

# **BCAR Overview and Required Capital Components**



### A.M. Best's BCAR: Goals & Objectives

# Incorporate probabilistic simulation modeling in BCAR

- § Consistent capital factors (i.e. risk measure, return period and time frame) that directly tie to probability of default
- § Use of sophisticated, technological software

#### Maintain similar structure as used in the old BCAR model

- **§ Economic view of capital** 
  - § Mark-to-market bonds, present value of reserves, & DAC adjustment
- § Covariance: sum of the squares rule (i.e. 30% to 45% reduction in GRC)
- § Risk categories: B1- B7 & catastrophe charge (i.e. moved from APHS)

#### New BCAR and BCRM effective October 13, 2017

- § Update per recent press release
- § Modest level of companies with material issues were placed under review with six months to take corrective actions

### A.M. Best's BCAR: New Formula and Interpretation

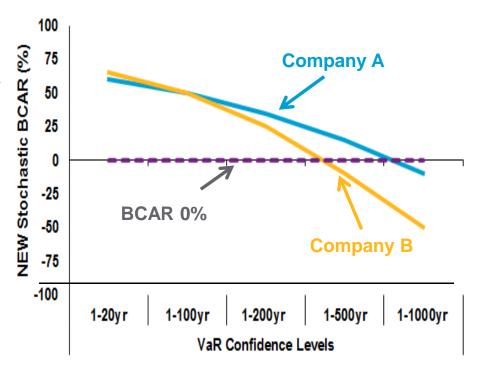
- § Available Capital reduced for net catastrophe PML
- § Looking for a BCAR score well above 100% (range from 0% to 999%)

- § Net catastrophe PML moved to be part of Required Capital
- § Translates as "excess capital as percent of Available Capital"
  - § E.g. 25% BCAR = '25% capital redundant' (-25% = 'capital deficient')
- § Aim for a BCAR score above 0% (range from -999% to 100%)
  - § The spread of positive scores will be compressed and relatively small increases will represent significantly stronger capitalization

### A.M. Best's BCAR: Application to Ratings

#### **Considerations for BCAR categories:**

- § Examine new BCAR scores for the various return periods to understand a company's "tail" risks and drivers
  - § Confidence level at which drop-off occurs
  - § Drivers and degree of downward slope
  - § Volatility of BCAR over time
- § BCAR score > 0% being considered as adequate
  - § Available Capital is greater than Required Capital
  - § May limit rating depending on other rating factors
- § Balance sheet strength assessment will be calibrated to return periods



Company A and Company B are rated "A" with identical current BCAR scores. However under the new Stochastic BCAR, Company B falls below ZERO after the 1-200yr return period. This will lower company B's balance sheet strength evaluation.

# **BCAR Changes:** Current Version

- BCAR now reflects amount of excess capital relative to available capital
- Added four confidence intervals; i.e. 95.0%, 99.5%, 99.6% & 99.8%



#### **Underwriting Risk**

#### Premium/reserves:

- § Changed size
  adjustment from
  surplus to statement
  value for each LOB
- § Correlation matrices based on size of total reserves & total premium; i.e. 4 size categories



#### **Credit Risk**

# Counterparty credit risk:

- § Replaced the 5 year default curve with ICR default curve & industry payment patterns by LOB (first 10 years)
- § 50% recovery rate



#### **CAT Risk**

#### **Natural CATs:**

- § Replaced a specific view with an all perils global view
- § Moved CAT charge from an adjustment to capital to a new CAT risk charge (B8)
- § NatCat stress test at 1-100 RP for all BCAR results



