Willis Re Briefing Note
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Retroactive Market Update - Recent Berkshire Hathaway Transactions

Introduction

Retroactive reinsurance is event-driven and deal volume is seldom consistent from year to year. A quick confirmation of this maxim can be found by looking at the activity of Berkshire Hathaway, the market of choice for large retroactive transactions. After recording only $5m of retroactive reinsurance premium in 2015 (a 19-year low) Berkshire closed a number of large transactions in 2016 and its largest ever in 2017. This note will look at the two largest; with The Hartford and AIG and put them into context compared to prior transactions.

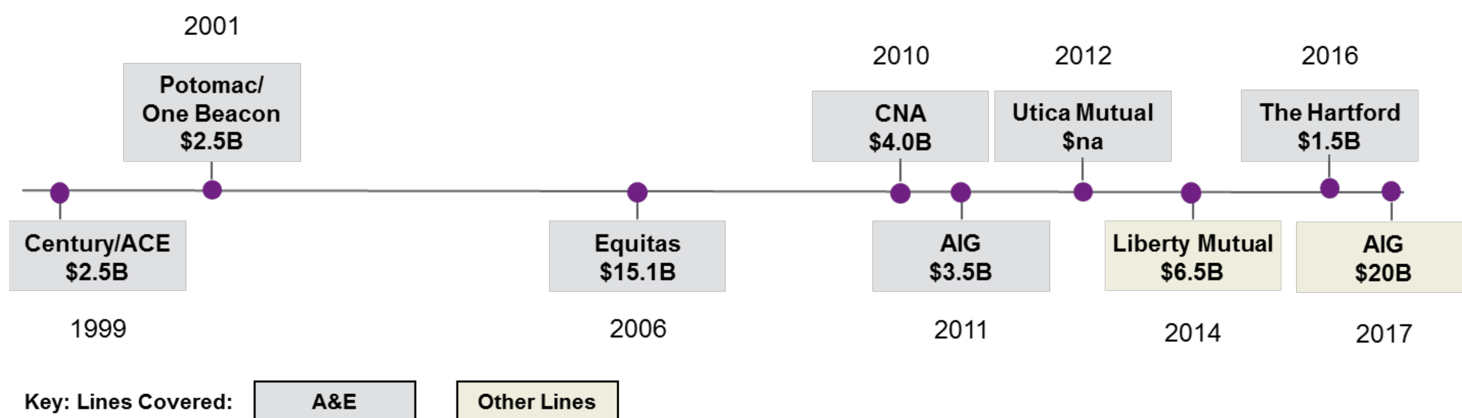

Figure 1 – Timeline of Major Berkshire Hathaway Retroactive Transactions since 1999

Details for each of the transactions on the Timeline in **Figure 1** are included in **Table 1** which follows this Briefing Note. **Table 1** lays out the subject business, form of retroactive transaction (see **Figure 2**), coverage and cost for each based upon publicly available information. The transactions above occurred over a nineteen year time horizon which saw a steady drop in interest rates. Since the reinsurance premium for a retroactive transaction contains a component to cover the present value of ceded carried reserves, similar transactions, executed in differing interest rate environments, will result in different premiums. **Table 1** attempts to adjust for differences in attachment points and then-current interest rates to provide an apples-to-apples estimate of the risk cost for each.

