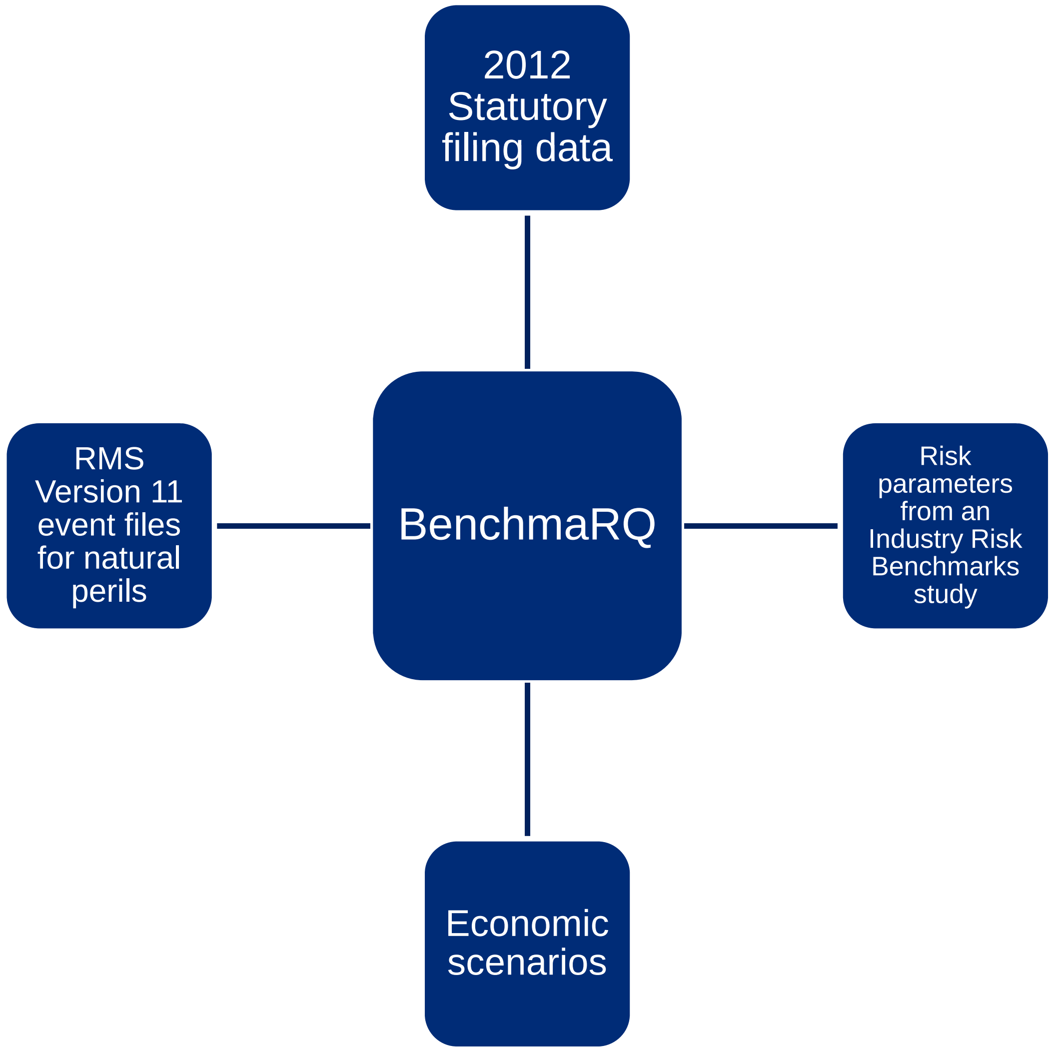


Economic Capital Model - Five Areas of Application

Managing Your Risk	supports ERM by facilitating definition of risk tolerances
Appropriate Economic Capital Levels	Determining economic capital targets, which inform strategic decisions related to capital management, dividend policy, and M&A planning
Economic Returns	Computation of risk-adjusted underwriting returns, enabling equitable appraisal of underwriting performance
BCAR Management	Exploring the drivers of BCAR strength as well as downside
Regulatory	Providing a quantitative foundation to the ORSA Summary Report and showcase internal ERM processes to rating agencies.

Introduction

Economic Capital Model - Structure



Economic Capital Model - Scope

2012 Statutory Annual Statement Data includes experience for the **following legal entities**:

American Modern Home Insurance Company
Central Mutual of Ohio Group
Cincinatti Insurance Group
Grange Mutual Casualty Co Combined
Great American Insurance Company
Meadowbrook (Century Surety)
Motorists Insurance Group
Nationwide Mutual Ins Co Combined
Progressive Insurance Group
Safe Auto Insurance Company
State Auto Group (Combined)
Westfield (Ohio Farmers Ins Co Combined)

Modeled property cat treaty:

100% of 3.6B x 3.08B per occurrence

This reflects a simplified assumption for a property cat program. The treaty was set to attach at the 1-in-20 return period and exhaust at the 1-in-100 return period

Peer Composite Group:

Super Regional Composite

Economic Capital Model - Super Regional Composite Company List

Amica Mutual Insurance Company (Combined)	New Jersey Skylands Insurance Association (Combined)
Auto Club Enterprises Insurance Group (Combined)	Ohio Farmers Insurance Co. (Combined)
Auto Club Insurance Association (Combined)	Old Republic General Insurance Group - U.S. (Combined)
Auto-Owners Insurance Company (Combined)	Palisades Safety and Insurance Association (Combined)
Cincinnati Insurance Group (Combined)	Philadelphia Indemnity Insurance Company (Combined)
Commerce Insurance Company (Combined)	Plymouth Rock Assurance Corporation (Combined)
COUNTRY Mutual Insurance Company (Combined)	Republic Mortgage Insurance Company (Combined)
Employers Mutual Casualty Company (Combined)	Selective Insurance Company of America (Combined)
Erie Insurance Group (Combined)	Sentry Insurance a Mutual Company (Combined)
Federated Mutual Group (Combined)	Shelter Mutual Insurance Company (Combined)
Grange Mutual Cas Co (Combined)	Southern Farm Bureau Casualty Consolidated (Combined)
Integon National Insurance Company (Combined)	State Auto Group (Combined)
MAPFRE PRAICO Corporation (Combined)	Tower Insurance Company of New York (Combined)
Metropolitan Property and Casualty Insurance Company (Combined)	Trinity Universal Insurance Company (Combined)
New Jersey Manufacturers Insurance Company (Combined)	

Contents

Expected Performance: Balance Sheet

The Mean Balance Sheet is constructed from the average result over all simulations.

It implies an expected return on surplus of **4.2%**

Invested assets are reallocated at the end of period according to the initial distribution.

GAAP Equity is estimated by recognizing various adjustments.

Item (Statutory Value)	2012	Average Simulated 2013	Volatility
Bonds	44,571.5	43,867.3	
Stocks	12,802.4	13,454.0	
Cash	3,282.0	3,005.3	
Other Invested Assets	11,082.9	11,478.4	
Total Cash and Invested Assets	71,738.7	71,804.9	
Other Assets	15,778.9	15,770.1	
Total Assets	**87,517.6**	**87,575.0**	
Net Loss and ALAE Reserves	31,938.5	29,543.3	
Net Unearned Premium Reserves	16,816.9	18,000.3	
Other Liabilities	8,563.8	8,563.7	
Total Liabilities	57,319.1	56,107.3	
Surplus Notes	2,182.8	2,182.8	
Statutory Policyholder Surplus	30,198.4	31,467.7	
Estimated GAAP Equity	34,768.5	35,711.5	

Risk Profile

Expected Performance: Income Statement

The Mean Income Statement is constructed from the average result over all simulations.

Underwriting delivers a **102.3%** combined ratio on average.

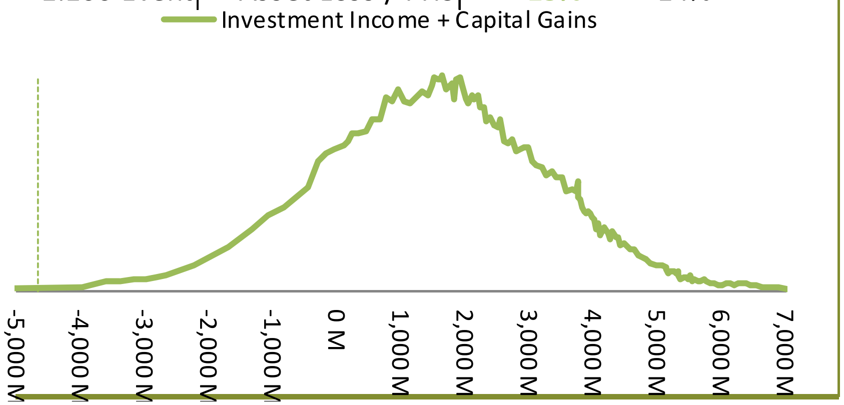
Asset management is expected to deliver a **3.2%** return on invested assets.

Item	Amount	Volatility
Net Earned Premium	46,221.8	
Net Incurred Loss	33,286.6	
Net Underwriting Expenses	13,980.8	
Underwriting Gain	**-1,045.6**	
Investment Income	1,815.3	
Realized Capital Gains	154.2	
Other Income	575.0	
Income Tax	240.0	
Net Income	**1,258.9**	
Change in Unrealized Capital Gains	19.1	
Deferred Taxes	8.8	
Change In Surplus	**1,269.3**	

Risk Profile
Summary Risk Appraisal

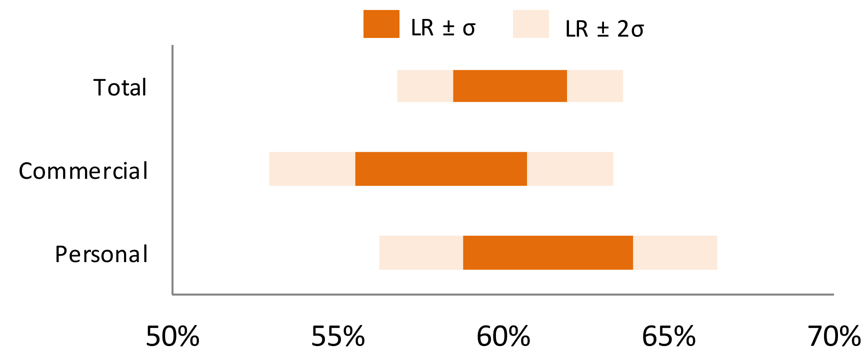
Asset Risk

Risk Measure	Definition	BACE	Peer
Leverage	Inv Assets / PHS	2.38	2.05
1:100 Event	Asset Loss / PHS	15%	14%



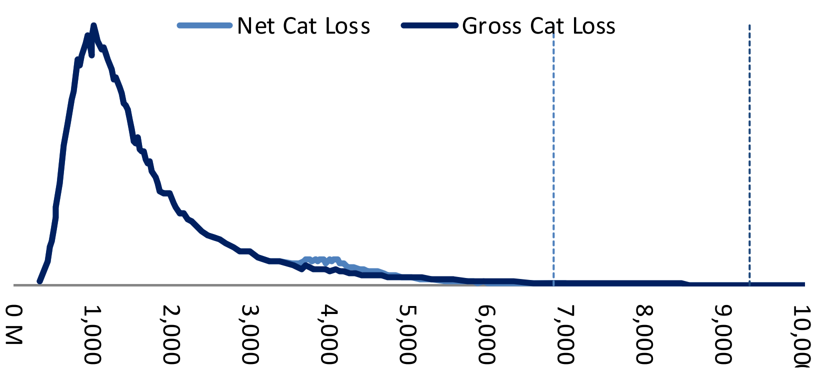
Pricing Risk (Ex-Cat)

Risk Measure	Definition	BACE	Peer
Leverage	NWP / PHS	1.57	0.64
1:100 Event	UW Loss / PHS	6%	4%



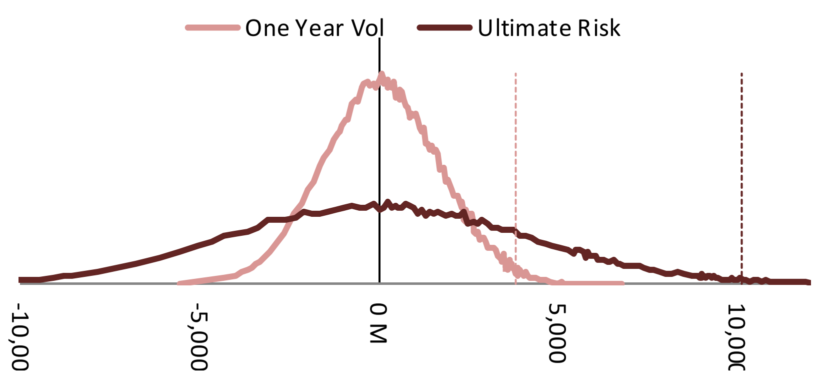
Cat Risk

Risk Measure	Definition	BACE	Peer
Leverage	AAL / PHS	0.06	0.05
1:100 Event	Net AEP PML / PHS	23%	18%