#### **Investment Risk**

#### **Bond default risk:**

- § Replace SVO with NRSRO credit ratings
- § Vary by maturity

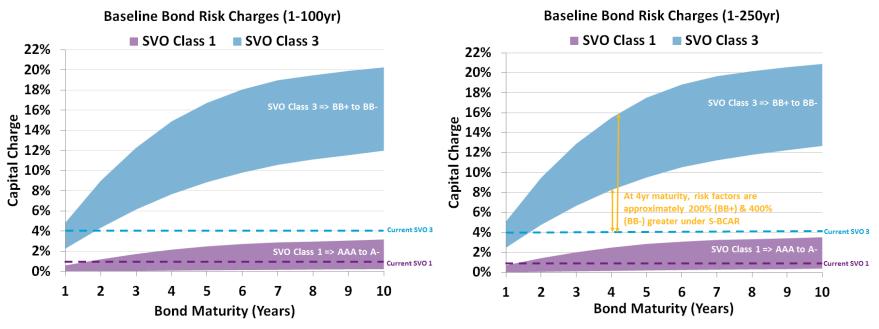
#### Stock market risk:

§ Adjust for Beta & R2

#### **Interest Rate Risk:**

§ Increased interest rate assumptions

### A.M. Best's BCAR: Asset Risk Charges



§ Bond charges relatively unchanged for Gov't, but will increase significantly for lower quality & longer maturities

Asset Risk Factor For ABC Insurance Company:	Current PC	1-20Yr (VaR 95)	1-100Yr (VaR 99)	1-200Yr (VaR 99.5)	1-250Yr (VaR 99.6)
Public Common Stock	15%	25.0%	38.0%	43.0%	44.0%

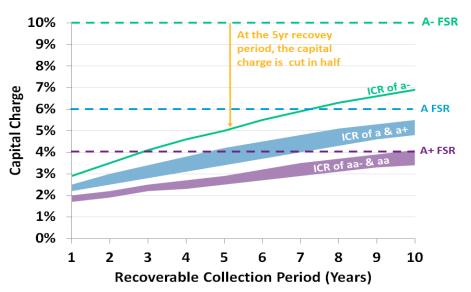
- § Proposed stock charges significantly higher & will vary by confidence level
  - § Table does not show impact of company specific portfolio "Beta"

Source: A.M. Best

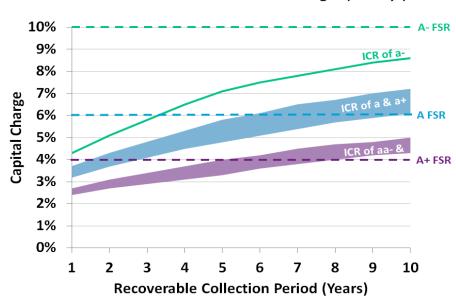
# A.M. Best's BCAR: Credit Risk Charges

- § Material improvement in the credit risk charges of reinsurance recoverables for well rated reinsurers (vs. old model)
  - § Significant reduction at the 99.0% confident interval (1-100yr) for all years





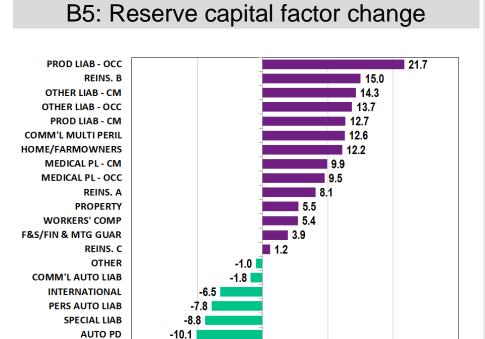
#### Reinsurance Recoverables: Risk Charges (1-250yr)



Source: A.M. Best & Willis Re

# A.M. Best's Stochastic Based BCAR: Reserve & Premium Risk Charges

- § Old BCAR is based on a 1% Expected Policyholder Deficit (EPD)
- § Stochastic BCAR will be based on Value at Risk (VaR)
- § Adj. capital factors will continue to reflect Co. size, reserve stability, & profitability
  - § New size adjustment more than offsets the adverse impact of change



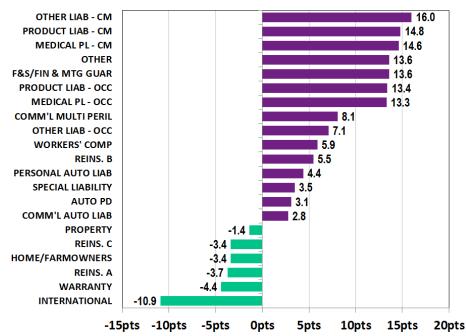
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10pts

