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Global Reinsurance – Segment Review

Down But Not Out

Reinsurers Look to Reposition Amid Market Disruption

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Segment Review
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Down But Not Out: Reinsurers Look to Reposition Amid Market Disruption

Current reinsurance market is far from thriving and appears to be operating amid malaise

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"I've missed more than 9,000 shots in my career. I've lost almost 300 games. 26 times, I've been trusted to take the game winning shot and missed. I've failed over and over and over again in my life. And that is why I succeed." Michael Jordan

Before Michael Jordan etched his name in the history books as one of the best basketball players in the world — if not *the* best — he was just a young kid, among many, playing sports. There are a lot of life lessons that are learned from participating in sports. Competitive sports challenge a person's skills, confidence, and mental toughness; will to continually improve; and ability to bounce back after a mistake or tough loss. Competitive sports put a person into numerous situations that result in successes and failures big and small. Winning and losing in business is a bit different, although that drive and passion to succeed is similar. In business, however, there are financial consequences. Competition in business, although not necessarily physically demanding, has its own ferociousness. Companies either continue to win, learn from mistakes, evolve, and advance, or they fade into the ether; sometimes they fail spectacularly. Over the past two decades, many industries have seen disruptive innovation. Think of what Craigslist, iTunes, Google, eBay, Amazon, Uber, or Twitter have done to classified ads, record stores, research libraries, local retail stores, taxis, and newspapers. This competition has been destructive to longstanding businesses, but the end product has been better for the consumer and the overall economy.

There is no doubt that market participants and market observers are thinking about the potential for disruption in the (re)insurance industry and, at the very least, many people are thinking about how to squeeze out more expense when calculating the cost of insurance and reinsurance. Although the shifts may or may not be completely transformational, the end product, over time, will likely be better and less expensive for the ultimate consumer. Arriving at that point will be destructive for some. A.M. Best's 2016 Global Reinsurance Segment Review, "Remaining Relevant," discussed among other things that the reinsurance industry needs to position itself to not just survive but thrive.

The current market, however, is far from thriving and appears to be operating amid malaise, given that the current reality seems to have little sway on pricing. A.M. Best's Global Reinsurance Market's composite showed that, at the end of full year 2016, the sector had booked an accident year combined ratio of 101.0 (**Exhibit 1**). This doesn't sound terrible, and given the headwinds in the sector, it probably isn't that surprising to market observers. Plus, the 95.2 reported combined ratio softens the sting.

Let's repeat, for emphasis, that the reinsurance sector booked 2016 at an underwriting loss. That is the first time we've seen an accident year loss in over ten years, with the exception of 2011, which had several significant global catastrophes. Some may argue that the 101 combined ratio reflects conservatism in loss picks, but history generally proves otherwise, especially for longer-tail classes of business, the current focus for reinsurers.

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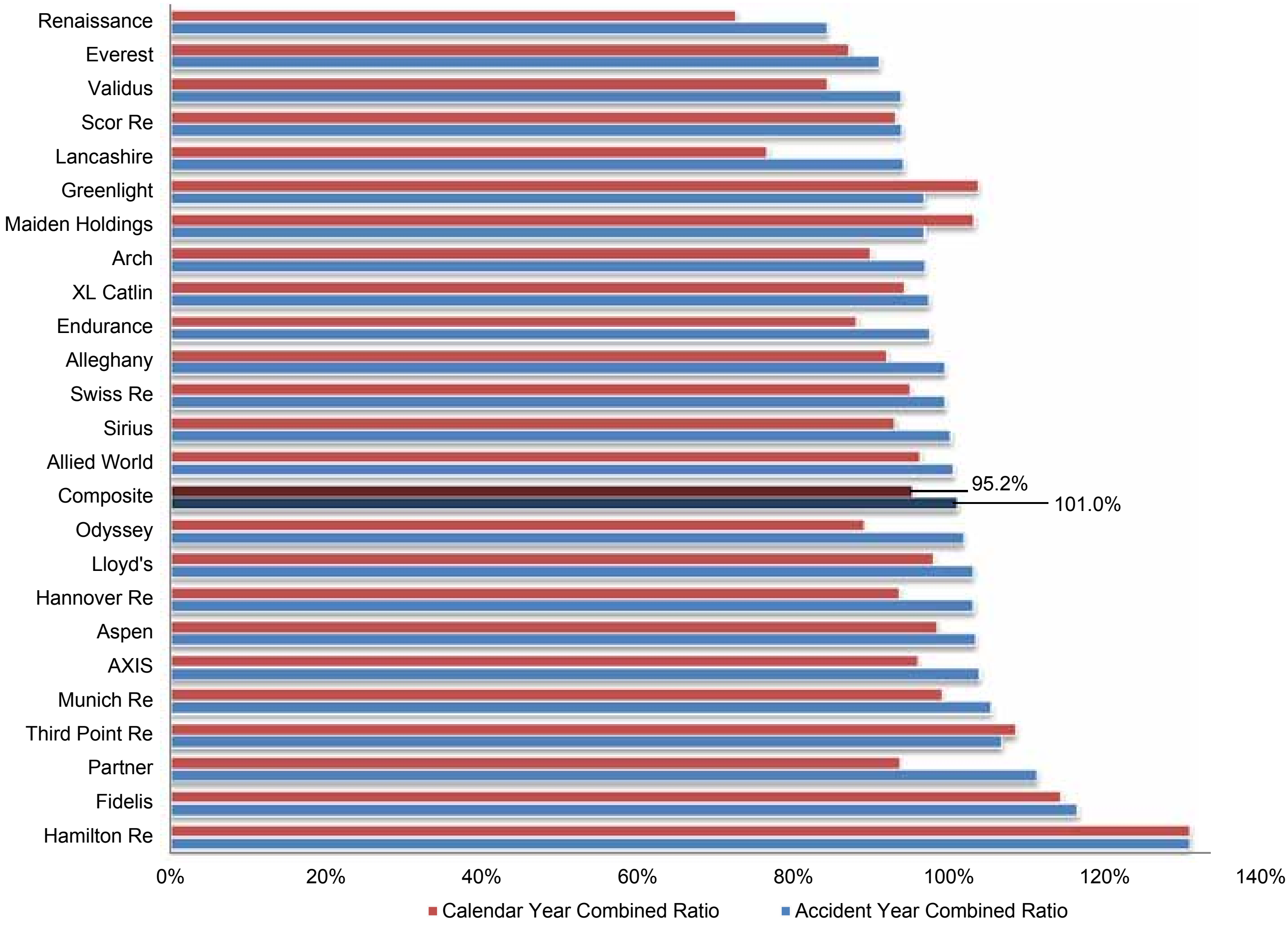
Exhibit 1
Global Market - Combined Ratio (2016)

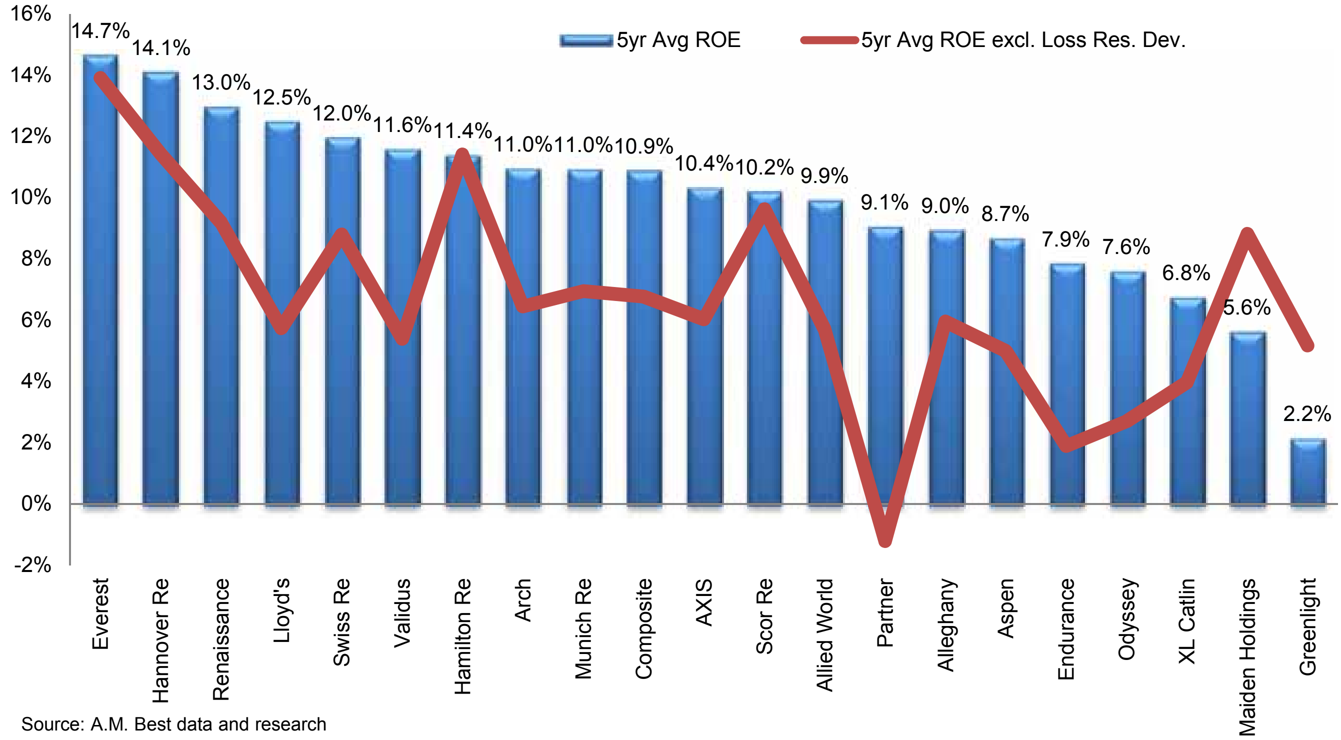


Source: A.M. Best data and research

Since 2013, the sector's combined ratio and return on equity have both deteriorated. We saw it coming, which is why A.M. Best changed its outlook for the reinsurance sector to negative in the summer of 2014. Fast forward, and the 2016 return on equity for the reinsurance composite was just above 8%, roughly five percentage points below where it was in 2013. These results are very anemic, and with a normal catastrophe year the deterioration would be much more visible. Favorable loss reserve development (**Exhibit 2**) has helped mask this deterioration. No single ratio should be looked at in isolation; in this case, reserving philosophies of companies do matter. For the time being, the significant interest in mortgage reinsurance may also be helping to mask deterioration emanating from other classes in the underwriting book, although we are focusing on risk accumulation in the mortgage business. (See the section "The Emergence of U.S. Mortgage Exposure in Reinsurance" for further discussion of mortgage reinsurance.)

A.M. Best has significant concerns. If the reinsurance market is booking the accident year combined ratio at a loss in a relatively benign catastrophe year, and that in and of itself is not the impetus for change, the next logical question is: What will it take to turn the market?

Exhibit 2
Global Market - 5-Year Average ROE Excluding Loss Reserve Development



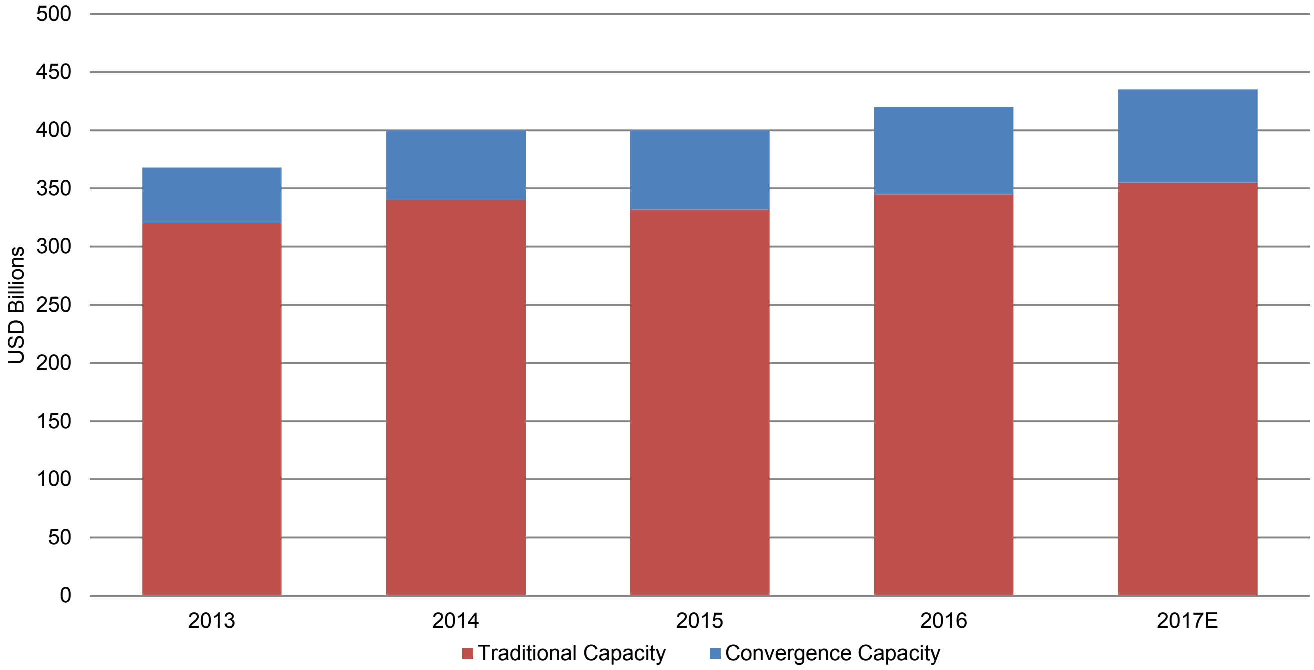
Source: A.M. Best data and research

Clearly, competition is tough. We analyze the financial results by company, but also consider the common themes across markets and step back and analyze broader macro trends. Over the past several years, in conjunction with Guy Carpenter, we have been analyzing what we call "dedicated reinsurance capacity" in an effort to get our arms around the supply/demand equation as it relates to capital and pricing dynamics. We use the Best's Capital Adequacy Ratio (BCAR) model as the starting point and, along with various assumptions, we try to determine how much capital is truly dedicated to the reinsurance business. We believe this estimate is a very good starting point from which to understand the sector.

At year-end 2016, dedicated reinsurance capacity was estimated at $420 billion (**Exhibit 3**), a number we split between traditional and convergence capacity. The vast majority of that capital, $345 billion, remains traditional capacity, but part of what has pressured this market so significantly is the growth in convergence capacity and its concentration toward U.S. property catastrophe risk. Although the growth in convergence capacity has slowed from the year prior, it still grew by approximately 10%.

We've questioned why third-party capital would continue to enter the reinsurance market despite the deteriorating fundamentals. The simple answer is that property catastrophe reinsurance is viewed as a non-correlating asset class to a broadly diversified investment portfolio for many pension plans, endowments, hedge funds, and alternative asset managers. Reinsurance companies, on the other hand, have for several years been trying to right-size their capital base, largely via share repurchases, and manage the cycle by adjusting their business mix. In sports, and parts of life, failures can lead to successes. In reinsurance, however, the paradox exists where the success of avoiding losses and being profitable ultimately pressures the industry into underwriting losses. What will it take to break this cycle? At this point, it does not appear that the lack of underwriting profit in the current book or continued erosion in ROE will break the cycle.

Exhibit 3
Estimate for Total Dedicated Reinsurance Capacity



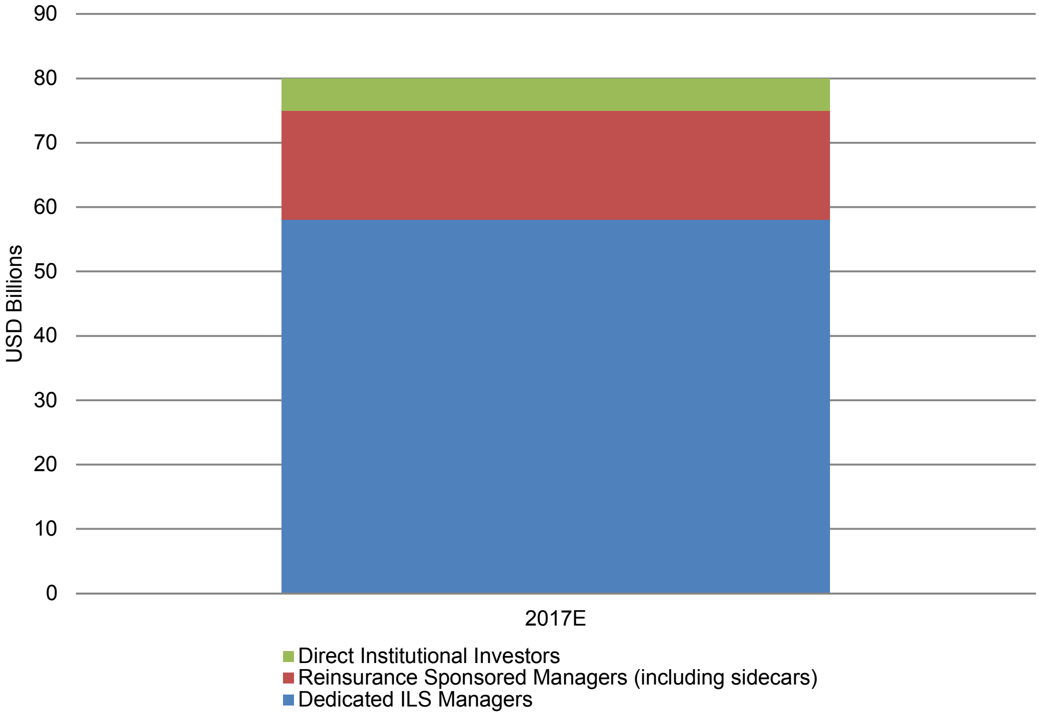
Source: A.M. Best data and research, working in conjunction with Guy Carpenter

Insurance-linked securities (ILS) funds (the collateralized market) remain the largest and fastest-growing recipient of this third-party capital (**Exhibit 4**). Given that the last several years have been rather benign from a catastrophe perspective, their investors are likely very satisfied with the returns. Still, we've heard that even ILS funds are finding it increasingly difficult to find attractive opportunities, as pricing dynamics deteriorate further and further. For (re)insurers that aren't looking for a merger or acquisition deal, building a fee income stream by working with third-party capital appears to be a viable strategy. This is much easier said than done though, and takes a great deal of work, but we believe the reinsurance companies have a rather natural fit here as they have the most expertise and understand the nuances of underwriting risk.

Reinsurance companies are well-positioned to play at various points along the spectrum. For reinsurance companies not directly managing third-party capital, entering into underwriting arrangements or fronting agreements to generate fees has increasingly become a viable option. While more work, control over the entire spectrum may be the preferred approach for various reasons, including optimizing profit, controlling the messaging with both the capital provider and client, and, most importantly, being in a better position to flex capital as events unfold and markets turn. Either way, there are meaningful opportunities for third-party capital over the intermediate and long terms. At some point, it may become easier because the market can allocate a growing pie as new risks and opportunities emerge—think economic losses versus insured losses from a catastrophe.

With tough market trends and competition, conditions remain ripe for mergers and acquisitions to continue over the next few years. Companies are flush with capital, borrowing is still relatively inexpensive, opportunities for organic growth are limited, and some companies are struggling to cover the cost of capital, which puts M&A on the table. We believe the Bermuda market is under the most pressure, given its market's rather anemic return

Exhibit 4
Third Party Capital Breakout



Source: A.M. Best data and research, working in conjunction with Guy Carpenter

on equity of 6.8% for 2016 (**Exhibit 5**). Initially, as the market softened, many companies shifted into primary lines in a more significant way. However, the majority of profit for many reinsurance companies with primary business is still coming from the reinsurance side, even while the primary results are around breakeven.