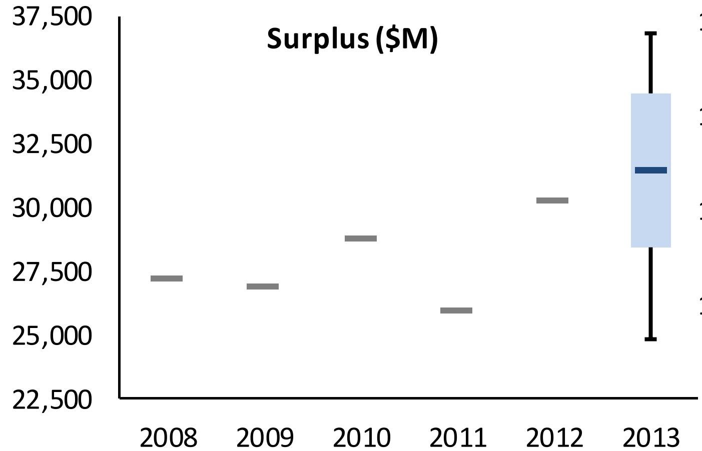
Reserve Risk

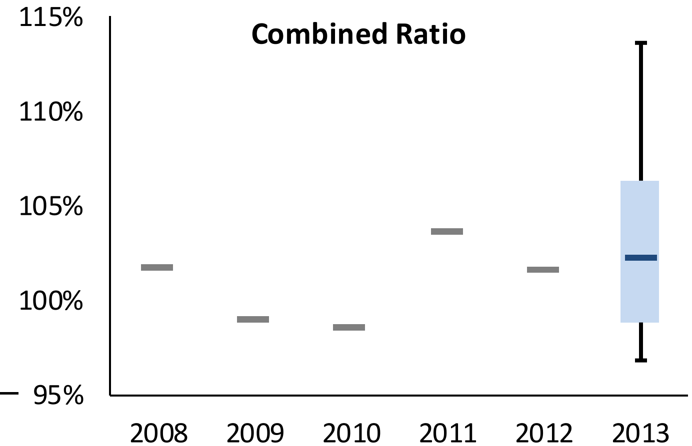
Risk Measure	Definition	BACE	Peer
Leverage	Net Res / PHS	1.06	0.79
1:100 Event	1-Yr Res Dev / PHS	13%	5%
1:100 Event	Ult Res Dev / PHS	33%	15%

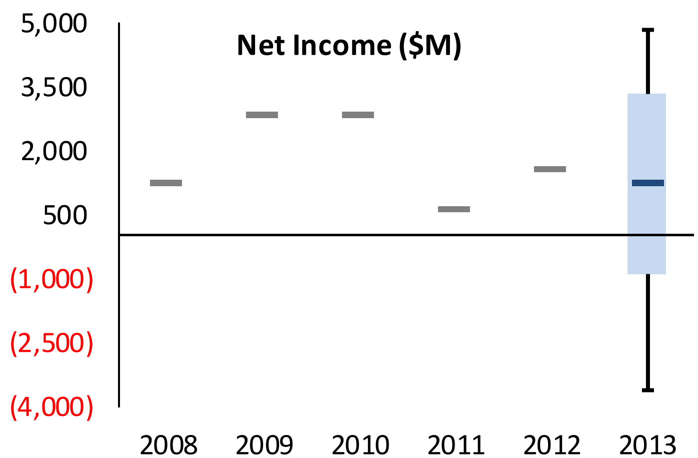


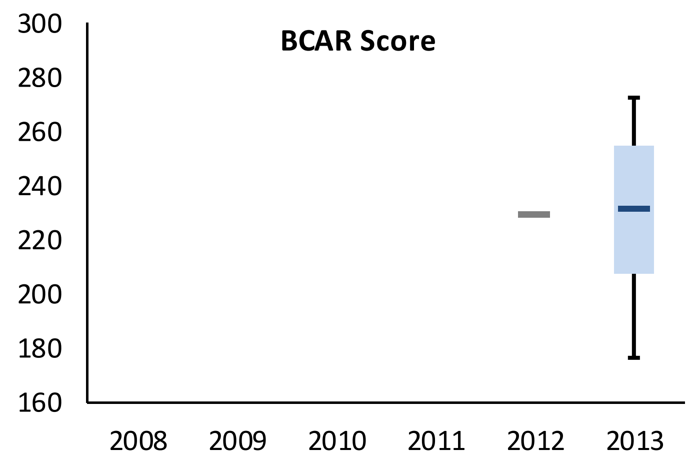
Historical and Simulated Performance

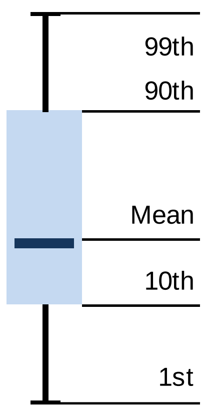
Comparison of the simulated distribution of key financial measures illustrates both trend and volatility.











Risk Profile

Distribution of Change in Surplus*

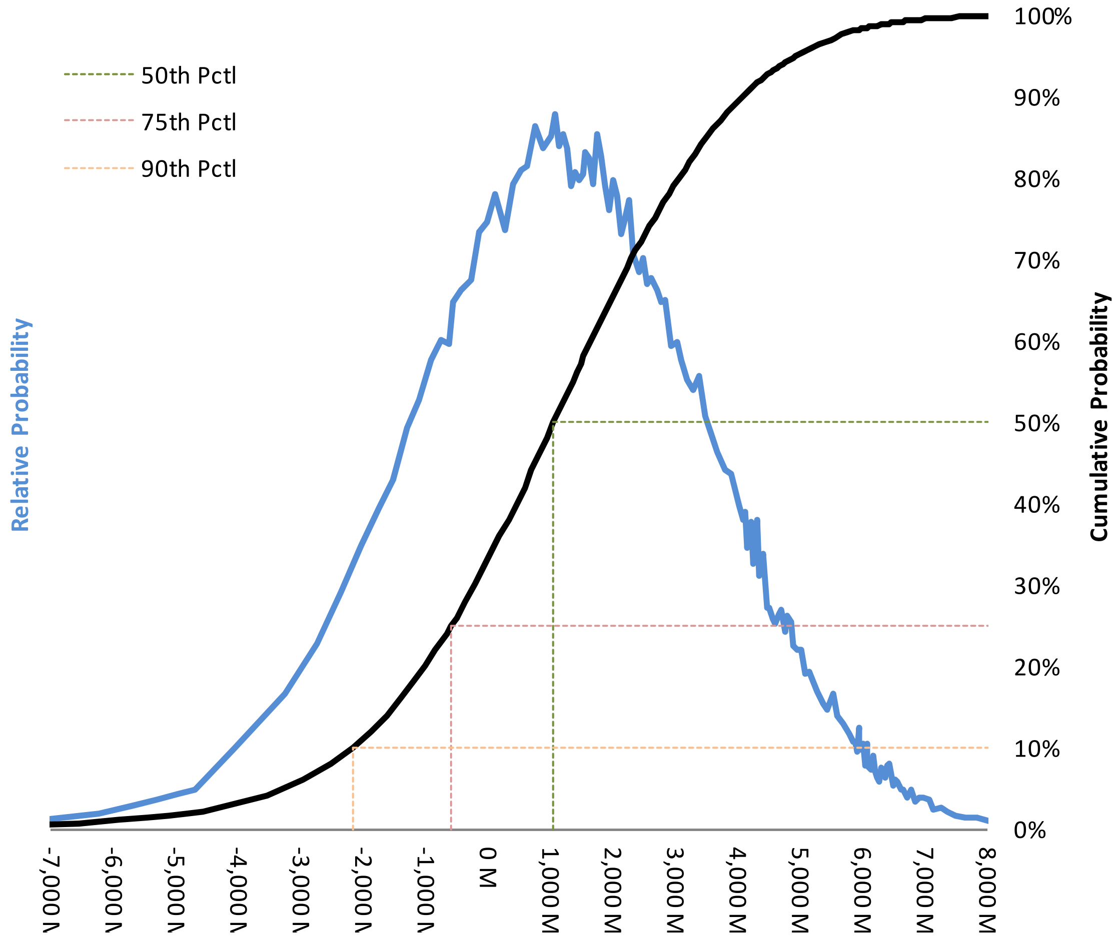
Change in Surplus has a coefficient of variation (spread) of **7.4%.**

We will use this value as a **risk metric to measure solvency risk.** The wider the spread of the distribution, the higher the metric and the more risk of insolvency.

* We allow bonds to be stated at market value to illustrate liquidity risk.

Statistics

Mean EOY:	35,711.5 M
Mean Δ:	943.0 M
Mean ROE:	2.7%
CV:	7.4%
Prob[Δ Surplus <0]:	33.2%

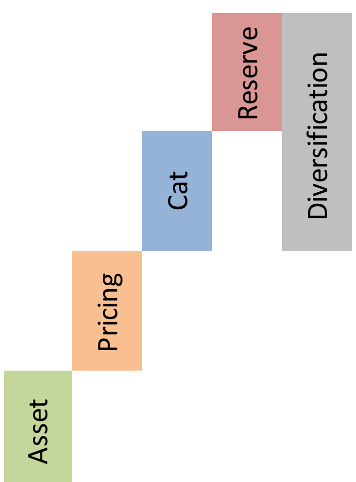


Risk Profile Benchmarking

We decompose the **7.4%** CV of Change in Surplus* into **marginal risk source**.

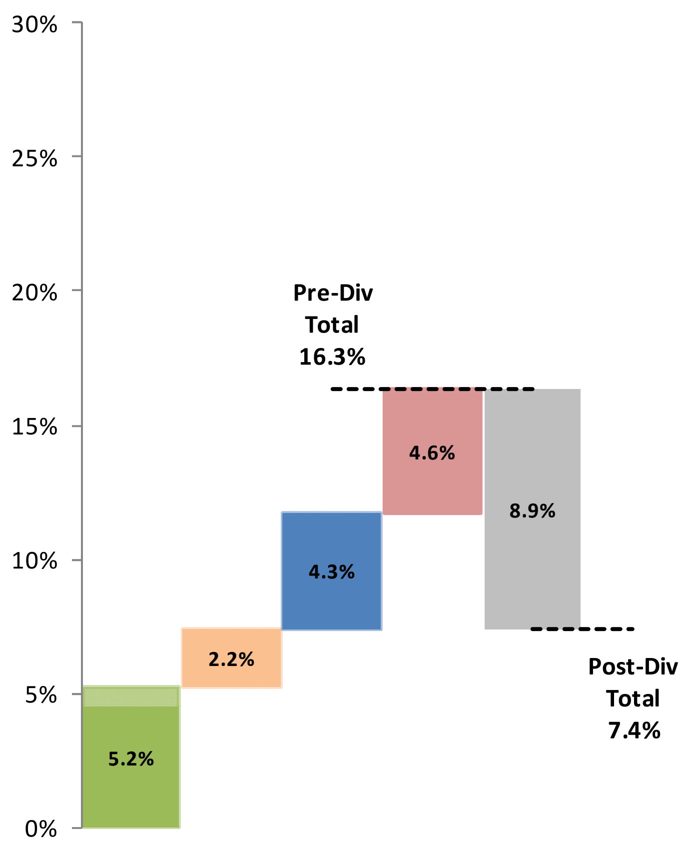
Total volatility is less than the sum of individual risk sources due to **diversification and tax effects**.

The risk profile is the **company's identity.**



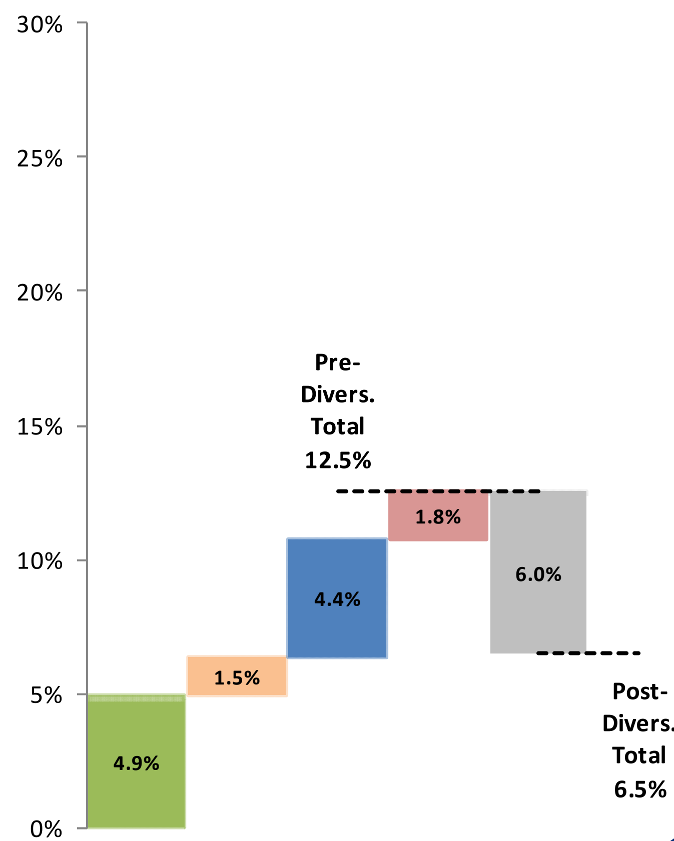
Company:

BACE



Peer Composite:

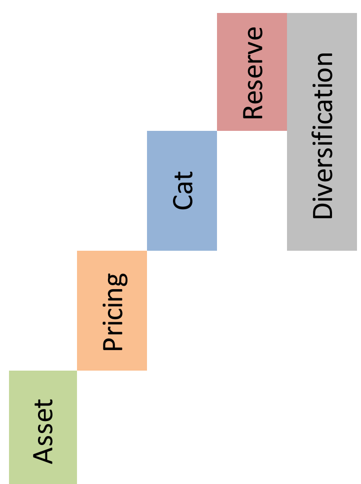
Super Regional



Risk Profile Stress Testing

We stress our risk assessment to evaluate the effectiveness of the **property cat treaty** and measure **ultimate reserve risk**.

ORSA requires an assessment of the relative magnitude in solvency risks; these steps provide a path.