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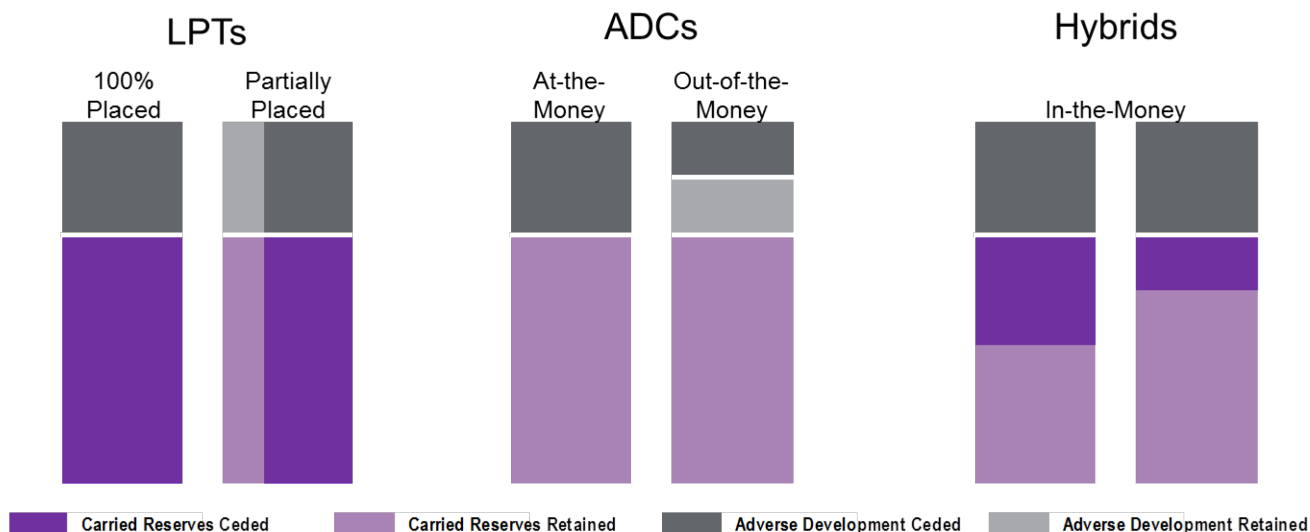

Figure 2 – Forms of Retroactive Transactions

The Hartford Transaction

In January The Hartford announced that they had entered into a retroactive reinsurance transaction with Berkshire Hathaway covering their remaining A&E reserves (in July they had announced that they had entered into a transaction with Catalina covering their UK exposures).

The cover is structured as an Adverse Development Cover (ADC) attaching at their carried reserves of \$1.7b. The ADC provides \$1.5b of limit for a reinsurance premium of \$650m. We've updated our benchmarking table based on these announced parameters (see **Table 1**).

On its face, the announced nominal ROL (43.3%) is on the low side of Berkshire's typical 50% ROL target. However, unlike any of the prior transactions detailed in **Table 1** this transaction is structured as an "at-the-money" ADC rather than a "first dollar" Loss Portfolio Transfer or an "in-the-money" Hybrid. This means that The Hartford did not transfer any *carried* reserves to Berkshire. Berkshire is only covering development therefore 100% of the reinsurance premium is a "risk premium" for possible future development rather than funding for the transfer of known losses.

Adjusting for this in **Table 1** we see that the implied risk ROL of 43.3% (same as nominal since no reserves were transferred) is higher than that estimated for the 2014 Liberty Mutual transaction. However, a more apt comparison may be to the earlier 2011 AIG transaction since, size-wise and coverage-wise, the two are very similar. Both cover A&E portfolios slightly less than \$2b in size (\$1.85b and \$1.7b, respectively) through roughly the same exhaustion point (188.2% and 189.2% of carried reserves respectively). The 2011 AIG transaction however attached at first dollar while the Hartford transaction attached at carried reserves. Adjusting for this, it would appear that the estimated risk ROL for the Hartford transaction was more than twice that for the 2011 AIG transaction (43.3% vs. 20.2%).

