CAS REINSURANCE
RUN-OFF AS A BUSINESS

JUNE 4, 2018

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Agenda

- Market overview
- Recent transactions
- Accounting considerations
- 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

Trends / Opportunities

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Run-off Opportunities

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

Recent Transactions

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Berkshire's ADC for Hartford

- US asbestos & environmental
- $1.5B ADC excess of $1.7B
- $650mm premium
- December 31, 2016

Source: BRK 2016 10K and press release

Catalina's 2016 IBT with Zurich

- German medical malpractice
- Reserves=$450mm
- "…release capital from non-core business."

Source: Company press release and Investor Day presentation

Enstar's IBT with RSA

- UK Employers Liability
- 75% asbestos exposure
- Reserves = £834mm
- Premium = £799mm
- Reinsurance with Part VII to follow in 18-24 months

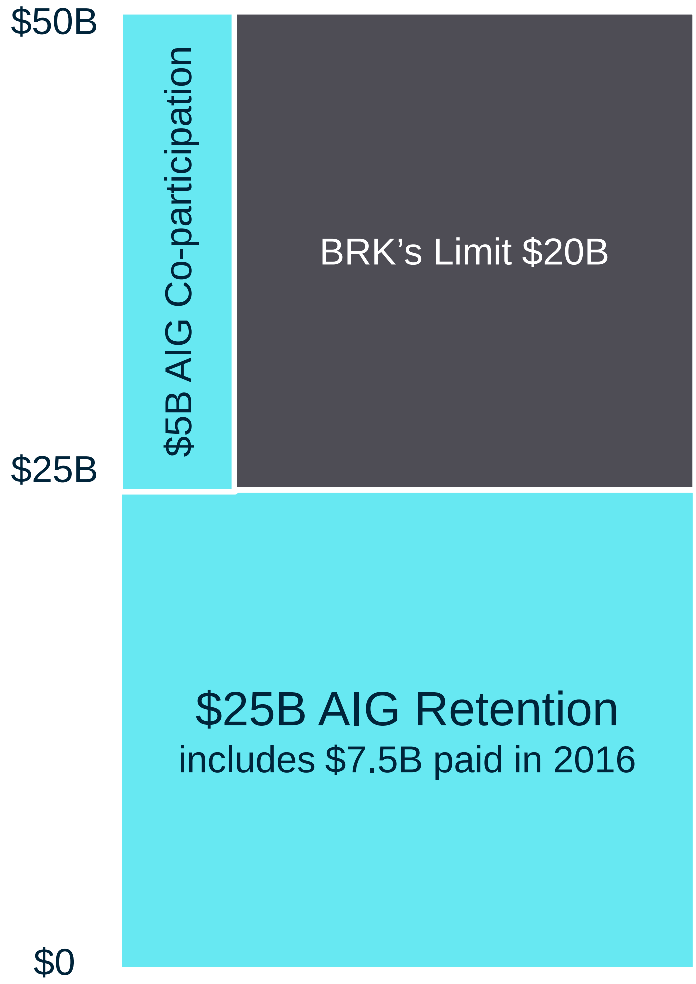
Source: Company press release

Berkshire's LPT for Liberty

- LPT for pre-'05 A&E
- Pre-'14 WC excess of $12.5B
- Agg limit = $6.5B
- Premium = $3.0B

Source: BRK 2014 & 2015 10K

BRK / AIG Retroactive Reinsurance



Deal Summary

- 80% share of $25B xs $25B
- Effective February 2, 2017
- Accident years 2015 & prior
- Paid on or after January 1, 2016
- US Commercial long tail business
- $10.2B Premium

Source: Berkshire Hathaway 10 – Q/K

BRK / AIG Deal Disclosures

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Berkshire Hathaway Reported:

- Estimated ultimate loss = $16.4B at inception
- Cash consideration received = $10.2B
- Deferred Charge Asset = $6.2B at inception
- 4th Quarter 2017:
  - – Estimated ultimate loss increased to $18.0B
  - – DCA increased $1.7B
- Unamortized DCA at 31-Dec-2017 = $7.5B, implies ~$500mm amortized in 2017
- Expected cash flow (at inception)
  - – 2020-2021 Expected loss payments = $3.6B
  - – 2022 & Sub Expected loss payments = $12.8B
- AIG retains claim handling

Source: Berkshire Hathaway 10 – Q/K

US GAAP

- No gain/loss at inception
- Undiscounted loss reserves
- Reinsurer books deferred charge asset equal to reserves in excess of consideration received
- Ceding company books a corresponding deferred liability
- DCA amortization
  – Payment method
  – Interest method (example)

NAIC Statutory

- Allows for day one gain/loss to surplus and other income
- No impact on loss reserves, Sch P or Sch F
- Liability/Contra Liability write-ins for assuming/ceding company
- Ceding company surplus gain is recorded as "Special Surplus" that unwinds into unrestricted surplus once recoveries exceed premium paid

GAAP Deferred Charge Asset (Illustration)

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Assumed Loss (Undiscounted)	$ 10,000
Cash Received	8,500
Deferred Charge Asset	1,500
GAAP Financial Impact at Inception	$ -

Year	1	2	3	8	9	10	Total
Payment Pattern	0%	0%	5%	10%	5%	5%	100%
Loss Payments	-	-	500	1,000	500	500	10,000
Loss Reserves (EOY)	10,000	10,000	9,500	1,000	500	-	
Invested Assets (BOY)	8,500	8,883	8,782	1,506	1,052	588	
Investment Income @ 4.5%	383	400	384	45	36	15	2,103
% of Investment Income	18%	19%	18%	2%	2%	1%	100%
DCA Amortized	**273**	**285**	**274**	**32**	**26**	**11**	**1,500**

- A deferred charge asset (DCA) ensures that there is no financial impact at inception
- DCA is amortized through income over the life of the deal
- Assumption changes reset future amortization and a “catch up” on prior years is booked
- Amortization in proportion to loss payments or investment income are the usual methods

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%	**NPV: Average Capital**	**NPV: Investment Income**
2. Investment return	3.50%	**130,932**	**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

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	Risk Free Rate
80	2.00%

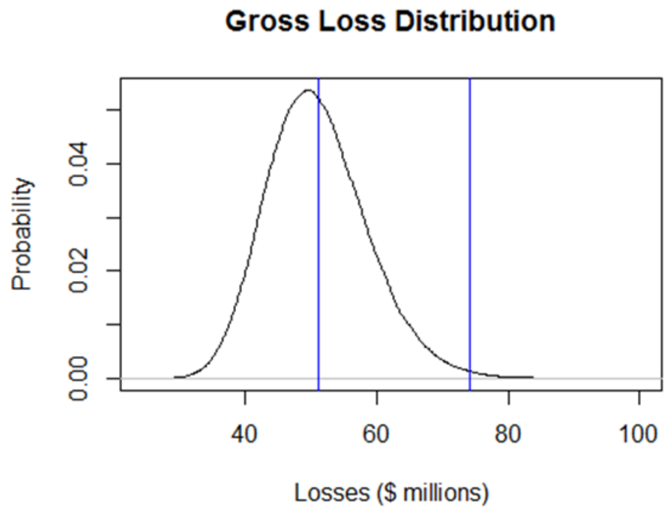
Percentile	Probability	Gross Loss Distribution	Limited Gross Loss Distribution	NPV Limited Gross Loss Distribution	NPV Underwriting G/(L)	Underwriting G/(L) as % Premium	Conditional G/(L) given (L)
10.00%	1.00%	44	44	38	14	26.8%	0.0%
20.00%	1.00%	47	47	41	11	21.8%	0.0%
30.00%	1.00%	49	49	43	9	18.0%	0.0%
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%