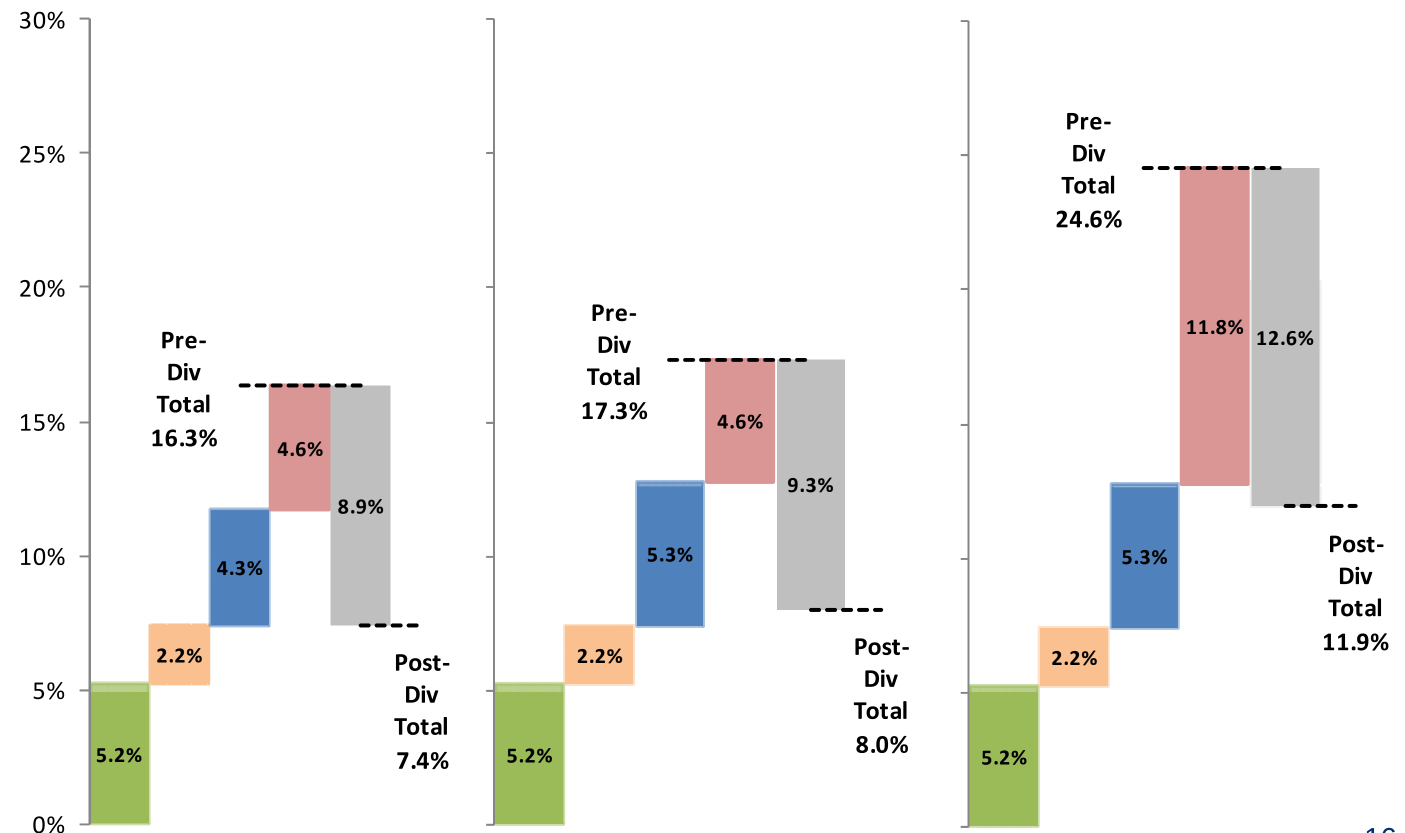
Status Quo

Stress 1:

Remove Property Cat Treaty

Stress 2:

Include Ultimate Reserve Risk

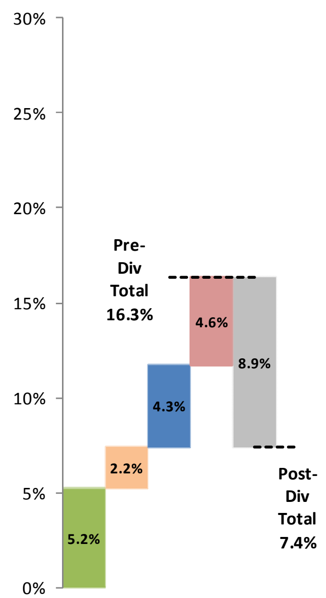


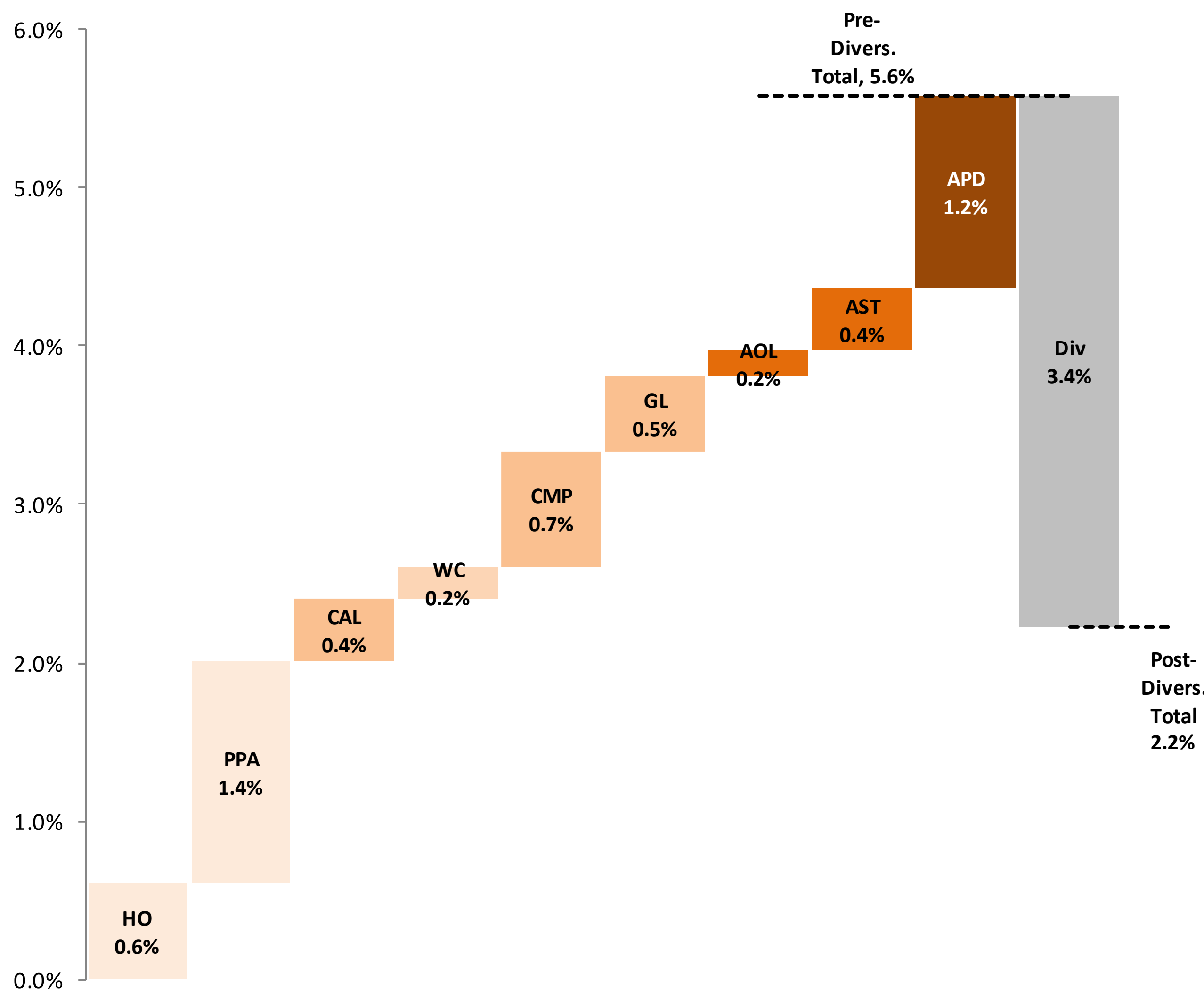
Risk Tolerance
Pricing Risk

Let's break down the Pricing risk **between underwriting lines**.

For property cat-exposed lines, the empirical volatility is reduced by a standard portion of modeled cat volatility.

Status Quo





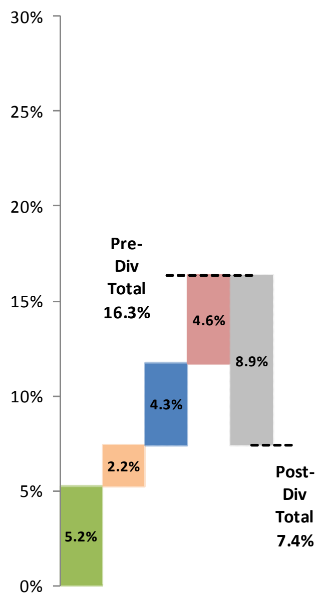
Risk Tolerance

Natural Catastrophe Risk

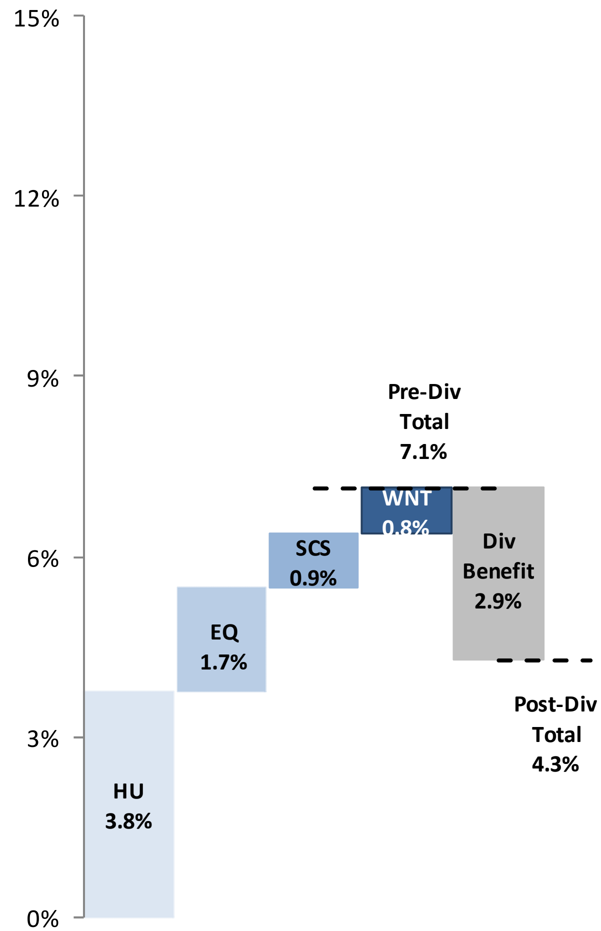
Let's break down the Cat risk **by peril**.

This view is an x-ray for **understanding reinsurance needs**.