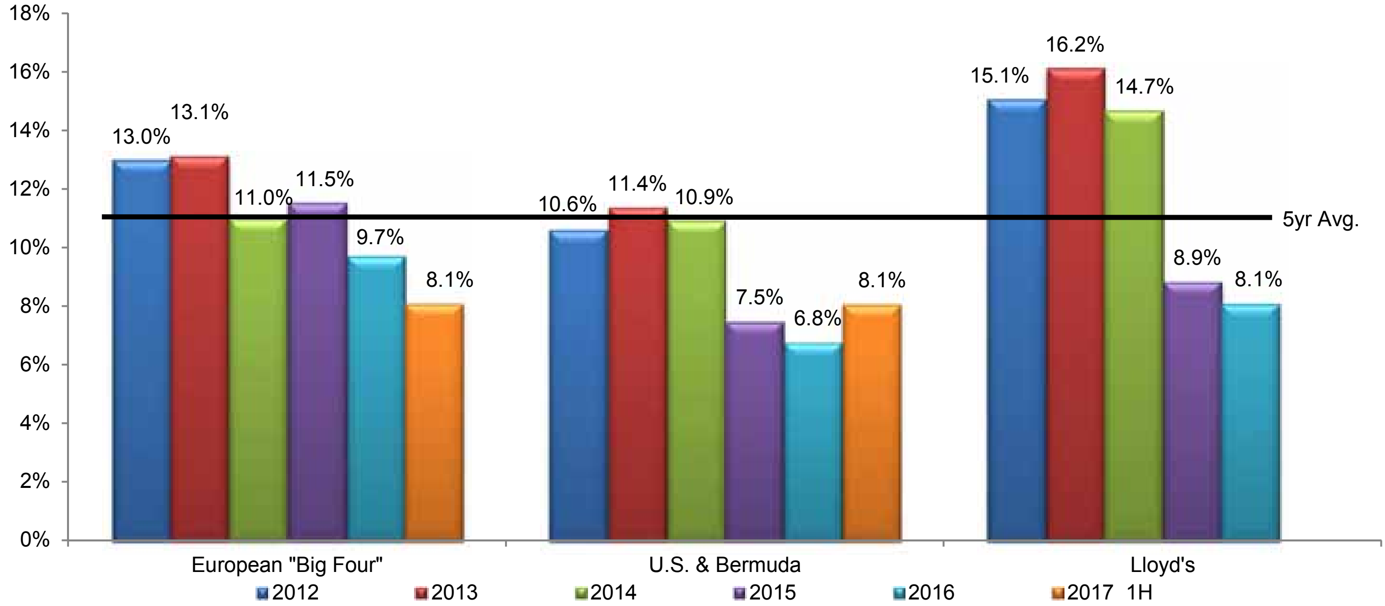
In 2015, we saw many M&A transactions aimed at gaining scale or building a broader market footprint, such as the XL/Catlin and RenRe/Platinum deals. The trend now for M&A appears to be leaning toward finding a home in a larger organization, where a company can have autonomy and be nimble but have some parental protection, as seen with the Endurance/Sompo and Allied World/Fairfax acquisitions. Amid the considerable uncertainty as to the timing and what exactly it will take to turn the market, the one certainty that remains is that reinsurers will have to continue to evolve, learning from their mistakes and successes. No doubt there may very well be some surprises that come along with that evolution.

Ratings Outlook

A.M. Best continues to hold its outlook for the reinsurance sector at negative, citing the significant ongoing market challenges that will hinder the potential for positive rating actions over time and may eventually translate into negative rating pressures. The market is in the later stages of a soft market.

Risk-adjusted returns are strained, as compression continues bearing down on underwriting margins, and investment yields offer little help. The market headwinds at this point present significant longer- term challenges that industry players need to work through. We've said that the companies that are not proactive will not determine their own destiny. M&A will remain a part of the landscape over the next few years, but M&A is not a cure and has its own potential dangers.

Exhibit 5
Return on Equity by Reinsurance Sector



Source: A.M. Best data and research

Declining rates, broader terms and conditions, an unsustainable flow of net favorable loss reserve development, low investment yields, and continued pressure from convergence capital are all negative factors that will adversely affect risk-adjusted returns over the longer term. Adding to the uncertainty is the potential fallout from Brexit or what type of changes, if any, will come to pass with regard to U.S. taxes. There are some pockets of opportunity with cyber insurance and mortgage reinsurance, but these do not come without risk and by themselves aren't enough to buoy the market in a meaningful way.

Reinsurers have been responding in other ways, by lowering their net probable maximum loss (PML) for peak zones, embracing new opportunities and geographies, producing fee income, and subtly migrating into asset classes that will produce some increased investment yield. Nevertheless, even with benign catastrophe conditions and stable financial markets, the overall market will produce a return on equity only in the mid-to-high single digits. The reality of the current situation is that even a normal catastrophe year will expose the true ramifications of current market conditions; an above average catastrophe year may be downright ugly.

For the most part, rated balance sheets are well-capitalized and capable of enduring a fair amount of stress. However, this strength may be eroded for some carriers as earnings come under increased pressure, favorable reserve development fades, and the ability to earn back losses following events is hindered by the immediate inflow of capital and competition from both traditional and non-traditional sources.

Our view of strong companies remains the same as it has for a number of years. Companies with diverse business portfolios, advanced distribution capabilities, and broad geographic scope are better-positioned to withstand the pressures in this type of operating environment and will be better able to target profitable opportunities as they arise.

Segment Review
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World's 50 Largest Reinsurers

It is clear that much of the risk transfer is aggregated among the industry's larger players

In this year's ranking (**Exhibit 1**), Swiss Re has supplanted Munich Re as the world's largest reinsurer (as measured by reinsurance gross premiums written (GPW)), a position it has not held since 2009. However, the reality is a bit more complicated. As noted in the **Ranking — Approach** sidebar, A.M. Best's formulation of the Top 50 is a bit nuanced. In this case, Munich Re's significant primary operations account for just over 30% of its total GPW; as a result, in line with our approach, its insurance premiums have been excluded. On the other hand, Swiss Re's reinsurance/primary insurance split is more modest, with just over 15% of GPW coming from insurance operations, putting it under the threshold to split out its insurance and reinsurance premiums. Moreover, Swiss Re breaks out its Corporate Solutions segment, which writes high excess primary layers, while Munich Re includes that segment in its reinsurance premiums. Add in the effects of currency conversion over the years, and you can see the slippery nature of a seemingly simple ranking exercise.

Ranking —Approach

A.M. Best's ranking of leading global reinsurers has evolved over time. Many longtime industry watchers may remember when the list comprised only the top 35 reinsurers. Regardless of the population size, the intention of the exercise has always been to try to isolate a (re)insurer's business profile using gross premiums written (GPW) as the measurement.

To obtain the most accurate figures possible, A.M. Best makes a number of assumptions and adjustments as we navigate through different financial statements, accounting standards, and segment reporting. Capturing only third-party business and excluding affiliated or intergroup reinsurance, in addition to trying to eliminate any compulsory business, are perhaps the most essential adjustments.

Another important adjustment is a rule of thumb we have used for splitting out reinsurance and insurance premiums. Our approach has been that if a company or group's GPW for reinsurance is 75% or more of its entire gross premium volume, all gross premiums written are counted in the ranking as reinsurance premiums. Conversely, if a company's or group's reinsurance/insurance split consists of less than 75% reinsurance premiums, only the reinsurance premiums are counted and the insurance premiums are excluded. The logic behind this adjustment is that if the company's book of reinsurance business is 75% or more of its total book of business, reinsurance represents its core book of business. Finally, when financial statements, supplements, etc. do not provide a proper breakout of reinsurance premiums, A.M. Best seeks to obtain data through a direct dialogue with the (re)insurer.

So what does it all mean? Ultimately, the takeaway should be that, in terms of GPW, Munich Re and Swiss Re are the reinsurance market's undisputed largest and most influential players. Both have roughly double the premium volume of their closest competitors; offer similar capacity across nearly all reinsurance products and geographies, with the ability to provide sophisticated risk transfer solutions; and have been the market leaders for well over a decade. One is the immovable object, the other is the unstoppable force; we will leave it to you decide which is which.

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Exhibit 1

Top 50 World's Largest Reinsurance Groups

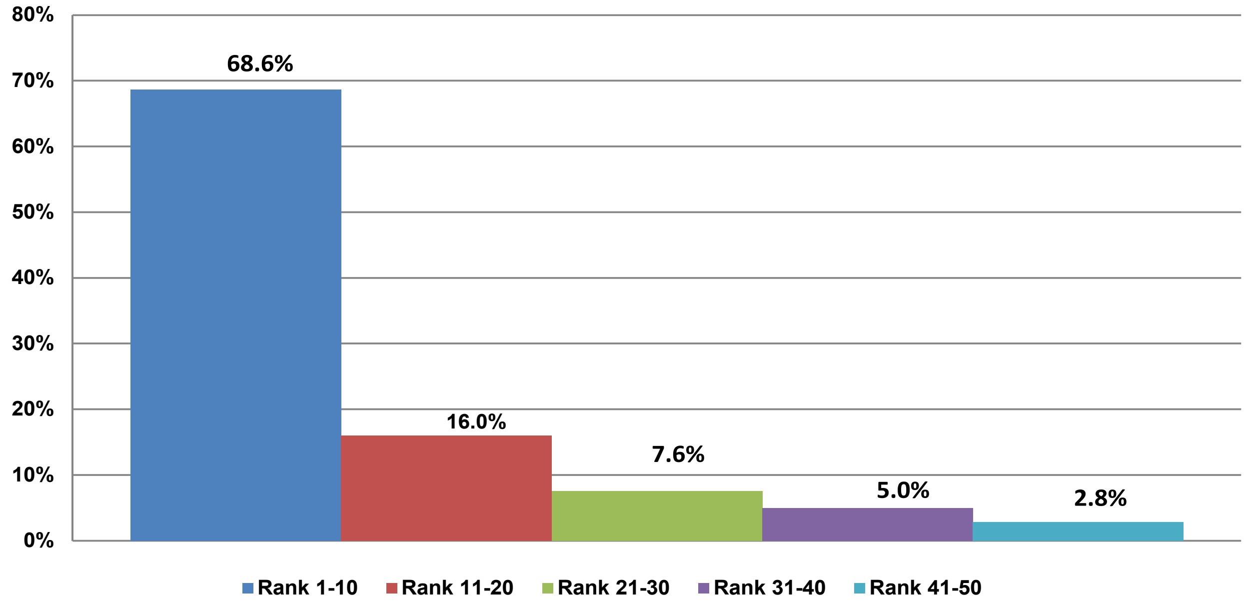
(Ranked by Unaffiliated Gross Premiums Written in 2016)
(USD Millions)[1]

		Reinsurance Premiums Written				Total			
2017		Life & Non-Life		Non-Life Only		Shareholders'	<------------Ratios[3]---------->		
Ranking	Company Name	Gross	Net	Gross	Net	Funds[2]	Loss	Expense	Combined
1	Swiss Re Ltd.	$35,622	$33,570	$21,878	$21,430	$35,716	61.3%	33.6%	94.8%
2	Munich Reinsurance Company	$33,154	$31,891	$18,784	$17,931	$33,493	63.3%	32.4%	95.8%
3	Hannover Rück S.E.[4]	$17,232	$15,192	$9,699	$8,414	$10,264	66.8%	27.2%	94.0%
4	SCOR S.E.	$14,569	$13,238	$5,942	$5,323	$7,055	59.5%	33.6%	93.1%
5	Berkshire Hathaway Inc.[5]	$12,709	$12,709	$8,037	$8,037	$286,359	N/A	N/A	89.4%
6	Lloyd's[6 7]	$11,576	$8,694	$11,576	$8,694	$34,101	53.2%	39.2%	92.3%
7	Reinsurance Group of America Inc.	$10,107	$9,249	N/A	N/A	$7,093	N/A	N/A	N/A
8	China Reinsurance (Group) Corporation	$7,857	$7,517	$3,342	$3,262	$10,384	64.4%	37.5%	101.9%
9	Great West Lifeco	$6,195	$6,112	N/A	N/A	$13,857	N/A	N/A	N/A
10	Korean Reinsurance Company	$5,554	$3,903	$4,880	$3,312	$1,755	81.7%	17.6%	99.2%
11	PartnerRe Ltd.	$5,357	$4,954	$4,189	$3,837	$6,688	60.2%	33.4%	93.6%
12	General Insurance Corporation of India[8]	$5,210	$4,678	$5,153	$4,626	$7,681	79.8%	21.4%	101.1%
13	Transatlantic Holdings, Inc.	$4,330	$3,969	$4,330	$3,969	$5,203	59.5%	33.8%	93.2%
14	Everest Re Group Ltd.[9]	$4,247	$3,885	$4,247	$3,885	$8,075	50.1%	27.5%	77.6%
15	XL Group Ltd.	$4,240	$3,527	$3,975	$3,515	$12,961	56.3%	32.1%	88.4%
16	MS&AD Insurance Group Holdings, Inc. [8 10 17]	$3,192	N/A	$3,192	N/A	$24,583	N/A	N/A	N/A
17	MAPFRE RE, Compania de Reaseguros S.A. [11]	$2,426	$2,180	$1,813	$1,584	$1,348	68.3%	23.6%	91.9%
18	RenaissanceRe Holdings Ltd.	$2,375	$1,535	$2,375	$1,535	$4,867	37.8%	34.7%	72.5%
19	R+V Versicherung AG[12]	$2,348	$2,305	$2,348	$2,305	$2,265	73.8%	25.3%	99.1%
20	The Toa Reinsurance Company, Limited [8 10]	$2,251	$1,970	$2,251	$1,970	$1,725	67.7%	26.0%	93.7%
21	Axis Capital Holdings Limited	$2,250	$1,946	$2,250	$1,946	$6,272	55.1%	32.8%	87.8%
22	Arch Capital Group Ltd.[13]	$2,029	$1,568	$2,029	$1,568	$9,106	52.3%	33.5%	85.8%
23	Assicurazioni Generali SpA	$1,936	$1,936	$791	$791	$27,047	56.0%	23.3%	79.3%
24	QBE Insurance Group Limited	$1,698	$1,390	$1,698	$1,390	$10,334	55.1%	32.7%	87.8%
25	Endurance Specialty Holdings, Ltd.	$1,632	$1,314	$1,632	$1,314	$5,142	47.0%	30.9%	77.9%
26	Pacific LifeCorp	$1,570	$1,172	N/A	N/A	$11,140	N/A	N/A	N/A
27	Tokio Marine Holdings, Inc. [10 14]	$1,553	$1,318	$1,553	$1,318	$32,092	58.5%	37.1%	95.6%
28	IRB - Brasil Resseguros S.A.	$1,515	$1,089	$1,412	$1,004	$1,023	67.7%	26.9%	94.6%
29	Odyssey Re Holdings Corp.	$1,464	$1,335	$1,464	$1,335	$3,833	52.3%	34.3%	86.6%
30	Aspen Insurance Holdings Limited	$1,413	$1,269	$1,413	$1,269	$3,648	55.7%	34.3%	90.0%
31	Caisse Centrale de Reassurance	$1,386	$1,352	$1,254	$1,225	$2,529	74.8%	15.3%	90.1%
32	Validus Holdings, Ltd.[15]	$1,381	$1,263	$1,381	$1,263	$4,004	38.2%	27.3%	65.5%
33	Deutsche Rueckversicherung AG	$1,287	$758	$1,238	$727	$245	66.0%	36.1%	102.1%
34	Sirius International Group, Ltd.	$1,269	$938	$1,269	$938	$2,209	57.8%	35.3%	93.1%
35	Qatar Reinsurance Company, Limited	$1,249	$364	$1,249	$364	$772	72.9%	24.7%	97.6%
36	Taiping Reinsurance Co. Ltd. [10]	$1,183	$1,078	$639	$545	$886	56.6%	36.3%	92.9%
37	Markel Corporation	$1,041	$899	$1,041	$899	$8,467	50.3%	36.9%	87.2%
38	American Agricultural Insurance Company[16]	$900	$341	$900	$341	$576	73.8%	19.0%	92.8%
39	Maiden Holdings, Ltd.	$824	$766	$824	$766	$1,361	78.9%	30.5%	109.4%
40	Chubb Limited	$739	$676	$739	$676	$48,275	45.8%	33.7%	79.4%
41	W.R. Berkley Corporation	$709	$648	$709	$648	$5,081	61.8%	38.8%	100.6%
42	Allied World Assurance Company Holdings, AG	$706	$665	$706	$665	$3,552	52.9%	29.4%	82.3%
43	Peak Reinsurance Company Ltd.	$698	$620	$664	$586	$841	65.5%	31.9%	97.4%
44	Hiscox Ltd.	$695	$324	$695	$324	$2,237	39.1%	26.5%	65.6%
45	African Reinsurance Corporation	$642	$556	$598	$512	$815	55.5%	35.3%	90.8%
46	Sompo Japan Nipponkoa Holdings, Inc. [8 10]	$631	$610	$631	$610	$16,802	N/A	N/A	N/A
47	Third Point Reinsurance Ltd.	$617	$615	$617	$615	$1,450	67.1%	41.4%	108.5%
48	ACR Capital Holdings Pte, Ltd.	$591	$298	$591	$298	$789	72.4%	43.4%	115.8%
49	Nacional de Reaseguros, S.A.	$561	$399	$473	$313	$336	58.8%	31.7%	90.4%
50	Greenlight Capital Re, Ltd.	$536	$526	$536	$526	$892	74.2%	31.2%	105.5%

[1] All non-USD currencies converted to USD using foreign exchange rate at company's fiscal year-end.
[2] As reported on balance sheet.
[3] Non-Life only.
[4] Net premium written data not reported, net premium earned substituted.
[5] Loss and expense ratio detail not available on a GAAP basis.
[6] Lloyd's premiums are reinsurance only. Premiums for certain groups within the rankings also may include Lloyd's Syndicate premiums when applicable.
[7] Total shareholders' funds includes Lloyd's members' assets and Lloyd's central reserves.
[8] Fiscal year-end March 31, 2017.
[9] Based on Everest Re Group Ltd. consolidated financial statements and includes cessions to Mt. Logan Re Ltd.
[10] Net asset value used for total shareholders' funds.
[11] Premium data excludes intergroup reinsurance.
[12] Ratios are as reported and calculated on a gross basis.
[13] Based on Arch Capital Group Ltd. consolidated financial statements and includes Watford Re segment.
[14] TSF of Tokio Marine Holdings Inc. at year-end Mar. 31, 2017, premium data based on Tokio Millennium Re AG year-end Dec. 31, 2016.
[15] Based on Validus Holdings, Ltd. consolidated financial statements and includes AlphaCat segment.
[16] Data and ratios based on U.S. Statutory Filing.
[17] Data includes MS Amlin through December 31, 2016.
(N/A) - Information not applicable or not available at time of publication.

Source: A.M. Best data and research

Exhibit 2
Life and Non-Life Reinsurance GPW Distribution by Ranking



Source: A.M. Best data and research

Swiss Re and Munich Re together represent over 30% of all the GPW in the ranking and the top 10 players make up just under 70%, or $156 billion, of the total GPW in the ranking. So, despite the syndicated nature of the reinsurance industry and cedents' efforts to diversify their reinsurance panels to spread their counterparty risk, it is clear that much of the risk transfer is aggregated among the industry's larger players (**Exhibit 2**).

Moving down the list, Hannover Rück and SCOR have held steady in the three and four spots, while Berkshire Hathaway's roughly $500 million year-over-year increase in GPW propelled it past Lloyd's to the ranking's fifth position, despite Berkshire Hathaway's eminent chairman and investment guru Warren Buffet's being vocally bearish on the reinsurance segment. Berkshire Hathaway's reinsurance premium growth was for the most part driven by large retroactive reinsurance deals with Hartford Fire and Liberty Mutual, with reinsurance premiums in almost all of the other segments flat or down year over year. Lloyd's dropped one spot to six, despite modest year-over-year growth in reinsurance premiums in its reported currency. Lloyd's premium volume was impacted by a nearly 25-cent weakening of the pound versus the dollar between year-end 2016 and year-end 2015.

Everest Re's ranking drop from nine to fourteen was impacted by the same approach as Munich Re as its primary insurance premiums increased above the 25% threshold, triggering a split of GPW between primary and reinsurance classes (**Exhibit 3**). Although the impact of this approach, strictly speaking, can affect a company's rankings, it also speaks to the continually shifting landscape of the sector. Ongoing challenging reinsurance market conditions continue to compel market participants to seek premium growth outside the reinsurance space.

Exhibit 3
Notable Changes in Ranking

Upward	2017	2016	Change
MS&AD	16	27	11
IRB	28	36	8
Endurance	25	32	7
Peak Re	43	50	7
W.R. Berkley	41	47	6
Great West Lifeco	9	12	3
Pacific Life	26	29	3
Maiden Re	39	42	3

Downward	2017	2016	Change
Odyssey Re	29	26	-3
CCR	31	28	-3
Third Point Re	47	44	-3
Everest Re	14	9	-5
ACR	48	43	-5

Source: A.M. Best data and research

That is not to say that some reinsurers have not seen material growth in reinsurance premiums. Companies in emerging markets, like General Insurance Corporation of India and IRB - Brasil Resseguros, S.A., saw significant year-over-year increases, albeit for different reasons. GIC of India's gross reinsurance premiums grew over 80% despite a relatively stable foreign exchange rate, with growth attributed largely to an increase in crop (re)insurance. IRB – Brasil Re also saw year-over-year growth in Brazilian reais, but that increase was magnified by the reais' appreciation against the dollar between fiscal year-end 2016 and 2015. In both these cases, one must remember that these companies have somewhat of an advantage in their local markets due to protectionist government regulations that mandate cessions or priority access to local primary insurance companies.

