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Modeling of Insurers' CMBS Holdings for Year-End 2010

Following a similar change in 2009 for residential mortgage-backed securities (RMBS), for year-end 2010, the NAIC changed the process by which state-regulated insurance companies determine risk-based capital (RBC) charges for commercial mortgage-backed securities (CMBS). Previously, individual CMBS holdings were assigned an NAIC designation based on a formulaic translation of ratings from nationally recognized statistical rating organizations (NRSROs). Beginning with year-end 2010, the NAIC decided to instead model each individual CMBS holding based on a common set of economic scenarios. Modeling output identified expected losses and expected recovery values for each scenario assuming the bonds were held to maturity. These were combined into a weighted average metric, which each insurer compared to their book/adjusted carrying value (BACV) for that holding. The relationship of the weighted average recovery value to the BACV determines the NAIC designation. As was the case with the prior process, the NAIC designation is mapped to an RBC factor.

This new process not only reduces the NAIC's reliance on the NRSROs, but it also increases regulatory oversight of the process and ensures greater consistency over how NAIC designations are determined. In addition, it draws a comparison to the insurer's BACV for a particular holding. The NRSRO process had assumed that all bonds were purchased and held at par value. In what has been a volatile marketplace for CMBS, this is frequently not the case. Purchases are often made at prices significantly different from par. Also, statutory accounting guidance requires a regular review of holdings and, where appropriate, impairments are to be taken to reflect recovery expectations. Certain holdings also are required to be held at the lower of cost or market value, which could be substantially below par. A holding at a BACV significantly different from par presents a different risk profile for return of that BACV at a given point in time.

Four different scenarios were used in the CMBS modeling process, and each translated into expectations for commercial real estate market values over the near and longer term. The assumptions used were exposed for public comment before being adopted by the Valuation of Securities (E) Task Force in November 2010. Those general market conditions were then more finely tuned to different property types and regions of the country. Each individual CMBS held by an insurer was modeled using these different scenarios, utilizing loan-level details (dated as of November 2010) on the individual assets underlying the CMBS. Modeling results were delivered to insurers at the end of December 2010 for each of their respective holdings.

As of year-end 2010, the total value of the insurance industry's CMBS holdings was:

	Life and Fraternal	P/C, Health and Title	Total
Par Value	\$154,515,400,378	\$26,837,173,615	\$181,352,573,993
BACV	\$145,289,701,136	\$26,339,055,548	\$171,628,756,684
	92.94%	98.59%	93.78%

The following table shows an estimate of the impact of the change in process in 2010 for CMBS on RBC. The calculation of the RBC difference does not take into account the covariance

component of the RBC formula. Therefore, this is for illustrative purposes only. The covariance component is an important factor in the RBC calculation, because it serves to smooth significant changes in RBC charges, especially when those changes are reflected in smaller portions of the insurer's portfolio and are less correlated with other factors in the calculation.

Estimated RBC charge	Before Covariance
Prior Guidance	\$1,652,665,303
New Guidance	\$1,897,910,050
Difference	\$245,244,747

Breaking down the insurance industry's holdings by NAIC designation yields the following:

NAIC	Prior Guidance		New Guidance	
1	\$152,766,965,993	89.0%	\$158,162,297,393	92.2%
2	8,796,044,298	5.1	3,768,840,864	2.2
3	5,348,486,808	3.1	3,312,097,218	1.9
4	2,948,814,928	1.7	3,266,979,995	1.9
5	1,470,991,796	0.9	2,332,931,438	1.4
6	297,452,861	0.1	785,609,776	0.5
	\$171,628,756,684		\$171,628,756,684	

Not surprisingly, the overall results show a shift in the NAIC designations for some of the insurance company CMBS holdings. However, the shifts do not appear to have been substantial. The predominant result was no change in NAIC designation. The following table breaks down changes in results, based on BACV.

	Life and Fraternal	P/C, Health and Title	Total
Positive Change	6.5%	3.8%	6.1%
No Change	86.8%	94.5%	88.0%
Negative Change	6.7%	1.7%	5.9%

With respect to the 5.9% of CMBS holdings that experienced a negative change in the NAIC designation, which, consequently, would warrant a higher RBC charge, 3.2% (\$5.6 billion) experienced a shift of only one level. The remaining 2.7% (\$4.7 billion) experienced a shift of more than one level.

As previously mentioned, a critical component of the new process is the comparison of the resulting expected recovery value with the individual insurance company's carrying value (or BACV) for the specific holding (see table below for some comparison metrics). Understanding the reasons for the assignment of a different NAIC designation requires an understanding of the results with that in mind.