20pts

30pts





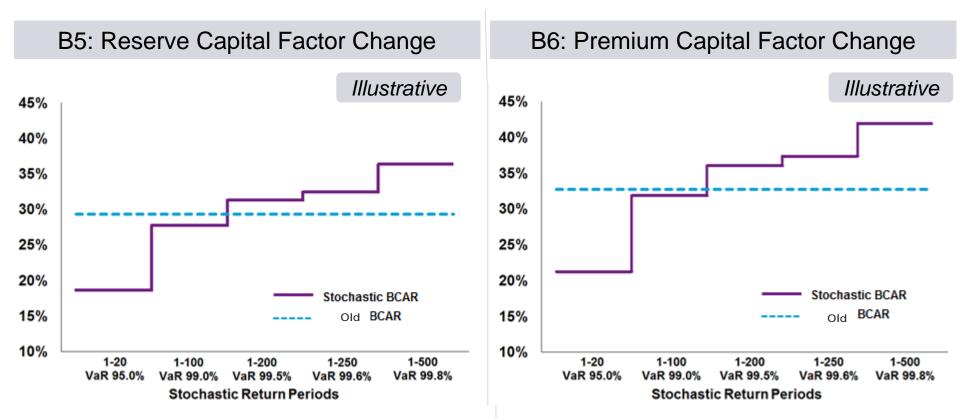
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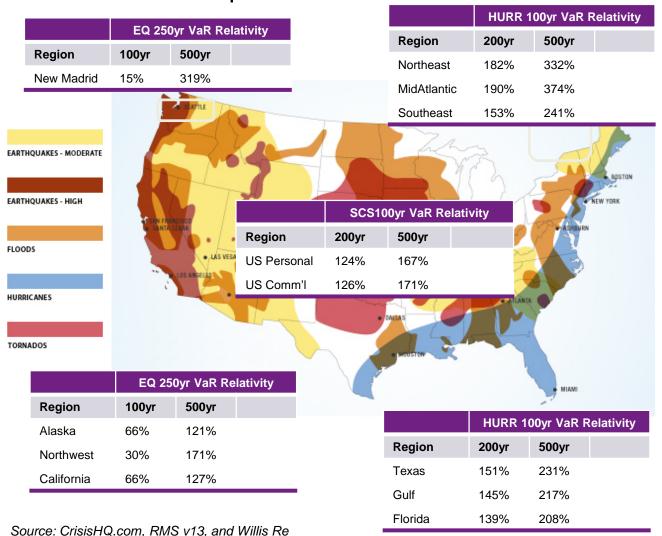
# A.M. Best's BCAR: Reserve & Premium Risk Charges



- $\S$  Old BCAR is roughly aligned to the 1-100 year return period
- § New model higher return periods generally lead to higher capital factors
  - § However, factors at higher return periods may not fully reflect all tail risks such as casualty cat or other emerging risks

### **Model Capital Factor Impact:**

Natural Catastrophes



- We modeled the gross industry portfolio using the RMS model
- A.M. Best currently charges EQ at 250yr or Hurricane at 100yr
- § EQ risk significantly declines below 250yr
- § HURR risk increases above 100yr period
- § Particularly Northeast
- Net PMLs may show "cliff" beyond level of reinsurance
  - § Particularly if only purchase limit to current BCAR requirements

### **Stochastic BCAR:** Catastrophe Stressed Assessment

- § The table below summarizes the impact of the stressed BCAR assessment on the overall capital assessment
- § If the standard score is greater than "Adequate" (BCAR @ 1-00 > 0%), then stressed BCAR assessment is allowed to be one level lower
  - § There may be greater tolerance for more significant drops if the company exhibits financial flexibility

Standard BCAR Assessment	Stressed BCAR Assessment	Revised BCAR Assessment	
Adequate or greater	1 assessment lower than standard	= Standard BCAR assessment	
Adequate	Weak ( > 95%)	= Adequate	
Adequate	Very Weak ( < 95%)	= Weak	
Weak	Very Weak (< 95%)	= Very Weak	