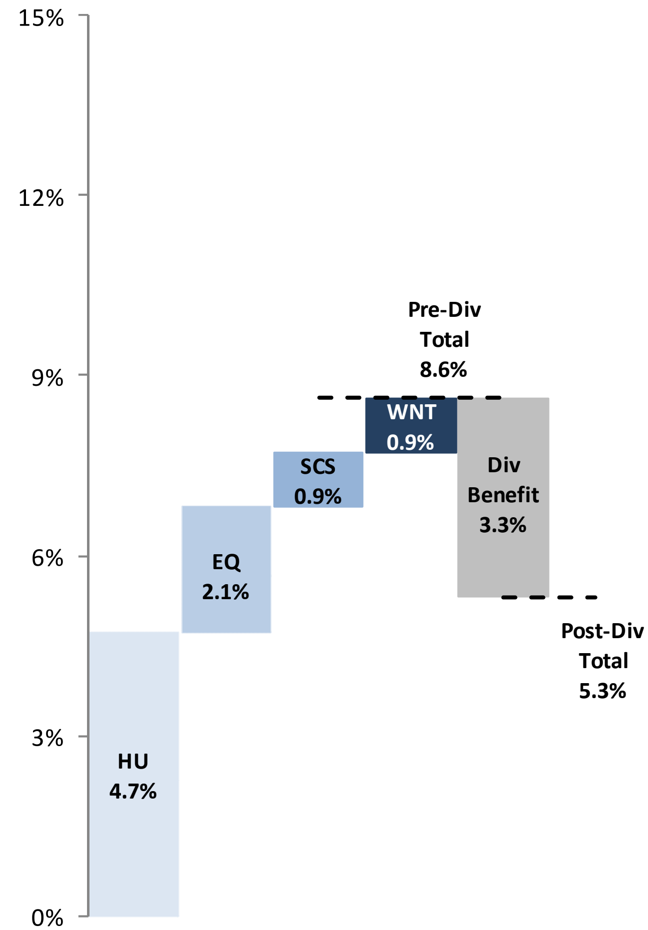
Status Quo



Net of Reinsurance



Gross of Reinsurance

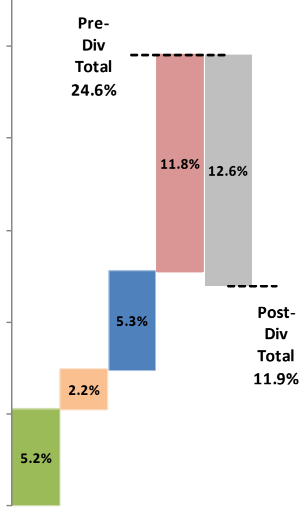


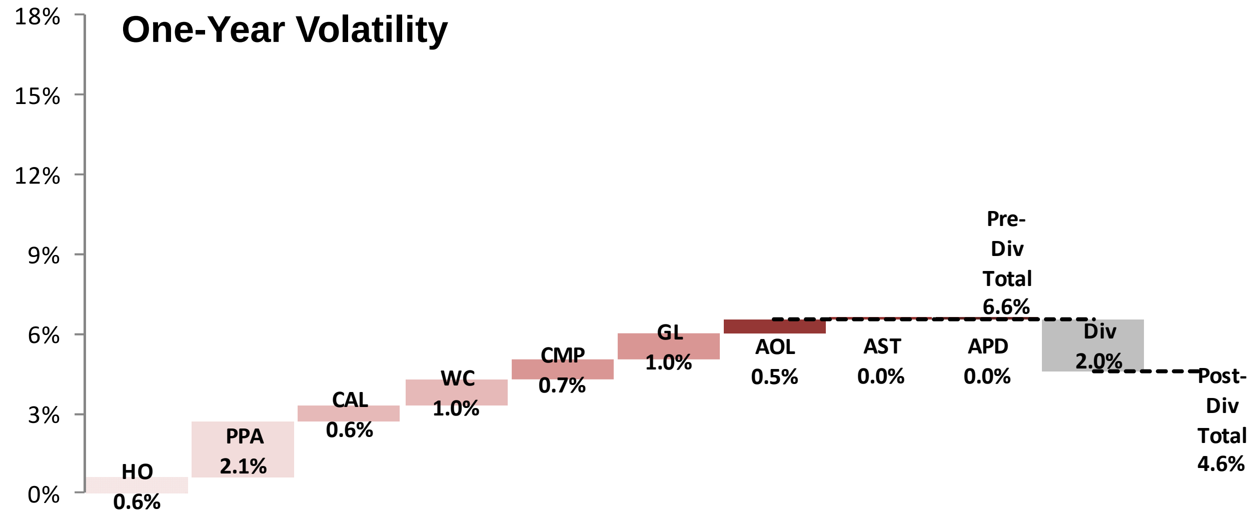
Risk Tolerance
Reserve Risk

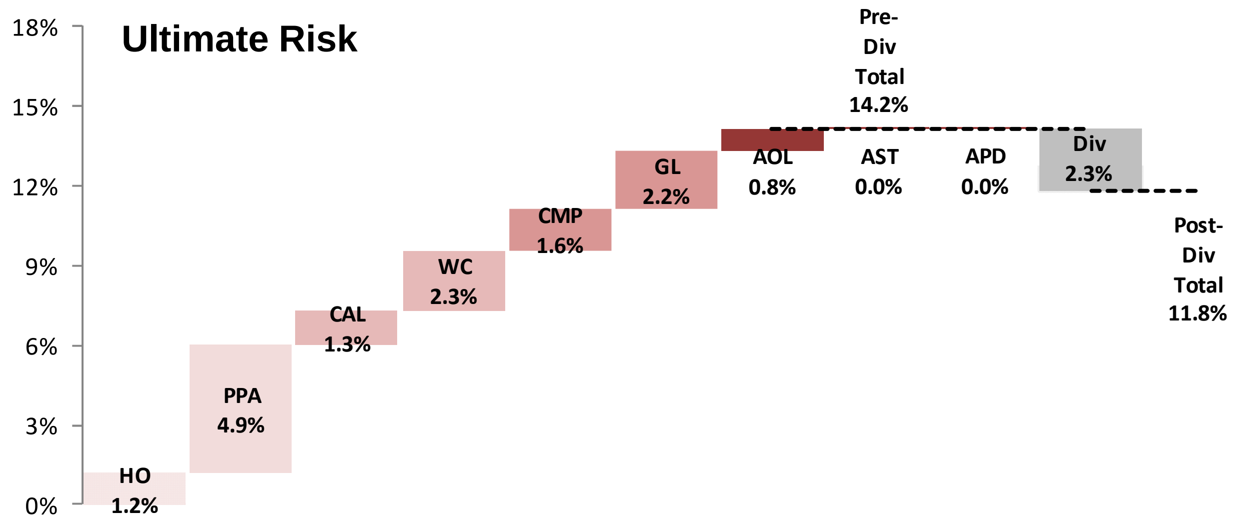
Let's break down the Reserve risk **between reserving lines**.

Ultimate reserve risk is the key, though often adverse development isn't completely recognized immediately.

Stress 2: Ultimate Res Risk







Risk Appetite

Allocation of Capital Cost

The CFO is operating an internal capital market

- An unconstrained market of one capital supplier and numerous consumers

Price access to this capital by any means necessary

- What to reward and punish, emphasize and ignore

Decide in that pricing policy whether (and how much) to reflect:

- Time and history
- Fact and intuition
- Return periods
- Risk factors

There is nothing inherently right or wrong about any approach

- Only the algorithmic expression of the risk preferences

Allocation of Capital Cost: The Co-TVaR Framework

We can **define risk preferences explicitly** by assigning a weight to losses on each realization of the model.

Common ways to compute the weights include:

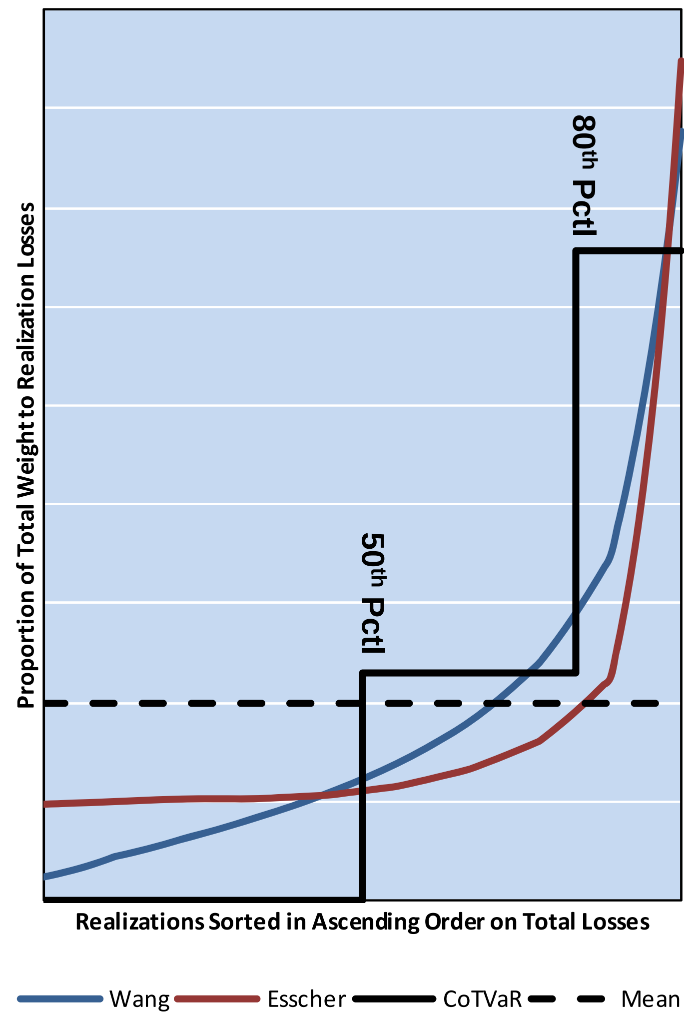
- Probability transforms
- Utility transforms
- Weighted Co-TVaR

The risk manager can define any **Risk Preference Function**.

Weighted Co-TVaR is a step function with several strengths:

- **Ease** of calculation, explanation, interpretation
- Reliance on a **common metric** in risk management
- **Intuitive application** to defining zones of operating loss impact: missing earnings, losing enough to warrant a downgrade, destruction of solvency.

Example: Equivalent Total Risk Charge



Allocation of Capital Cost: Allocation to Line

Metric: TVaR of Net Total Loss and ALAE, with contributions by line.

Co-TVaR percentages can be highly sensitive to return periods.

Return	Co-TVaR									
Period	HO/FO	PPA	CAL	WC	CMP	GL	AOL	AST	APD	TVaR
1	11.9%	33.8%	7.3%	3.3%	9.6%	5.1%	1.0%	6.5%	21.4%	29670
7	14.1%	31.4%	6.7%	3.0%	11.2%	4.8%	1.0%	7.6%	20.3%	32,537
10	14.6%	30.8%	6.6%	3.0%	11.5%	4.7%	0.9%	7.9%	20.0%	33,173
20	15.5%	29.8%	6.4%	2.9%	12.0%	4.5%	0.9%	8.6%	19.5%	34,362
25	15.8%	29.4%	6.3%	2.8%	12.2%	4.5%	0.9%	8.8%	19.3%	34,795
50	16.9%	28.1%	6.0%	2.7%	12.7%	4.3%	0.9%	10.0%	18.5%	36,416
100	18.2%	26.4%	5.6%	2.5%	13.0%	4.0%	0.8%	11.9%	17.5%	38,610
200	19.5%	24.4%	5.2%	2.4%	13.2%	3.7%	0.8%	14.7%	16.2%	41,613
250	19.9%	23.7%	5.1%	2.3%	13.2%	3.6%	0.7%	15.7%	15.7%	42,791
500	21.1%	21.5%	4.6%	2.1%	13.2%	3.3%	0.7%	19.1%	14.4%	47,036
1,000	22.0%	19.5%	4.2%	1.9%	13.0%	2.9%	0.6%	22.7%	13.2%	52,111

Economic Returns: Risk Preference Visualization

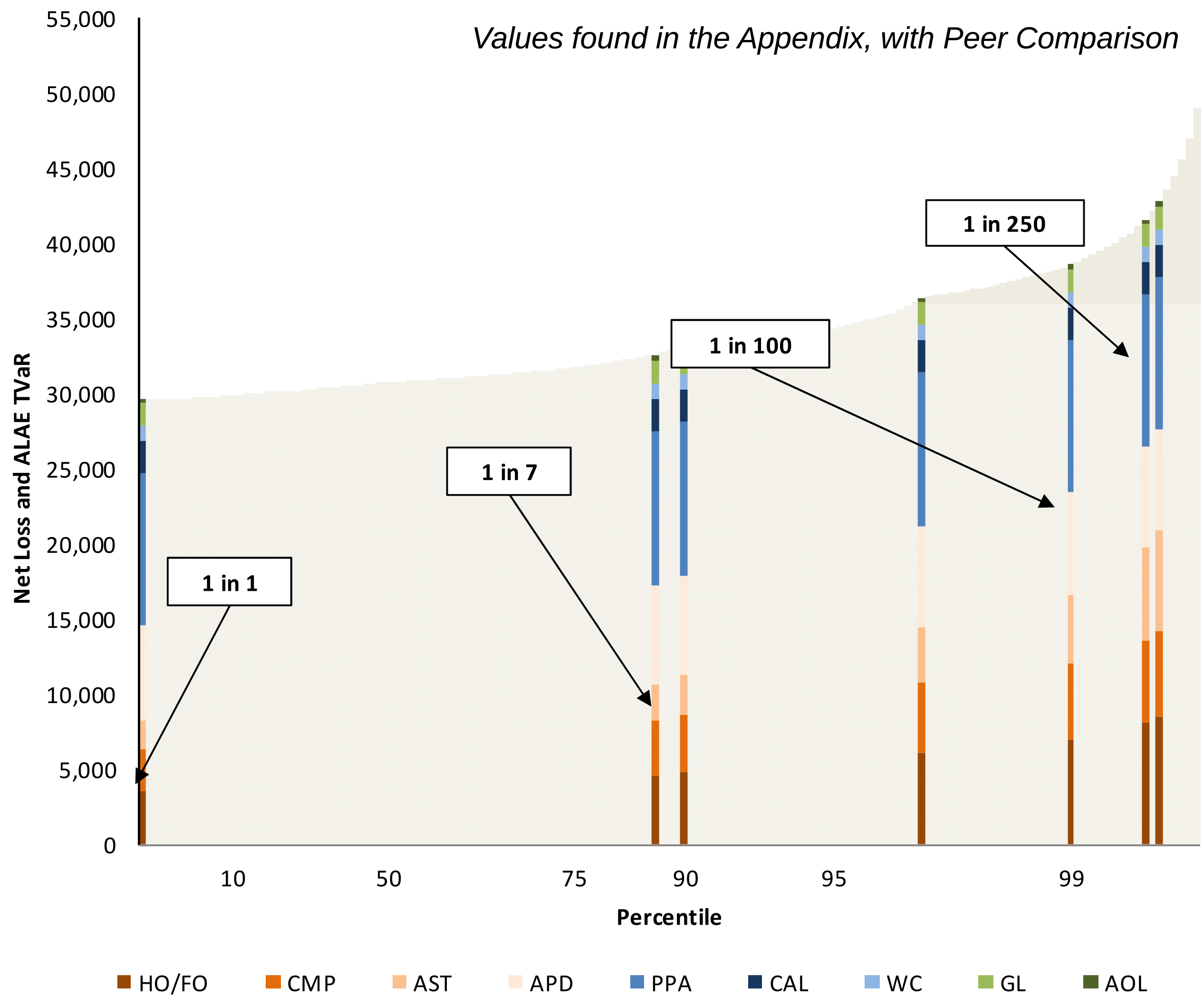
Metric: Sort Total Losses from each model realization in ascending order. The average total past the nth-largest trial is TVaR.

TVaR at zero is simply the average of all trials, **$30B**.

Co-TVaR are the average losses over the same set of realizations for a line of business contributing to the total.

Choosing TVaR thresholds to allocate capital is an **expression of risk preferences**.

Cat-exposed lines (HO, CMP, AST, APD) are shaded in **hues of orange**.