	Expected Recovery Price (%)	Carrying Value Price (%)
NAIC 1	97.11	94.61
.....		
NAIC 5	68.09	84.48
NAIC 6	24.92	48.47
Positive Change	74.29	61.65
No Change	99.32	98.44
Negative Change	76.56	88.38

Noteworthy is that bonds receiving an NAIC 1 using the new methodology had a weighted average carrying value 2.5 points below the expected recovery value. On the other hand, bonds assigned an NAIC 5 or 6 had carrying values significantly above the expected recovery value.

This same dynamic occurs in the positive change, no change and negative change differentials between the new process and the prior one (which relied on NRSRO ratings).

CMBS held at significant discounts, not only to par but also to the expected recovery value, were assigned an improved designation using the new methodology. CMBS with carrying values in excess of the expected recovery value suffered in comparison. On average, the bulk of the insurance industry's CMBS exposure had a carrying value roughly equal to the expected recovery value. The translation of this data is that holdings based on the modeling results are less likely to lose any portion of their carrying value, which in many cases is less than par, and they received a better NAIC designation and resulting lower RBC factor. In some cases, this was an improvement over the designation they would have otherwise received using the prior formulaic translation of NRSRO ratings. The reverse is the case for bonds with carrying values significantly above the expected recovery values. In those cases, the bonds would be assigned lower NAIC designations and map to higher RBC factors. For some holdings, this was a lower designation than would have been received under the prior methodology.

BACV is a function of several factors beyond a bond's initial purchase price. Amortization of premium and discount will have an impact, which can be significant from one year to the next for shorter duration bonds. In addition, there is valuation guidance under *SSAP No. 43R—Loan-Backed and Structured Securities – Revised*. Circumstances might require an insurer to reduce its carrying value by taking a realized loss through other-than-temporary impairment (OTTI) or an unrealized loss by marking a bond to fair value. For purposes of some additional analysis, we focused on the life industry, which represents the bulk of the overall CMBS exposure. In 2010, the life industry took OTTI and unrealized losses totaling \$3,946,626,172 on CMBS with a par value of \$10,074,295,484. This represents a significant write-down of a relatively small portion of the industry's holdings. The following table details the resulting impact on the NAIC designation for those bonds.

NAIC	Prior Guidance	BACV Price	% Total	New Guidance	BACV Price	% Total
1	\$308,485,623	87.19%	7.8	\$2,149,998,672	31.48%	54.0
2	586,415,323	79.79	14.7	78,958,175	55.65	2.0
3	993,565,406	61.41	25.0	276,140,943	54.73	6.9
4	1,208,326,917	42.80	30.4	381,366,510	51.64	9.6
5	733,695,299	24.96	18.4	382,112,726	52.38	9.6
6	149,284,812	12.30	3.8	711,196,354	48.16	17.9
	\$3,979,773,380	38.30%		\$3,979,773,380	38.30%	

It is notable that, while there was a significant upward shift in NAIC designations using the new methodology, there were still significant holdings after these revaluations with NAIC designations below NAIC 1 or 2.

An analysis of the securities where a revaluation was not reported shows that the BACV of these holdings represented the bulk of the life industry's holdings (\$141,309,927,756, or 97%). Of these, 6% experienced a "downgrade" in NAIC designation and an increase in RBC. On the other hand, 5% of the holdings benefitted from an improvement in the NAIC designation that resulted in a RBC decrease. The majority of this group of holdings (89%) saw no change in the NAIC designation. The average expected recovery value of this portion of the life industry's holdings was 98.5%, which is modestly above the overall BACV price. For those holdings being assigned an NAIC 1 under the new methodology, the average expected recovery value was 99.33%, above the BACV price of 97.37%.

NAIC	Prior Guidance	BACV Price	% Total	New Guidance	BACV Price	% Total
1	\$127,248,978,239	98.66%	90.0	\$130,122,545,893	97.37%	92.1
2	7,404,624,664	96.45	5.2	3,449,963,398	99.08	2.4
3	4,154,111,948	91.85	2.9	2,905,766,561	98.16	2.1
4	1,652,520,962	85.25	1.2	2,833,537,957	96.83	2.0
5	710,040,761	67.30	0.5	1,931,316,455	96.93	1.4
6	139,651,182	37.32	0.1	66,797,492	57.31	0.1
	\$141,309,927,756	97.37%		\$141,309,927,756	97.37%	

As would be expected, the improvement in NAIC designation was substantially less for those holdings that did not experience a revaluation than for those that did. There was some improvement in designation for those holdings where a revaluation did not occur. This reflected the same dynamic in that, on average, the BACV price was approximately 8.7% below the expected recovery value.