# **Best's Credit Rating Methodology**





# A.M. Best's new scorecard

Λ	M Post Eve	Iluation Process	Adjustment		<u>FSR</u>	ICR [	Descriptor
Α.	Balance Sheet	§ BCAR & stress test § Other B/S Items			A++	aaa aa+	Superior
Risk	(Implied ICR)	§ Consolidated BCAR § Holding Co. Review	Implied ICR	Grade	A+	aa aa-	Superior
Country R	Operating Performance	§ UW Performance § Operating Earnings	+2/-3	Investment	Α	a+ a	Excellent
5	renomiance	§ Inv. Performance § Forecasts		se/	A-	a-	Excellent
ပိ	Business	§ Product Concentration § Product Risk	+2/-3	≦	B++	bbb+ bbb	Good
	Profile	§ Geo. Concentration § Market Position	TZ/ 3		B+	bbb-	Good
	ERM	§ Product/UW § Tail exposure	+1/-4		В	bb+ bb	Fair
		§ Risk Appetite § Inv. & Country Risk		d)	B-	bb-	Fair
	Comp	Recognizes a truly uncommon strength/     weakness not captured elsewhere	+1/-1	Grade	C++	b+ b	Marginal
	Adjustment	weakness not captured eisewhere	71/1	<u>≤</u>	C+	b-	Marginal
i	Enhancement	Non-lead rating units may be eligible for partial	Veried	Speculative	С	ccc+	Weak
	Emancement	rating enhancement due to affiliation	Varied	Spe	C-	CCC-	Weak
			ICR		D	С	Poor
		ts noted for each rating element are not intended to reflect an	FSR		E/F	d/e/f F	Reg. Supervision
	xhaustive list of all p Source: A.M. Best &	ossible components. Willis Re			NR	Not rat	ted by A.M. Best

A.M. Best

# **Balance sheet strength assessment**

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Descriptor	Baselin Confidence Level	e BCAR Threshold	Confidence		Implied ICR	Other B/S Items		Positive	Neutral	Negative	Very Negative
Strongest	99.6	>25%	99.6	>10%	a+/a	§ Asset;	Strong- est	0	0	-1	-3
Very Strong	99.6	>10% • 25%	99.5	>0%	a/a-	§ Quality § Diversity	Very Strong	+1	0	-1	-3
Strong	99.5	>0%	99.0	>0%	a-/bbb+	§ Reinsurance; § Quality	Strong	+1	0	-1	-3
Adequate	99.0	>0%	95.0	>0%	bbb+/bbb-	§ Diversity § Purpose	Adeq- uate	+1	0	-1	-2
Weak	95.0	>0%	95.0	>0%	bb+/bb-	§ Op Leverage § Liquidity & C/F	Weak	+1	0	-1	-1

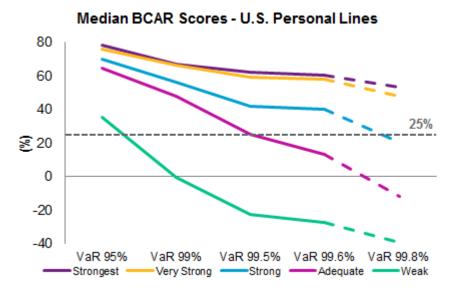
- § Assessment of balance sheet strength (B/S) is three fold; rating unit analysis, holding company assessment, & country risk evaluation
- § Rating unit analysis starts with BCAR & included additional analytical factors
  - § Quality of capital, utilization of reinsurance, ALM, diversity of investments & liquidity

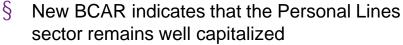
Source: A.M. Best & Willis Re

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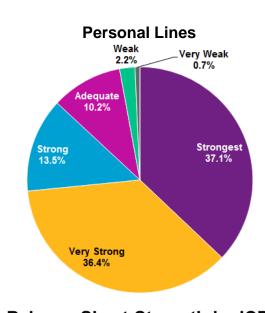
# **Balance sheet strength assessment distribution**

