CAS REINSURANCE
RUN-OFF AS A BUSINESS

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Agenda

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- Market Overview
- Example transaction

Runoff Market

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- The global P&C run-off insurance market is large and growing
- The run-off transaction landscape is the busiest it has been in years.
- There are a number of reasons why insurers decide to sell run-off books of businesses:
  - Release Capital
  - Address regulatory or rating agency issues
  - Exit insurance lines with low profitability and/or low growth
  - Discontinue strategically unattractive parts of acquisitions
  - Limit the level of management distraction in operating noncore businesses
  - Manage Claim Volatility
  - Achieve finality by selling or reinsuring liabilities

2017 Transactions (1)

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Hartford announces $1.5 billion reinsurance agreement with Berkshire Hathaway's National Indemnity Company (January 3, 2017)

- Effective December 31, 2016, covering A&E exposures; Excludes UK run-off subsidiary
- Coverage is $1.5 billion excess $1.7 billion for $650 million
- Hartford retains claims handing and reinsurance collections
- Retroactive reinsurance accounting
- Hartford takes $423 million post tax charge

Source: Company press release and related public disclosures

2017 Transactions (2)

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Enstar announces closing QBE U.S. multi-line P&C reinsurance agreement (Jan 11th)

- $919 million gross / $444 million net discontinued reserves
- Primarily WC, CD and GL
- Enstar will provide administrative services
- Collateralized and parental guarantee

Source: Company press release and related public disclosures

2017 Transactions (3)

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AIG announces $20 billion reinsurance agreement with Berkshire Hathaway's National Indemnity Company (Jan 20th)

- Covering U.S. commercial exposures for accident years 2015 and prior as of Jan 1, 2016
- Coverage is 80% of $25 billion in excess of $25 billion for $9.8 billion plus 4% interest from January 1, 2016 until the premium is paid (expected June 30, 2017).
- AIG retains claims handling authority and reinsurance collections
- Charge taken in 4Q16 by AIG and will be accounted for in 1Q17 with premium paid in 2Q17
- Retroactive reinsurance accounting
- AIG will take a material prior adverse development charge in 4Q16
- Berkshire Hathaway, Inc. provides a parental guarantee to NICO

Source: Company press release and related public disclosures

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No discussion of runoff is complete without Asbestos

- More than 100 defendant company bankruptcies
- Favorable Developments:
  - Virtual elimination of unimpaired claimants
  - Mesothelioma victims correctly receive most of the money paid to claimants
- Unfavorable Developments:
  - Mesothelioma deaths have not declined as fast as once predicted
  - Life expectancy and female cases are commonly cited factors in recent trends

Simple Demographics (not scientific)**:**

- OSHA tightened safety regulations in 1972
- A 30 year old worker in 1972 is 75 years old today
- That worker had 10+ years of experience prior to OSHA changes
- Most mesothelioma victims are in their 70s and 80s

The situation is worse in the UK where heavier use of asbestos persisted into the late 1970s and early 1980s.

Trends / Opportunities

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(Re)Insurance Market Trends

- Competitive environment / tight margins
  - Managing underperforming lines
  - 90% drop in 2016 C/L UW profit*
  - PHS grew 6.5%* → more capital chasing the same business
- Increased focus on capital requirements
- Increasing M&A activity
- Reserve deficiency increasing for some
  - Favorable PYD has run its course
  - Unfunded asbestos liabilities

Run-off Opportunities

- Reinsurance solutions
  - Loss portfolio transfers
  - Adverse development covers
- Capital solutions
  - Part VII transfers
  - Reduction in economic volatility
- Captives
  - Deductible buyouts
- M&A
  - Risk transfer solutions

* Source: AM Best

US Regulatory Options

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There are laws in other states that have been used in restructuring insurance companies, but Reg 68 and LIMA are the most prominent.

Rhode Island Regulation 68 (August 2015)

- Similar to UK Part VII transfer rules – legal finality
- Insurance Business Transfer (IBT) for commercial insurance
  - Approval o the domestic regulator
  - IBT plan approval by Rhode Island, including an expert/actuarial impact analysis
  - Court approval of the IBT plan

Vermont Legacy Insurance Market Act (LIMA)

- Closed blocks of non-admitted commercial P&C risks
- Regulatory approval only
- Policyholder opt-out option

Illustrative transaction – Summary

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100% Quota Share Limited = $80,000

1.	Cedant's Carried Reserve (Loss & ALAE)		$ 50,000
	Reinsurer's Best Estimate		
2.	Nominal		51,000
3.	Discounted @ 2.5%	85%	43,299
	Pricing		
4.	LPT Portion		43,299
5.	Limit Above Best Estimate @ 20% Rate-on-Line	$ 29,000	5,800
6.	NPV Unallocated LAE @ 5% of Loss	5%	2,165
	Subtotal before Acquisition Expenses		51,264
7.	Gross up for Acquisition Expenses	2%	52,310