Other changes in the ranking were due to ongoing M&A activity in the sector. Most notable of these changes was MS&AD Insurance Group Holdings, Inc.'s eleven spot jump to sixteen, reflecting the first year of the inclusion of Amlin's (now MS Amlin) premium volume in MS&AD's consolidated results. Endurance Specialty saw premium growth in 2016 across all reinsurance lines of business written, partly attributed to its 2015 acquisition of Montpelier, which moved the company up eight spots to twenty-five, although it will likely fall out of the rankings once it is consolidated into Sompo Japan, as the latter builds out its reinsurance footprint. On a pro forma basis, the addition of Endurance Specialty's reinsurance premiums to Sompo's existing reinsurance premiums would put the Japanese insurance group in the top twenty.

Companies that write predominately life reinsurance also saw increases in reinsurance premiums, with Great West Lifeco and Pacific Life each climbing up three spots. Reinsurance Group of America remained in the seven spot, a place it has held since 2009, making RGA the largest "pure" life reinsurer in the ranking.

Edging its way into the ranking's last spot was Greenlight Capital Re, Ltd, after dropping out two years ago. Greenlight's growth can be attributed to increases in its casualty and specialty classes of business. Last year's occupant of the fifty spot, Peak Re, saw a nearly 30% increase in reinsurance GPW in 2016, pushing the Hong Kong-domiciled reinsurer into the forty-three spot. Other notable changes were W.R. Berkley moving up six spots to forty-one, driven largely by an increase in property reinsurance premiums, and Singapore-domiciled ACR Capital, slipping five positions to forty-eight, from forty-three last year.

Looking at A.M. Best's 50 largest reinsurers in aggregate, we saw a year-over-year growth in life and non-life GPW of approximately $7.4 billion to $226.6 billion, which equates to a roughly 3% increase, with non-life GPW accounting for $5.4 billion and life GPW at about $2 billion. Interestingly, net premium growth outpaced that of GPW despite challenging market conditions and talk of increased retrocession purchases.

The Top 50 world's largest retained 88% of GPW, compared to 85% last year. Across the entire ranking, the segment was able to cobble together a respectable 93.1% average combined ratio, which, not surprisingly, closely mirrors the Top 5's average combined ratio of 93.4%. In light of the slow decline in favorable reserve development and relatively benign catastrophic activity in 2016, it appears that market is still maintaining some much-needed underwriting discipline.

Top 15 Non-Life and Top 10 Life Global Reinsurers

This year, A.M. Best has broken out two sub-rankings, one non-life (**Exhibit 4**) and one life **(Exhibit 5**), that spotlight (re)insurance groups that have a truly global footprint or business profile. Not only do these groups have diverse product offerings, but they also generally maintain a very strong geographic spread of risk and provide material capacity to numerous different markets. Nearly all of these companies have somewhat modest origins, some going back over 100 years, as they have evolved from being regional or specialty players into truly global reinsurers. Often, it was their very strength as a regional or specialty reinsurer that eventually created concentration risk(s) that compelled them to expand their footprints and seek geographic and product diversification.

There is no set rule to specifically determine when or how a reinsurer truly becomes global. As market dynamics ebb and flow, so can a group's profile. So, as some of the world's largest reinsurance groups continue to enter new markets and provide capacity, expect them to be added to these lists in due time.

Exhibit 4

Top 15 Global Non-Life Reinsurance Groups

Ranked by Unaffiliated Gross Premiums Written in 2016
(USD Millions)

2017		Non-Life only		Total Shareholders'	Ratios		
Ranking	Company Name	Gross	Net	Funds	Loss	Expense	Combined
1	Swiss Re Ltd.	$21,878	$21,430	$35,716	61.3%	33.6%	94.8%
2	Munich Reinsurance Company	$18,784	$17,931	$33,493	63.3%	32.4%	95.8%
3	Lloyd's	$11,576	$8,694	$34,101	53.2%	39.2%	92.3%
4	Hannover Rück S.E.	$9,699	$8,414	$10,264	66.8%	27.2%	94.0%
5	Berkshire Hathaway Inc.	$8,037	$8,037	$286,359	N/A	N/A	89.4%
6	SCOR S.E.	$5,942	$5,323	$7,055	59.5%	33.6%	93.1%
7	Transatlantic Holdings, Inc	$4,330	$3,969	$5,203	59.5%	33.8%	93.2%
8	Everest Re Group Ltd.	$4,247	$3,885	$8,075	50.1%	27.5%	77.6%
9	PartnerRe Ltd.	$4,189	$3,837	$6,688	60.2%	33.4%	93.6%
10	XL Group Ltd.	$3,975	$3,515	$12,961	56.3%	32.1%	88.4%
11	MS&AD Insurance Group Holdings, Inc.	$3,192	N/A	$24,583	N/A	N/A	N/A
12	RenaissanceRe Holdings Ltd.	$2,375	$1,535	$4,867	37.8%	34.7%	72.5%
13	R+V Versicherung AG	$2,348	$2,305	$2,265	73.8%	25.3%	99.1%
14	The Toa Reinsurance Company, Limited	$2,251	$1,970	$1,725	67.7%	26.0%	93.7%
15	Axis Capital Holdings Limited	$2,250	$1,946	$6,272	55.1%	32.8%	87.8%

Note: See Top 50 World's Largest Reinsurance Groups ranking for any related footnotes.

Source: A.M. Best data and research

Exhibit 5

Top 10 Global Life Reinsurance Groups

Ranked by Unaffiliated Gross Premiums Written in 2016
(USD Millions)

2017 Ranking	Company Name	Life Only Gross	Life Only Net	Total Shareholders' Funds
1	Munich Reinsurance Company	$14,370	$13,960	$33,493
2	Swiss Re Ltd.	$13,744	$12,140	$35,716
3	Reinsurance Group of America Inc.	$10,107	$9,249	$7,093
4	SCOR S.E.	$8,627	$7,915	$7,055
5	Hannover Rück S.E.	$7,533	$6,778	$10,264
6	Great West Lifeco	$6,195	$6,112	$13,857
7	Berkshire Hathaway Inc.	$4,672	$4,672	$286,359
8	Pacific LifeCorp	$1,570	$1,172	$11,140
9	PartnerRe Ltd.	$1,168	$1,117	$6,688
10	Assicurazioni Generali SpA	$1,145	$1,145	$27,047

Note: See Top 50 World's Largest Reinsurance Groups ranking for any related footnotes.

Source: A.M. Best data and research

Segment Review
September 5, 2017

All Roads Lead to Convergence

The future of traditional reinsurance is increasingly tied to developments in insurance-linked securities. A.M. Best assembled a panel of rating and ILS professionals to assess the state of insurance-linked securities, including why investors still value the ILS sector even as growth slips. Following are excerpted, edited highlights of the discussion. Meg Green conducted the interviews. To access the event, visit: *http://www.ambest.com/conferences/webinars.asp*.

Dedicated reinsurance capacity measured about $420 billion at YE16

Q: How would you describe the state of alternative capital in the industry today?

ROBERT DEROSE, A.M. Best: When you look at the components of alternative capital, by far the fastest-growing component is collateralized reinsurance. It's more directly correlated in terms of structure to traditional reinsurance. There are important differences, however, that need to be considered when a cedent is looking to place business, whether to go traditional or collateralized. A lot of traditional reinsurers are increasingly utilizing collateralized facilities in the form of sidecars. The traditional market is embracing, more so than resisting, forms of collateralized reinsurance and trying to deploy that in order to maintain their relationship and capacity with their client base.

GREG REISNER, A.M. Best: We look at traditional capital. We also look at alternative capital. At the end of 2016 we calculated dedicated reinsurance capacity to be about $420 billion. We've worked this number out with Guy Carpenter. Our starting point is the BCAR (Best's Capital Adequacy Ratio). The number breaks down to roughly $345 billion of what we consider traditional capacity and approximately $75 billion of alternative capacity, at year-end 2016 . When we think about the alternative capacity, we put it in three buckets: (ILS) cat bonds, industry loss warranties, and collateralized reinsurance.

ADITYA DUTT, RenaissanceRe: The state of the alternative capital industry is excellent. We've seen a lot of growth over the last 10 to 15 years. It's close to 20% to 25% of the industry, about $85 billion to $90 billion dollars of what people would call alternative capital. It's a truly accepted form of capital provision in the reinsurance market.

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Q. Have we reached equilibrium between alternative capital and traditional capital?

FRANK MAJORS, Nephila Capital: You could make an argument that we have, as it relates to what I would call the original problem. When we think about why alternative capital made sense 20 years ago when we started Nephila, it was about peak risk. To the extent that alternative capital has had a beneficial impact on the industry, it has been helping the industry deal with peak risk that was hard to diversify, in Florida, California, whatever the peak catastrophic regions are.

To a certain extent, we're close to equilibrium as far as how alternative capital can help with that problem. For there to be additional growth in the industry, we're probably going to have to see some additional innovation, whether it's different product lines, different forms of delivery, or efficiency.

Allocating more into peak risk without innovation is probably not the answer. Finding different ways to innovate so that capital can be used efficiently is probably the way forward for us.

Q. Do you think that capital could be used to close the protection gap?

FRANK MAJORS: Look back to where the market was 10 years ago, with the state pools very heavily exposed, buying very little cover. You've seen those entities lay that risk off, either through the reinsurance industry or through depopulation programs that have been supported by reinsurance, a lot of it being alternative capital. A lot has been done there. To make greater strides in penetrating that market gap is going to come down to cost structure. It's still too expensive to deliver the capital to the consumer. There's a lot more progress that we could make around the cost structure of the industry, rather than just competing over the same catastrophe reinsurance programs that are already in the market.

ROBERT DEROSE: When you get into other less insurable or less insured risks like flood and cyber, there the modeling has to improve substantially. The models have to be proven before you're going to get a good level of investor confidence to take on that type of exposure.

But traditional players who have dabbled in those exposures for a period of time and have more pricing capability and possibly the ability to deploy cat capital more effectively to those segments have the leg up if they're going to close that gap.

ADITYA DUTT: When you get into other classes of business, the tail is much longer. That's a real challenge when you're dealing with investors that may want liquidity or certainty of valuation in a business. The expertise and the modeling are objectively difficult to prove and man-made phenomena — as opposed to physical phenomena — make it difficult to prove your modeling is better than anyone else's.

I'm sure there are many more factors involved but to the extent a manager can solve at least two of those factors or two of those questions, you're on your way to succeeding in building a platform that can bring alternative capital in.

As a reinsurer, we think hard about bringing capital to other lines of business. One of the issues we constantly encounter is there's no lack of supply. There's plenty of capital available. The client isn't looking for more capital, they're looking for a better product, a cheaper product, or something else. In the current market, more capital is not the issue.

Q. Is the traditional reinsurance model broken?

ADITYA DUTT: We don't think it's broken. If anything, we owe a debt of gratitude to what the ILS industry has done for the past two decades. They've made us better. If it wasn't for what they were doing, we wouldn't have to evolve because there was no push in the market to make us become more efficient in how we source capital. It's because of these innovations that a lot of reinsurance companies today feel that they must evolve and get better at what they do. There is a convergence to a hybrid approach. We use both forms of capital. Many of the ILS funds use rated carriers. They partner with rated carriers to write their business. That separation—those lines are becoming increasingly blurred in our market.

ROBERT DEROSE: It's evolving. Some traditional players are evolving faster than others, but evolution is absolutely necessary. There's a convergence going on; we can replace the term alternative capital with convergence capital. That's probably a better definition. If a reinsurer fails to evolve, that's probably the mark that they will soon be extinct.

FRANK MAJORS: On the outside looking in, it certainly doesn't look broken to me. If you look at RenRe's structure, they're a hybrid approach. They have taken the best of both worlds, as far as finding the right capital for the right risk. There are some risks where the traditional balance sheet works better and some risks where the alternative capital structure works better. I don't think it's an either/or type of thing.

Q. What is an acceptable rate of return for investors?

FRANK MAJORS: We've seen a secular change. The pricing you see the market for cat risk currently, that's where it's going to be. I don't think this is a soft market. The current pricing environment is roughly how the market's going to look because the value of an uncorrelated asset is incredibly high, particularly in a more interconnected, more correlated world. There just aren't that many uncorrelated assets. It's a very powerful ingredient to the overall value package that gets delivered to investors in ILS.

ADITYA DUTT: One discrepancy in this market that persists and is really interesting to watch is the balance sheet that's equity-financed. Those investors demand a higher return and they always have. You're also dealing with another set of investors who, because of the non-correlation benefit and they see the non-correlation benefit so clearly, are happy with something that's lower. That's a discrepancy that a lot of traditional reinsurers have not been able to marry or bridge as efficiently as they ought to.

To understand that, and say, "OK, here's my capital that wants a 10% return and here's the one that wants 5%." How do I give them each the portfolios of risk that they want, that are optimal for them? If there was one critique about the traditional industry, it's that we need to understand that better and service our investor clients better on that front.

A lot of development in the ILS market has been due to that. We talked about why the ILS market has grown so much faster. The stock market is saying, "You'd better buy back stock if you're only making 8% returns. That's not good enough. You can't keep capital on your balance sheet." Clearly, at the same return the ILS market is happy with it. They'll take more.

ROBERT DEROSE: I would guess that we're nearer the floor today than we were three years ago. I don't know where that floor is but given the fact that alternative capital flow has slowed and that traditional players are pulling back capacity for property cat, we've got to reach bottom at some point.

GREG REISNER: My sense is that institutional investors, just like they're going to allocate 20% or 30% to equities and 20% or 30% to fixed income, not to say regardless of market conditions in the reinsurance space, but to an extent, they'll always have a toehold or a foothold in the reinsurance space.

Q. What if there is a huge event?
ADITYA DUTT: At a very simple level, you have an expected loss. Let's call it a very big one. Pick Florida because everyone thinks they know about Florida. A big loss occurs in Florida. It's a well-modeled region of the world. We think what prevails is the capital provider. The capital provider is comfortable putting in more capital.

Let's say it's a part of the world, a peril or a region that's unmodeled, unknown, and it's a huge surprise. What prevails is expertise, intellectual capital, and not necessarily financial capital. Even if you have the money, you're afraid. You don't necessarily rush into that part of the world.

FRANK MAJORS: What's changed is that capital can flow to things a lot more efficiently. Our industry can deliver capital to risk a lot more efficiently than 10 or 15 years ago.

We survived 2004-2005. We have some experience with investor reactions. We learned a lot from that experience, both from an underwriting perspective and from a capital behavior perspective. What we found was that the more educated, the more time that the investor had spent in asking good questions on the front end, the more they kept their nerve and wanted to re-up. The people who were the fast-money people got spooked and left.

It is going to be interesting. It will be just like past events when some reinsurers failed and some thrived. You're going to see some ILS funds fail and you're going to see some thrive. There is enough experience to show that alternative investors are just as rational as other forms of investors.

I would argue that an investor who has a 2% to 10% allocation to an asset class is in a pretty good position to be pretty rational. It's not going to hurt them if they've got a 5% allocation and it's down 20%. That's down 1% on their fund. They can take a long view on that. This idea that alternative capital is going to be particularly flighty is pretty overblown.

Q. We've seen more ILS structures with aggregate attachment triggers, as opposed to per-occurrence triggers. What is driving that?
ADITYA DUTT: There's nothing new about aggregate triggers. It's a standard feature of reinsurance contracts to be sold in either form. I don't think whether it's aggregate or per occurrence is a distinction that we make between the types of capital. In terms of pricing, most underwriters in the market have a pretty good feel for how to distinguish between the two. You can argue whether everyone is facile in establishing a price on that or pricing it correctly, so to speak. In our opinion, it's not a distinction between traditional or alternative capital. It's a fairly standard distinction between contracts. Following the losses in 2011 in the retrocessional market, the aggregate trigger gained a little more popularity.

ROBERT DEROSE: Aggregate covers were definitely in demand following a series of events; obviously there are benefits associated with having an aggregate type of trigger. Pricing was somewhat prohibitive at that point in time. While there was an appetite for it, reinsurers had more of a firm foothold in terms of pricing and it may not have been taken advantage of.

FRANK MAJORS: Retro aggregate is a tough product to sell. A lot of what's driving this is people trying to get headline, no-loss returns for their investors, a certain type of investor who is looking for double-digit returns. There aren't that many ways to do that. An aggregate retro is sort of like an embedded levered product. That's one way to do it and it's not something that we do, but to each his own.

Q. We're hearing about over-the-top risk in which an ILS fund collateralizes fronting carriers to a certain probable maximum loss. What if the loss turns out to be larger than the PML?
ROBERT DEROSE: Over-the-top risk is an area of real concern for us as a rating agency. When we rate primary companies we look at the reinsurance program, whether it's traditional or collateralized re. If it's a collateralized mechanism, is it collateralized to limit or is it collateralized to a selected PML? If it is only collateralized to a stated PML, is that over-the-top risk taken into account in the tail exposures that the company has? Our new BCAR model, which will be rolled out at the end of this year, is looking further out into the tail. That type of exposure will now be more visible in the rating process. It's always been part of our rating process but now you're going to see it through our capital model analysis. It's important in that companies collateralize to a PML where they feel pretty comfortable that a likelihood of over-the-top risk of an event is pretty remote. Nonetheless, remote things can happen. We as a rating agency have to be cognizant of that and factor that into our rating analysis.

GREG REISNER: Model risk is a real thing or a potentially real phenomenon. The devil's in the detail—that is going to be what shapes the next hard market. Or maybe it wouldn't be a hard market if it winds up being within expectations, then it's business as usual.

FRANK MAJORS: Tail risk is tail risk and you've got to hold capital for it and you need to charge for it. We need to be aware, whether it's because you're taking tail risk because you're taking a lot of cat risk directly, or whether you're providing fronting services and there is over-the-top risk.

Q. We've heard of some ILS funds reinsuring each other, forming something like an ILS spiral. Are there unintended consequences of this? Could a Unicover-type situation occur again?
ADITYA DUTT: It's probably not too different than reinsurers reinsuring each other. Yes, we've seen a lot of ILS funds buying cover from each other. The only thing you have to be careful about is investors in both places. A lot of investors are now increasingly putting their capital in multiple funds. Money may be just changing pockets, although I wouldn't call this an existential issue for the ILS industry. It's something to watch.

FRANK MAJORS: I don't think this is a systemic risk. It does differ from the spiral, in that the spiral was basically based on promises to pay, leverage, whereas ILS funds have the built-in disciplining factor that they're typically fully funded. Do I think it's healthy? No. Does it make sense? No. Does it serve anybody's purpose? No. Do I think it's a danger to the broader industry? I don't think so.

ROBERT DEROSE: That would be exactly my concern. Is there any leverage in the spiral? I don't know the answer to that. We don't rate collateralized pools, so we don't have any transparency. We as a rating agency, when we hear about this type of issue, quite frankly it makes us more skeptical of a collateralized facility. It puts more pressure on us to make

To view the complete discussion, including additional topics such as the evolving market for ILS and the role of retail investors, please visit *http://www.ambest.com/conferences/webinars.asp*.

sure that we're looking at the collateralized documents to make sure that the collateral is, in essence, fool-proof, that the collateral is to limit or sufficiently high up enough to make any possible over-the-top loss remote and that it can be drawn with no questions.

If the collateral is only partial collateral and this is going on, then it really becomes a major issue from a credit perspective and something that we as a rating agency have to worry about.

Segment Review
September 5, 2017

The Only Certainty in Regulatory Risk is Uncertainty

Legislative and regulatory proposals in Washington would affect (re)insurance industry

Regulatory developments have taken place in very small steps thus far in 2017, and much remains uncertain. It is no surprise that regulatory risk and compliance remain high on the list of concerns cited by members of (re)insurance management teams when surveyed, and most would say that this will remain a concern for a number of years.

Uncertainty often accompanies election years

Elections have taken place in a number of jurisdictions so far this year, with Theresa May's Conservative Party narrowly retaining power in the U.K., a new French president coming from a political party barely a year old, and a change in government in Bermuda following its general election. Although Section 50 has been triggered by the U.K., signaling the start of the 24-month countdown to the country's exit from the European Union, parties are in the very early stages of discussing a wide range of topics related to the exit. In the United States, President Trump continues to face challenges in the first year of his presidency as he works to pass key legislation promised during his campaign, some of which will affect the (re)insurance industry.