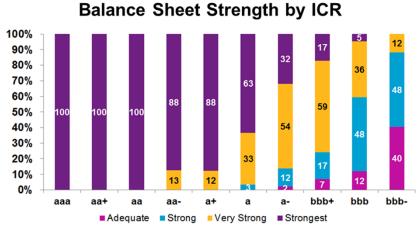
BCAR score is often adjusted downwards for qualitative factors





- § Results show significant BCAR capital cushions
- § BCAR is not sole determinant of BSS assessment
- S Despite BCAR scores >25%, almost 50% of sector did not earn "Strongest" BSS assessment





Source: A.M. Best

# **Balance sheet strength assessment**

#### Willis Re illustrative assessment of BSS

											lmp	act '	r								
Initial BCAR Assessment Incl. Stress Results	Implied ICR	Slope	BCAR Cushion	Stability	Quality of Capital & ALM	Re- insurance Program	Liquidity & Cash Flow	Financial/ Operating Leverage		Positive	Neutral	Negative	Very -ve	Combined BSS Assessment	Country Risk Overlay	Selected ICR					
Strongest	a+/a	Flat	Large		Strongest				Srong- est	0	0	-1	-3	Strongest		a+/a					
Very Strong	a/a-	Flat	Large	Stable	Very Strong	Appropriate & Diverse	& Diverse					Appropriate	Low	Very Strong	+1	0	-1	-3	Very Strong	1-5	a/a-
Strong	a-/bbb+	Slight Slope	Medium		Strong		Арргорпасе		Strong	+1	0	-1	-3	Strong	sk Tiers	a-/bbb+					
Adequate	bbb+/bbb-	Larger Slope	Small	Relatively Stable	Adequate	Appropriate		Moderate	Adeq- uate	+1	0	-1	-2	Adequate	ntry Risk	bbb+/bbb-					
Weak	bb+/bb-	Steep	None	Volatile	Weak	Weak	Weak	High	Weak	+1	0	-1	-1	Weak	Country	bb+/bb-					
Very Weak	b+ and below	Jieep	None	voiaule	Very Weak	Very Weak	Very Weak	riigii	Very Weak	+1	0	0	0	Very Weak		b+ and below					

\*These are descriptor notches

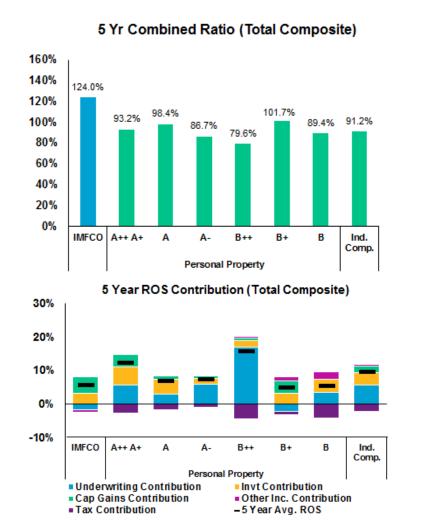
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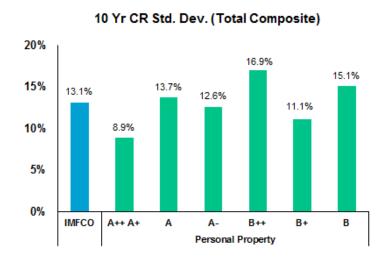
- § "Strongest" (a+/a) initial BSS assessment from BCAR; also, passes the two events stress test
- § BCAR has a flat slope with a large cushion at higher confidence levels
  - § Score outperforms median composite score
- § Strong reserve position as reflected by consistent favorable reserve development over the past ten AYs
- § Aggressive common stock leverage mitigated considerably by excellent level of risk-adjusted capitalization and conservative underwriting leverage
- § The company has begun investigating reinsurance options for its emerging homeowners' business
- § "Strongest" (a+/a) final BSS assessment and ICR

