

Article Title: ARCHIVE | Criteria | Insurance | General: Methodology For Incorporating Incremental Stress Factors Into The Capital Adequacy Analysis Of North American Insurers Data: (EDITOR'S NOTE: —This article, published Feb. 18, 2009, has been superseded by "Methodology For Incorporating Incremental Stress Factors Into The Capital Adequacy Analysis Of U.S. Insurers," published April 12, 2010.) This article discusses the "Principles Of Corporate And Government Ratings," published June 26, 2007, on RatingsDirect at www.ratingsdirect.com and Standard & Poor's Web site at www.standardandpoors.com. More specifically, it presents criteria on Standard & Poor's methodology and assumptions for evaluating the capital adequacy of insurance companies. The continued turmoil in the credit and equity markets is taking a bigger toll on the North American life and health insurance sectors. Although Standard & Poor's Ratings Services believes that most rated companies' long-term fundamental strengths remain intact, current financial pressures are acute. Accordingly, based on our expectations for higher-than-normal credit losses, we expect some insurers will be more vulnerable to current economic conditions. Therefore, the application of our incremental stress factor assumptions may result in the ratings being lowered by one to two notches. (For more details, see "2009 U.S. Life Insurance Outlook: Sector Outlook Remains Negative As Companies Grapple With Market Turmoil," published Dec. 12, 2008, on RatingsDirect.) We believe that insurers' bond holdings, commercial mortgages (CM), and commercial mortgage-backed securities (CMBS) could experience unprecedented stress in the next 12 to 18 months. As a result, Standard & Poor's has set out its criteria for performing an incremental stress analysis to apply to these assets in order to assess the capital adequacy of life and health insurance companies. The analysis incorporates higher levels of stressed loss assumptions for certain asset classes, as we stated in our press release, "Advance Notice Of Proposed Criteria Change: Stress Analysis Of Capital Adequacy Of North American Life/Health Insurers," published Feb. 4, 2009, on RatingsDirect. Although capital adequacy is only one of the components of our ratings methodology, it is clearly central to evaluating these emerging risks. We have applied the incremental stress analysis primarily to bonds, CMBS, and CM whole-loan portfolios because they generally represent, in aggregate, approximately 80% of an insurer's invested assets. Although we are not changing our baseline insurance risk-based capital adequacy model, we are applying incremental stresses for these asset classes across all confidence levels during this difficult economic period. We may expand our analysis in the future to include additional asset classes as the market conditions continue to evolve, updated information becomes available, and material losses emerge. The U.S. is in the midst of perhaps its longest recession in a generation, and our economists believe it is just entering its most difficult phase. The Standard & Poor's baseline economic forecast is for a deep and long recession, with a sluggish recovery beginning in mid-2009. Standard & Poor's economists are forecasting negative GDP growth in the first half of 2009 after declines in the second half of 2008 for a total decline of 3% peak to trough. Standard & Poor's Global Fixed Income Research expects nonfinancial corporate entities to experience rapid deterioration in credit quality in 2009. The baseline forecast is for a 12-month-forward (December 2009) default rate for U.S. corporate speculative-grade ratings of nearly 14%, up from 4.02% in 2008. This dramatic rise reflects our opinion of the weak credit profiles of many corporations going into this period of economic contraction. In addition, CM lending is generally considered to be highly cyclical, and during recent months it has become increasingly clear that the problems facing the financial markets and the U.S. economy have left CM in a fundamentally weaker position. Additionally, as a lagging economic indicator, we expect that losses on these assets have yet to be fully realized. It is our view that all property types are subject to potential increases in defaults and that those that become distressed will experience longer workout times and will have higher loss severities. Furthermore, because of liquidity constraints, we think that borrowers may have difficulty refinancing loans in the current environment. Determining The Amount Of Capital Insurers Would Need To Cover Their Losses Amid The Tough Economic Conditions This stress analysis should be interpreted as reflecting a near-term (one to two years) view based on current market conditions. We would expect relatively little credit deterioration during benign market conditions or during times of only mild or modest stress. Conversely, insurers and their investment portfolios could suffer greater degrees of credit deterioration during periods of severe or extreme stress. (For a full list of stress factors affecting capital, see the table at the end of the article.) We are applying the incremental stress factors in a manner that is consistent with the approach

taken in our existing risk-based capital adequacy model. The incremental stresses that we are introducing seek to determine the amount of capital that an insurer would need to cover the calculated losses in the current economic environment at varying confidence intervals commensurate with ratings categories. We will continue to monitor, and possibly revise, the underlying assumptions to insure their relevance as the events driving the credit cycle evolve. For additional details on Standard & Poor's risk-based insurance capital model and the underlying approach to applying capital factors, please see "Risk-Based Insurance Capital Model," published Sept. 11, 2008, on RatingsDirect. We have designed the stresses to affect certain asset classes, and they are based on certain available data and current market conditions. Generally speaking, we assumed that corporate bond and CMBS portfolios are well diversified and of high credit quality. Furthermore, we assume that CM portfolios are well diversified by building type, credit quality characteristics, geographic regions, and year of origination. We will discretely assess mortgage risk for insurers' portfolios that do not fit these characteristics on a case-by-case basis.