Healthcare reform in the U.S. remains under a cloud …

The Trump Administration continues to work toward passing health care reform legislation. With the Senate having only agreed to debate a health care bill in late July, the passage of health care reform remains elusive. A proposal to vote solely on the repeal of the Patient Protection and Affordable Care Act without an immediate replacement has been given a dire prognosis by the Congressional Budget Office.

… and related, potential tax reforms could affect insurers

Health care is one part of a broader tax reform package expected later in the year. In addition to tax reform measures that benefit individuals, the package currently includes provisions to cut the corporate tax rate and to impose a border adjustment tax. If the border adjustment tax does not exclude financial services transactions, the (re)insurance industry would be materially impacted. If the border adjustment tax is removed from the tax reform package altogether, replacement revenue would be needed and the government may turn to House Bill H.R. 1 (Rep. Dave Camp, R-MI), the Tax Reform Act of 2014, for sources of potential revenue. Although H.R. 1 was never passed, it provides a number of options for legislators to consider to offset individual and corporate tax cuts, including the disallowance of tax deductions on U.S. reinsurance cessions to affiliates in jurisdictions where legislation does not tax reinsurance premiums (H.R.1 §3701).

Including the disallowance of tax deductions for certain non-U.S. affiliated cessions in tax reform would impact the (re)insurance industry globally, and not just from a tax perspective. From an enterprise risk management perspective, internal reinsurance aids the centralization of key functions such as capital management, investment management, and reinsurance purchasing. Opponents of the provision argue that higher taxes would reduce capacity and increase rates, which would ultimately fall on the U.S. consumer. The details of the tax reform package are expected by the end of 2017.

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U.S. to sign Covered Agreement with EU

In July 2017, the U.S. Department of the Treasury and the Office of the U.S. Trade Representatives announced their intent to sign the bilateral agreement commonly known as the Covered Agreement with the EU ("Agreement"), which provides for mutual recognition in the areas of reinsurance, group supervision, and exchange of information, as well as reductions in collateral requirements. Earlier in the year, the National Association of Insurance Commissioners (NAIC) and others expressed concerns to Treasury Secretary Steven Mnuchin about the lack of clarity in a number of the Agreement's terms. The details of the Agreement were of particular concern to the NAIC because state regulators would be responsible for implementing many of the Agreement's provisions. The NAIC issued a statement in connection with the July announcement, noting that key elements of the Agreement would be clarified and that the primacy of state regulation was affirmed. This is a positive step forward, with more details to follow when the Agreement is signed and a U.S. policy statement is issued.

The Agreement does not cover a small number of jurisdictions that are outside of the EU but have received "qualified jurisdiction" status from the NAIC. Qualified jurisdictions are eligible for certification by a state as a certified reinsurer for collateral reduction purposes. In addition to Bermuda, Japan, and Switzerland, four EU countries have achieved this status for a five-year period—absent a material change in circumstances—from January 1, 2015. Bermuda and Switzerland are also Solvency II equivalent, while Japan has temporary equivalence with Article 172 (reinsurance) for five years and provisional equivalence with Article 227 (group solvency) of the Solvency II Directive for ten years.

Post-Brexit, the U.K., a qualified jurisdiction, will also fall outside the Agreement and will undoubtedly seek Solvency II equivalence. Bermuda, a British Overseas Territory, will retain its Solvency II equivalence status following Brexit —it has never been a member of the EU — and it has already completed its equivalence review. Efforts are being made to apply the benefits of the Agreement to qualified jurisdictions outside the EU.

A.M. Best's views remain unchanged

A.M. Best does not generally foresee any rating impact from the relaxation of collateral requirements resulting from the signing of the Covered Agreement, provided that companies adhere to the fundamentals of their credit risk reviews. Should counterparties decide to reduce or eliminate collateral requirements, the amount of required capital as calculated by Best's Capital Adequacy Ratio model is likely to increase; on the other hand, all things being equal, having less collateral would improve liquidity for the reinsurer. A.M. Best focuses primarily on the consolidated operating group and consolidated operating performance, net of tax. We will continue to communicate with (re)insurance companies and other members of the industry as they navigate this period of uncertainty.

Segment Review
September 5, 2017

Challenging Market Conditions and An Increase in Large Losses Affect Reinsurance Performance at Lloyd's

Lloyd's offers proactive response to competitive threats

Lloyd's occupies an excellent position in the global insurance and reinsurance markets as a specialist writer of property and casualty risks. The collective size of the market and its unique capital structure enable syndicates to compete effectively with large international insurance groups under the well-recognized Lloyd's brand. The competitive strength of Lloyd's derives from its reputation for innovative and flexible underwriting, supported by the pool of underwriting expertise in London.

On July 20, 2017, A.M. Best affirmed the Best's Financial Strength Rating of A (Excellent) and the Long-Term Issuer Credit Ratings of "a+" of Lloyd's and Lloyd's Insurance Company (China) Limited. The outlook on each rating is stable. The ratings reflect Lloyd's strong and stable risk-adjusted capitalisation, excellent business profile, and recent strong underwriting performance.

Overall operating performance has been good in recent years, supported by strong technical performance as demonstrated by an average five-year combined ratio of 90% (2012-2016). However, the market's combined ratio deteriorated in 2016 to 97% (2015: 89%), primarily due to a higher major loss burden and a reduction in reserve releases. Major losses accounted for approximately 9% of net earned premiums in 2016, which is in line with the market's 10-year average. Assuming average catastrophe experience, technical performance in 2017 is expected to be in line with 2016.

Lloyd's maintains an excellent business profile. However, an increasingly difficult operating environment poses challenges to its competitive position. In particular, the growth of regional (re)insurance hubs combined with the comparatively high cost of placing business at Lloyd's is reducing the flow of business into the London market. There has been a proactive response by Lloyd's to these threats. Improved access to international business is being supported by the Vision 2025 strategy and the establishment of regional platforms, and Lloyd's continues to implement initiatives to improve efficiency and reduce operating costs.

A more urgent threat to the competitive position of Lloyd's is the United Kingdom's decision, taken in a referendum held in June 2016, to leave the European Union (EU). In late March 2017, the U.K. government gave formal notice, under Article 50 of the EU's Lisbon Treaty, of its intention to withdraw from the EU. Under these guidelines, this gave the EU two years in which to negotiate and conclude an agreement with the U.K., setting out the arrangements for its withdrawal, taking account of the framework for its future relationship with the EU.

Membership in the EU gives businesses in any member state the right to trade throughout the EU. Depending on the outcome of the exit negotiations, leaving the EU could restrict the access of Lloyd's to European business. Since the referendum, Lloyd's has devoted significant resources to assessing the options for it to continue to access EU markets. Within days of

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Article 50 being invoked, Lloyd's announced that it would establish a European insurance company in Brussels that would be ready to write business from 1 January 2019, subject to regulatory approval.

Total reinsurance premiums written by Lloyd's increased by 9.5% in 2016 to GBP 9.4 billion, with some variation across the classes within the segment. Lloyd's reinsurance class comprises property (with property catastrophe excess of loss the largest segment), casualty (primarily non-marine excess of loss and U.S. workers' compensation), and specialty reinsurance (marine, energy, and aviation reinsurance).

Property reinsurance, which accounts for over half the reinsurance segment, reported an 8.5% increase in GWP, largely attributable to exchange rate movements. Although the pace of decline has slowed in some key markets, in the absence of major natural catastrophe events, premium rates continue to soften and terms and conditions continue to widen. There were several large loss events during 2016, including Hurricane Matthew, which affected the Bahamas, Florida, and South Carolina; and the Fort McMurray wildfire in Canada. In addition, there were flood losses in the United States, the largest being in Louisiana, and earthquakes in Japan, New Zealand, and Ecuador. As in recent years, however, none of these losses, either alone or in aggregate, had a lasting positive effect on premium rates, particularly with capital in the reinsurance market continuing to be plentiful.

It was a similar scenario of surplus capacity and softening rates in the casualty market, yet the casualty reinsurance sector achieved 16.6% growth in GWP during 2016, assisted by the decline in sterling compared to the U.S. dollar. The sector includes motor excess of loss business, which, together with some other liability business, is affected by the change in the Ogden tables used to calculate the discount rate for lump sum bodily injury compensation in the U.K. announced in February 2017. The lower discount rate is likely to lead to a re-evaluation of current pricing levels for affected lines within casualty reinsurance. Specialty reinsurance saw 5.9% growth in GWP, with increases of 7.2% in marine and 10.8% in energy offsetting a decrease of 3.6% in the aviation sector.

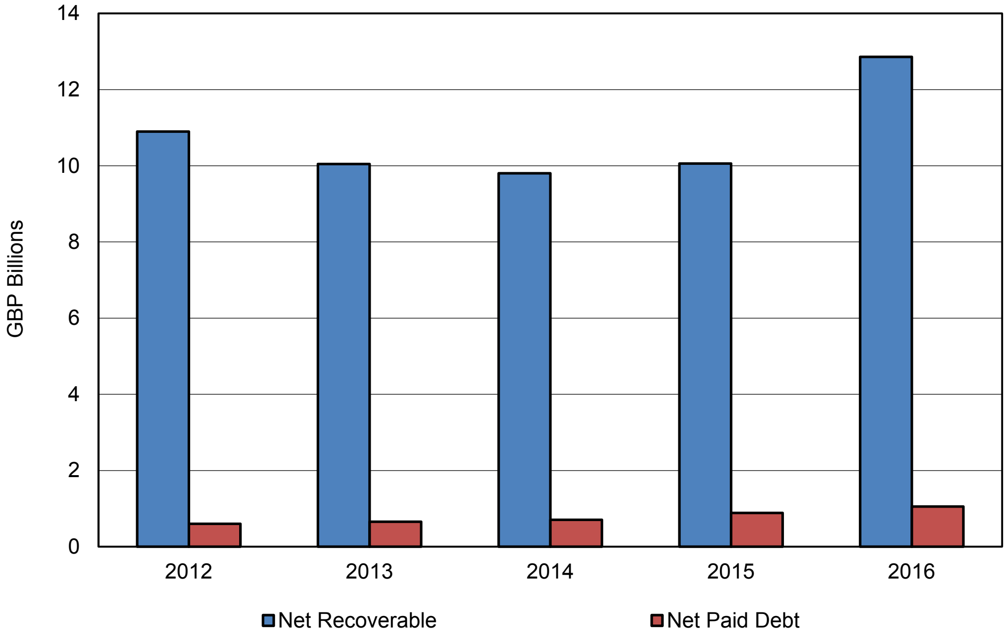
The performance of Lloyd's reinsurance segment deteriorated in 2016. All three sub-segments (property, casualty, and specialty) reported accident-year combined ratios above 100%, although reserve releases supported calendar-year combined ratios below 100%. The property reinsurance segment was affected by the year's catastrophe events, in particular Hurricane Matthew and the wildfires in Fort McMurray, Canada, as well as a number of smaller catastrophe and risk losses, which contributed to the increase in the accident-year combined ratio. By contrast, 2015 was a benign catastrophe-loss year.

Reinsurance ceded by Lloyd's increased slightly to 23% in 2016 (including reinsurance placed within Lloyd's). The Performance Management Directorate's ongoing focus on syndicate business plans and their reinsurance dependence is expected to support continued stability in this ratio in 2017. The Lloyd's reinsurance panel remains well-diversified, with the 10 largest external reinsurance groups accounting for 43% of total reinsurance recoverables in 2016 (2015: 45%).

Exhibit 1 shows the development in Lloyd's net recoverables and total net paid debt. Total net reinsurance recoverables increased to GBP 12.9 billion at year-end 2016 from GBP 10.0 billion in 2015.

Lloyd's continues to monitor its reinsurance exposure through a range of submitted returns, complemented by monitoring of Realistic Disaster Scenarios for individual syndicates. The security required by managing agents for their syndicate reinsurance programs is reviewed

Exhibit 1
Reinsurance Debtors (2012-2016)



Source: Lloyd's

on a regular basis in order to address any issues that have the potential to affect the financial strength of the overall market. In particular, total outstanding reinsurance recoverables, counterparty concentration risk, and the purchasing trends of individual syndicates are all closely monitored.

Segment Review
September 5, 2017

The Emergence of U.S. Mortgage Exposure in Reinsurance

Diversification benefit among lines of business and risk types greatly reduces NRC for any additional GSE mortgage risks assumed by reinsurers

Introduction

Historically, U.S. mortgage risks ceded to the reinsurance market generally were concentrated among reinsurance affiliates of primary monoline mortgage insurance companies, captive mortgage reinsurance entities affiliated with mortgage lending institutions, and a handful of mainstream reinsurers. U.S. mortgage insurance exposures, which generally have been an obscure product line for reinsurance companies, have now become very pronounced in reinsurers' lines of business.

Two key factors are driving this phenomenon: a) the mandate by the Federal Housing Finance Agency (FHFA), in its role as conservator, requiring the two government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, to cede as much as possible of the credit risk of their pooled loans to the private sector; and b) soft market conditions in the property/casualty reinsurance sector, driven by falling rate-on-line on property catastrophe exposures and competition from the alternative capital sector. Thus, supply and demand conditions have created a favorable outcome, with reinsurers being the beneficiaries of the insurance-reinsurance transactions of the GSEs' U.S. mortgage credit risk transfer program.

Credit Risk-Sharing Programs

The credit risk-sharing programs undertaken by the GSEs generally fall under the following:

- Enterprise debt issuances through Fannie Mae's Connecticut Avenue Securities (CAS) and Structured Agency Credit Risk (STACR) by Freddie Mac
- Credit-linked notes, similar to enterprise debt issuances, but with the notable exception that the notes are issued by a trust that is intended to limit counterparty risk faced by investors
- Insurance-reinsurance transactions, through which GSEs shift credit risk on a pool of mortgage loans to mortgage insurers and reinsurers through quota-share and aggregate excess loss covers; two pooled level insurance products to accomplish this credit risk transfer are Fannie Mae's Credit Insurance Risk Transfer (CIRT) and Freddie Mac's Agency Credit Insurance Structure (ACIS)
- Front-end lender risk-sharing transactions
- Senior-subordinate securitizations

Insurance-Reinsurance Transactions

The insurance-reinsurance transactions in the GSEs' mortgage credit risk-transfer programs mimic a traditional reinsurance program, whereby an insurance policy for the credit risk on a reference pool of the GSEs' mortgage loans portfolio is issued by a primary insurer or a protected cell insurance vehicle and transferred to one or more reinsurance companies. The reinsurance programs are structured as aggregate excess of loss covers with GSEs retaining a portion of credit losses underlying the loan portfolio. The reinsurers generally follow the fortunes of the GSEs. The majority of the reference pool on the reinsurance program is generally composed of 30-year loans on single family-homes. The reinsurance cover is in effect

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for approximately 10-12 years from the transaction date, with a cancellation option by the GSEs. The reinsurance transactions are partially collateralized, with the amount of collateral provided depending on the credit rating of the reinsurer and other factors.

Fannie Mae's CIRT Program

As of July 30, 2017, Fannie Mae, under its flagship CIRT and MIRT programs, has transferred approximately USD 4.7 billion in limits or risk in-force to the reinsurance sector, covering an initial reference pool of mortgage loans on single-family homes with approximately USD 189.8 billion in initial unpaid principal balances (**Exhibit 1**). These reference pools of mortgage loans cover mostly 30-year fixed interest rate mortgages with a reinsurance coverage term

Exhibit 1

Fannie Mae - Summary of Key Credit Insurance Risk Transfer (CIRT) Deal Terms

No.	Deal	Effective Date	Maturity Date	Term (years)	Total Initial Principal Balance ($mm) (UPB)	Aggregate Retention[1] ($mm)	Limit of Liability[2] ($mm)	Limit % as of UPB	Retention % as of UPB
1	MIRT 2013-1[3]	Sep-13	Aug-23	10.0	5,171.7	10.3	93.1	1.80%	0.20%
2	CIRT 2014-1	Nov-14	Oct-24	10.0	6,418.9	32.1	192.6	3.00%	0.50%
3	CIRT 2015-1	Jun-15	May-25	10.0	4,675.8	23.4	116.9	2.50%	0.50%
4	CIRT 2015-2	Jul-15	Jun-25	10.0	8,101.4	40.5	202.5	2.50%	0.50%
5	CIRT 2015-3	Aug-15	Jul-25	10.0	7,047.7	35.2	176.2	2.50%	0.50%
6	CIRT 2015-4	Oct-15	Sep-25	10.0	7,399.9	37.0	185.0	2.50%	0.50%
7	CIRT 2015-5	Oct-15	Sep-35	10.0	4,859.9	24.3	121.5	2.50%	0.50%
8	CIRT 2015-6	Nov-15	Oct-25	10.0	8,229.3	41.1	205.7	2.50%	0.50%
9	CIRT 2016-1	Feb-16	Jan-26	10.0	8,799.9	44.0	220.0	2.50%	0.50%
10	CIRT 2016-2	Feb-16	Jan-26	10.0	10,673.0	53.4	266.8	2.50%	0.50%
11	CIRT 2016-3	Mar-16	Feb-26	10.0	5,693.7	28.5	142.3	2.50%	0.50%
12	CIRT 2016-4	May-16	Apr-26	10.0	9,720.0	48.6	243.0	2.50%	0.50%
13	CIRT 2016-5	May-16	Apr-26	10.0	9,027.3	45.1	225.7	2.50%	0.50%
14	CIRT 2016-6	May-16	Apr-26	10.0	3,759.9	18.8	94.0	2.50%	0.50%
15	CIRT 2016-7	Aug-16	Jul-26	10.0	10,383.4	51.9	259.6	2.50%	0.50%
16	CIRT 2016-8	Aug-16	Jul-26	10.0	4,000.0	20.0	100.0	2.50%	0.50%
17	CIRT 2016 FE-1	Oct-16	Mar-27	10.5	3,700.0	12.9	98.0	2.65%	0.35%
18	CIRT 2016-9	Oct-16	Mar-24	7.5	11,710.2	41.0	204.9	1.75%	0.35%
19	CIRT 2017- FE-1[4]	Jan-17	Jun-27	10.5	15,000.0	75.0	375.0	2.50%	0.50%
20	CIRT 2017-1	Feb-17	Jan-27	10.0	18,090.7	90.5	452.3	2.50%	0.50%
21	CIRT 2017-2	Feb-17	Jan-27	10.0	2,300.1	11.5	57.5	2.50%	0.50%
22	CIRT 2017- FE-2[4]	Apr-17	Sep-27	10.5	5,200.0	26.0	137.8	2.65%	0.50%
23	CIRT 2017-3	May-17	Apr-27	10.0	17,676.8	88.4	486.2	2.75%	0.50%
24	CIRT 2017-4	May-17	Apr-27	10.0	2,185.1	10.9	60.1	2.75%	0.50%
	Total				**189,824.6**	**910.5**	**4,716.7**		

Source: Fannie Mae

Notes:

[1] Fannie Mae's first dollar position (deductible)

[2] Maximum liability for reinsurers

[3] Mortgage Insurance Risk Transfer program

[4] Exact Total Initial Principal Balance, Aggregate Retention, Limit of Liability, and Annual Premium to be determined following the end of the fill-up period

of approximately 10 years. Under the reinsurance structure, Fannie Mae retains a first loss position or deductible amount based on a percent of the loan portfolio's initial principal balance, and it has the option to cancel the reinsurance program after 60 months or when the total current principal balance of each mortgage portfolio has declined to no more than 10% of the total initial principal balance.

Freddie Mac's ACIS Program

Freddie Mac's ACIS program shares the same reference pool as its enterprise debt issuance program, Structured Agency Credit Risk (STACR), or can be a standalone reference pool. The loans in these pools may have a) a 60% to 80% loan-to-value (LTV) for 30-year fixed rate; b) a greater than 80% LTV on 30-year fixed rate; or c) a 15-year fixed rate. Freddie Mac retains a first loss position and a vertical slice position of each tranche (portion) of mortgage credit losses ceded to reinsurers. As of July 30, 2017, Freddie Mac has transferred approximately USD 7.6 billion in limits or risk in-force to the reinsurance sector, for a reference pool of loans with approximately USD 742.8 billion in initial principal balances, as well as a requested collateral amount of USD 1.2 billion from reinsurers (**Exhibit 2**).