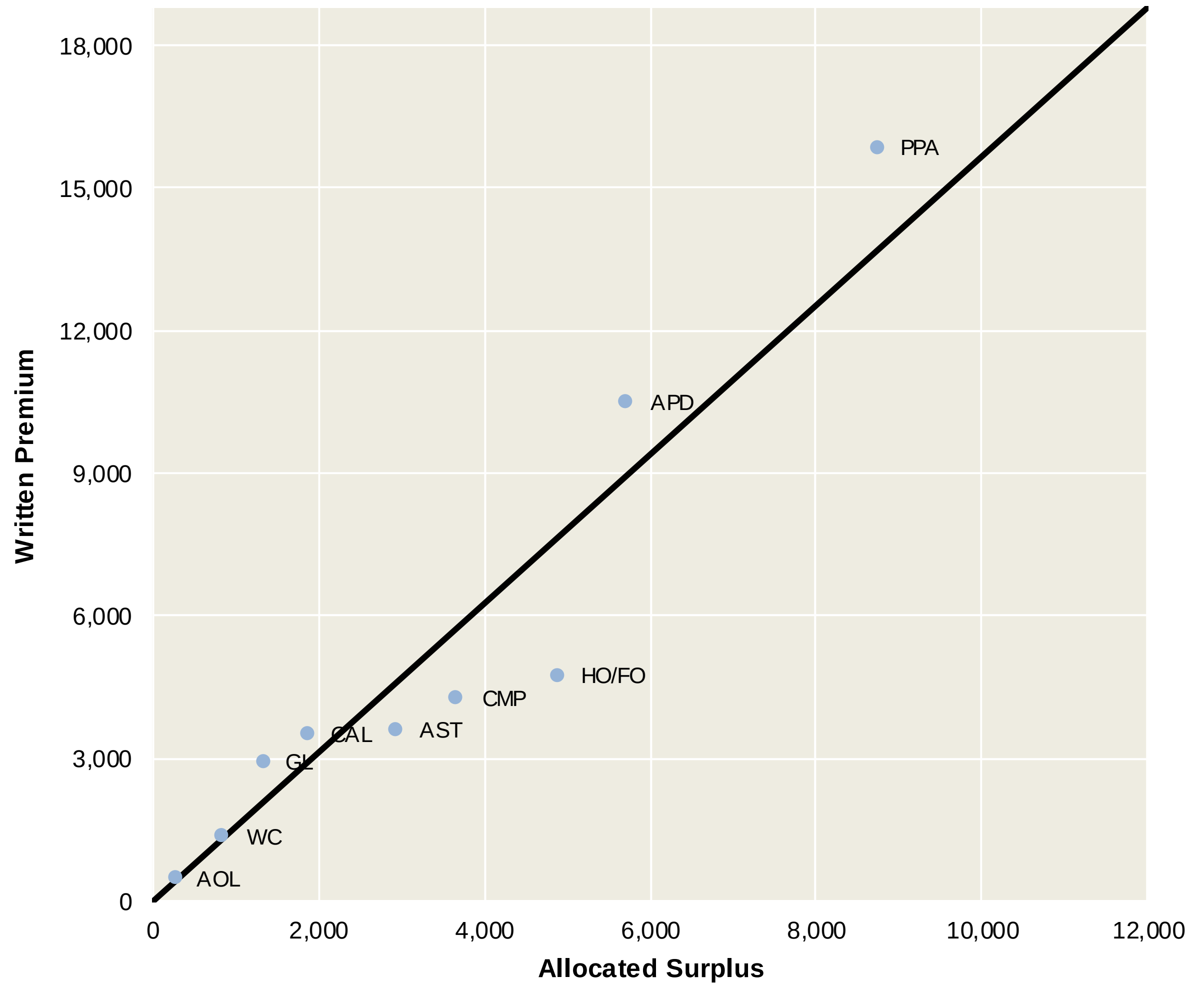
Economic Returns: Capital Allocation and Premium-to-Surplus

The chart displays 2013 expected net written premium against 2012 Policyholder Surplus.

The ratio in total is **1.57**, represented by the black line.

Lines of business with comparatively more risk in the model fall below the black line.

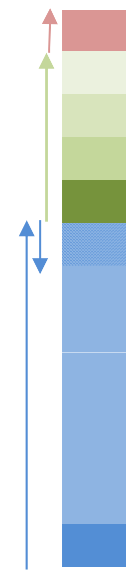
For illustration we assume a 50/50 weighting of 1-in-7 TVaR and 1-in-100 TVaR.



Risk Appetite

Economic Returns: Accident Year 2013

Economic Return is expressed as a Combined Ratio where:

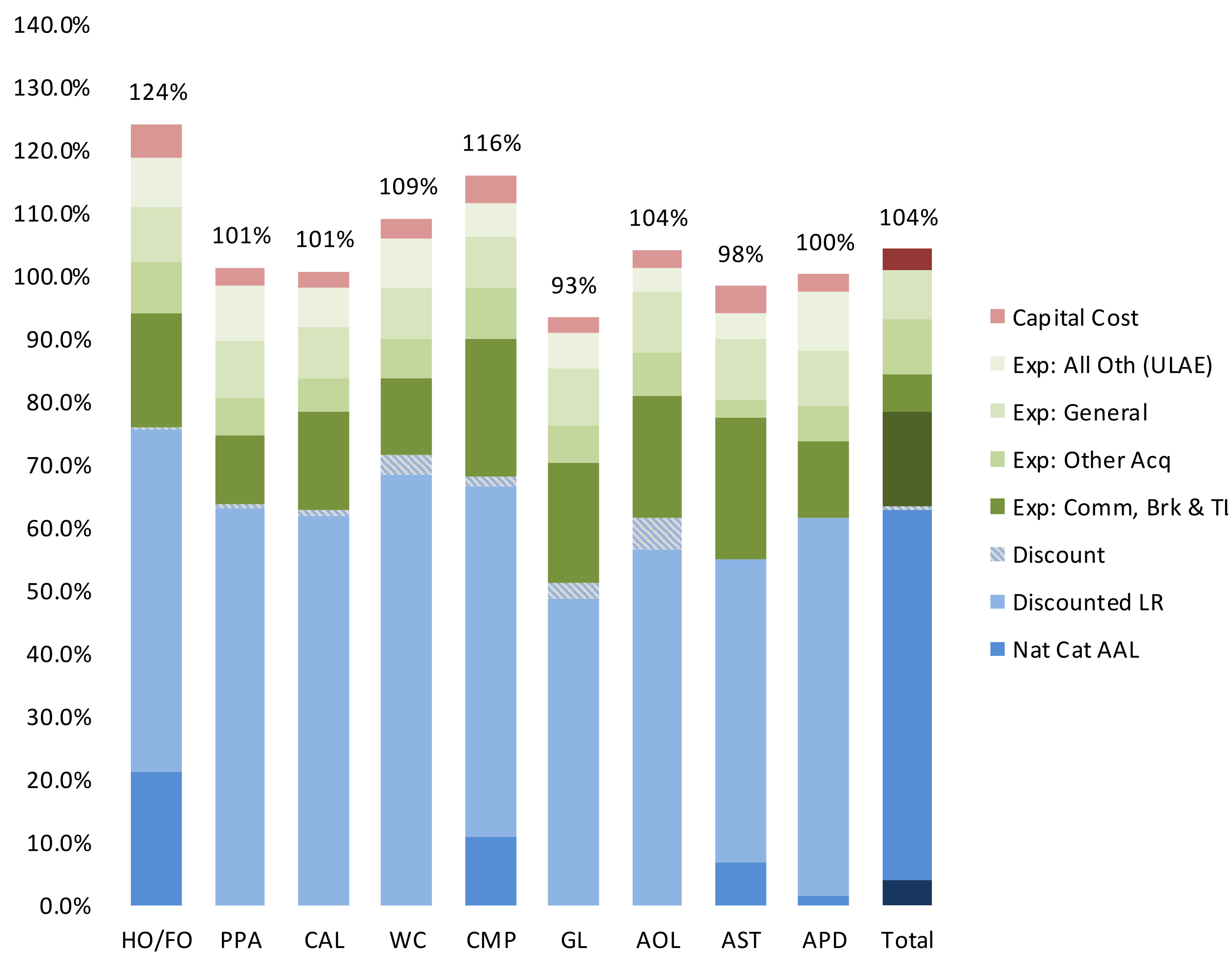


Discount credit is assigned for investment return based on current yield curves and the duration of each line of business

Capital charges are assigned based on BenchmaRQ default risk preferences and capital charge of 5%.

Recognizing both duration and capital cost is a means to **compare value creation**.

Values found in the Appendix, with Peer Comparison



Contents

Ohio House Bill 313

Sec. 3901.373: An insurer shall maintain a risk management framework to assist the insurer with identifying, assessing, monitoring, managing, and reporting on its material and relevant risks. This requirement may be satisfied if the insurance group of which the insurer is a member maintains a risk management framework applicable to the operations of the insurer.

Ohio House Bill 313

Sec. 3901.375. (A)(1) Upon the request of the superintendent of insurance, and not more than once annually, an insurer shall submit to the superintendent an own risk and solvency assessment summary report, or any combination of reports that together contain the information described in the own risk and solvency assessment guidance manual, applicable to the insurer or the insurance group of which it is a member.

Ohio House Bill 313

(B) If an insurer qualifies for exemption pursuant to division (A)(I)(a) of this section, but the insurance group of which the insurer is a member does not qualify for exemption pursuant to division (A)(I)(b) of this section, and if an own risk and solvency assessment summary report is required pursuant to division (E) of this section, then the summary report shall include every insurer within the insurance group. This requirement may be satisfied if the insurer submits more than one own risk and solvency assessment summary report for any combination of insurers provided the combination of reports includes every insurer within the insurance group.

ORSA, Section 1

Risk Culture and Governance

- Roles, responsibilities, accountabilities

Risk Identification and Prioritization

- Ownership with a risk management function

Risk Appetite, Tolerances, and Limits

- Formal risk appetite statement
- Board understanding

Risk Management and Controls

- Operating at all levels of organization

Risk Reporting and Communication

- Transparency
- Facilitates informal decisions on risk taking

ORSA, Section 2

Document the quantitative and/or qualitative assessments of risk exposure in both normal and stressed environments for each material risk category identified in Section I

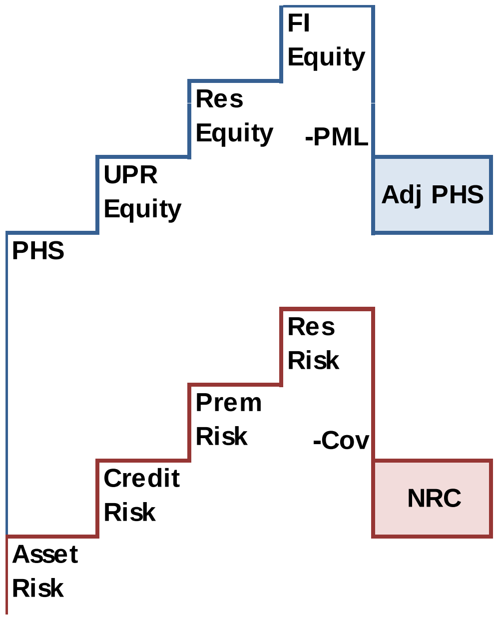
A.M. Best: Stochastic BCAR, Timeframe

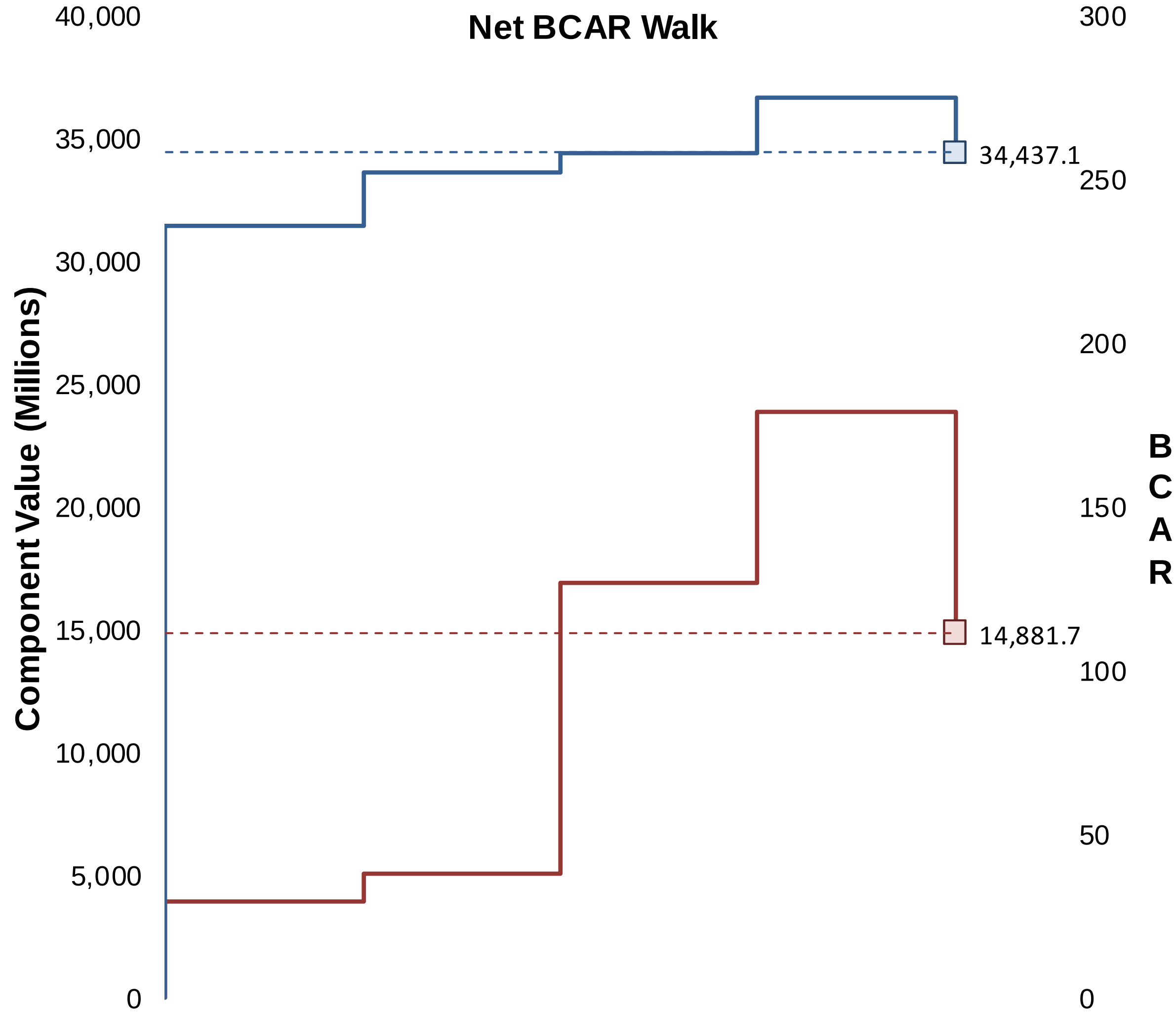
- A.M. Best will begin to run the new BCAR Model this year using YE2013 data
- The output will be shared with companies once A.M. Best has conducted its internal review – but it will not have any impact on a company’s rating review – it will be provided for informational purposes only
- The current BCAR model and PML criteria will continue to be utilized for rating purposes
- A.M. Best plans to issue a draft Criteria report for comment later this year to discuss the new BCAR model and present its features, CAT test and baseline calculation of capital factors – and ask for industry feedback over a six month period
- Once the comment period ends a final Criteria report will be issued and A.M. Best expects to adopt the new stochastic-based BCAR model in 2015

Regulatory Perspectives

A.M. Best: Stochastic BCAR

Illustrating the components of BCAR clarifies potential action plans.