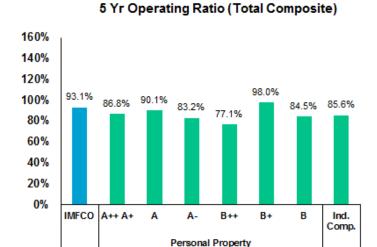
Source: A.M. Best & Willis Re

# Operating performance: Earnings stability, diversity, sustainability

### Selected elements from Willis Re Ratings benchmarking

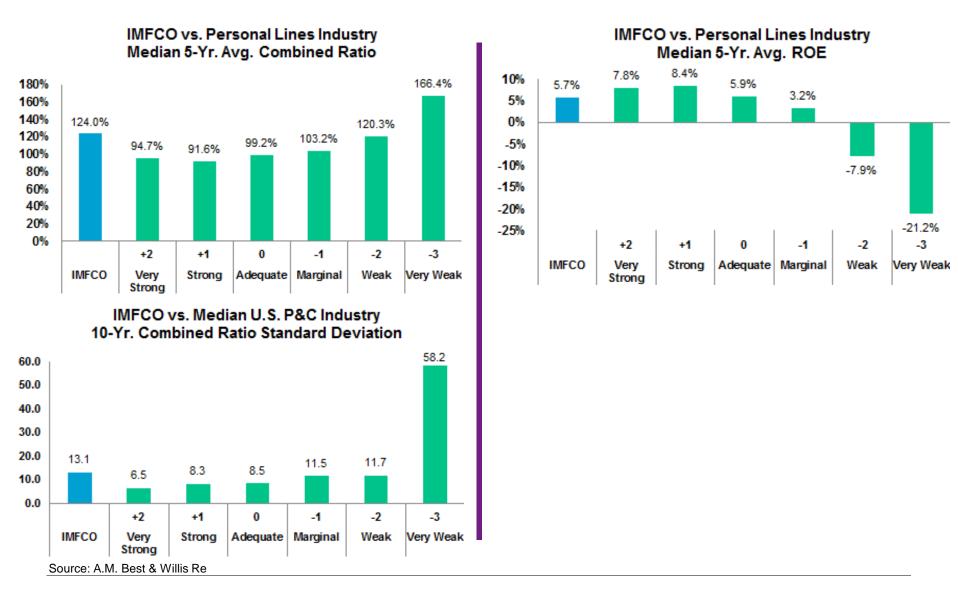




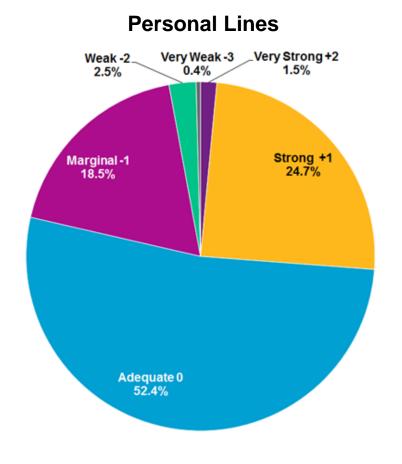


Source: A.M. Best & Willis Re

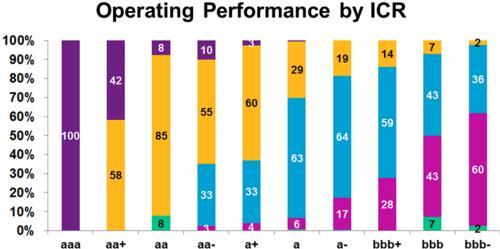
# Operating performance: Personal lines results released by Best



# Operating performance assessment distribution



Most personal lines carriers have an "Adequate" operating performance due to underwriting results near breakeven



Adequate 0

Strong +1

■ Very Strong +2

Source: A.M. Best

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■ Weak -2 ■ Marginal -1

# **Operating performance assessment**

#### Willis Re illustrative assessment of OP

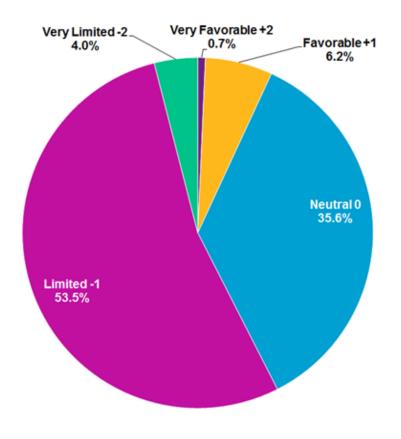
- § Looking at level, trend and volatility
- § "Marginal" OP assessment
  - § **Historical results:** 5-year average underwriting and operating performance worse than peers
  - § **Trends:** Earnings trend inconsistent in the past 5 years
  - § **Volatility:** Higher volatility compared the P&C Industry, but in line with personal property peers
  - § **Quality of earnings:** Operating profitability has been driven by investment income and capital gains that have offset underwriting losses