Capital Adequacy and BCAR

A.M. Best, as part of its rating analysis of insurance and reinsurance companies, uses its Best's Capital Adequacy Ratio (BCAR) to assess the balance sheet strength of these entities. A.M. Best's BCAR model evaluates and quantifies the adequacy of a company's risk-adjusted capital position. BCAR uses a risk-based capital approach whereby net required capital (NRC), a component of the BCAR, is calculated to support the three broad risk categories: investment risk, credit risk, and underwriting risk. The NRC in the BCAR formula also contains an adjustment for covariance, reflecting the relative statistical independence of the individual components. The covariance adjustment recognizes the low probability that all risk elements would occur simultaneously and serves to reduce the overall net required capital. The BCAR for each value-at-risk (VaR) level is derived as one minus the ratio of NRC to available capital (**Exhibit 3**).

Capital Charges Related to GSEs' Credit Risk-Sharing Reinsurance

A.M. Best's determination of how much capital should be charged in the BCAR model to account for net unexpected losses associated with the GSEs' sponsored credit risk-sharing reinsurance programs depend on stressed loss projections associated with the reference pool of mortgages, as well as on the premiums earned by the insurers for providing protection on the risk-sharing programs.

A.M. Best, in the planned revision to its core methodology, will be using a factor-based analysis to calculate capital charges for these programs at VaR confidence levels of 95%, 99%, 99.5%, and 99.6%. The factor-based approach to derive the capital charges incorporates all of the following:

- Unpaid Principal Balance (UPB) Distribution Matrix, a grid that shows the percentage of the UPB associated with a reference pool, segmented by original LTV and credit score buckets
- Stressed Ultimate Losses (SUL) Matrix, which is based on the GSEs' loan performance data for the 2007 vintage and some quality adjustments, specifically the following: 2007 default frequency and loss severity associated with 2007 mortgage vintage; contractual and effective insurance coverage corresponding to the original LTV and credit scores; differences in the mix of business before and during the 2007 environment and the current market mix of business; current mortgage loans underwriting environment; and other factors

Exhibit 2

Freddie Mac - Summary of Key Agency Credit Insurance Structure (ACIS) Deal Terms

No.	Deal Name	STACR Residual Risk	Effective Date	Maturity Date	Total Initial Principal Balance ($mm) (UPB)	Limit of Liability[1] ($mm)	Initial Minimum Collateral Amount ($mm)
1	ACIS 2013-1	2013 DN-1	Nov-13	Jul-23	22,584.4	77.4	n/a*
2	ACIS 2014-1	2013 DN-2	Apr-14	Nov-23	35,327.3	269.5	30.0
3	ACIS 2014-2	2014 DN-1	Jun-14	Feb-24	32,440.7	284.5	44.0
4	ACIS 2014-3	2014 DN-2	Nov-14	Apr-24	28,147.0	155.3	26.0
5	ACIS 2015-1	2014 HQ-2	Jan-15	Sep-24	33,434.4	500.0	62.0
6	ACIS 2015-2	2014 DN-3	Jan-15	Aug-24	19,746.2	115.2	20.0
7	ACIS 2015-3	2014 DN-4	Jan-15	Oct-24	15,740.7	91.6	16.0
8	ACIS 2015-4	2015 DN-1	Jun-15	Jan-30	27,643.5	173.1	33.0
9	ACIS 2015-5	2015 HQ-1	Jun-15	Mar-30	16,551.6	50.1	10.0
10	ACIS 2015-6	2015 DNA-1	Sep-15	Oct-27	31,875.7	132.5	30.0
11	ACIS 2015-7	2015 DNA-2	Oct-15	Dec-27	31,985.6	502.6	83.0
12	ACIS 2015-8	2015 DNA-3	Nov-15	Apr-28	34,706.3	702.4	104.5
13	ACIS 2015-9	2015 HQA-2	Dec-15	May-28	17,103.5	372.8	60.4
14	ACIS 2015-10	2015 HQA-1	Dec-15	Mar-28	19,376.9	135.6	20.2
15	ACIS 2016-1	2016 DNA-1	Jan-16	Jul-28	35,724.1	450.7	71.9
16	ACIS 2016-2	2016 HQA-1	Mar-16	Sep-28	17,931.5	336.3	53.7
17	ACIS 2016-3		Apr-16	Oct-23	11,187.0	201.4	27.3
18	ACIS 2016-4	2016 DNA-2	Jun-16	Oct-28	30,120.9	303.3	51.8
19	ACIS 2016-5	2016 HQA-2	Jun-16	Nov-28	18,455.4	208.0	37.0
20	ACIS 2016-6	2016 DNA-3	Jun-16	Dec-28	26,467.9	276.8	42.6
21	ACIS 2016-7	2016 HQA-3	Dec-16	Mar-29	15,709.4	195.1	33.3
22	ACIS 2016-8	2016 DNA-4	Sep-16	Mar-29	24,844.9	266.3	40.1
23	ACIS 2016-9	2016 HQA-4	Oct-16	Apr-29	13,846.6	148.3	25.0
24	ACIS 2016-10		Nov-16	May-24	15,827.5	285.0	32.3
25	ACIS 2017-1	2017-DNA-1	Feb-17	Jul-29	33,965.4	263.3	41.9
26	ACIS 2017-2	2017-HQA-1	Feb-17	Aug-29	29,658.9	252.3	43.0
27	ACIS 2017-3	2017-DNA-2	Apr-17	Oct-29	60,715.9	440.3	69.5
28	ACIS 2017-4		May-17	Nov-29	10,117.8	168.0	23.3
29	ACIS 2017-5	2017-HQA2	Jun-17	Dec-29	31,604.3	263.3	51.2
	Total				**742,841.4**	**7,620.8**	**1,183.0**

Source: Freddie Mac

Notes:

[1] Maximum liability for reinsurers

* Not available

Exhibit 3
Proposed Modified NRC Formula (Inclusive of Mortgage Risk)

$$\text{NRC*} = \sqrt{B1^2 + B2^2 + (B1_n + B2_n)\text{x}(B5_m + B6_m) + B3^2 + (0.5B4)^2 + (0.5B4 + B5)^2 + B6^2 + B8^2} + B7$$

(B1) Fixed Income Securities
($B1_n$) Non-affiliated Fixed Income Securities
(B2) Equity Securities
($B2_n$) Non-affiliated Equity Securities
(B3) Interest Rate
(B4) Credit Risk
(B5) Net Loss and LAE Reserves
($B5_m$) Net Loss and LAE Reserves Associated with Mortgages
(B6) Net Premiums Written
($B6_m$) Net Premiums Written Associated with Mortgages
(B7) Business Risk
(B8) Potential Catastrophe Losses

$$\text{BCAR*} = \frac{(Available\ Capital - Net\ Required\ Capital)}{Available\ Capital} x100$$

* Proposed Draft
Source: A.M. Best data and research

- Derivation of the current Stressed Ultimate Loss (SUL) as the sum of all matrix elements in the product of the Stressed Ultimate Loss Matrix and the UPB Matrix (cell-by-cell product, as opposed to matrix multiplication) bucketed by original LTV and credit scores at the various VaR levels
- Application of Seasoning Vectors by year, reflecting perceived risk changes as the loans age from the underwriting years and remaining UPB to generate seasoned SUL for subsequent periods
- Loss Pattern Vector, which reflects potential future losses to generate a cumulative loss vector as the product of SUL and Loss Pattern Vector
- Amortization Pattern Vector, which represents the average annual amortization percentage for a mortgage reference pool for transactions whose premiums are based on their UPB

A.M. Best's recently released draft criteria procedure, "Evaluating Mortgage Insurance," describes in detail how the SUL is derived from the following tables: the UPB Matrix, the Stressed Ultimate Loss Matrix, Seasoning Vectors, Loss Pattern Vectors, and Amortization Pattern Vectors.

The SUL is a key element in the determination of capital charges for A.M. Best-rated reinsurers providing coverage for the GSEs' mortgage credit risk. To calculate the capital charges, A.M. Best generally:

1. Calculates the projected losses associated with the mortgage loan reference pool;
2. Determines how the projected losses may breach each reinsured layer under the reinsurance agreement;
3. Calculates the amount of ceded premiums accruing to the reinsured layers;

4. Applies a premium credit of no more than three years for remote reinsured layers that are unlikely to be breached;
5. Estimates the initial capital charge for the reinsured layers as the projected discounted losses, minus the projected discounted premiums of the corresponding reinsured layers; and
6. Sets up a capital charge floor of 5% of the reinsurer's total outstanding limits.

Exhibit 4
Hypothetical Reinsurance Cover of Selected CIRT Transactions

Program	Effective Date	Valuation Date	Years Since Inception	All Reinsurers Limits ($mm)	Reinsurer Limits ($mm)	Initial SUL as of % UPB	Remaining UPB	Seasoning	Seasoned SUL (as of % UPB)	Ult Loss (reflects Loss Pattern Vector)	Projected Discounted Losses	Premium Credit	Capital Charge	Capital Charge ($mm)	Capital Charge divided by Reinsurer Limits
(1)	(2)	(3)	(4)	(5a)	(5b)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
CIRT 2016-6	May-16	Jun-17	1.1	94.0	20.0	4.30%	81.82%	105.74%	3.72%	3.04%	79.88%	27.77%	52.11%	10.4	
CIRT 2016-7	Aug-16	Jun-17	0.8	259.6	50.0	3.65%	81.52%	104.51%	3.11%	2.54%	64.16%	27.40%	36.76%	18.4	
CIRT 2016-8	Aug-16	Jun-17	0.8	100.0	20.0	3.61%	84.72%	104.51%	3.19%	2.61%	66.29%	28.48%	37.81%	7.6	
CIRT 2017-1	Feb-17	Jun-17	0.3	452.3	95.0	3.54%	92.86%	101.80%	3.34%	2.73%	68.88%	29.70%	39.18%	37.2	
CIRT 2017-2	Feb-17	Jun-17	0.3	57.5	15.0	3.51%	91.91%	101.80%	3.28%	2.68%	67.28%	29.40%	37.89%	5.7	
CIRT 2017-3*	May-17	Jun-17	0.1	486.2	100.0	4.40%	99.72%	100.45%	4.40%	3.60%	78.47%	31.88%	46.59%	46.6	
Total				**1,449.5**	**300.0**									**125.9**	**42.0%**

Source: A.M. Best data and research
Notes:
Input and outputs are based on VaR 99 estimates
(5a) Max liability of all reinsurers (reinsured layer)
(5b) Max liability of the hypothetical reinsurer
(6) Initial stressed ultimate losses (ground up) based on UPB grid and SUL Matrix
(7) Estimated remaining UPB as valuation date based on A.M. Best's estimates
(8) Based on A.M. Best Seasoning Vectors reflecting time elapse between transaction inception date through June 1, 2017
(9) Product of Columns (6), (7) and (8) and SUL reflecting Seasoning Vector and the current UPB (expressed as a ratio to initial UPB)
(10) Estimated ultimate losses (ground up) reflecting Loss Pattern Vector, derived as product of (9) and the Loss Pattern Vector (expressed as a ratio to initial UPB)
(11) Estimated discounted losses associated with reinsurance layer over the 12 years (expressed as a ratio to initial reinsured limit)
(12) Estimated discounted premium which accrues to the reinsurance layer over 10 years (expressed as a ratio to initial reinsured limit)
(13) Estimated capital charge is the difference between projected discounted losses and the discounted premium (expressed as a ratio to initial reinsured limit)
(14) Estimated capital charge ($mm) is the product of Column (5b) and Column (13)
(15) Ratio of the total of Column (14) over total Column (5b)

Example of Capital Charge Calculation at VaR 99% Level

Exhibit 4 shows the capital charge of a hypothetical reinsurer participating in five CIRT transactions with a combined total limit of USD 300 million. The capital charge for the hypothetical reinsurer starts with an estimate of the total potential losses underlying the reference mortgage pool adjusted for the retained losses by Fannie Mae, subject to the reinsurance limit. The hypothetical reinsurer's share of loss, which is reflected in the interest and liability agreement, is the product of the hypothetical reinsurer's percentage share and the estimated reinsured loss amount, adjusted for the first loss position and reinsurance limit. The estimated projected losses also reflect the following: A.M. Best's Seasoning Vectors, Loss Pattern Vectors at the 12-year mark, and Amortization Pattern Vector to obtain the current outstanding UPB and potential premium credit. The calculation is made separately for each CIRT transaction.

In this example, the resulting capital charge for mortgage risk of USD 300 million (approximately 20.7% of USD 1.4 billion) is about USD 126 million, 42% of the reinsurer's initial limit at the VaR 99 level as of the selected valuation date. In other words, the hypothetical reinsurer holding USD 126 million has just a 1% probability chance that this amount will not be sufficient to withstand potential catastrophic and systemic mortgage losses similar to those of 2008 if it has provided reinsurance coverage for the selected CIRT transactions.

Exhibit 5
Hypothetical Reinsurance Cover for Selected ACIS Transactions

Program (1)	Tranche	Effective Date (2)	Valuation Date (3)	Years Since Inception (4)	All Reinsurers Limits ($mm) (5a)	Reinsurer Limits ($mm) (5b)	Initial SUL as of % UPB (6)	Remaining UPB (7)	Seasoning (8)	Seasoned SUL (as of % UPB) (9)	Ult Loss (reflects Loss Pattern Vector) (10)	Projected Discounted Losses (11)	Premium Credit (12)	Capital Charge (13)	Capital Charge ($mm) (14)	Capital Charge divided by Reinsurer Limits (15)
ACIS2017-1	M1	Feb-17	Jun-17	0.3		10.0	3.43%	96.51%	101.80%	3.37%	2.75%	10.66%	6.48%	4.18%	0.4	
ACIS2017-1	M2	Feb-17	Jun-17	0.3		15.0	3.43%	96.51%	101.80%	3.37%	2.75%	75.85%	18.76%	57.09%	8.6	
ACIS2017-1	B1	Feb-17	Jun-17	0.3		10.0	3.43%	96.51%	101.80%	3.37%	2.75%	85.85%	16.67%	69.18%	6.9	
Subtotal					**263.3**	**35.0**									**15.9**	**45.4%**
ACIS2017-3	M1	Apr-17	Jun-17	0.2		15.0	3.39%	98.03%	100.90%	3.35%	2.74%	17.75%	6.19%	11.56%	1.7	
ACIS2017-3	M2	Apr-17	Jun-17	0.2		15.0	3.39%	98.03%	100.90%	3.35%	2.74%	76.73%	18.02%	58.71%	8.8	
ACIS2017-3	B1	Apr-17	Jun-17	0.2		20.0	3.39%	98.03%	100.90%	3.35%	2.74%	85.42%	16.27%	69.14%	13.8	
Subtotal					**440.3**	**50.0**									**24.4**	**48.7%**
Total						**85.0**									**40.3**	**47.4%**

Source: A.M. Best
Notes:
Input and outputs are based on VaR 99 estimates
(5a) Max liability of all reinsurers (reinsured layer)
(5b) Max liability of the hypothetical reinsurer
(6) Initial stressed ultimate losses (ground up) based on UPB grid and SUL Matrix
(7) Remaining UPB as of valuation date based on Freddie Mac's performance data
(8) Based on A.M. Best Seasoning Vectors reflecting time elapse between transaction inception date through June 1, 2017
(9) Product of Columns (6), (7) and (8) and SUL reflecting Seasoning Vector and the current UPB (expressed as a ratio to initial UPB)
(10) Estimated ultimate losses (ground up) reflecting Loss Pattern Vector, derived as product of (9) and the Loss Pattern Vector (expressed as a ratio to initial UPB)
(11) Estimated discounted losses associated with reinsurance layer over the 12 years (expressed as a ratio to initial reinsured limit)
(12) Estimated discounted premium which accrues to the reinsurance layer over 12 years (expressed as a ratio to initial reinsured limit)
(13) Estimated capital charge is the difference between projected discounted losses and the discounted premium (expressed as a ratio to initial reinsured limit)
(14) Estimated capital charge ($mm) is the product of Column (5b) and Column (13)
(15) Ratio of the total of Column (14) over total Column (5b)

Exhibit 5 shows the corresponding results for the capital charge associated with the hypothetical reinsurer's participation in different tranches for two ACIS transactions. The results reflect the same approach as described earlier. For these transactions, the hypothetical reinsurer participates in different percentages associated with each tranche in each ACIS transaction. The estimated losses are adjusted for first-dollar position and vertical share of losses for each tranche, subject to the reinsurers' maximum liability in each tranche for each transaction. In this example, the resulting capital charge is approximately USD 40.3 million for reinsurance coverage of USD 85.0 million (approximately 12.1% of USD 703.6 million) at the VaR 99% level for the ACIS transactions.

For comparison purposes, the resulting capital charges are expressed as a ratio to the initial reinsurance limits or initial UPB. However, the calculations generally reflect the current outstanding UPB based on the selected future amortization pattern, including the scheduled and unscheduled amortization associated with the reference pools, loss payments made, and the potential premium credit and erosion of reinsurer limits as observed in some of the less risky tranches in some of the transactions.

Impact of GSE Reinsurance-Sharing Program Capital Charges on BCAR

Exhibits 6 and **7** illustrate how the capital charges associated with the GSEs' mortgage risk-transfer program impact the hypothetical reinsurer's BCAR score and assessment. This illustration assumes that the reinsurer providing coverage for the GSE mortgage risk has a well-diversified book of business, with adjusted capital and shareholders' funds of USD 4 billion. The reinsurer has USD 385 million in limits of GSE mortgage credit risk, and according to the factor-based analysis, the capital charge for this risk is estimated at about USD 166 million (43.1% of limit), as of the specified valuation date. The NRC, calculated using the BCAR model (excluding the GSE mortgage risk), is approximately USD 1.84 billion, with a BCAR score of 53.9%.

Exhibit 6
Net Required Capital and BCAR Calculations

Capital Risk Components:		Amount (000)
Fixed Income Security Risk (All)	B1	159,538
Fixed Income Security Risk (non-affiliate)	$B1_n$	150,782
Equity Securities Risk (All)	B2	700,000
Equity Securities Risk (non-affiliate)	$B2_n$	534,738
Interest Rate Risk	B3	106,064
Credit Risk	B4	70,000
Loss and LAE Reserve Risk (excluding mortgage risk)	B5	1,400,000
Loss and LAE Reserve Risk (mortgage risk only)	$B5_m$	166,124
Net Premiums Written Risk (excluding mortgage risk)	B6	900,000
Net Premiums Written Risk (mortgage risk only)	$B6_m$	0
Business risk	B7	1,500
Potential Natural Catastrophe Losses	B8	0
Net Required Capital Calculations:		
Net Required Capital (excluding mortgage risk)		1,844,636
Net Required Capital (including mortgage risk)		1,882,808
Adjusted Capital and Shareholders' Fund		4,000,000
BCAR:		
BCAR (excluding mortgage risk)		53.9%
BCAR (including mortgage risk)		52.9%

Source: A.M. Best data and research

In incorporating the estimated mortgage-related capital charge (i.e., the mortgage-related reserve risk), into the BCAR, A. M. Best assumes that the correlation between the mortgage loss and LAE reserve risk ($B5_m$) and the non-affiliated fixed income securities risk ($B1_n$) is 50%. A.M. Best also assumes that the correlation between the mortgage loss and LAE reserves risk ($B5_m$) and the non-affiliated equity securities risk ($B2_n$) is 50%. Furthermore, A.M. Best assumes that the correlation between the mortgage loss and LAE reserve risk ($B5_m$) and the non-life reserves risk associated with other lines of business is 10%. This gives an NRC amount of USD 1.88 billion, with a BCAR score of 52.9% for this particular hypothetical reinsurer.

It is important to emphasize the role diversification plays in the calculation of the NRC and, hence, the BCAR. In the NRC, the correlation of mortgage losses to other property/casualty lines of business reserves is assumed to be low; therefore, the reserve diversification benefit is high when the mortgage risk is added to a reinsurer's business mix. In addition to a reserve-line diversification benefit, the covariance adjustment in the NRC further deepens the effect of the initial capital charge or unexpected losses associated with the GSEs' mortgage-related reinsurance transactions (**Exhibit** 7).