Regulatory Perspectives

A.M. Best: Stochastic BCAR

Opening BCAR was estimated for composite as of 12/31/2012, **229.**

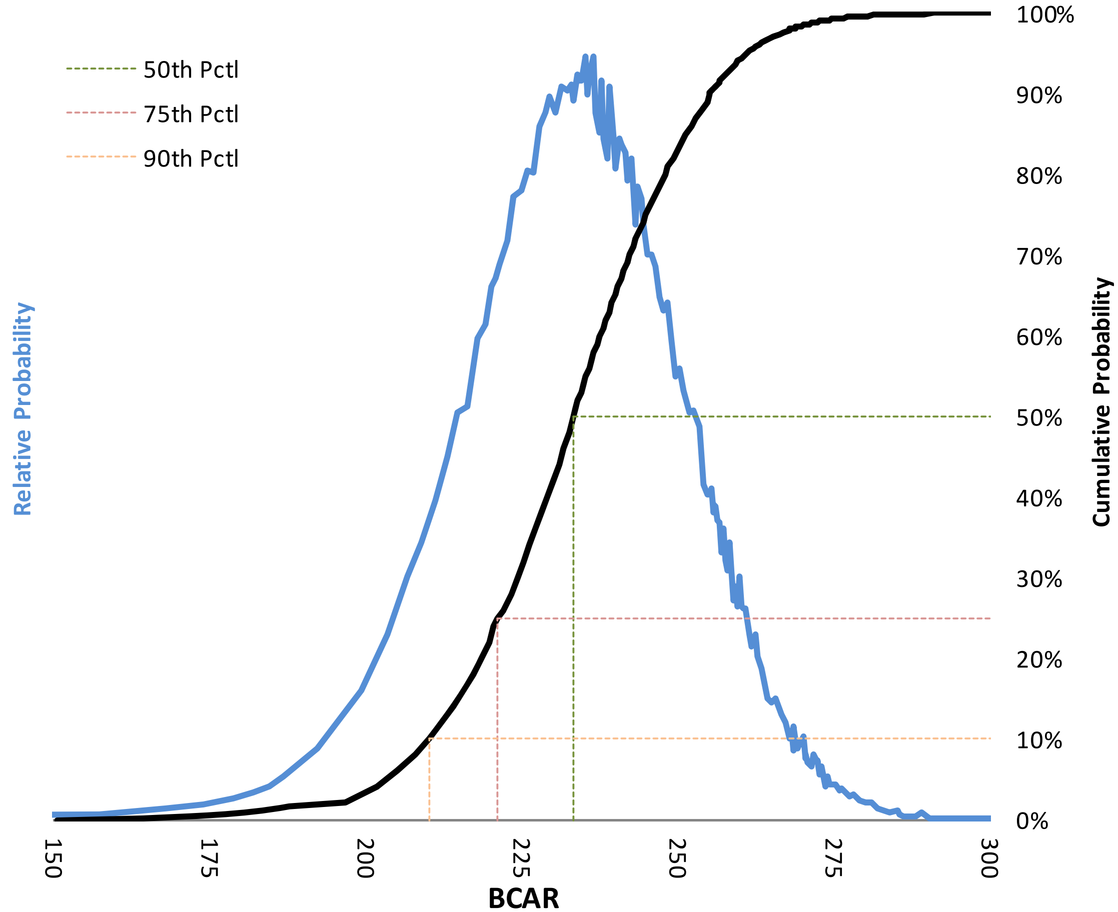
Category	Value
Asset Charge	5.5%
Reserve Charge	30.6%
Premium Charge	31.2%
Credit Charge	12.9%
UEPR Equity	12.5%
Loss Reserve Equity	3.0%
Net Cat PML	3440.7 M

Details

Expected BCAR: 12/31/13	231
Mean Δ in BCAR Score	3
Variability of BCAR Score	20

P [BCAR< Tech Min]

A++	175	0.9%
A+	160	0.4%
A	145	0.2%
A-	130	0.2%
B++	115	0.2%
B+	100	0.2%



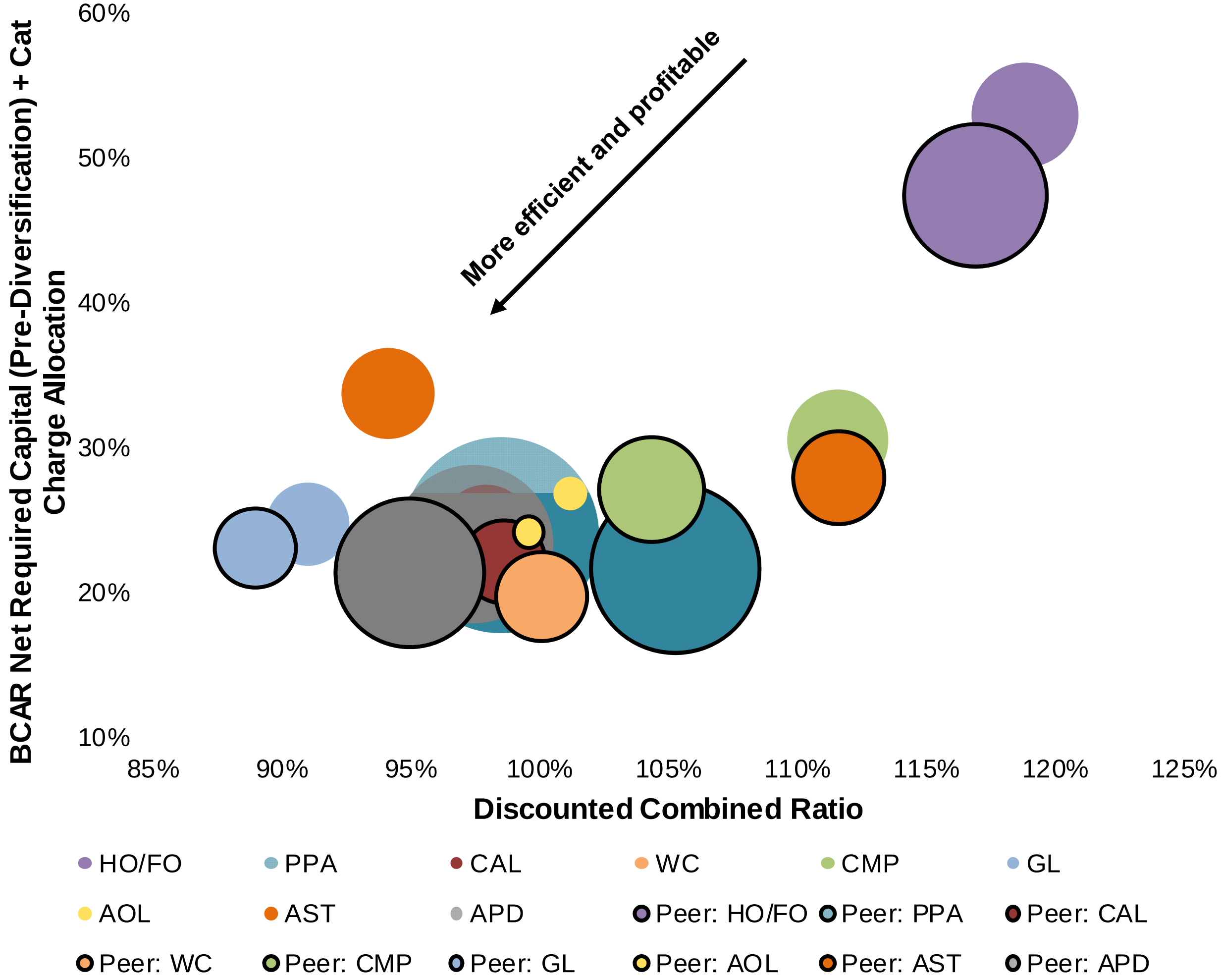
Regulatory Perspectives
A.M. Best: Stochastic BCAR

Metric: Expected 2013 combined ratios, discounted for payment delay.

For each line of business, we then compare to required capital (as a percentage of premium & reserves) from **BCAR premium and reserve factors**.

The covariance adjustment from BCAR has been ignored for this exhibit.

Bubble sizes indicate 2013 expected earned premium.



Contents

Appendix
Model Specification

BenchmaRQ is a one-year stochastic financial projection built from . . .

2012 **Statutory filing data** provided by A.M. Best and the NAIC:

- Balance Sheet, Income Statement, U&I Exhibit, Page 14, IEE
- Asset detail from Schedule D
- Reserve detail from Schedule P

Risk parameters from the Industry Risk Benchmarks research produced by Guy Carpenter and Oliver Wyman

Economic scenarios provided by Barrie and Hibbert valued at 12/31/2012

RMS Version 11 **event files** for four natural perils:

- Hurricane with near-term frequency (HUNT), demand surge and storm surge
- Earthquake (EQ) with fire following and demand surge
- Winter Storm (WNT) with demand surge
- Severe Convective Storm (SCS) with demand surge

. . . In **MetaRisk®**

Appendix
Model Specification

The model produces possible financial statements for **one unknown future year**, 2013. Each set of financial statements is equally likely. Analysis of all possibilities enables the applications discussed above.

Reserve runoff uncertainty is modeled on a one calendar year basis (we call this 'reserve volatility') and on an ultimate settlement basis (we call this 'ultimate reserve risk').

Underwriting lines of business follow Schedule P definition with some aggregation. There are nine total lines:

1. HO	Homeowners/Farmowners (A)	6. GL	General Liability (H1,H2)
2. PPA	Private Passenger Auto (B)	7. AOL	All Other Liability (F1,F2,G,O,R1,R2)
3. CAL	Commercial Auto Liability (C)	8. AST	All Other Short-Tailed (I,K,L,M,N,P,S,T)
4. WC	Workers Compensation (D)	9. APD	Auto Physical Damage (J)
5. CMP	Commercial Multi-Peril (E)		

Natural catastrophe risk is modeled via by-state, by line of business premium market shares applied to the industry-wide event file for HUNT, EQ, SCS, and WNT.

Correlation between lines of business is modeled via common loss inflation effects.

Losses are modeled **net of reinsurance**, except that the property cat treaty is modeled explicitly (see below).

Assumptions

U/W and Cat Risk: Expected 2013 Performance By Line

Written premium for 2013 assumed to be **$52B gross and $47B net.**

ELR for 2013 is the five-year weighted average booked ultimate Loss & ALAE Ratio (AY08-AY12).

Volatility includes the effects of both cat and non-cat losses.

Net expense ratio (as a % of NEP & including ULAE) is assumed to be **38%** based on IEE.

Natural catastrophe losses are modeled explicitly and non-cat volatilities are therefore reduced accordingly.

Line of Business	Net Earned Premium	Loss & ALAE Ratio	Expense Ratio	Combined Ratio	Volatility
1. HO/FO	4,637.8	76%	44%	120%	12%
2. PPA	15,641.8	64%	35%	99%	3%
3. CAL	3,396.8	64%	36%	100%	4%
4. WC	1,318.1	75%	35%	110%	5%
5. CMP	4,115.1	69%	45%	114%	9%
6. GL	2,845.8	54%	41%	94%	6%
7. AOL	466.0	66%	41%	107%	13%
8. AST	3,494.9	55%	40%	95%	6%
9. APD	10,305.6	62%	36%	98%	4%
Total	**46,221.8**	**64%**	**38%**	**102%**	**4%**
xCat		*60%*	*38%*	*98%*	*2%*