This could imply that Berkshire perceives The Hartford's reserves as either significantly riskier and/or shorter tailed than AIG's. This may be the result of differences in reserving patterns between the two companies prior to their respective transactions with Berkshire. The Hartford provided the results of its annual A&E reserve review in its second quarter 2016 earnings release (see slide 6 in the July 28, 2016 *Second Quarter 2016 Financial Results Presentation*) at:
https://ir.thehartford.com/~/media/Files/T/Thehartford-IR/quarterly-results/current/2016-2q/2q-16-slides.pdf

Adverse development has averaged approximately $240m per annum (roughly 12% of prior year ending carried reserves) over the last three years. By contract, AIG strengthened A&E reserves significantly in 2010, recording a $1.3b charge (see slide 14 in the February 25, 2011 *Fourth Quarter 2010 Results Conference Call Presentation*) at: http://www.aig.com/content/dam/aig/america-canada/us/documents/investor-relations/4q10-earnings-release-02-25-11-final-report.pdf

Also worth noting is that unlike the 2011 AIG and other past A&E transactions, The Hartford retains both claims handling and credit risk for uncollectible reinsurance. The retention of claims handling by The Hartford is consistent with their choice of structure since they retain responsibility for the payment of carried claims while AIG transferred their carried claim liability to Berkshire.

The AIG Transaction

Preliminary Assessment

It seemed like the ink had barely dried on the Hartford transaction before this one was announced. This transaction goes outside the A&E space and covers substantially all of AIG's long tail casualty lines for AYs 2015 and prior *except* A&E (which, as discussed above, was transferred to Berkshire back in 2011). This makes it most comparable to the 2014 Liberty Mutual transaction which was also mostly outside the A&E space (about 92% of the reserves covered were Workers' Compensation and only 8% A&E) although the apparent motivations differ.

The 2014 Liberty Mutual transaction appeared to be motivated by a desire to reduce WC exposure rather than concern about development (as evidenced by other actions that year such as the sale of Florida-based WC writer Summit Holdings Southeast Inc. and the relatively low exhaustion point for the coverage provided). The 2017 AIG transaction seems to be more akin to the A&E transactions in that it appears to be motivated by a desire to achieve finality in the light of ongoing adverse development.

As announced, the cover is structured as a Hybrid – attaching "in-the-money" and providing limit excess carried reserves. The coverage attaches at $25b and provides $25b of coverage on a 100% basis but is only 80% placed and so provides $20b of coverage. The coverage is retroactive to January 1, 2016 and was announced before AIG released full year 2016 results. AIG provided figures for the impact of the transaction as of the retroactive date but also stated that they expected material adverse development in 2016 (following approximately $4.1b of adverse development in 2015) so the *actual* carried number on which the transaction was executed was not determinable as of the announcement date.

The announced reinsurance premium was $12.25b ($9.8b at 80%) for a nominal ROL of 49% - essentially equal to Berkshire's 50% ROL standard. Because of the retroactive date, Berkshire will also be receiving interest on the reinsurance premium at 4% between the January 1, 2016 retroactive date and when the reinsurance premium is actually received. If paid in June 2017 as projected this may add close to $600m to the final payment. This shouldn't be viewed as indicative of the discount rate that Berkshire uses internally, but rather as what they were able to negotiate with AIG in return for the January 1, 2016 retroactive date.

Final Figures

AIG released its full year earnings on February 14th after the market close. As evidenced by the 9% drop in AIG's stock price on the 15th despite the ADC, the magnitude of the announced development (nearly $5.8b in total in calendar year 2016 across all lines) was higher than the market had expected given the prior year development ($4.1b in 2015).

The earnings call presented much more information on the ADC than the prior press release and allows a more detailed look at the economics (see especially slides 6-8 in their February 15, 2017 *Conference Call Presentation – Fourth Quarter 2016*) at: http://www.aig.com/content/dam/aig/america-canada/us/documents/investor-relations/4q16-conference-call-presentation.pdf.

The analysis is complicated by the January 1, 2016 retroactive date and the question of just how *much* development Berkshire expected (of the $5.8b in development, approximately $5.3b is covered by the ADC of which $4.8b was recognized in Q4). For that reason we've included two columns for this transaction in **Table 1** – the first based on figures as of YE 2015, prior to any development, and the second based on final figures as of YE 2016 assuming perfect knowledge of the full development. It may be assumed that Berkshire knew the development would be substantial but may not have known the full extent. If that is the case, then Berkshire's view of the transaction lies somewhere between these two sets of parameters.