$52M premium for LPT with $30M limit above $50M carried reserve, including transferring claims handling responsibility

Illustrative transaction – ROE

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Return on Equity Analysis

1. Discount rate 2.50%
2. Investment return 3.50%

NPV: Average Capital
130,932

NPV: Investment Income
16,357

Return on Equity **12%**

IRR of Capital Flow **12%**

Year	Reserves	Payments	Required Capital	Average Capital	Invested Assets	Investment Income	Dividends
Inception	53,550		21,420		74,970		(21,420)
1	48,731	4,820	19,492	20,456	68,223	2,540	4,467
2	43,911	4,820	17,564	18,528	61,475	2,303	4,231
3	39,092	4,820	15,637	16,601	54,728	2,067	3,995
4	34,272	4,820	13,709	14,673	47,981	1,831	3,759
5	29,453	4,820	11,781	12,745	41,234	1,595	3,523
21	2,142	536	857	964	2,999	122	336
22	1,607	536	643	750	2,249	96	310
23	1,071	536	428	536	1,499	69	284
24	536	536	214	321	750	43	257
25	-	536	-	107	-	17	231
Total		53,550				18,743	

The calculations above include some simplifications but the intent is to show the equivalence of ROE and IRR of capital flows. For additional details see "Determining the Proper Interest Rate for Loss Reserve Discounting: An Economic Approach", Robert Butsic' 1988

Illustrative transaction – Full Limit Loss

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- One easy assessment of downside risk to an analysis of a full limit loss
- Perform an internal rate of return calculation to determine the return required to fund the worst case losses
- Useful to score risks from alternative reinsurance structures

IRR = 8.7%

Year	Payments	
Inception	(51,264)	<-- Premium
1	7,560	<-- Loss Paymemts
2	7,560	
3	7,560	
4	7,560	
5	7,560	
21	840	
22	840	
23	840	
24	840	
25	840	
Total Losses Paid	84,000	

Risk Transfer – FAS113

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Premium	**52.3**

	Result	Pass/Fail
Test 1: 10% risk of 10% Loss	-7.4%	**FAIL**
Test 2: Expected Reinsurer Deficit > 1%	2.10%	**PASS**

Aggregate Loss Distribution	
Mean	**53.6**
CV	**15.00%**
St Dev	8
Mu	3.96949
Sigma	0.14917

Limit **80**

Risk Free Rate **2.00%**

Percentile	Probability	Gross Loss Distribution	Limited Gross Loss Distribution	NPV Limited Gross Loss Distribution	NPV Underwriting G/(L)	Underwriting G/(L) as % Premium	Conditional G/(L) given (L)
10.00%	1.00%	44	44	38	14	26.8%	0.0%
20.00%	1.00%	47	47	41	11	21.8%	0.0%
30.00%	1.00%	49	49	43	9	18.0%	0.0%
40.00%	1.00%	51	51	45	8	14.6%	0.0%
50.00%	1.00%	53	53	46	6	11.3%	0.0%
60.00%	1.00%	55	55	48	4	7.9%	0.0%
70.00%	1.00%	57	57	50	2	4.1%	0.0%
80.00%	1.00%	60	60	53	(0)	-0.5%	-0.5%
90.00%	**1.00%**	**64**	**64**	**56**	**(4)**	**-7.4%**	**-7.4%**
91.00%	1.00%	65	65	57	(4)	-8.3%	-8.3%
92.00%	1.00%	65	65	57	(5)	-9.4%	-9.4%
93.00%	1.00%	66	66	58	(5)	-10.5%	-10.5%
94.00%	1.00%	67	67	58	(6)	-11.8%	-11.8%
95.00%	1.00%	68	68	59	(7)	-13.3%	-13.3%
96.00%	1.00%	69	69	60	(8)	-15.1%	-15.1%
97.00%	1.00%	70	70	61	(9)	-17.4%	-17.4%
98.00%	1.00%	72	72	63	(11)	-20.5%	-20.5%
99.00%	1.00%	75	75	66	(13)	-25.5%	-25.5%
99.99%	0.99%	92	80	72	(20)	-38.2%	-38.2%

Expected Reinsurer Deficit	**-2.10%**

Risk Transfer Testing

- Model of cash flow between parties
- Insurance risk only
- Single discount rate
- No consideration of income tax, reinsurer expenses, brokerage or credit risk
- Reasonable possibility of significant reinsurer loss