Assumptions

U/W and Cat Risk: 2013 Performance By Line, Detail

BACE

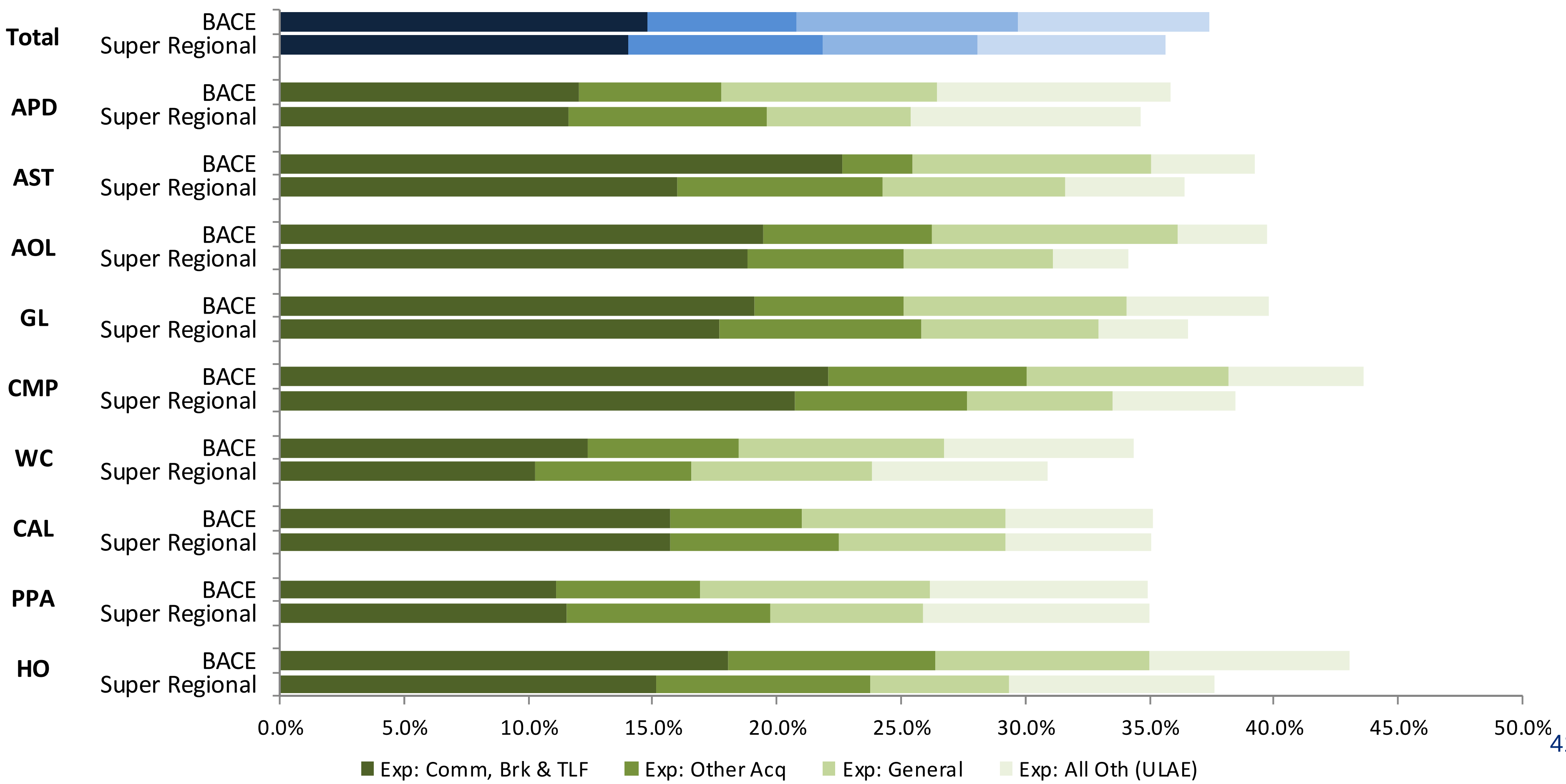
	Loss				Expense					Capital	
	Non-Cat	Cat	Discount	Discounted Loss Ratio	Commisions, Brkge, TLF	Other Acquisition	General	All Other Inc ULAE	Total	Cost	Risk-Adjusted Discounted CR
1. HO/FO	54.9%	21.2%	0.3%	75.8%	18.1%	8.3%	8.6%	8.0%	43.0%	5.3%	124.1%
2. PPA	64.1%	0.0%	0.5%	63.6%	11.1%	5.8%	9.2%	8.8%	34.9%	2.8%	101.3%
3. CAL	63.9%	0.0%	1.1%	62.8%	15.7%	5.3%	8.2%	6.0%	35.2%	2.7%	100.7%
4. WC	74.5%	0.0%	3.0%	71.5%	12.4%	6.1%	8.2%	7.7%	34.4%	3.2%	109.1%
5. CMP	58.5%	10.8%	1.3%	68.0%	22.1%	8.0%	8.1%	5.4%	43.6%	4.4%	116.0%
6. GL	53.6%	0.0%	2.4%	51.2%	19.1%	6.0%	9.0%	5.7%	39.8%	2.3%	93.4%
7. AOL	66.5%	0.0%	5.0%	61.5%	19.5%	6.7%	9.9%	3.6%	39.7%	2.9%	104.1%
8. AST	48.1%	6.9%	0.1%	54.9%	22.6%	2.9%	9.6%	4.2%	39.2%	4.2%	98.3%
9. APD	60.0%	1.6%	0.0%	61.6%	12.0%	5.7%	8.7%	9.4%	35.9%	2.8%	100.2%
Total	**60.2%**	**4.0%**	**0.7%**	**63.5%**	**14.8%**	**6.0%**	**8.9%**	**7.7%**	**37.4%**	**3.3%**	**104.2%**

Peer Composite

	Loss				Expense					Capital	
	Non-Cat	Cat	Discount	Discounted Loss Ratio	Commisions, Brkge, TLF	Other Acquisition	General	All Other Inc ULAE	Total	Cost	Risk-Adjusted Discounted CR
1. HO/FO	58.6%	21.0%	0.2%	79.3%	15.1%	8.6%	5.6%	8.3%	37.6%	7.7%	124.6%
2. PPA	71.1%		0.8%	70.3%	11.5%	8.2%	6.1%	9.1%	35.0%	4.3%	109.6%
3. CAL	65.1%		1.5%	63.5%	15.7%	6.7%	6.7%	5.9%	35.1%	3.9%	102.5%
4. WC	74.6%		5.4%	69.2%	10.3%	6.3%	7.3%	7.1%	30.9%	4.5%	104.6%
5. CMP	58.3%	9.4%	1.8%	65.9%	20.7%	6.9%	5.9%	4.9%	38.4%	6.4%	110.7%
6. GL	55.7%		3.2%	52.5%	17.7%	8.1%	7.1%	3.6%	36.5%	3.4%	92.4%
7. AOL	70.7%		5.2%	65.5%	18.8%	6.3%	6.0%	3.0%	34.1%	4.2%	103.8%
8. AST	68.8%	6.6%	0.2%	75.2%	16.0%	8.2%	7.4%	4.8%	36.4%	8.5%	120.1%
9. APD	58.9%	1.4%	0.0%	60.3%	11.6%	8.0%	5.7%	9.3%	34.7%	3.8%	98.7%
Total	**64.0%**	**5.5%**	**1.1%**	**68.4%**	**14.0%**	**7.8%**	**6.2%**	**7.5%**	**35.6%**	**5.3%**	**109.2%**

U/W and Cat Risk: Expense Ratio Benchmarking

BACE Composite's overall expense ratio of **37.4%** compares with peer composite of **35.6%.**

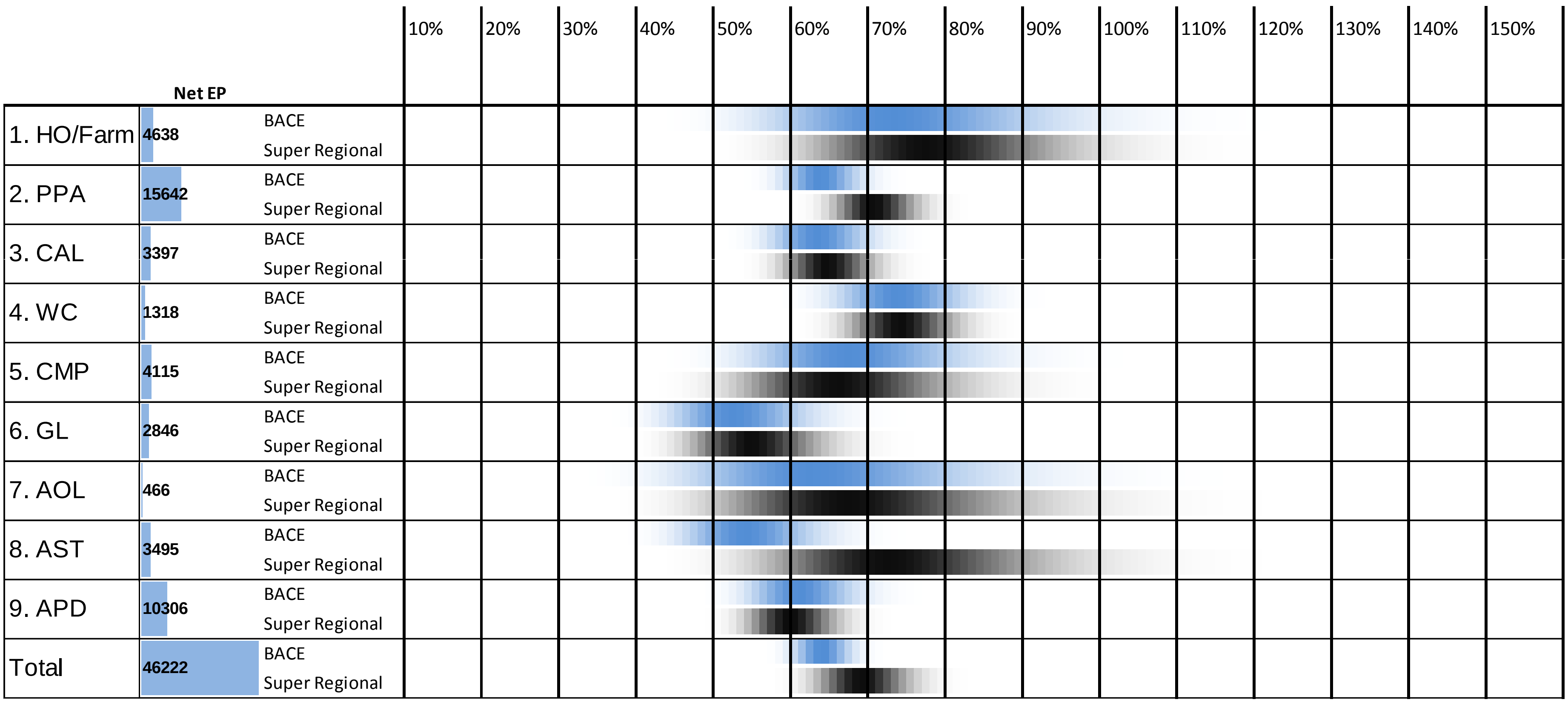


Assumptions

U/W and Cat Risk: Loss Ratio Distributions

The color density charts express the relative likelihood of loss ratio by line of business.

For comparison we also show distributions for the **Super Regional** segment.



Assumptions

U/W and Cat Risk: Cat Stats

Metric: The concentration ratio is the ratio of the share of industry annual aggregate loss (AAL) to the share of industry premium.

AAL share is calculated for all modeled perils combined.

Concentration ratios above one indicate that the state/line distribution for the company is relatively more exposed to natural perils than the industry.

	Direct Writen Premium			All-Perils Gross AAL			Concentration
	BACE	Industry	Share	BACE	Industry	Share	Ratio
Homeowners/Farmowners	**5,000.5**	**81,242**	**6.16%**	**1,018.2**	**22,345**	**4.56%**	**0.74**
Northeast/Atlantic	954.4	16,405	5.82%	145.0	2,680	5.41%	0.93
Southeast/Gulf	1,598.9	30,870	5.18%	558.3	15,915	3.51%	0.68
Midwest	1,837.3	18,994	9.67%	297.0	2,981	9.97%	1.03
West	608.2	14,973	4.06%	17.9	769	2.33%	0.57
CMP (Non-Liability)	**1,330.4**	**12,583**	**10.57%**	**471.8**	**5,148**	**9.16%**	**0.87**
Northeast/Atlantic	214.9	3,948	5.44%	30.4	779	3.91%	0.72
Southeast/Gulf	418.2	2,960	14.13%	342.9	3,657	9.38%	0.66
Midwest	450.1	2,710	16.61%	88.4	528	16.75%	1.01
West	247.1	2,964	8.34%	10.0	184	5.46%	0.65
Auto Physical Damage	**9,768.8**	**72,403**	**13.49%**	**173.2**	**1,178**	**14.70%**	**1.09**
Northeast/Atlantic	1,860.0	15,381	12.09%	16.4	137	11.94%	0.99
Southeast/Gulf	3,578.8	24,119	14.84%	96.2	668	14.40%	0.97
Midwest	2,844.2	16,529	17.21%	53.2	300	17.71%	1.03
West	1,479.1	16,374	9.03%	7.3	72	10.14%	1.12
AST (Allied Lines and EQ)	**677.4**	**15,143**	**4.47%**	**260.9**	**8,055**	**3.24%**	**0.72**
Northeast/Atlantic	72.0	1,785	4.03%	9.3	303	3.06%	0.76
Southeast/Gulf	274.6	7,009	3.92%	171.8	5,171	3.32%	0.85
Midwest	218.2	2,774	7.86%	40.7	481	8.46%	1.08
West	112.7	3,576	3.15%	39.2	2,100	1.87%	0.59
Total	**16,777.0**	**181,370**	**9.25%**	**1,924.1**	**36,726**	**5.24%**	**0.57**
Northeast/Atlantic	3,101.3	37,519	8.27%	201.2	3,900	5.16%	0.62
Southeast/Gulf	5,870.5	64,958	9.04%	1,169.2	25,411	4.60%	0.51
Midwest	5,349.8	41,007	13.05%	479.3	4,289	11.17%	0.86
West	2,447.0	37,887	6.46%	74.5	3,125	2.38%	0.37

Assumptions

Allocation of Capital Cost: High-Level Allocation

Metric: TVaR of Net Total Loss and ALAE, with contributions by high-level aggregations.

Co-TVaR percentages can be highly sensitive to return periods.

	Co-TVaR		
Return Period	Prop Cat	Non-Cat	**TVaR**
1	6%	94%	29670
7	13%	87%	32,537
10	15%	85%	33,173
20	17%	83%	34,362
25	18%	82%	34,795
50	22%	78%	36,416
100	27%	73%	38,610
200	33%	67%	41,613
250	34%	66%	42,791
500	40%	60%	47,036
1,000	46%	54%	52,111

	Co-TVaR		
Return Period	Comm Lines	Pers Lines	**Net Loss TVaR**
1	33%	67%	29670
7	34%	66%	32,537
10	35%	65%	33,173
20	35%	65%	34,362
25	36%	64%	34,795
50	37%	63%	36,416
100	38%	62%	38,610
200	40%	60%	41,613
250	41%	59%	42,791
500	43%	57%	47,036
1,000	45%	55%	52,111

Assumptions

Allocation of Capital Cost: Cat/Non-Cat Allocation

Metric: TVaR of Net Total Loss and ALAE by peril and for attritional losses.

These risk preferences imply an allocation of **approximately 20% of capital** for natural catastrophe losses, the **hurricane peril** requiring the most capital support.

	Return Period		Weighted	Allocated
Line of Business	7	100	**Ave**	**Surplus**
Non-Cat	87%	73%	80%	24,166.5
Hurricane	9%	19%	14%	4,156.3
Earthquake	1%	5%	3%	863.8
Winterstorm	1%	1%	1%	253.1
TO/WS	3%	2%	3%	758.8
Total Cat	13%	27%	20%	6,031.9
Total	**100%**	**100%**	**100%**	**30,198.4**

Reserve Runoff Risk: Reserves and Duration By Line

Total Net Reserves of **32B**.

Metric: Accident Year (AY) duration developed from company loss experience; effective duration is dependent on distribution of reserves by AY.