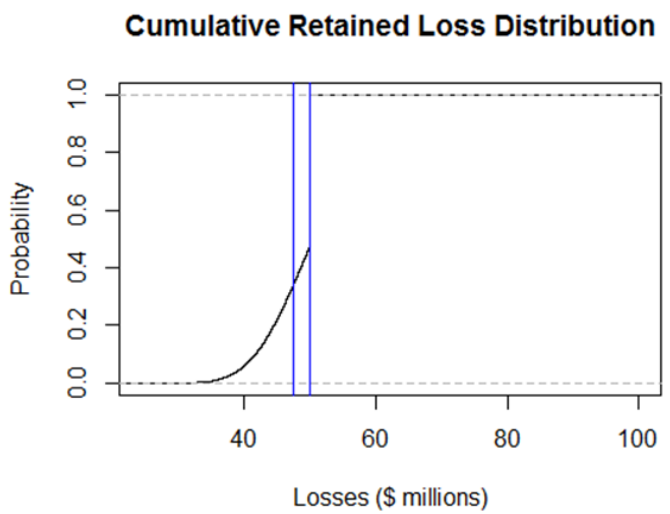
Expected Reinsurer Deficit	-2.10%

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





Impact of 30M xs 50M ADC

Gross Loss Distribution

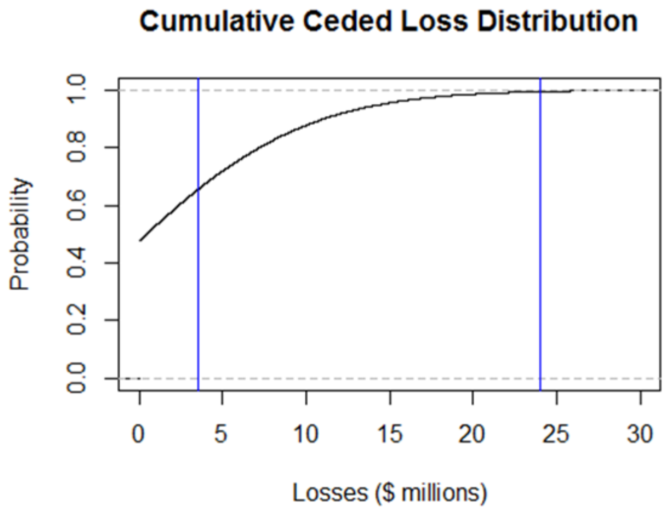
- Mean loss = 51M
- 99.5th Percentile = 74M
- Capital (undiversified) = 23M

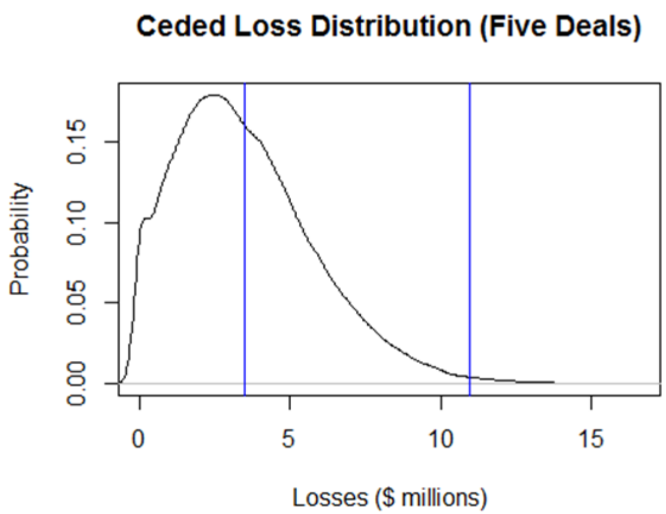
Capital Relief

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
- 99.5^{th} Percentile = 24M
- Capital (undiversified) = 20.5M

Diversification

Diversification over five deals

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

Thank You

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