OP Assessment	Adjustment (Notches)	and Operating Operating		Operating	Volatility of Key Metrics	Quality of Earnings
Very Strong	+2	Exceptionally Strong	Positive	Exceptionally Strong	Low	Very Strong
Strong	+1	Strong	Neutral/Slightly Positive	Strong	Low to Moderate	Strong
Adequate	0	Neutral	Neutral	Neutral	Moderate	Neutral
Marginal	-1	Inconsistent	Neutral/Slightly Negative	Uncertain	Moderate to High	Uncertain
Weak	-2	Poor	Slightly Negative	Poor	High	Poor
Very Weak	-3	Very Poor	Negative	Very Poor	Very High	Very Poor

Source: A.M. Best & Willis Re

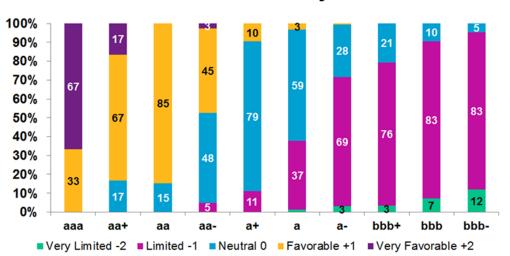
### **Business profile assessment distribution**

#### **Personal Lines**



- § Best reviews various business profile characteristics
- § Most companies have a Profile viewed as "neutral" or "limited"

#### **Business Profile by ICR**



Source: A.M. Best

# **Business profile assessment**

#### Willis Re illustrative assessment of BP

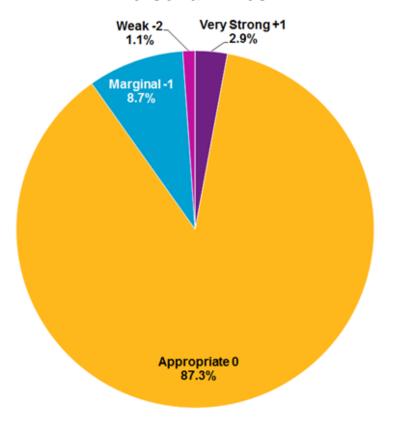
- § "Limited" BP assessment
  - § Product concentration in fire, burglary, and allied lines coverages; limited market presence
  - § Elevated product risk
  - § Geographically diverse spread of risk

BP Assessment	Adjustment (Notches)	Market Position	Degree of Competition	Product Risk	Product/ Geographic Concentration	Distribution Channels	Management Capabilities	Data Management	Regulatory & Market Risk
Very Favorable	+2	Unquestionable Market Leadership / High Brand Recognition	Very Low	Non-Correlated Business Lines with Low Risk	Significant Diversification	Competitive Advantage	Very Strong	Very Strong	Very Low
Favorable	+1	Market Leader / Strong Business Trends	Low	High to Moderate Barriers to Entry	Diversified Operations in Key Markets	Good Control	Strong - Meets Projections	Utilizes Data Effectively	Low
Neutral	0	Not a Market Leader, but Competitive	Neutral	Moderate Risk / Limited Severity & Frequency of Loss	Adequate Spread of Risk	Some Concentration / Limited Control	Adequate	Evolving Use of Technology	Moderate and Stable
Limited	-1	Low Presence / Not Competitive	High/Increasing Competition / Low Barriers to Entry	Elevated Risk	Lack of Diversification	Limited Control / Undifferentiated	Weak	Unable to utilize data effectively or consistently	High / Increased
Very Limited	-2	Very Low Presence / Not Competitive	High Competition / Low Barriers to Entry	Commodity / Higher-Risk	Very Limited Diversity	Very Limited Control / Undifferentiated	Very Weak	Weak Data Management	Very High