In summary, the modeling of CMBS for year-end 2010 resulted in a mapping of NAIC designations that shifted a portion of the insurance industry's holdings from middle levels (NAIC 2 and 3) to either a higher level (NAIC 1) or lower (NAIC 4, 5 or 6). This was appropriate for those specific holdings, as the shift reflected the relative valuations in the insurers' balance sheets as compared with expected recovery values. The shift was more dramatic particularly for those holdings where insurers took an OTTI write-down or fair value reduction in 2010. The estimate of RBC for the insurance industry was modestly higher for the asset class.

April 8, 2011								
Major Insurer Share Prices		Change %				Prior		
Close		Week	QTD	YTD	Week	Quarter	Year	
Life	Aflac	\$53.66	0.4	1.7	(4.9)	\$53.45	\$52.78	\$56.43
	Ameriprise	62.93	0.8	3.0	9.3	62.43	61.08	57.55
	Genworth	12.99	(3.8)	(3.5)	(1.1)	13.51	13.46	13.14
	Lincoln	29.79	(2.2)	(0.8)	7.1	30.47	30.04	27.81
	MetLife	44.53	(1.7)	(0.4)	0.2	45.31	44.73	44.44
	Principal	31.72	0.0	(1.2)	(2.6)	31.71	32.11	32.56
	Protective	26.70	(0.7)	0.6	0.2	26.90	26.55	26.64
	Prudential	62.28	(0.3)	1.1	6.1	62.45	61.58	58.71
	UNUM	26.31	(0.9)	0.2	8.6	26.54	26.25	24.22
PC	ACE	\$65.79	(0.1)	1.7	5.7	\$65.83	\$64.70	\$62.25
	Axis Capital	36.24	2.3	3.8	1.0	35.42	34.92	35.88
	Allstate	31.40	(0.2)	(1.2)	(1.5)	31.45	31.78	31.88
	Arch Capital	102.57	2.3	3.4	16.5	100.31	99.19	88.05
	Cincinnati	32.92	(0.2)	0.4	3.9	32.97	32.79	31.69
	Chubb	62.12	1.1	1.3	4.2	61.42	61.31	59.64
	Everest Re	92.58	2.4	5.0	9.1	90.40	88.18	84.82
	Progressive	21.26	0.3	0.6	7.0	21.20	21.13	19.87
	Travelers	59.58	(0.1)	0.2	6.9	59.65	59.48	55.71
	WR Berkley	31.80	(3.2)	(1.3)	16.1	32.86	32.21	27.38
	XL	25.19	1.8	2.4	15.4	24.75	24.60	21.82
Other	AON	\$53.27	(0.8)	0.6	15.8	\$53.71	\$52.96	\$46.01
	AIG	34.49	(1.3)	(1.8)	(28.5)	34.96	35.14	48.27
	Assurant	37.98	(1.0)	(1.4)	(1.4)	38.37	38.51	38.52
	Fidelity National	14.73	2.2	4.2	7.7	14.41	14.13	13.68
	Hartford	27.17	(1.7)	0.9	2.6	27.65	26.93	26.49
	Marsh	30.07	0.2	0.9	10.0	30.00	29.81	27.34
Health	Aetna	\$36.75	(2.5)	(1.8)	20.5	\$37.68	\$37.43	\$30.51
	Cigna	43.13	(3.2)	(2.6)	17.6	44.54	44.28	36.66
	Humana	70.13	0.2	0.3	28.1	69.98	69.94	54.74
	United	44.38	(2.8)	(1.8)	22.9	45.65	45.20	36.11
	WellPoint	68.95	(2.4)	(1.2)	21.3	70.64	69.79	56.86
Monoline	Assured	\$14.93	(0.4)	0.2	(15.6)	\$14.99	\$14.90	\$17.70
	MBIA	9.56	(4.4)	(4.8)	(20.3)	10.00	10.04	11.99
	MGIC	9.11	(2.6)	2.5	(10.6)	9.36	8.89	10.19
	PMI	2.60	(3.3)	(3.7)	(21.2)	2.69	2.70	3.30
	Radian	6.54	(4.2)	(4.0)	(19.0)	6.83	6.81	8.07
	XL Capital	25.19	1.8	2.4	15.4	24.75	24.60	21.82