This illustration shows that the initial capital charge of USD 166 million associated with USD 385 million of GSE mortgage exposures/limits is reduced to just USD 38 million at the 99% VaR Level—only approximately 10% of the assumed USD 385 million limits of GSE mortgage risk, a decline of almost 77% from the initial capital charge. The absolute difference in the

Exhibit 7
Example: Impact on NRC and BCAR Related to GSE Mortgage Risks

	Item	VaR 99
Limits and Assumed Losses		
(1)	GSE Mortgage Exposure Limit	385,000
(2)	Model Unexpected Loss	166,124
(3) = (2) / (1)	Ratio of Model Unexpected Loss to GSE Mortgage Exposure Limit	**43.1%**
Net Required Capital		
(4)	Net Required Capital Without Mortgage Risk	1,844,636
(5)	Net Required Capital With Mortgage Risk	1,882,808
(6) = (5) - (4)	Incremental Net Required Capital (INRC)	38,171
(7) = (6) / (1)	Ratio of INRC to GSE Mortgage Exposure Limit	**9.9%**
BCAR Scores		
(8)	BCAR Score Without GSE Mortgage Risk	53.9%
(9)	BCAR Score With GSE Mortgage Risk	52.9%
(10) = (9) - (8)	BCAR Scores (absolute difference)	**-1.0%**

Source: A.M. Best

Notes:

Row (1). Reinsurer's GSE Mortgage Exposure Limit

Row (2). Modeled Unexpected Loss -- Ground Up Modeled Losses Adjusted for Mortgage Exposure Reserves

Row (3). Ratio of Row 2 to Row 1

Row (4). Net Required Capital Before Adding Mortgage-Related Losses

Row (5). Net Required Capital After Adding Mortgage-Related Losses

Row (6). Net Required Capital After Mortgage Losses Less Net Required Capital Before Mortgage Losses

Row (7). Ratio of Row 6 to Row 1

Row (8). BCAR Score Before Adding Mortgage Risk

Row (9). BCAR Score After Adding Mortgage Risk

Row (10). Row 9 minus Row 8

BCAR scores (without and with) the GSE assumed mortgage risk of 385 million shows only a 1% decline. In other words, for every USD 100 million of additional GSE mortgage exposure assumed (in addition to the other risks), this reinsurer needs to provide only USD 9.9 million additional capital to be able to withstand losses with 99% confidence in a stressed mortgage claims environment similar to 2008.

Concluding Remarks

In the future, A.M. Best expects to see more of the GSEs' mortgage risks finding their way to the reinsurance market, as the FHFA expects the GSEs to reduce taxpayers' risk by expanding the role of private capital in the mortgage market. The GSEs would continue to cede the credit risks associated with single-family and multifamily loans in the foreseeable future. In addition, A.M. Best also expects an increase in demand in GSEs' mortgage credit risk from reinsurers and other alternative capital providers in reinsurance. Benign property catastrophe insured losses (which have kept rate-on-line in the doldrums), along with insurance brokers actively involved in this market, bode well for increased participation in the GSEs' reinsurance credit risk sharing program. Current U.S. housing pricing conditions may also be a contributing factor.

A.M. Best will continue to monitor and assess the effects of the GSEs' risk-sharing program on the reinsurance market and provide periodic updates on this program. A.M. Best's recently released draft criteria, "Evaluating Mortgage Insurance," provides a thorough framework for estimating potential losses and capital charges for A.M. Best-rated reinsurers' involved in the GSEs' reinsurance credit risk transfers.

Segment Review
September 5, 2017

Life Reinsurance Marketplace: A Study in Stability

U.S. Life reinsurance market fundamentals more favorable than the primary market

The fundamentals driving the reinsurance market in the U.S. continue to be characterized by the assumption of more stable liabilities, favorable capitalization, a conservative investment approach, and solid market positions. The segment contrasts with the life and annuity market, which remains more susceptible to a possible downturn in the credit cycle, persistently low interest rates, difficulties with top line growth, and deterioration in the overall credit quality of investment portfolios.

Life reinsurance market is dominated by five players

The life reinsurance market differs fundamentally from the primary life market and is dominated by five large carriers, which account for the vast majority of the U.S. life mortality business (**Exhibit 1**). Four of the five are subsidiaries of higher-rated, Tier 1 global reinsurers (Munich Re, Swiss Re, Hannover Re, and SCOR) that are well-placed at their current rating levels and carry a stable outlook—the exception being SCOR SE, a dominant player in the U.S. life reinsurance market, which has a positive outlook. These major players have global life reinsurance operations, which in most cases provide a source of stable earnings to complement their non-life businesses.

Exhibit 1
Major U.S. Life Reinsurers by Premium & Life Insurance In Force, 2016
(USD Thousands)

Ratings as of Aug. 24, 2017

AMB#	Company	Best's Long-Term Issuer Credit Rating	Rating Outlook	Life Reinsurance Premium Assumed	Life Insurance In Force	Rating Effective Date
009080	RGA Reinsurance Company	aa-	Stable	8,260,927	1,938,494,991	2-Aug-17
070253	SCOR Life US Group*	a+	Positive	4,366,351	1,725,542,409	21-Sep-16
068031	Hannover Life Reassurance Co of America	aa-	Stable	23,533,342	1,554,502,971	30-Sep-16
007283	Swiss Re Life & Health America Inc	aa-	Stable	8,928,982	1,402,851,223	16-Dec-16
006746	Munich American Reassurance Company	aa-	Stable	2,982,827	1,005,942,765	19-Oct-16
060237	London Life Reinsurance Company	a+	Stable	370,776	182,138,077	21-Jul-17
006234	General Re Life Corporation	aa+	Stable	1,044,779	158,179,966	21-Dec-16
006976	Employers Reassurance Corporation	a-	Stable	927,982	146,501,549	6-Jul-17
060560	Wilton Reassurance Company	aa-	Stable	433,717	66,108,357	2-Jun-17
008863	Optimum Re Insurance Company	a-	Stable	251,016	60,938,053	29-Jun-17
008491	Commonwealth Annuity and Life Insurance Company	a-	Positive	611,237	8,281,014	15-Dec-16

* SCOR Life US Group is composed of SCOR Global Life Americas Reinsurance Company (AMB# 6555), SCOR Global Life Reinsurance Company of Delaware (AMB# 60212), and SCOR Global Life USA Reinsurance Company (AMB# 9189).
Source: Statutory 2016 NAIC filings

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Generally, the U.S. life reinsurance business makes up a significant share of the companies' global life reinsurance premium and income. Although Reinsurance Group of America (RGA) is not part of a large multi-national group, it has a longstanding, solid market position in the U.S., with substantial geographic and business diversification through operations in Canada, Europe, and Asia-Pacific. The ratings on the five companies with more modest market shares are also well-positioned; in general, these companies have strong parent organizations that are committed to the segment or strong niche market positions, or both.

Although a highly concentrated and competitive marketplace, pricing remains rational. The larger players are characterized by meaningful economies of scale, solid capitalization, and very strong market positions, and offer value-added services such as facultative underwriting or capital management solutions. A.M. Best believes that, following the acquisition of Aurigen Re by PartnerRe in early April 2017, consolidation has run its course. Nevertheless, A.M. Best also believes that acquisitions of blocks of business by the reinsurance community will continue. PartnerRe's purchase of Aurigen Re is unlikely to affect the competitive landscape in the U.S. life reinsurance market, given that PartnerRe is not a player here.

Low cession rates remain a challenge …

Despite a number of positive factors, the life reinsurance market still faces the challenge of low cession rates, which have settled in the mid-20% range, after falling steadily from a historical high of around 60%. Although the decline in ceded business is a negative, reinsurance companies provide an array of services in addition to mortality cover. Capital management solutions, often referred to as financial reinsurance, are a source of revenue, especially given the increased reserving requirements on aging underlying books such as level term. Additionally, block acquisitions provide an area of growth, as direct writers with legacy books or trapped capital look to reinsurers to essentially buy or co-insure blocks of business, allowing the direct writers to move capital to better-margin businesses. The aging population affords yet another area for growth outside mortality reinsurance. Finally, reinsurers continue to review the viability of entering additional business lines, including variable annuity and long-term care reinsurance.

… as do low interest rates

Persistently low interest rates are fueling demand for asset-intensive annuity business reinsurance, presenting opportunities for newer entrants with a bigger investment risk appetite than the more established players. However, long-established life reinsurance companies are taking on interest-sensitive businesses as well, as evidenced by RGA's recent acquisition of Farmers New World's asset-intensive business. A.M. Best will continue to monitor the performance of these blocks of business carefully, in light of the market dynamics of interest-sensitive businesses.

The demand for longevity reinsurance remains strong in the U.K. and Canada. The aging population and the need for more longevity products as retirees look for lifetime income solutions afford yet another area for growth outside of mortality reinsurance. Moreover, there is continued interest in pension risk transfer deals, which presents an opportunity for life reinsurance to provide risk solutions against meaningful mortality improvements. Lastly, A.M. Best is seeing signs of interest by reinsurers to enter the direct market. Whether this trend will continue remains to be seen, but the market has yet to be tapped by the life reinsurers.

Market dynamics impacting the direct life and annuities players include the persistently low interest rate environment and the potential for rising impairments when and if the credit cycle turns. Although lower rates affect all companies and dampen earnings, the life reinsurers in general are somewhat less reliant on investment income to achieve return targets. Reinsurers take significant risk on the liability side of the balance sheet and thus tend to accept less investment risk. Life reinsurers generate earnings primarily through underwriting results and income from financial reinsurance solutions, and tend to have more conservative asset portfolios; they do not depend heavily on investment yield to support their product offerings, and as a result are somewhat insulated from the negative effects of riskier asset classes. Their operating results have also benefited from lengthening life expectancies over the years, despite evidence of rising mortality rates in the general population as a result of drug overdoses and suicides, for example, which are more prevalent among younger people. Furthermore, the insured/reinsured population tends to be from higher social/economic classes, which constitute a larger proportion of preferred risks and are thus of less concern.

Barriers to entry remain high

Although counterparty concentration is an issue for direct writers, and new entrants may be welcomed, the barriers to entry in the U.S. life reinsurance market are significant, adding to the defensible market positions of established companies. For example, reinsurers are often viewed as partners offering underwriting and other support. Relationships built over the years offer a competitive advantage that new entrants simply do not have. New entrants continue to evince interest in the space, but their business models are focused primarily on interest-sensitive businesses. Such companies are often backed by investment managers who have expertise in certain asset classes and have bigger risk appetites. Their business model is predicated on offering attractive prices to buy annuity businesses. Cedents, however, may not be comfortable with more aggressive investment strategies because, in the event of insolvency, the business and the assets supporting that business may revert back. Despite the potential for such companies to acquire significant assets, their focus is not the more traditional life reinsurance business and thus A.M. Best does not expect to see meaningful disruption in the segment.

Covered Agreement with EU provides relief

Following a long period of debate and study, the White House has agreed to sign a Covered Agreement with the European Union. The agreement, reached after months of negotiations, is intended to relieve U.S. primary insurers of burdensome Solvency II compliance costs and provide some collateral requirement relief for EU reinsurers operating in the U.S. Currently, globally active U.S. carriers are subject to higher Solvency II mandates, including higher capital standards, because EU regulators did not recognize the U.S. state-based system as being functionally equivalent. Certain groups have voiced concerns about clarity and certainty in the Agreement, but the industry as a whole views the Agreement positively.

The operating performance and capitalization of the major life reinsurers in the U.S. marketplace is stable, underpinned by modest but steady premium growth, mortality experience that remains within pricing parameters, and very strong and defensible market positions.

Segment Review
September 5, 2017

Dark Clouds Gather over the Asian Reinsurance Market

As Asian markets evolve, region's reinsurance model faces challenges from multiple directions

The key word in the Asian reinsurance market over the past year has been 'stability'. In fact, since the impact of a series of catastrophes in 2011 on reinsurers' 2011 and 2012 results, the Asian reinsurance market's results have been stable, with only limited volatility. Many Asian reinsurers have very strong home markets, with a focus on proportional business and wider product diversification, so it is no surprise that the combined ratios of these companies' domestic portfolios tend to be less volatile than those of the domestic primary players. Having such a strong footing in their domestic markets also allows Asian reinsurers to expand overseas through reciprocal business, especially in the initial stages of overseas expansion.

Behind this stability, though, lurks the worry that Asian reinsurers are finding it difficult to grow both top and bottom lines.

As the Asian markets continue to evolve, the region's reinsurance model faces challenges from multiple directions. A glut in reinsurance capacity and growing retention by the direct industry are obvious threats. An even greater challenge, though, comes from the Asian reinsurance model's weakening value proposition. A major premise of this model is leveraging on a strong home market to expand overseas. This still holds somewhat in developing or large countries, but the good days will be short-lived, especially as these economies continue to develop.

It is clear that Asian reinsurers will have to revisit their strategies for their own long-term survival.

Profiles: GIC Re of India Grows, China Re Slows Down

The number of Asian reinsurers in the list of Top 50 Global Reinsurance Groups is the same this year as last. Among the Asian companies on the list, GIC Re of India grew very strongly, owing to the country's government-sponsored crop insurance program coupled with relatively weak solvency capital at its cedents.

In contrast, China Re's top line growth slowed (on a local currency basis), mainly due to a decline in its non-life reinsurance premium, which came about because of both an increase in reinsurance capacity across China and a decrease in demand from China Re's cedents. An overall slowdown in the non-life market's growth rate and the lower solvency capital requirement for motor insurance under the new solvency regulation — the China Risk-Oriented Solvency System (C-ROSS) — have alleviated pressure on solvency capital for Chinese companies.

As **Exhibit 1** shows, growth in 2016 was driven primarily by GIC Re of India. GIC Re is likely to continue to grow over the short term, though at a slower pace; however, growth in the company's top line may face strong hurdles, given that more foreign reinsurers have opened branches in India recently and some of GIC Re's cedents are considering an IPO. Moreover, solvency capital in India is calculated on a cost basis, putting a heavy burden on the state-owned insurers, which have large amounts of unrealized capital gains that are not taken

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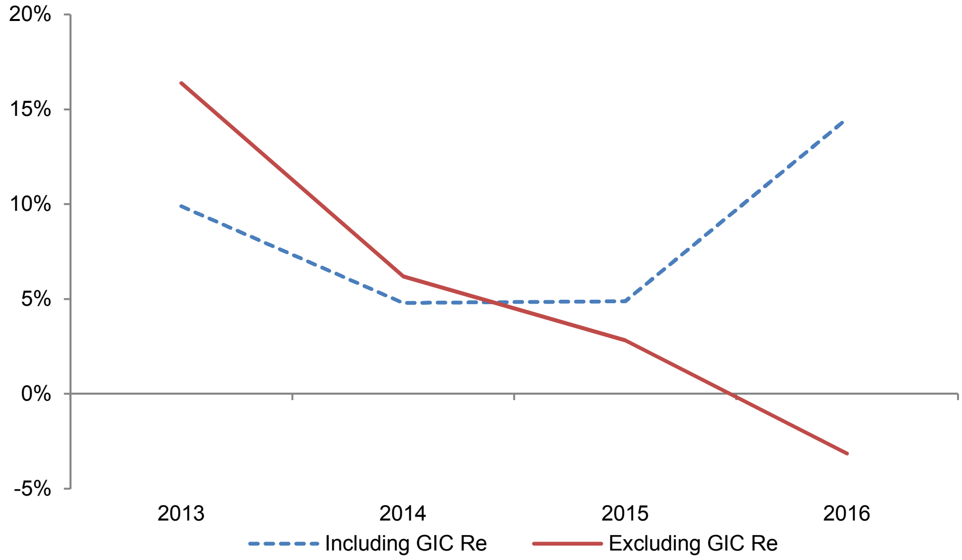
Exhibit 1
Aggregated GPW Growth Rates of Non-Life Reinsurers in Asia



Source: A.M. Best, Company financial statements
Note: Selected group of Asian reinsurers.

into account in their solvency calculations. Although reinsurance demand often experiences short-term volatility as a result of regulatory changes (mainly to the solvency calculation), the long-term growth prospects, both absolute and relative, for reinsurers in China and India remain very high — which also means that more players are likely to enter, bringing intense competition to both markets.

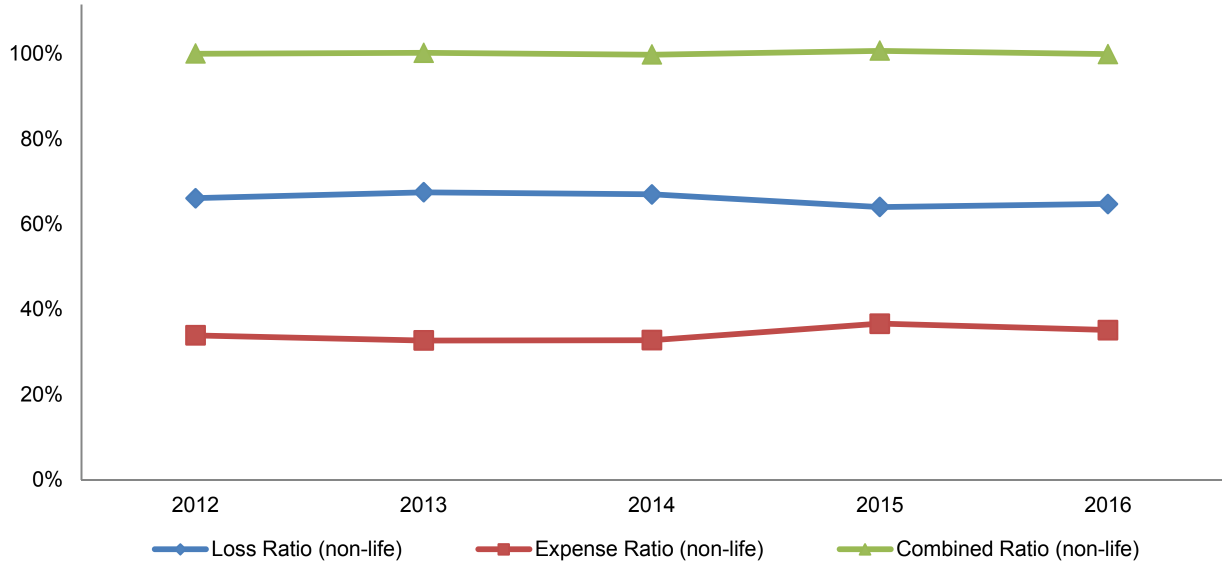
Two more noteworthy developments among the Asian players in the Top 50 were the growth of Peak Re, which continued its global diversification through actions such as setting up a subsidiary in Switzerland, and the decrease in premium volume of ACR, which reduced its top line in an effort to amend its underwriting profitability.

As the insurance industry continues to evolve, one of the challenges Asian reinsurers face is the domestic market's oligopolistic structure and how it relates to reinsurers' capital positions in comparison to their main cedents. This is especially clear in Japan, where the three major insurance groups dominate the non-life market; each of the three is in the Top 50 Global Reinsurance Groups as well. The situation is not too different in other Asian countries, though on a smaller scale. The dominant ceding companies will grow faster than the market, while reinsurers will grow only in line with the market. Over the long term, this will result in a gap in their capital amounts. Reinsurers need to diversify further to lower their cost of capital, as well as remain innovative and continue to offer new services. As their cedents' financial strength improves, reinsurance will increasingly be viewed not just as protection, but as consulting that is paid for with ceding premiums. New product ideas and solutions to manage risk and improve efficiencies will become increasingly important for reinsurers to maintain relevance to their cedents, especially as market structures change and premium growth is increasingly led by personal lines.

Stability, but With Low Profits

Stability is a key merit of the Asian reinsurers, but it comes at the cost of a narrower profit margin — that is, a relatively higher combined ratio.

Exhibit 2
Aggregated Performance Ratios of Non-Life Reinsurers in Asia



Source: A.M. Best, company financial statements
Note: Selected group of Asian reinsurers.

Exhibit 2 shows that the combined ratios of many Asian reinsurers in the Top 50 list are higher than those of their international peers. There are many reasons for this, but first and foremost is the insurers' focus on proportional business, which consumes less capital than non-proportional business.

When it comes to profitability, Asian reinsurers can be split into two groups. The three members of the first group — China Re, Korean Re, and GIC Re — have higher combined ratios than other Asian reinsurers, because personal lines reinsurance, which tends to have a combined ratio close to 100%, constitutes a large proportion of their business. It's also not surprising that these three are the highest-ranked Asian reinsurers by premium volume. The second group is composed of the Asian reinsurers that focus more on the commercial line; their combined ratios tend to be closer to those of their international peers.

The current low volatility and the willingness to accept lower profit margins may hold as long as the industry continues to grow strongly, but this may not in fact be a low-risk model. Reinsurers need to consider further diversification and higher-profit ventures (perhaps from alternative sources) for their long-term viability.

Reinsurers' Risk-Based Capital Remains Strong

In general, Asian reinsurers' risk-adjusted capital remains very solid, and due to the slowing growth rate, there is only a slight chance of immediate pressure on this capital. Since 2011 and 2012, Asian reinsurers are doing a better job of managing their net catastrophe exposures, and the quality of capital is very high, with only limited financial leverage.