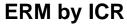
Source: A.M. Best & Willis Re

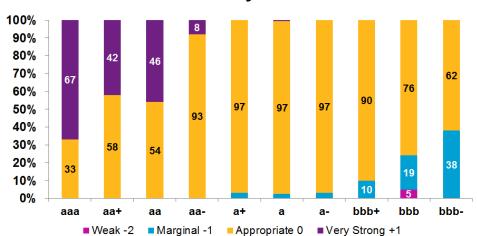
#### **ERM Assessment Distribution**

#### **Personal Lines**



- § Overall, most companies are assessed "Appropriate"
- We can expect more variation in ERM
   assessments over time as analysts spend more
   time assessing ERM.





Source: A.M. Best

# **Scoring of the ERM framework**

#### **Embedded** Integrated; Robust; Proven **Scoring of the ERM Framework** Integrated; Some development in Risk Identification & Reporting **Developing** progress: Not tested Risk Appetite & Tolerance Process is implemented; Development **Emerging** Risk Management & Controls continuing Governance & Risk Culture Process started; Initial development **Nascent** Stress Testing of Capital stages No process in place; Need not yet Unrecognized recognized

#### **Attributes of a Strong ERM Framework**

- § Results in a prudent level of capital & performance on a risk adjusted basis
- § Integrate risk metrics into corporate, business unit & functional areas
- § Embedded in the financial planning, decision making & evaluation process (i.e. performance and incentive metrics)

Source: A.M. Best & Willis Re

# Scoring of management capabilities

- § Risk Evaluation
  - § Assessment of risk profile relative to risk management capabilities
- § Score Risk Profile and Risk Management Capability separately

Risk Evaluation	Risk Profile	Risk Management Capabilities
Product/Underwriting	Types of products; historical experience; level of diversification	Implementing product changes; risk mitigation strategies; correlation management
Reserving	Historical reserve adequacy; current reserve position; liability tail	Philosophy (midpoint, margins, etc.); LOB trends in adequacy; reserving process & exp.
Concentration	Investments; product; geography; distribution; regulatory	Controls; mitigation strategy; track record; length of time in given area of concentration
Reinsurance	Counterparty credit risk; dispute risk; dependence on reins.; reins. market conditions	Appropriateness of program; decision making process; historical experience
Liquidity & Capital Management	Financial wherewithal & ability to raise funds; structural considerations; needs of parent	Potential sources; timeliness of capital raise; overall cap mgmt philosophy; leverage/coverage
Investments	Investment mix & duration; riskiness of invested assets; ALM philosophy reflecting liability & liquidity needs	Ability to monitor/manage portfolio; investment guidelines; degree of oversight; stress testing & analysis
Legislative/Regulatory/ Judicial/Economic	Macro-environmental conditions; regulatory exposure; potential impact on pricing & strategy	Ability to identify, monitor & measure risks; historical experience; level of preparedness

Source: A.M. Best & Willis Re

#### **ERM** assessment

#### Willis Re illustrative assessment of ERM

- § ERM capabilities are viewed in light of the scope & complexity of its business
- § A Risk Impact Worksheet (RIW) assesses the risk management framework & capabilities
- § "Appropriate" ERM assessment
  - § Risk management capabilities are in line with A.M. Best's expectations, which consider the size and complexity of the business
  - While no formal ERM program is in place, the company is conservative in its account selection and underwriting exposures

ERM Assessment	Adjustment (Notches)	ERM Framework	Risk Management Capabilities given Risk Profile		
Very Strong	+1	Sophisticated, Time/Stress-Tested, Embedded across Enterprise	Superior / Suitable		
Appropriate	0	Well-Developed / Adequate	Very Good / Well Aligned		
Marginal	-1	Developing, but certain key elements are inadequate	Some capabilities are not aligned		
Weak	-2	Emerging / Management is exploring the development of formal risk protocols	Insufficient		
Very Weak	-3/4	Limited Evidence of Framework	Severe Deficiencies		

Source: A.M. Best & Willis Re

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