Determining The Stressed Capital Factors Corporate bonds Our approach to performing the stressed analysis on insurers' bond portfolios is consistent with the applications of criteria we have used in our traditional capital model. For the purposes of deriving the bond default risk factors, we used the CreditPro database of corporate bond performance. The data set spanned the years 1981–2005 and included several recent economic downturns. We determined the stressed risk factors by taking the worst observed cumulative default performance within the population data for each of the segmented bond portfolio maturity buckets. After deriving the cumulative default risk factors, we then discounted the expected losses over the relevant maturity period and applied recovery assumptions consistent with those applied in our standard model. These efforts generated baseline asset risk factors, which we calibrated as 'BBB' level factors. We then derived the equivalent 'A', 'AA', and 'AAA' stress factors by applying the same confidence intervals between 'BBB', 'A', 'AA', and 'AAA' factors as we use in our traditional risk-based capital model. We then broadly applied these stress factors by credit rating and maturity bucket to insurers' balance sheets on a pro forma 2008 basis. As an example, for the five- to 10-year maturity bucket, at the 'AAA' confidence interval, we added an incremental stress capital charge of 4.03% for 'BBB' rated bonds to the existing 4.33% baseline factor, reflecting a total stress (existing plus additional) of 8.36%. We applied the same methodologies to other bond-like instruments using similar stress factors.

Commercial mortgages Similar to the approach taken with corporate bonds, we looked back at data from 1981–2007 to determine the worst observed economic cycle for commercial mortgages. Based on data from the American Council of Life Insurers' Mortgage Loan Portfolio Profile Database, we determined that this occurred from 1988–1995, when annual default rates exceeded 1.0%, compared with the long-term average of 0.84%. We determined the cumulative foreclosure rates (approximately 17%) and average loss severity rates (approximately 27%) for this period and then discounted the expected losses over the relevant maturity period. We calibrated the result as the 'BBB' rating level starting point. As we did with the corporate bonds, we then derived the equivalent 'A', 'AA', and 'AAA' stress factors by applying the same confidence intervals between 'BBB', 'A', 'AA', and 'AAA' factors as we use in our traditional risk-based capital model. The stress assumption does not give consideration for differing commercial mortgage maturities unlike the stress assumption used in bond factors. As a result, at the 'AAA' confidence interval level, we have added an additional stress of 3.77% to the existing 2.90% baseline factor, reflecting a total stress (existing plus additional) of 6.67%. We recognize that portfolio performance can vary greatly between insurance companies. Year of origination or concentrations in certain geographic regions or building types can have a significant impact on the performance of a commercial real estate pool. Additionally, the appetite for different loan types can influence performance. For example, banks often make construction loans, while insurance companies generally do not offer these. Similarly, different issuers have varying risk profiles or underwriting appetites that will influence the portfolio composition and contribute to the variance in their loss performances. This typically has been observed when comparing the historical loss performance of CM pools originated by insurance companies with those of banks or CMBS.

Commercial mortgage-backed securities The incremental stress on CMBS holdings reflects our view of the potential impairments as a result of the continued deterioration of the economy in general, and the CM market in particular. CMBS transactions historically have performed well, however they are facing increasing stress as the economic conditions continue to deteriorate. Standard & Poor's loss