2013 Payment Ratio of **46%**.

Overall Ceded Reserve Ratio of **22%**.

The longer the duration, the stronger the correlation of ultimate runoff risk between reserve lines.

	Loss & ALAE Res		Ceded	**Duration**		Est Net	2013
LOB	Gross	Net	Ratio	Effective	AY	2013 Pmt	Pmt Ratio
1. HO/FO	1,324.8	1,224.1	8%	1.5	0.9	756.8	62%
2. PPA	13,557.3	9,957.5	27%	1.6	1.5	5,120.4	51%
3. CAL	4,209.2	3,780.1	10%	1.8	2.3	1,533.3	41%
4. WC	4,202.6	3,388.7	19%	3.3	2.9	892.1	26%
5. CMP	5,229.0	4,434.0	15%	2.7	2.1	1,517.9	34%
6. GL	7,483.1	5,756.4	23%	2.1	3.7	2,524.8	44%
7. AOL	2,543.6	2,328.3	8%	1.6	4.9	1,574.9	68%
8. AST	2,079.0	834.9	60%	1.1	0.9	526.5	63%
9. APD	252.8	234.4	7%	0.2	0.5	294.5	126%
Total	**40,881.4**	**31,938.5**	**22%**	**2.0**	**1.5**	**14,741.3**	**46%**

Assumptions

Reserve Runoff Risk: Stochastic Model

Data

Schedule P losses, claim counts, premium

Some consolidation by line necessary, as shown

One-Year Volatility

Historical calendar year reserve development as a percentage of prior reserves

Standard deviation of 20 years of experience

Volatility correlated via scaled medical inflation

Ultimate Risk

Simulates alternative future scenarios of trend and loss inflation

Aggregation recognizes correlation between lines of business

	Carried	One-Year Volatility		Ultimate Risk	
Line of Business	**Reserve**	BACE	Peer	BACE	Peer
1. HO/FO	1,224.1	17%	4%	35%	7%
2. PPA	9,957.5	7%	3%	17%	6%
3. CAL	3,780.1	6%	3%	12%	7%
4. WC	3,388.7	10%	3%	24%	11%
5. CMP	4,434.0	6%	4%	12%	13%
6. GL	5,756.4	6%	5%	13%	9%
7. AOL	2,328.3	8%	6%	13%	15%
8. AST	834.9	1%	1%	1%	1%
9. APD	234.4	1%	1%	1%	1%
Total	**31,938.5**	**5%**	**2%**	**13%**	**7%**

Asset Profile and Balance Sheet: Opening Balance Sheet (12/31/2011)

2011

Assets from Balance Sheet(s)		Liabilities from Balance Sheet(s)	
Total Bonds	39,801.0	Gross Loss & LAE Reserves	29,457.9
Total Stocks	10,670.8	Ceded Loss & LAE Reserves	-2,771.6
Property	1,594.3	Net Loss & LAE Reserves	26,686.4
Cash	2,196.6		
Other Invested Assets	5,726.9	Gross Unearned Premium Reserves	15,042.2
Total Cash & Invested Assets	59,989.8	Ceded Unearned Premium Reserves	-1,189.4
		Net Unearned Premium Reserves	13,852.8
Uncollected Premium	7,913.5		
		Other Liabilities	7,328.7
		Total Liabilities	47,867.9
		Surplus Notes	2,240.2
		Capital & Surplus	23,638.5
		Policyholder Surplus	**25,878.6**
Other Assets	5,843.3		
Total Assets	**73,746.5**	Total Liabilities & Policyholder Surplus	73,746.5

Asset Profile and Balance Sheet: Notes on Momentum

Year-over-year changes in the statutory balance sheet (2011 to 2012) indicate a **19.7% increase** in liabilities, an **18.7% increase** in total assets, and a **16.7% increase** in surplus.

RBC Figures (at 12/31/12):

Total Adjusted Capital: **$37.4B**

Authorized Control Level (ACL): **$5.5B**

Estimated BCAR of **229%** as of May, 2013

Gross/Net PML (greater of 1-in-100 HU and 1-in-250 EQ) of about **$6.7B / $3.08B**.

Assets		**Liabilities**	**YE 2012 / YE 2011**
Total Bonds	19.0%	Net Loss & LAE Reserves	19.7%
Total Stocks	18.5%	Net UEPR	21.4%
Total Cash & Invested Assets	19.6%	Total Liabilities	19.7%
		Policyholder Surplus	**16.7%**
Total Assets	18.7%	Total Liabilities & Surplus	18.7%

Assumptions

Asset Profile and Balance Sheet: Fixed Income Asset Profile

Asset profile is built from 2012 Schedule D, which provides:

Bond type

Value: Market, Amortized, Par, Acquisition

Average time to maturity

Embedded coupon rate

Market value of Equity Investments

These values are estimated:

Bond quality

Duration and convexity

Expected Calendar Year Equity Returns

Market Value

	AAA	AA	A	BBB	BB	B	CCC	Total	Pct
Government		8,921.8						8,921.8	18.3%
Municipal		13,140.9	6,143.1	262.4	10.1	15.3	61.6	19,633.6	40.3%
Corporate	675.2	2,700.9	7,877.6	7,491.3	635.0	586.9	150.6	20,117.5	41.3%
Total	675.2	24,763.6	14,020.7	7,753.7	645.1	602.2	212.2	**48,672.8**	
Pct	1.4%	50.9%	28.8%	15.9%	1.3%	1.2%	0.4%		

Average Time to Maturity

	AAA	AA	A	BBB	BB	B	CCC	Total	Embedded Coupon Rate
Government		6.3						6.3	2.39%
Municipal		9.0	3.2	14.2	8.2	6.6	5.8	7.2	4.48%
Corporate	4.6	4.6	4.6	6.5	5.7	5.8	7.0	5.4	4.67%
Total	4.6	7.5	4.0	6.8	5.7	5.9	6.6	**6.3**	

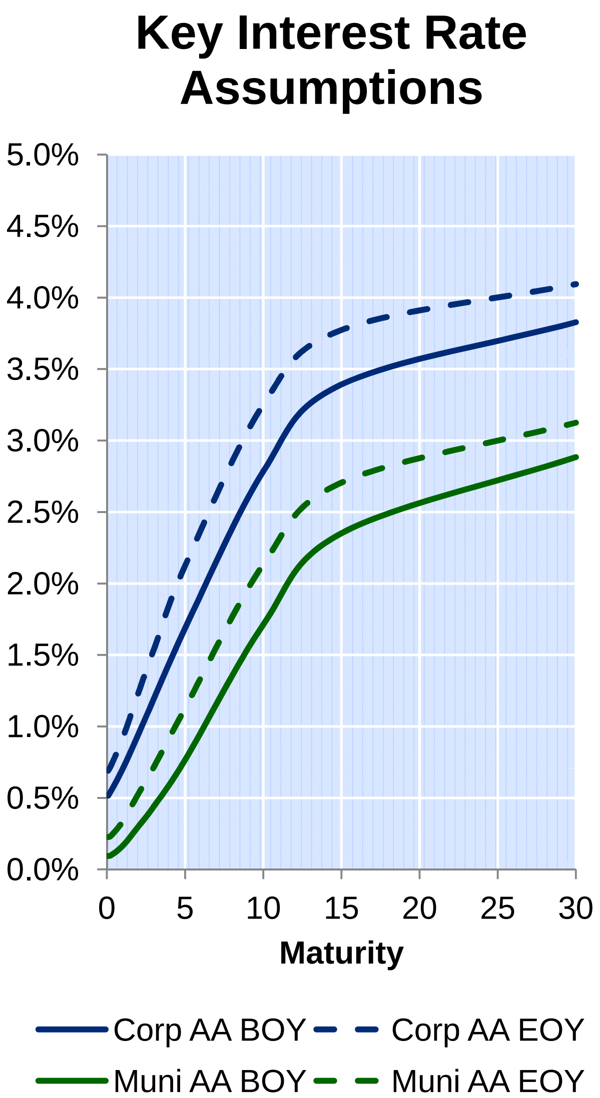
Equities

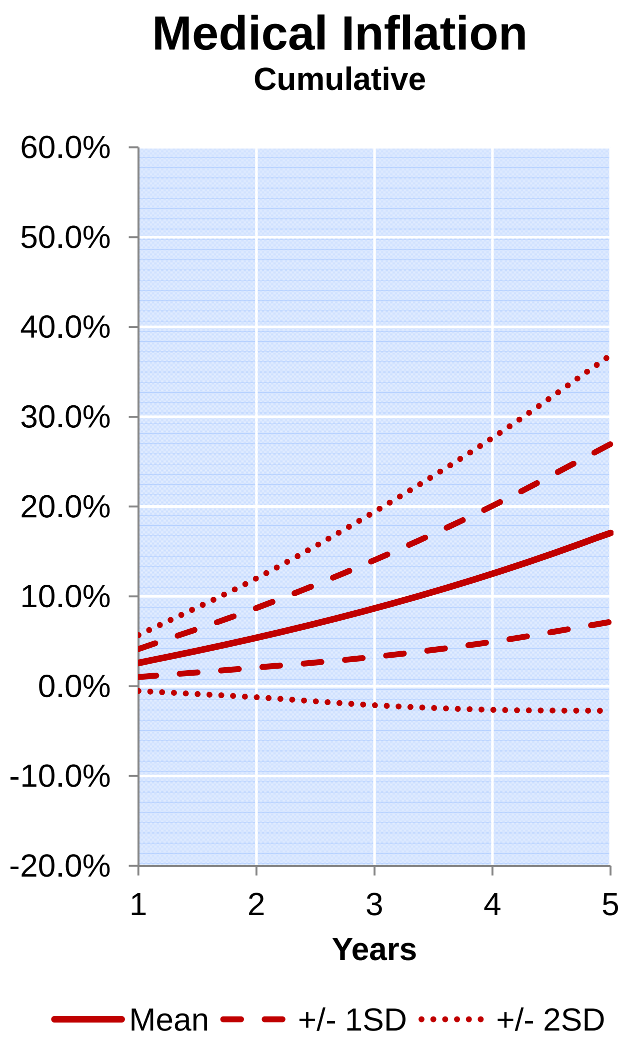
	Holdings	Expected Capital Gains	St Dev Capital Gains	Expected Yield	St Dev Yield
USA Equities	12,802.4	2.0%	17.8%	2.3%	0.4%
Euro Equities		1.0%	22.8%	3.7%	0.7%
GBP Equities		-0.9%	19.3%	3.6%	0.5%
Japan Equities		3.8%	23.7%	2.1%	0.4%
Emerging Market Equities		4.0%	27.6%	2.3%	0.4%

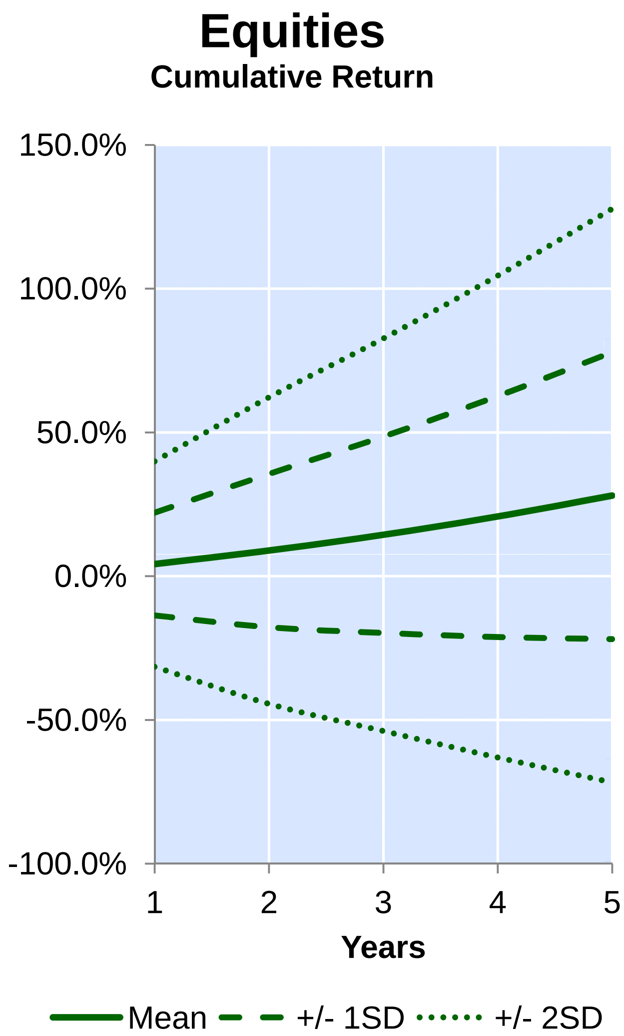
Other Invested Assets

	Holdings	Expected Capital Gains	St Dev Capital Gains	Expected Yield	St Dev Yield
Property	1,835.6	3.2%	14.9%	0.0%	0.0%
Cash	3,282.0	0.0%	0.0%	1.0%	0.0%

Asset Profile and Balance Sheet: Summary of Economic Scenarios

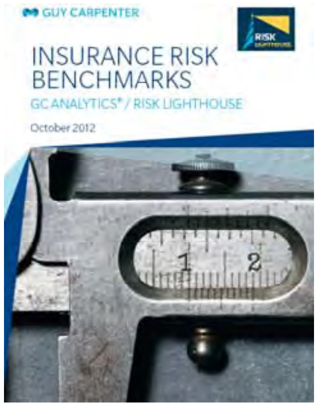






Appendix

Industry Risk Benchmarks Research



Data Sources: A.M. Best, NAIC, SNL, CIAB, III

Significant effort invested into data validation and correction

Accident Year 1980 to 2012 (reported as of 1989 to 2012)

Gross and net of reinsurance

Available parameterization:

- Pricing risk (loss ratio volatility)
- Reserve volatility (adverse/benign reserve development)
- Payment pattern volatility
- Correlation between lines of business

Definition of market segments:

- Large National
- Super Regional
- Regional
- Specialty
- Reinsurer
- Other

GUY CARPENTER

OLIVER WYMAN