Risk appetites, especially for catastrophes, are generally very low. For the Asian reinsurers' main domestic portfolios, which are generally very well diversified in their home countries (even compared to domestic primary companies), retrocession protection is abundant. However, as Asian reinsurers expand overseas, securing retrocession protection for their overseas portfolios that aligns with their low domestic risk retention becomes increasingly difficult and expensive. Often, the overseas portfolio gives rise to performance volatility, even though the proportion in terms of the top line is relatively low.

A larger absolute capital base can help prevent higher performance volatility and lead to a better risk balance. Moreover, investments in technical expertise and improvements in risk management (for which some Asian reinsurers have a great need) are both easier with a larger capital base. However, we have yet to see in Asia the degree of consolidation taking place in many regions around the world. There seem to be a few smaller-sized reinsurers for sale in the region, and there are ongoing discussions in Indonesia to create a larger reinsurance company. But for the most part, the Asian reinsurers do not yet seem to have much desire to expand their capital through M&A.

With regard to local reinsurers in Southeast Asia, risk-based capital for most Asian reinsurers rated by A.M. Best is strong. However, there also remains a need to further improve risk awareness and risk management capabilities. Areas where improvement is needed include the incorporation of catastrophe scenarios in capital models, the calibration of catastrophe scenarios, and capital requirements for locally and internationally rated reinsurance counterparties. Regulators seem to recognize this, as reflected in ongoing efforts to refine existing risk-based capital regimes in the region. However, there are also signs that stakeholders may need more time.

Forecast for 2017 and 2018

The domestic book comprises the main portion of business for many Asian reinsurers, but only a few of them actually enjoy dominant positions in their domestic markets, and they all face strong and growing competition. Regulatory protection of the growth in domestic retention can buy time but will not reverse the persistent growth in competition. Some reinsurers might try to increase premium retention to offset top-line pressure and spread expenses over a higher premium base. With competition in their own markets increasing, they may want to venture into smaller markets that are overlooked by the large players.

Over the past year, we have seen new reinsurers entering the market in China and India, which comes as no surprise. Regionally, though, the number of potential start-ups currently being discussed has declined from previous years, somewhat reflecting current market conditions—and despite the growth prospects in some Asian markets. Moreover, given the need to shift from a business model that relies on domestic proportional business to one that provides value-added consulting paid for by ceded premiums, the smaller domestic reinsurers may also seek out alliances with the global mid-sized reinsurers that have the appetite, but not the scale, to efficiently expand into Asia.

Segment Review
September 5, 2017

Stormy Currents Emerging For MENA Reinsurers

Benign exposure to natural catastrophes makes MENA an attractive insurance market

Insurance markets in the Middle East and North Africa (MENA) region continued to grow in 2016, with premiums reaching USD 57 billion, up from USD 52 billion the previous year. The largest markets continue to be Turkey, the United Arab Emirates (UAE), and Saudi Arabia. Growth over the past decade has been driven by increased demand for insurance products, a period of high oil prices (which has funded infrastructure development and increased commercial activity), and the introduction of compulsory covers, particularly for medical healthcare and liability risks.

However, many Middle Eastern economies are now facing challenges as a result of the low oil price environment experienced since the end of 2014, with lower revenue increasing pressure on government finances (as seen by the erosion of current account surpluses). This has resulted in governments reconsidering their fiscal stances, with the adoption of a value added tax (VAT) regime in the process of being rolled out across the countries of the Gulf Cooperation Council (GCC) and increasing restraint on government spending on infrastructure and reduction in benefits for government officials and local nationals. The operating environment is further complicated by the heightened level of political instability in the region, not just from the ongoing conflict from the Arab Spring, but also from the recent disputes between some Middle Eastern countries and Qatar. While their domestic markets remain important to MENA reinsurers, in a global reinsurance world, they are also looking further afield for diversification in order to stabilise earnings against the uncertainties and volatility of their local markets.

A.M. Best notes that the profile of the region's reinsurers has not changed materially over the past few years, and that they concentrate on prudent underwriting and risk selection in order to maintain profitability. However, given the pressure on rates experienced in core product lines, coupled with the higher frequency of property losses, MENA reinsurers have gradually reduced their exposure to MENA markets, and supplemented revenues by focussing more on Asian and African markets, where pricing is more attractive.

Furthermore, many MENA reinsurers have provided capacity to Lloyd's syndicates to gain additional exposure to uncorrelated risks. The expansion into non-MENA territories does increase reinsurers' exposure to catastrophe risks in a more controlled manner, unlike the inward retrocession exposure that many took on during the catastrophe years of 2011 and 2012. The competition for reinsurers is further compounded by primary insurers leveraging off their ratings and capacity by writing inward facultative business from the region. This can be seen as a concern as some primary writers may lack the expertise to underwrite reinsurance business with existing programmes providing reinsurance protection across the whole portfolio. This will increase accumulation risk within a reinsurer's portfolio. It is also evident that some primary insurers' reinsurance portfolios have exceeded that of the local reinsurers.

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Exhibit 1
Middle East & North Africa Reinsurers -
Largest MENA Reinsurers Ranked by Gross Premiums Written, 2016
(USD Millions)

Company	Gross Premiums Written	Net Premiums Written
Qatar Reinsurance Co. Ltd.	1,249.4	363.6
Trust International Insurance & Reinsurance Co. BSC	469.2	283.2
Milli Reasurans Turk Anonim Sirketi	258.7	230.9
Saudi Reinsurance Co.	249.9	237.9
Arab Insurance Group (B.S.C.) (C)	225.0	188.3
Société Centrale de Réassurance	192.1	126.9
Kuwait Reinsurance Co. K.S.C.P.	95.9	83.5
Hannover Re Takaful B.S.C. (c)	95.9	90.3
Arab Reinsurance Co. SAL	65.5	44.8
Société Tunisienne de Réassurance	45.9	26.4
Emirates Retakaful Ltd.	27.6	24.0
Oman Reinsurance Co. SAOC	23.7	14.3

Notes: Excludes branches of reinsurers not domiciled in the MENA region. Premiums are not restricted to MENA region. Excludes companies for whom financial data were not available.

Source: A.M. Best data and research

The largest MENA reinsurers ranked by gross premiums written (GPW) are shown in **Exhibit 1**. There has been steady growth for most MENA reinsurers over recent years, again with the exception of Qatar Reinsurance Co. (Qatar Re) (now domiciled in Bermuda), which has experienced significant growth. A key trend has been the growing presence and capacity provided by regional reinsurers. However, despite increased competition, the profiles of primary insurers and regional reinsurers tend to be limited in comparison to their international peers, with the vast majority of ceded premiums on commercial risks still placed in the international market.

The Lure of MENA Markets

While reinsurance markets in the MENA region are competitive, they are also considered to be a source of expansion. This is owing to a range of factors, including continued market liberalisation, and the majority of markets being open with few restrictions on reinsurance operations, despite some countries (such as Algeria and Morocco) aiming to retain business within their local markets through mandatory cessions.

Many of the region's markets are additionally perceived to be attractive as they have benign exposure to natural catastrophe events in comparison to other more mature insurance markets. This is particularly the case in the GCC countries of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE. Reinsurers are drawn to the prospect of establishing geographically diverse underwriting portfolios without encountering the significant earnings volatility driven by natural catastrophe exposure. Both regional and international reinsurers are seeking less catastrophe-prone business to complement their existing portfolios.

The region has benefitted vastly from the presence of the Dubai International Financial Centre (DIFC), which is seen as a major hub for underwriting reinsurance and specialty classes from the Middle East, along with wider territories such as Africa and Asia. A.M. Best notes that most global groups have a presence within the DIFC.

International reinsurers offer a supporting role to the market, providing capacity, particularly for “big ticket” commercial and industrial risks, as primary insurers and regional reinsurers usually lack sufficient underwriting capacity and balance sheet size to retain these large-scale risks within their markets. Overseas reinsurers also provide technical expertise to assist in the underwriting of increasingly sophisticated and high-value risks through surveying expertise, pricing models, and risk management and risk mitigation techniques.

Although the MENA reinsurance markets have their attractions, the region also faces a variety of challenges. These include the continual influx of capacity from both regional and international reinsurers, as well as the capacity on offer from primary insurers participating on facultative risks. A.M. Best believes that this influx of capacity has resulted in the prevailing competitive market conditions, weak pricing environment, and increasingly strained technical performance for many regional reinsurers. In addition, there has been an increased frequency of medium-to-large losses, particularly from property, engineering, and energy risks.

The fall in global crude oil prices, and consequent deterioration in medium-term economic forecasts, is impacting the reinsurance sector. As oil production and refinement is at the core of many economies in the region and has funded government and private sector investment in energy, infrastructure, and industrial development projects in the region, a prolonged period of low hydrocarbon prices could have profound implications for (re)insurers. Over the last decade, significant growth in gross premium revenues has stemmed from an increase in insurable risk, particularly for property, engineering, and construction lines.

Other challenges facing the sector include elevated levels of political instability and social unrest unsettling the region; currency and inflationary risks in the wider (non-GCC) economies; and weak risk management and mitigation practices across many industries, which impact the quality of assumed risks.

Domestic Reinsurers Seek Greater Diversification to Reduce Volatility and Stabilise Earnings

The strategies and profiles of the region’s reinsurers vary significantly, with some benefitting from compulsory cessions and others depending on proportional business. A.M. Best also notes that while some reinsurers are actively shifting to non-proportional portfolios, others are increasingly seeking geographical diversification.

Consequently, the technical performance in 2016 of the region’s reinsurers differs considerably. Some have demonstrated strong non-life combined ratios below 100%, while others have posted deteriorating technical performance with combined ratios well in excess of 100% (**Exhibit 2).** In 2016, MENA reinsurers experienced an increase in the frequency of both attritional and large losses during the year, with the proportional books generally tracking the declining underwriting trends of the primary market. While the expense ratios remain steady, there are concerns regarding the loss ratios, which stand well above those reported by the global reinsurance market. Moreover, part of the deterioration in profitability is driven by inflation and currency depreciation from non-GCC markets. This trend is likely to continue in the near term as currencies come under further pressure. A.M. Best notes that there is also the risk that some GCC economies could potentially lose their peg to the United States dollar if fiscal pressures continue.

Exhibit 2
Middle East & North Africa Reinsurers - Non-Life Underwriting Ratios (2014-16)
(%)

		Loss Ratio				Combined Ratio			
Company	**Country**	**2014**	**2015**	**2016**	**yr Avg.**	**2014**	**2015**	**2016**	**yr Avg.**
Qatar Reinsurance Co. Ltd.	Bermuda	84	68	73	75	103	87	98	98
Trust International Insurance & Reinsurance Co. BSC	Bahrain	67	65	68	66	97	96	96	96
Milli Reasurans Turk Anonim Sirketi	Turkey	83	88	77	78	116	120	111	110
Société Centrale de Réassurance	Morocco	55	75	73	53	95	87	87	84
Arab Insurance Group (B.S.C.) (C)	Bahrain	67	66	61	63	104	109	93	100
Saudi Reinsurance Co.	Saudi Arabia	75	58	78	77	107	80	103	104
Hannover Re Takaful B.S.C. (c)	Bahrain	84	70	70	73	118	100	102	107
Kuwait Reinsurance Co. K.S.C.P.	Kuwait	68	60	65	66	106	95	103	99
Arab Reinsurance Co. SAL	Lebanon	78	69	73	72	113	99	109	105
Emirates Retakaful Ltd.	United Arab Emirates	67	64	104	74	96	97	176	111
Société Tunisienne de Réassurance	Tunisia	58	51	53	54	100	91	91	96
Oman Reinsurance Co. SAOC	Oman	170	98	55	98	232	152	101	148

Notes: Excludes companies for whom financial data were not available.

Source: A.M. Best data and research

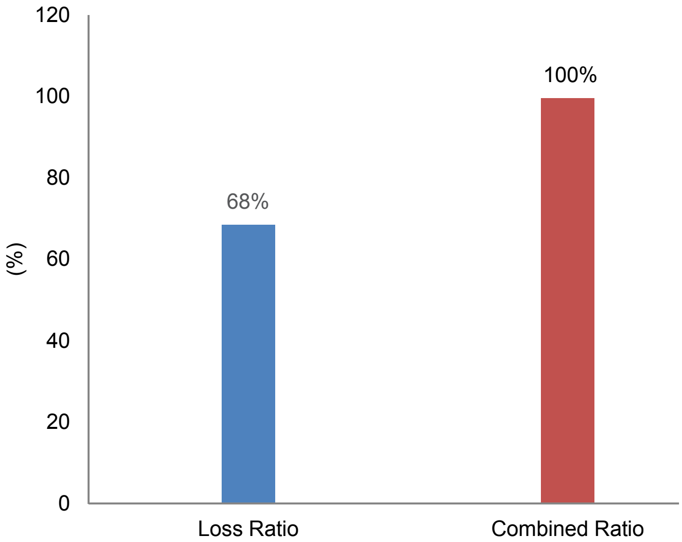
A.M. Best notes with concern that only a couple of reinsurers have seen their technical performance improve during 2016, and even those that are more established are finding the market difficult to navigate.

Some companies have benefitted from the performance of their life portfolios, which can help offset underwriting pressures in the non-life market. However, the life reinsurance market remains small although income has been stable and can help to reduce volatility in those reinsurers' profiles.

MENA reinsurers are being tempted to expand outside their domestic markets. However, A.M. Best believes that the desire for more global portfolios may hinder companies further. While regional reinsurers have been affected by a higher frequency of large losses in recent years, a more geographically diverse book may reintroduce higher levels of catastrophe risk and volatility into their portfolios. Therefore, in A.M. Best's opinion, risk selection and good client relationships remain crucial to ensure that local reinsurers maintain access to high quality business.

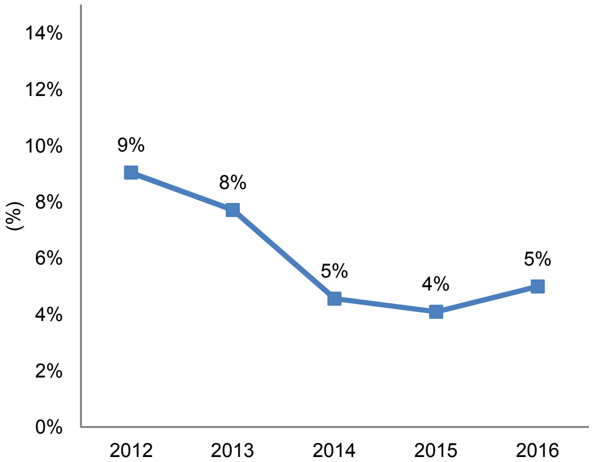
The abundance of capacity and weak pricing conditions, combined with an uptick in the frequency of medium-to-large losses in the region, has strained technical performance for regional reinsurers. Increased large property, commercial, and energy losses have resulted in deteriorating loss ratios for some reinsurers and further pressure on overall 2016 technical performance (**Exhibit 3**). Typically, smaller reinsurers with less developed and diverse profiles have been most affected by this increased loss experience as they have a reduced ability to absorb a single large loss on their balance sheets.

Exhibit 3
Middle East & North Africa Reinsurers – Five-Year Average Non-Life Underwriting Performance (2012-16)
(A comparison between loss ratios and combined ratios)



Notes: Excludes companies for whom financial data were not available.
Source: A.M. Best data and research

Exhibit 4
Middle East & North Africa Reinsurers - Return on Equity Ratios (2012-16)



Notes: Excludes companies for whom financial data were not available.
Source: A.M. Best data and research

Investment performance is a key driver of overall operating results and return on equity ratios as regional reinsurers face pressures on their technical performance. However, the weak interest rate environment and low-yielding investment markets have resulted in return on equity ratios for regional reinsurers remaining in the low single digits. From 2012 to 2016, equity ratios have varied between 4% and 9% (**Exhibit 4**), below that of leading reinsurance groups.

Reinsurers that seek to grow their profiles in this current competitive environment are likely to face further pressure on underwriting margins. Meanwhile, those that plan to focus on profitability do so at the expense of profile and market share.

Large Property Losses Overshadow Market

A.M. Best has observed that the frequency of losses experienced in the region has increased in recent years, with property in particular being seen as an underperforming business segment for many MENA reinsurers, and often as a loss-making risk – especially within the UAE, Saudi Arabia, and Kuwait. Over the last three years, the influx of capacity to the region and the resulting prevailing competitive market conditions have grown ever fiercer. Premium rates for property risks in most of the GCC have continued their downward trend, mainly as a result of more reinsurers and specialty insurers entering rather than leaving the GCC markets.

In recent years, there have been significant claims relating to high-rise and high-value buildings. These include the fires in Dubai in 2015 at the Address Hotel on New Year's Eve, and earlier that year at the Torch residential skyscraper. In 2016, there was further pressure on the technical performance of reinsurers' GCC portfolios following more fire losses in the region. In the past year, material property and business interruption claims have resulted from fires at Dubai's Sulafa Tower and the Al Bandary Twin Towers in Sharjah, as well as the Adriatic building in Dubai's Oceana complex on Palm Jumeirah. A second massive fire at the Torch skyscraper occurred in August 2017.

The large number of fires in high-rise, skyscraper buildings in the Middle East is causing reinsurers operating in the region to further tighten terms and conditions and adjust commission rates for residential and commercial property risks, particularly for treaty business. Regional insurers are also coming under pressure to increase retention levels and premium rates for these buildings to demonstrate their alignment of interests with those of reinsurers. This is particularly the case with buildings constructed prior to 2012, many of which incorporated a type of external cladding, the use of which has been banned.

In the UAE, an updated version of the country's Fire and Life Safety Code of Practices is, for the first time, making tenants accountable for ensuring fire safety and compliance with specific safety rules. Insurers will need to monitor whether any increased exposure will impact balance sheets in the event of a major loss. A significant rise in retention levels could require greater levels of capital and will increase volatility in underwriting performance.

MENA Reinsurance Ratings Issues

Despite the diverse range of challenges facing companies, all A.M. Best-rated reinsurers domiciled in the MENA region are generally well-capitalised and have "B+" (Good) Financial Strength Ratings (FSRs) or above (**Exhibit 5**). The highest rating assigned at present is an FSR of "A" (Excellent) and the outlook for the FSRs and Issuer Credit Ratings (ICRs) on the vast majority of the companies is stable.

A.M. Best notes that while balance sheet strength is strong for rated MENA reinsurers, underwriting profitability remains the main concern, with many companies delivering marginal to weak performance. Therefore, reinsurers in the region are dependent on investment income to generate earnings. While investment yields are low, pressure to improve underwriting margins is growing, and any failure to improve technical performance is likely to put greater pressure on ratings as this weakness gradually erodes both balance sheet strength and the profile of the companies.

With premium rates in the market starting to rise, particularly for property risk, regional reinsurers may see some respite over the coming year. However, they must still seek to improve their approach to risk selection. A.M. Best notes that many regional reinsurers have invested significantly in advancing their risk management functions. This not only enables them to improve their underwriting practices but, more importantly, limits earnings volatility by understanding aggregation and accumulation of large losses. In addition, an increasing focus on data quality, surveying techniques, and risk mitigation practices is assisting reinsurers in improving their underwriting approach.

Market conditions for MENA reinsurers are extremely challenging, with pressures on underwriting compounded by economic and political uncertainties. This, in turn, increases the desire for reinsurers to seek diversification and reduce potential volatility in earnings. In A.M. Best's view, the long-term trends in credit quality are likely to be dependent on reinsurers' ability to successfully execute growth strategies in a highly competitive market.

Exhibit 5

Middle East & North Africa Reinsurers - A.M. Best-Rated Entities

Ratings as of Aug. 16, 2017.