April 8, 2011							
Major Market Variables		Change %			Prior		
		Close	Week	QTD	YTD	Week	Quarter
Dow Jones Ind	12,380.05	0.0	0.5	6.9	12,376.72	12,319.73	11,577.51
S&P 500	1,328.17	(0.3)	0.2	5.6	1,332.41	1,325.83	1,257.64
S&P Financial	221.70	(0.4)	0.4	3.2	222.48	220.71	214.77
S&P Insurance	194.07	(1.1)	(0.5)	3.1	196.21	194.96	188.22
US Dollar \$		Change %			Prior		
/ Euro	\$1.45	1.8	2.3	8.2	\$1.42	\$1.42	\$1.34
/ Crude Oil bbl	112.79	4.3	5.7	22.3	108.09	106.72	92.22
/ Gold oz	1,473.40	3.2	2.4	3.7	1,427.70	1,438.90	1,420.78
Treasury Ylds %		Change			%		
1 Year	0.27	0.03	(0.02)	(0.01)	0.24	0.28	0.27
10 Year	3.58	0.13	0.11	0.28	3.45	3.47	3.30
30 Year	4.64	0.16	0.14	0.31	4.49	4.51	4.34
Corp Credit Spreads -bp		Change %			Prior		
CDX.IG	81.45	(2.8)	(2.8)	(4.2)	83.81	83.81	85.00

April 8, 2011

Major Insurer Bond Yields

	Company	Coupon	Maturity	Price			Spread	
				Current	Change	Yield	B.P.	Change
Life	Aflac	8.500%	5/15/2019	\$120.31	(\$0.69)	5.37%	210	(2)
	Ameriprise	5.300%	3/15/2020	\$105.85	(\$0.32)	4.50%	104	(6)
	Genworth	6.515%	5/15/2018	\$100.04	(\$0.06)	6.51%	340	(9)
	Lincoln National	8.750%	7/15/2019	\$125.90	(\$0.26)	4.88%	159	(6)
	MassMutual	8.875%	6/15/2039	\$134.39	(\$2.06)	6.26%	161	(3)
	MetLife	4.750%	2/15/2021	\$99.40	(\$0.90)	4.83%	119	(3)
	Mutual of Omaha	6.800%	6/15/2036	\$94.59	(\$1.27)	7.27%	281	(4)
	New York Life	6.750%	11/15/2039	\$112.59	(\$2.16)	5.84%	117	(1)
	NLV Financial	7.500%	8/15/2033	\$114.18	(\$1.58)	6.31%	199	(3)
	Northwestern Mutual	6.063%	3/15/2040	\$103.97	(\$1.89)	5.78%	108	(3)
	Pacific Life	9.250%	6/15/2039	\$129.88	(\$2.16)	6.84%	219	(3)
	Principal	6.050%	10/15/2036	\$101.72	(\$2.10)	5.92%	142	(3)
	Prudential	4.500%	11/15/2020	\$97.41	(\$0.67)	4.84%	126	(5)
	TIAA	6.850%	12/15/2039	\$111.59	(\$1.78)	6.00%	133	(2)
P&C	ACE INA	5.900%	6/15/2019	\$110.11	(\$1.03)	4.41%	110	4
	Allstate	7.450%	5/15/2019	\$118.73	(\$0.20)	4.65%	137	(6)
	American Financial	9.875%	6/15/2019	\$122.07	(\$0.39)	6.37%	304	(9)
	Berkshire Hathaway	5.400%	5/15/2018	\$109.71	(\$0.64)	3.82%	77	2
	Travelers	3.900%	11/15/2020	\$94.41	(\$0.57)	4.63%	107	(6)
	XL Group	6.250%	5/15/2027	\$97.46	(\$1.40)	6.51%	244	(9)
	Other	AON	5.000%	9/15/2020	\$100.75	(\$0.76)	4.90%	134
AIG		5.850%	1/15/2018	\$103.73	(\$0.25)	5.19%	220	(4)
Fidelity National		7.875%	7/15/2020	\$111.25	\$1.50	6.25%	404	88
Hartford		5.500%	3/15/2020	\$101.60	(\$0.51)	5.27%	183	(5)
Marsh		9.250%	4/15/2019	\$124.85	(\$1.17)	5.39%	208	6
Nationwide		9.375%	8/15/1939	\$122.53	(\$1.23)	7.45%	284	(7)
Health	Aetna	3.950%	9/15/2020	\$95.94	(\$0.70)	4.48%	93	(4)
	CIGNA	5.125%	6/15/2020	\$103.51	(\$0.95)	4.65%	113	(1)
	United Healthcare	3.875%	10/15/2020	\$94.57	(\$1.05)	4.59%	102	1
	Wellpoint	4.350%	8/15/2020	\$98.79	(\$0.95)	4.51%	100	(0)

Questions and comments are always welcome. Please contact the Capital Markets Bureau at CapitalMarkets@naic.org.

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