On a 100% basis the ADC attaches at $25b and provides $25b of limit. Under each assumption the nominal ROL on the transaction brackets 50% - in line with past Berkshire transactions (we've included accrued interest through YE 16 as part of the premium for the "As of YE 2016" calculations, consistent with AIG's presentation – additional interest will continue to accrue through the date of payment).

The calculations in **Table 1** use an estimated 15 year mean-time-to-pay for the transferred reserves in each case. This may be slightly too long, but the lines covered are long tail and $1.3b of the $4.8b of total Q4 development (and $0.7b of the $1.8b of development in the WC line) is related to the 2005 and prior AYs so it's a reasonable estimate. Based on the pre- and post-development losses ceded, the implied risk ROL on the remaining limit is somewhere between 35% and 21%. The latter figure matches the implied ROL on the 2014 Liberty Mutual transaction. That transaction was primarily motivated by leverage concerns vs. development and may indicate that after close to $10b of development the last two calendar years the perceived risk of further development is fairly low.

AIG took the charge for development in 2016 since the agreement hadn't been finalized but will recognize a deferred benefit in 2017 (for GAAP purposes any benefit under a retroactive reinsurance cover is deferred and recognized over time). As in the 2014 Liberty Mutual transaction, AIG is retaining claims handling since they are responsible for all of the first $25b and 20% above that. Since AIG has control of claims (and could presumably alter its practices once the attachment is hit) the transaction includes a 20% co-participation which is not uncommon in these types of structures.

Conclusion

After a quiet 2015 Berkshire Hathaway executed a number of large transactions in 2016 and to-date in 2017. In addition to The Hartford and AIG transactions discussed above, Berkshire entered into two transactions outside the U.S. with two companies in the Insurance Australia Group (IAG Re Australia Ltd. and IAG Re Singapore Pte Ltd.) covering asbestos and other liabilities and losses from the 2010 and 2011 New Zealand Earthquakes (Berkshire had announced a strategic relationship with IAG in 2015 that included an ownership stake and a quota share).

The transactions executed by the Hartford and AIG allowed these companies to achieve a high degree of finality with respect to the covered risks, allowing them to move forward in 2017 with cleaner balance sheets, improved capital positions and less uncertainty.