Domicile	Company	AMB #	Best's Long-Term Issuer Credit Rating (ICR)	Best's Financial Strength Rating (FSR)	ICR & FSR Rating Action	Best's ICR & FSR Outlook	Rating Effective Date
Algeria	Compagnie Centrale de Réassurance	90777	bbb-	B+	Affirmed	Stable	10-Aug-17
Bahrain	ACR ReTakaful MEA B.S.C. (c)	90059	bbb+	B++	Affirmed	Negative1	15-Dec-16
Bahrain	Arab Insurance Group (B.S.C.)	85013	a-	A-	Upgraded	Stable	21-Dec-16
Bahrain	Trust International Insurance & Reinsurance Company B.S.C. (c) Trust Re	86326	a-	A-	Affirmed	Stable	18-Aug-16
Bermuda	Qatar Reinsurance Company Limited	92611	a	A	Affirmed	Stable	23-Dec-16
Kuwait	Kuwait Reinsurance Company K.S.C.P.	85585	a-	A-	Affirmed	Stable	2-Feb-17
Lebanon	Arab Reinsurance Company SAL	89190	bbb-	B+	Affirmed	Stable	15-Dec-16
Morocco	Société Centrale de Réassurance	84052	bbb	B++	Affirmed	Stable	3-Oct-16
Tunisia	Societe Tunisienne de Reassurance	83349	bbb-	B+	Affirmed	Stable	27-Jul-17
Turkey	Milli Reasurans Turk Anonim Sirketi	85454	bbb-	B+	Affirmed	Negative	14-Jul-17
United Arab Emirates	Emirates Retakaful Limited	93190	bbb+	B++	Affirmed	Positive	16-Jun-16

Notes: 1: Best's ICR Outlook: Negative Best's FSR Outlook: Stable

Source: A.M. Best data and research

Segment Review
September 5, 2017

Economic Pressures on African Reinsurance Markets Remain, but Growth Potential Lures Overseas Players

The African reinsurance market continues to offer growth potential, drawing in overseas reinsurers

The African reinsurance market has experienced material growth over the past decade. However, the operating environment remains challenging, with significant headwinds of currency volatility and inflationary strains amid global softening market conditions.

In the past year, the continent's reinsurers have been affected by slower growth, reflecting challenging economic conditions and subsequently suppressed demand for oil and gas. In addition to reduced cover for large value risks, there has been a higher frequency of attritional and large claims, as well as increased cost bases together with the need to strengthen reserves given inflationary effects.

Yet despite this backdrop, the reinsurance market in Sub-Saharan Africa continues to offer growth potential, drawing in overseas reinsurers. Although domestication policies are designed to retain business locally, overseas reinsurers provide capacity and technical expertise. They seek to deploy surplus capital, establish a global footprint, and consider the region to be relatively benign from natural catastrophes.

Key Market Characteristics

A notable characteristic of the region is that most primary markets tend to be small and highly saturated. In general, the reinsurance sector is made up of a combination of local and regional participants, with a growing presence of overseas reinsurers. In many of the African

Exhibit 1
Global Reinsurance - Sub-Saharan Africa - A.M. Best-Rated Companies
Ratings as of Aug. 16, 2017.

Domicile	Company Name	AMB #	Best's Long-Term Issuer Credit Rating (ICR)	Financial Strength Rating (FSR)	Best's ICR / FSR Action	Best's ICR & FSR Outlook / Implication	Rating Effective Date
Nigeria	African Reinsurance Corporation	083411	a u	A u	Under Review	Negative	12-Jul-17
Togo	Compagnie Commune de Réassurance des Etats Membres de la Conférence Interafricaine des Marchés d'Assurances (CICA Re)	093852	bb+	B	Affirmed	Stable	9-Feb-17
Nigeria	Continental Reinsurance plc	078723	bbb-	B+	Affirmed	Stable	13-Oct-16
Kenya	East Africa Reinsurance Co. Ltd.	077803	bb+	B	Affirmed	Stable	15-Dec-16
South Africa	General Reinsurance Africa Ltd	086651	aa+	A++	Affirmed	Stable	21-Dec-16
Ghana	Ghana Reinsurance Co. Ltd.	090035	bb	B	Affirmed	Stable	16-Dec-16
Kenya	Kenya Reinsurance Corporation Ltd.	085416	bbb-	B+	Affirmed	Negative	23-Dec-16
Kenya	ZEP-RE (PTA Reinsurance Co.)	078388	bbb	B++	Upgraded	Stable	14-Dec-16

Source: A.M. Best data and research

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markets, the growth of the insurance sector is supported by hydrocarbon discoveries with consequent investments in infrastructure. Overseas (re)insurers consider African markets to offer diversification strategies and growth opportunities. While there is some earthquake risk and hailstorms do occur (notably in South Africa), the region is, on the whole, viewed to be relatively less prone to natural catastrophes.

Many local and regional reinsurers benefit from legal treaty cessions. A.M. Best notes that domestication policies remain commonplace as lawmakers intend to reduce premium outflows to international reinsurance markets and retain increased profits in their respective countries. Nigeria's local content law is the most prominent example, mandating the retention of a large portion of oil and energy business in the country, as well as the retention of life and accident classes (which is also the case in Kenya). Insurers are required to obtain reinsurance for 70% of oil and gas risks in the local Nigerian market before seeking capacity elsewhere.

However, A.M. Best understands that these domestication policies are not strictly adhered to. While the levels of risk retained in Nigeria have grown, it is unrealistic that retention levels will reach the desired 70% minimum level in the near term. This is a consequence of the relatively low market capacity of the local primary and reinsurance sectors, and where the role of overseas insurers is fundamental. In particular, this applies to high-value corporate risks, where additional technical expertise and more sophisticated underwriting skills are required.

Pools are also utilised increasingly to retain business within local markets. These include the Energy and Allied Risks Insurance Pool of Nigeria, the Ghana Oil and Gas Insurance Pool, and the Ghana Agricultural Insurance Pool. Meanwhile, the African Insurance Organisation, a non-governmental body recognised by many African governments, established the African Aviation Pool and the African Oil and Energy Insurance Pool in 1989 and 1998, respectively. The financial affiliate ARC Insurance Company Limited, a component of the entities forming the African Risk Capacity, is another prominent insurance risk pool. Initially registered in Bermuda, it carries out commercial insurance functions of risk pooling and risk transfer in accordance with national regulations for parametric weather insurance. To date, 32 countries have become signatories.

Although these pooling arrangements can support further premium retention in the region, A.M. Best notes that, in reality, the capacity offered by such pools remains small in relation to the size of many of the large risks underwritten.

A.M. Best has observed a trend toward the creation of national reinsurers with governmental support in order to retain reinsurance business domestically. The establishment of Ethiopia Reinsurance (Ethiopia Re), which commenced operation in July 2016, is considered to be one of the recent growth stories in the Sub-Saharan region. In the short term, Ethiopia Re will focus primarily on risks within the country, but is considering accepting business from international markets in Africa, the Middle East, and Asia.

While domestication policies, the use of pools, and the creation of national reinsurers aim to retain risks in Africa, in general, retention levels for high-value risks remain low. Therefore, A.M. Best expects there to continue to be a heavy reliance on the international reinsurance market.

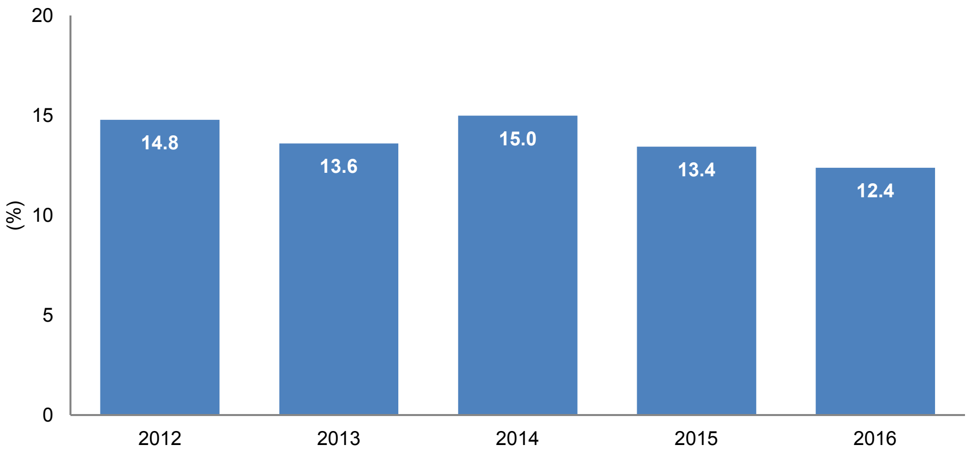
Most African (re)insurers look beyond their physical borders for growth. A.M. Best has observed that companies operating in West Africa are attempting to underwrite risks in East Africa (and vice versa). Those based in East Africa are also drawn to Asia as a result of historical migratory trends and retained networks and connections with countries such as India and Nepal.

In a broad sense, the region's regulatory framework is seen to be evolving, although this varies depending on the country. For example, Kenya adopted a risk-based framework in 2016 and has been moving toward higher capital requirements, bringing the country in line with international best practices. There is a drive to adopt risk-based capital models in line with European market regulatory trends. A.M. Best believes that regulators in the region want to ensure a perception of high standards, in spite of political pressures existing in countries such as South Africa. Furthermore, it can be challenging to implement a new regulatory framework in conditions where a scarcity of workers with the key skills, understanding, and experience is not uncommon.

Main Rating Drivers for Reinsurers

For A.M. Best-rated reinsurers in Sub-Saharan Africa, balance sheet strength has been underpinned by strong risk-adjusted capitalisation, owing to companies' large capital bases relative to their risk profiles. **Exhibit 2** shows that for each of the past five years, return on equity was in excess of 12%. A.M. Best notes that capital requirements are largely driven by investment.

Exhibit 2
Reinsurance - Sub-Saharan Africa - Return on Equity



Source: A.M. Best data and research

Investment quality is generally weak, reflecting limited opportunities to invest in better quality assets (restricted foreign investment is often used to foster growth within the country). However, reinsurance quality remains adequate, with the majority of primary companies seeking capacity from international markets.

Many of the region's economies have been affected by low commodity prices, the slowdown of China's economic activity, and currency devaluations. African reinsurers are starting to mirror the decline in the region's markets, especially in Sub-Saharan Africa. Reserves are being strengthened in light of inflationary effects associated with currency fluctuations, resulting in higher costs for importing goods and items.

For some of the major African economies, the depreciation of local currencies relative to the U.S. dollar presents a key challenge – particularly in oil and gas producing countries such as Sudan and Nigeria. For geographically diverse companies reporting in U.S. dollars, their results have been impacted by translation effects. This has led to a dampening of results in U.S. dollar terms, even if, on a local basis, a company may be growing in a healthy fashion.

Although (re)insurers in Africa have engaged in asset liability matching on a local basis, they rarely exercise the typical hedging strategies employed in other international markets, such as the use of derivatives. Markets in Sub-Saharan Africa generally do not offer these more sophisticated hedging options, and if they are available, they tend to be expensive. An option would be for African reinsurers to change their functional currency, which some investors would support as the U.S. dollar is typically seen as a stable currency, although A.M. Best notes that this in itself would be challenging.

Operating performance has generally been solid for most companies, although it has weakened in the past year, due to economic difficulties. This situation has resulted in less insurable risk in oil and gas producing countries such as Nigeria. There is the possibility of the African reinsurance market softening, but A.M. Best does not believe this will be to the same extent as experienced in other regions as overseas reinsurers continue to be attracted to the region.

African (re)insurance businesses have historically suffered from clients failing to pay premiums on time, although in recent years, companies have refused to provide insurance without payment. For countries (including Nigeria and Ghana) that have adopted "No Premium, No Cover" legislation, premium receivables remain low on balance sheets, in spite of the economic downturn faced, providing greater confidence regarding published results.

A.M. Best notes that the business profiles of the region's (re)insurers are generally limited to domestic markets. The scale of their operations broadly remains small, and as competition is fierce, consequently, there is an inability to gain critical mass to support a higher rating. Companies that seek expansion do so with significant execution risk.

While the lack of established enterprise risk management (ERM) frameworks within organisations continues to be a weakness, A.M. Best is of the opinion that it is reinsurers who continue to take the lead in developing these frameworks. The momentum across the continent for an evolving risk-based regime is forcing reinsurers to strengthen their own internal frameworks. It is expected that the changes made to frameworks will aid reinsurers in managing more complex risks and will improve accountability within the company. There is a need for reinsurers to fully recognise the benefits of ERM and embed these frameworks into the decision-making process of the company.

Evolving Market Conditions

A.M. Best anticipates there would be further protectionist policies put in place following the establishment of new national reinsurers and legal cessions. The implementation of restrictive regulatory policies is hindering growth objectives from competitive overseas reinsurers, seeking to diversify outside of their home markets.

Insurance regulators in Africa are more active with regard to implementing policies to improve the perception of the industry. For example, the introduction of "No Premium, No Cover" and the adoption of risk-based capital regimes are viewed as positives by A.M. Best.

Merger and acquisition activity continued in 2016, both from regional and overseas market participants, although to a lesser extent than in 2015. Drivers for consolidation remain as investors seek out the continent's potential, with its young population and rising middle class. Overseas reinsurers will, in the meantime, remain a resource for providing capital, technical expertise, and experience, supporting the continent's insurers and reinsurers to improve and strengthen frameworks that mirror other more mature insurance markets.

Credit Quality

In A.M. Best's opinion, the credit quality of reinsurers in the region remains varied. This is partly a reflection of the different levels of economic and insurance development experienced in these markets. In particular, balance sheet strength, market profile, and risk management capabilities are important distinguishing factors to reinsurers' credit profiles.

While many reinsurers have successfully navigated turbulent economic and political times, the market environment remains volatile and uncertain. The advanced use of risk management tools, prudent underwriting practices, and the development of insurance markets are critical to ensure the sustainability and profitability of reinsurers over the longer term.

Most reinsurers in this region occupy a unique position within either the local or regional markets, operating under a remit to enhance the premium retention in their market and provide technical expertise. Most reinsurers benefit from the quasi-governmental structures and compulsory cessions, which allows their business profile to grow in line with market characteristics. While these reinsurers hold solid positions in their local markets, A.M. Best notes that most companies' involvement in international markets remains limited.

Appendix 1
Global Market* - Trend Summary
(USD Billions)

	5-Yr Avg	1 H 2017^	2016	2015	2014	2013	2012
NPW (Non-Life only)	138.9	62.6	139.5	137.6	140.4	144.2	132.8
Net Earned Premiums (Non-Life only)	135.9	57.9	136.7	135.8	137.0	140.0	130.0
Net Investment Income	22.1	11.6	20.6	19.0	23.0	22.6	25.1
Realized Investment Gains / (Losses)	4.5	1.2	0.8	1.3	11.8	1.2	7.5
Total Revenue	**223.1**	**105.1**	**221.6**	**213.2**	**222.5**	**232.2**	**226.2**
Net Income	**21.0**	**7.1**	**16.4**	**18.9**	**22.9**	**24.7**	**22.1**
Shareholders' Equity (End of Period)	198.0	174.7	204.3	198.4	205.7	191.5	190.3
Loss Ratio	57.8%	62.2%	60.6%	56.2%	56.2%	55.9%	60.2%
Expense Ratio	33.2%	32.6%	34.7%	34.2%	33.5%	31.9%	31.6%
Combined Ratio	91.0%	94.8%	95.2%	90.4%	89.7%	87.9%	91.7%
Reserve Development - (Favorable)/Unfavorable	-5.9%	-3.0%	-5.8%	-6.0%	-5.5%	-5.8%	-6.4%
Net Investment Ratio[1]	16.3%	20.0%	15.1%	14.0%	16.8%	16.2%	19.3%
Operating Ratio	74.7%	74.8%	80.2%	76.4%	73.0%	71.7%	72.4%
Return on Equity (annualized)	10.9%	8.1%	8.2%	9.5%	11.6%	13.0%	12.4%
Return on Revenue (annualized)	9.4%	6.7%	7.4%	8.9%	10.3%	10.7%	9.8%
NPW (Non-Life only) to Equity (End of Period)	70.2%	71.6%	68.3%	69.4%	68.2%	75.3%	69.8%
Net Reserves to Equity (End of Period)	266.9%	282.1%	249.1%	250.9%	256.3%	290.9%	287.4%
Gross Reserves to Equity (End of Period)	290.8%	301.8%	272.4%	273.5%	276.8%	316.5%	314.5%

[1] Net Investment Ratio based on Non-Life NPE

^Lloyd's 1H 2017 data unavailable at the time of publication

*A.M. Best Reinsurance Composite composition changes over time as companies enter and exit the market or rating process. Some historic data has changed to reflect changes in companies' segment reporting.

Appendix 2
European 'Big Four' Market* - Trend Summary
(USD Billions)

	5-Yr Avg	1 H 2017	2016	2015	2014	2013	2012
NPW (Non-Life only)	61.1	32.6	59.8	59.3	61.4	66.1	58.8
Net Earned Premiums (Non-Life only)	59.9	32.0	58.8	58.4	60.4	63.8	58.1
Net Investment Income	16.0	9.0	14.3	14.2	16.3	16.6	18.6
Realized Investment Gains / (Losses)	3.5	0.7	-	1.7	10.1	0.4	5.2
Total Revenue	**138.5**	**74.6**	**134.7**	**129.9**	**136.1**	**148.3**	**143.3**
Net Income	**9.8**	**3.6**	**8.2**	**10.0**	**9.3**	**11.1**	**10.2**
Shareholders' Equity (End of Period)	85.9	87.8	86.5	84.0	89.9	83.9	85.0
Loss Ratio	61.3%	64.6%	63.4%	59.9%	61.7%	60.2%	61.5%
Expense Ratio	30.8%	32.0%	32.8%	31.9%	30.7%	29.1%	29.6%
Combined Ratio	92.2%	96.7%	96.3%	91.8%	92.4%	89.3%	91.2%
Reserve Development - (Favorable)/Unfavorable	-4.6%	-2.4%	-5.7%	-4.6%	-3.3%	-3.6%	-5.8%
Net Investment Ratio[1]	26.7%	28.1%	24.3%	24.3%	27.0%	26.0%	32.1%
Operating Ratio	65.4%	68.6%	72.0%	67.5%	65.3%	63.3%	59.1%
Return on Equity (annualized)	11.7%	8.1%	9.7%	11.5%	11.0%	13.1%	13.0%
Return on Revenue (annualized)	7.0%	4.8%	6.1%	7.7%	6.8%	7.5%	7.1%
NPW (Non-Life only) to Equity (End of Period)	71.2%	74.1%	69.2%	70.6%	68.4%	78.8%	69.2%
Net Reserves to Equity (End of Period)	447.2%	446.6%	423.7%	425.9%	426.9%	492.7%	467.0%
Gross Reserves to Equity (End of Period)	467.5%	463.4%	441.5%	444.9%	446.0%	515.9%	489.1%

[1] Net Investment Ratio based on Non-Life NPE

*A.M. Best Reinsurance Composite composition changes over as companies enter and exit the market or rating process. Some historic data has changed to reflect changes in companies' segment reporting.

Appendix 3
U.S. & Bermuda Market* - Trend Summary
(USD Billions)

	5-Yr Avg	1 H 2017	2016	2015	2014	2013	2012
NPW (Non-Life only)	46.7	30.0	51.3	47.0	47.8	44.8	42.6
Net Earned Premiums (Non-Life only)	45.7	25.8	50.0	46.7	46.2	43.6	41.7
Net Investment Income	4.7	2.6	4.6	4.2	5.0	4.7	4.9
Realized Investment Gains / (Losses)	1.0	0.5	0.8	(0.5)	1.6	0.9	2.1
Total Revenue	**52.9**	**30.5**	**56.8**	**52.2**	**54.4**	**50.4**	**50.7**
Net Income	**7.2**	**3.5**	**5.6**	**5.7**	**8.7**	**8.4**	**7.4**
Shareholders' Equity (End of Period)	78.2	86.9	83.7	78.5	80.8	74.0	74.2
Loss Ratio	57.3%	59.3%	59.0%	55.7%	53.8%	55.3%	62.6%
Expense Ratio	32.4%	33.3%	33.5%	33.3%	33.6%	31.3%	30.3%
Combined Ratio	89.7%	92.6%	92.5%	88.9%	87.4%	86.6%	92.9%
Reserve Development - (Favorable)/Unfavorable	-6.6%	-3.8%	-6.3%	-6.5%	-6.6%	-7.2%	-6.6%
Net Investment Ratio[1]	10.3%	10.0%	9.3%	9.0%	10.8%	10.7%	11.7%
Operating Ratio	79.4%	82.6%	83.2%	79.9%	76.6%	75.9%	81.3%
Return on Equity (annualized)	9.4%	8.1%	6.8%	7.5%	10.9%	11.4%	10.6%
Return on Revenue (annualized)	13.6%	11.3%	9.8%	11.0%	16.0%	16.6%	14.7%
NPW (Non-Life only) to Equity (End of Period)	59.7%	69.1%	61.3%	60.0%	59.2%	60.5%	57.4%
Net Reserves to Equity (End of Period)	125.5%	116.0%	116.4%	121.3%	121.3%	130.6%	138.1%
Gross Reserves to Equity (End of Period)	144.9%	138.4%	138.5%	142.0%	135.5%	149.4%	159.1%

[1] Net Investment Ratio based on Non-Life NPE

*A.M. Best Reinsurance Composite composition changes over as companies enter and exit the market or rating process. Some historic data has changed to reflect changes in companies' segment reporting.

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