estimates for these transactions likely will increase in response to the worsening market conditions, with expected losses for the 2005–2007 originations rising more than the losses for other vintages. This reflects our opinion of the impact of increased lending capacity and weaker underwriting standards of originations during the 2005-2007 period, and it highlights the subsequent effects that market conditions can have on CMBS asset performance. Our stress assumptions are that many of these assets will transition to lower ratings in the short term. The vast majority, approximately 95%, of these securities within insurers' CMBS portfolios are identified as NAIC 1 bonds. For the basis of our assumption, we differentiated stresses based on Standard & Poor's ratings included in the NAIC 1 category ('AAA' through 'A' ratings). Standard & Poor's expects insurers' CM portfolios to perform better on a loan-loss-performance basis than other financial institutions, such as banks. Historically, the banking sector's performance has been highly correlated to CM, as it can represent a large portion of banks' balance sheets. Additionally, banks tend to provide development and construction loans. These typically have not performed as well as other loans and, because they are shorter term in nature, have a heightened degree of refinancing risk, which may further exacerbate the near-term performance of these portfolios. This is currently implied in the financial institution's risk-adjusted capital framework for construction and development loans of 18%. In general, we believe the differences in performance tend to result from risk appetites and, in the case of CMBS, differences in underwriting standards. Assessing The Results Standard & Poor's will apply the results of the analysis on an individual-company basis based on company-specific data. The analysis incorporates our opinion of the overall quality of capital adequacy, considering the impact of the stress results and the importance of capital as a major factor in the overall rating. In particular, we will analyze the variance between the total required capital, based on the current charges, and the total required capital reflecting the stress charges, based on pro forma 2008 data. We also consider, when possible, concentration risk and overall levels of unrealized losses in our review of insurers' portfolios. For example, we will review the top five counterparty risk concentrations within investment portfolios for each insurer to see how that exposure compares with total adjusted capital. Additionally, we compare generally accepted accounting principles (GAAP) unrealized investment losses within the investment portfolio to the insurer's GAAP total equity. We will more closely scrutinize the outliers related to these metrics. Although we have focused on North American life and health insurers, the enhanced criteria applies to North American property and casualty insurers as well. In reviewing these initial results, it is unlikely that rating changes will result based on the incremental stress analysis. In our opinion, there are several ways that companies may mitigate perceived capital shortfalls, and we will factor these into our analysis. For example, we will consider a company's ability to mitigate any perceived capital shortfall through positive operating performance or organic capital generation over a two-year horizon, recognizing that future earnings may be muted by any persisting economic malaise and likely will fall below historical levels. For companies that have earnings or capital plans that can restore lost capital over the next two years, we do not expect any rating changes. Our analysis will also reflect the extent to which companies may have already written down the value of certain assets on a statutory-accounting basis. Additionally, we will make a qualitative assessment of an individual company's capital based on available funding sources and its access to the capital markets. Standard & Poor's Baseline Insurance Risk-Based Capital Adequacy Model Remains The Same Standard & Poor's has not changed its baseline insurance risk-based capital adequacy model for life and health insurers. Rather, this stress analysis reflects a near-term view based on current market conditions. Although short-term financial pressures are acute, we believe that the long-term fundamental strength of most rated companies remains intact. As noted previously, our baseline insurance risk-based capital model assumes that we would expect insurers to experience relatively little credit deterioration during benign market conditions or periods of only mild or modest stress. On the other hand, insurers and their investment portfolios could suffer greater credit deterioration during severe or extreme stress. If other rated financial institutions or corporate sectors are exposed to these same asset classes, we will consider whether ratings reviews are appropriate. We will continue to evaluate our assumptions and will review or update them as appropriate. We provide ratings on companies in many parts of the world, and in the process we encounter many different accounting frameworks. Our capital model is designed under a globally consistent framework by incorporating regional factors unique to a local market. It is an ongoing

objective of Standard & Poor's to normalize the resulting capital measures on a basis that is consistent with U.S. statutory or GAAP/International Financial Reporting Standards accounting. For example, and subject to analytical judgment, we generally will not apply incremental stresses to the baseline insurance risk-based capital model where current values are reported on a marked-to-market basis, reflecting sharp declines in fair value. Capital Adequacy Is One Piece Of A Larger Rating Analysis The capital adequacy outcome from the model, as well as from any stress analysis, is only a starting point for our analysis of the overall capital adequacy of insurers. We apply qualitative and quantitative considerations as warranted to derive a more complete picture of an insurer's capital position. Similarly, we will continue to base our ratings on a broad-based analysis of an insurer's credit quality. Strengths or weaknesses in other key areas, such as a company's competitive position, management and strategy, investment risk, liquidity risk, operating performance, enterprise risk management, and financial flexibility may in some cases more than offset relative strength or weakness in capital adequacy. We view these areas of analysis as being interconnected, and their importance and influence on a rating will differ depending on company-specific circumstances. Related Research "How The Credit-Market Crisis Is Changing The World Of Banking," published Nov. 25, 2008. "Advance Notice Of Proposed Criteria Change: Economic Stress And Liquidity Constraints Take A Toll On U.S. CMBS," published Dec. 16, 2008. "The Impact Of Reduced Liquidity On U.S. CMBS Ratings And Loan Performance," published Sept. 17, 2008. U.S. Life And Health Insurance Capital Adequacy Factors (%)