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Table 1

Past Retroactive Transactions - Berkshire Hathaway

	Century/ Ace	Potomac/ OneBeacon	Equitas	Equitas Option	Equitas Combined	CNA	AIG	Utica Mutual	Liberty Mutual	The Hartford	AIG Announced Jan-17 retroactive to Jan-16		
Transaction Parameters	Jun-99	Jun-01	Nov-06	Jun-09	Jul-09	Jul-10	Apr-11	Sep-12	Jul-14	Jan-17	As of YE 15	As of YE 16	Note
Form of Transaction	HYBRID	LPT	LPT	ADC	LPT	LPT	LPT	LPT	HYBRID	ADC	Hybrid - 80% Placed	Hybrid - 80% Placed	
Lines Covered	A&E	A&E	A&E	A&E	A&E	A&E	A&E	A&E	WC + A&E	A&E	Casualty ex A&E	Casualty ex A&E	
Cedant Net Reserves	3,550	955	8,100		8,100	1,600	1,850	236	15,800	1,700	35,700	41,000	(a)
Attachment	2,300	0	0	13,800	0	0	0	0	12,500	1,700	25,000	25,000	
Attachment as a % of Reserves	64.8%	0.0%	0.0%	170.4%	0.0%	0.0%	0.0%	0.0%	79.1%	100.0%	70.0%	61.0%	
Limit Provided	2,500	2,500	13,800	1,300	15,100	4,000	3,500	na	6,500	1,500	25,000	25,000	(b)
Limit as a % of Reserves	70.4%	261.8%	170.4%	16.0%	186.4%	250.0%	189.2%	na	41.1%	88.2%	70.0%	61.0%	(b)
Exhaustion	4,800	2,500	13,800	15,100	15,100	4,000	3,500	na	19,000	3,200	50,000	50,000	(b)
Exhaustion as a % of Reserves	135.2%	261.8%	170.4%	186.4%	186.4%	250.0%	189.2%		120.3%	188.2%	140.1%	122.0%	(b)
Reinsurance Premium	1,250	1,322	7,100	66	7,166	2,000	1,650	241	3,000	650	12,250	12,750	(b), (c)
Premium as a % of Reserves Transferred	100.0%	138.4%	87.7%	0.8%	88.5%	125.0%	89.2%	102.1%	90.9%	na	114.5%	79.7%	(b)
Nominal ROL	50.0%	52.9%	51.4%	5.1%	47.5%	50.0%	47.1%	na	46.2%	43.3%	49.0%	51.0%	
Estimated Pricing Metrics													
Reserves Ceded	1,250	955	8,100	0	8,100	1,600	1,850	236	3,300	0	10,700	16,000	(b)
Treasury Rate as of Transaction Date	6.0%	5.4%	4.6%	na	4.6%	3.0%	3.5%	1.6%	3.0%	2.45%	2.62%	2.62%	
Present Value of Ceded Reserves	519	565	5,181		5,181	1,195	1,317	202	1,824	na	7,265	10,863	(b)
Implied Risk Premium (RP less PV of Ceded)	731	757	1,919		1,985	805	333	39	1,176	650	4,985	1,887	(b)
Limit Provided Excess of Carried Reserves	1,250	1,545	5,700		7,000	2,400	1,650	na	3,200	1,500	14,300	9,000	(b)
Calculated Risk ROL	58.5%	49.0%	33.7%		28.4%	33.5%	20.2%	na	36.8%	43.3%	34.9%	21.0%	

All figures USD Millions

All figures based on publlicly available data from Annual Statement filings and press releases.

(a) Carried Reserves at YE 15 of $35.7b + 2016 adverse development of $5.3b

(b) Figures presented on a 100% basis

(c) Includes $0.5b of interest from January 1st, 2016 and December 31st, 2016.

The above table highlights some of Berkshire's larger retroactive transactions executed over past 19 years. The first register, **Transaction Parameters**, outlines details of each transaction (based on publicly available information). Included is the form of the transaction ("**LPT**" indicates attachment at first dollar, "**Hybrid**" indicates attachment within carried reserves and "**ADC**" indicates attachment at or above carried reserves) and the subject lines covered. Data is also provided on the **Cedant's Net Reserves** and the **Attachment**, **Limit Provided** under the cover and **Exhaustion** point both on a dollar basis and relative to Cedant's Net Reserves. Finally, the **Reinsurance Premium** paid is given in both dollar terms and, where applicable, as a percentage of carried reserves transferred and the **Nominal Rate on Line** (calculated as **Reinsurance Premium** divided by **Limit Provided**).

The second register, **Estimated Pricing Metrics**, attempts to provide some insight into the pricing of the risk component of each transaction – i.e., of the pricing for the possibility of adverse development. To do this, we have to eliminate the impact of the transfer of known carried reserves on the **Reinsurance Premium**. The Reinsurance Premium for a retroactive transaction can be modelled as two components; *i)* the present value of known reserves transferred, plus *ii)* a risk premium for the limit provided for adverse development.

The risk premium is calculated by subtracting the present value of **Ceded Reserves** from **Reinsurance Premium.** The Present Value of **Ceded Reserves** is calculated using an estimate of the Mean Time to Pay (i.e., the duration) of the Ceded Reserves and an equivalent term Treasury Rate (a risk-free rate) as of the Transaction Date. This **Implied Risk Premium** is then compared to the **Limit Provided** under the transaction excess of the **Carried Reserves** to arrive at a **Calculated Risk ROL**. This allows us to back-out the differences due to different amounts of reserves transferred and the changing interest rate environment over the past 19 years to allow for a more "apples-to-apples" comparison of risk.