Capital impact of the deal

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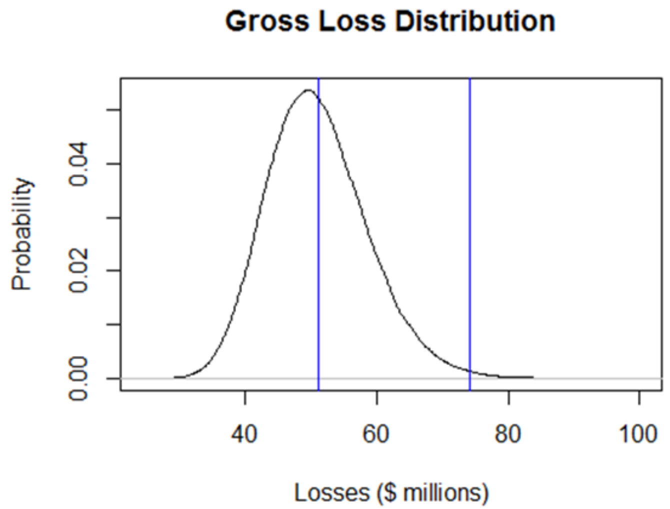
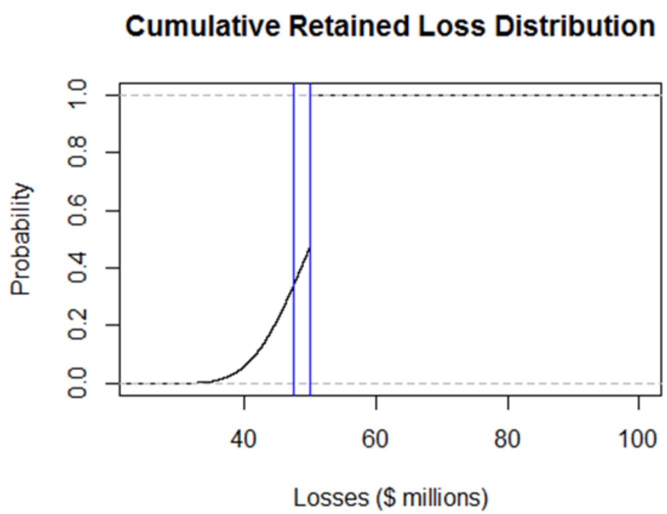




Impact of 30M xs 50M ADC

Gross Loss Distribution

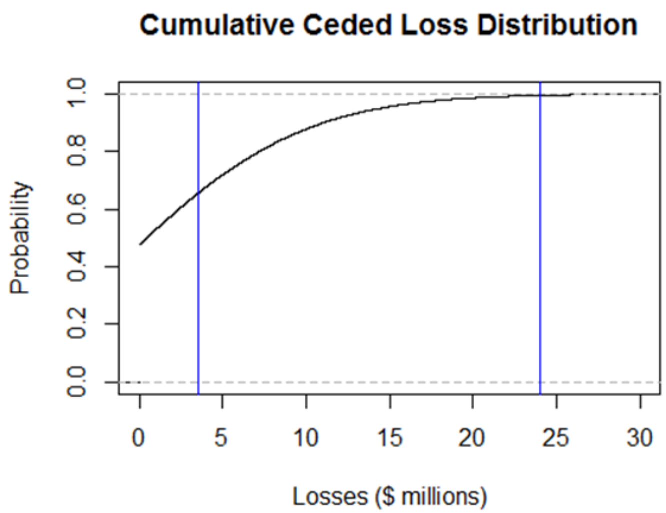
- Mean loss = 51M
- 99.5th Percentile = 74M
- Capital (undiversified) = 23M

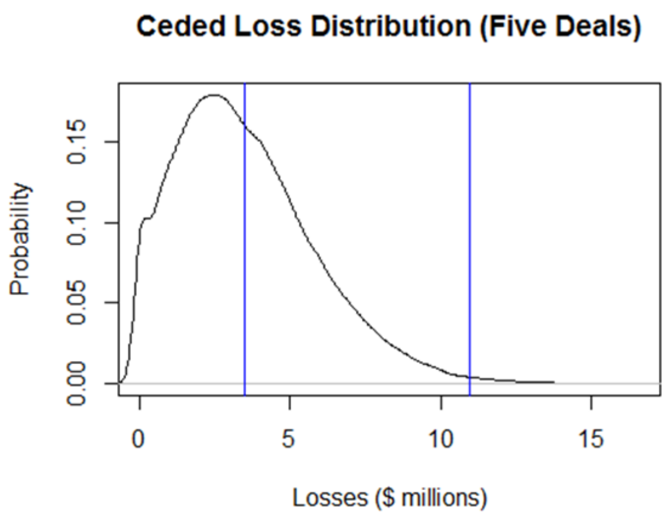
Capital Relief

Net Loss Distribution

- Mean loss = 47M
- 99.5th Percentile = 50M
- Capital (undiversified) = 3M

Reinsurer diversification





Diversification from five deals

Ceded Loss Distribution (one deal)

- Mean loss = 3.5M
- 99.5th Percentile = 24M
- Capital (undiversified) = 20.5M

Diversification

Diversification over five deals

- Mean loss = 3.5M
- 99.5th Percentile = 11M
- Capital (undiversified) = 7.5M

Thank You

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