	--EXISTING FACTORS (A)--										--ADDITIONAL STRESS FACTORS (B)--										--TOTAL STRESS (A+B)--																																																															
AAA	0.13	0.12	0.11	0.09	0.14	0.12	0.11	0.08	0.27	0.24	0.22	0.17	0.81	0.73	0.68	0.55	0.41	0.35	0.31	0.94	0.85	0.79	0.64	0.52	0.42	0.33																																																										
AA	0.20	0.12	0.11	0.09	0.14	0.12	0.11	0.08	0.27	0.24	0.22	0.17	0.81	0.73	0.68	0.55	0.41	0.35	0.31	0.94	0.85	0.79	0.64	0.52	0.42	0.33																																																										
A	1.22	1.08	0.99	0.75	NAIC 3	2.87	2.61	2.44	2.00	1.42	1.19	1.04	0.64	4.29	3.81	3.48	2.64	NAIC 4	12.63	11.67	11.02	9.33	5.23	4.19	3.49																																																											
BBB	11.67	11.02	9.33	5.23	4.19	3.49	1.64	17.86	15.86	14.51	10.97	NAIC 5	35.22	32.74	31.06	26.67	6.08	3.93	2.49	0.00	41.29	36.67	33.55	26.67	NAIC 6																																																											
AAA	30.00	30.00	30.00	30.00	ONE TO FIVE YEARS:	NAIC 1	0.31	0.28	0.26	0.21	0.20	0.17	0.15	0.10	0.50	0.45	0.41	0.31	NAIC 2	2.30	2.10	1.97	1.63	0.78	0.63	0.53	0.26	3.08	2.73	2.50	1.89	NAIC 3	9.16	8.48	8.02	6.81	1.72	1.18	0.82	0.00	10.88	9.66	8.84	6.81	NAIC 4	23.98	22.28	20.79	18.11	8.19	6.28	5.34	1.65	32.17	28.57	26.13	19.76	NAIC 5	37.65	35.44	32.92	29.81	15.23	11.53	10.04	2.68	52.89	46.97	42.96	32.49	NAIC 6	30.00	30.00	30.00	30.00	0.00	0.00	0.00	0.00	30.00	30.00	30.00	30.00	FIVE TO 10 YEARS:
AA	1.01	0.94	0.87	0.71	1.16	0.99	0.90	0.63	2.18	1.93	1.77	1.34	NAIC 2	4.33	4.12	3.84	3.35	4.03	3.31	2.95	1.79	8.36	7.42	6.79	5.14	NAIC 3	13.87	13.21	12.54	11.14	11.00	8.87	7.65	4.13	24.86	22.08	20.20	15.27	NAIC 4	26.88	25.82	24.20	21.84	16.95	13.10	11.40	5.09	43.82	38.92	35.60	26.92	NAIC 5	40.44	38.59	36.82	33.39	19.73	14.84	12.05	3.57	60.17	53.43	48.88	36.97	NAIC 6	30.00	30.00	30.00	0.00	0.00	0.00	0.00	30.00	30.00	30.00	30.00	10 TO 20 YEARS:							
A	1.22	1.04	1.27	1.07	0.99	0.63	2.72	2.42	2.21	1.67	NAIC 2	5.29	4.98	4.66	4.15	3.98	3.26	2.88	1.55	9.27	8.24	7.53	5.70	NAIC 3	15.67	14.89	14.09	12.78	11.57	9.30	8.04	3.96	27.24	24.19	22.13	16.74	NAIC 4	28.89	27.34	25.83	23.21	20.07	16.14	13.94	6.87	48.96	43.48	39.77	30.08	NAIC 5	42.90	41.57	39.70	35.77	22.10	22.98	19.34	8.89	65.00	64.54	59.04	44.66	NAIC 6	30.00	30.00	30.00	30.00	0.00	0.00	0.00	0.00	30.00	30.00	30.00	30.00	20 YEARS AND MORE:								
BBB	1.80	1.64	1.50	1.33	1.17	1.00	0.91	0.50	2.97	2.64	2.41	1.83	NAIC 2	6.64	6.13	5.64	5.03	4.20	3.50	3.16	1.63	10.84	9.63	8.81	6.66	NAIC 3	17.10	16.13	15.18	13.79	11.20	9.00	7.80	3.60	28.30	25.13	22.99	17.39	NAIC 4	31.17	29.18	27.69	24.54	22.18	18.20	15.65	8.24	53.35	47.38	43.34	32.78	NAIC 5	48.34	45.59	43.72	38.85	16.66	19.41	19.57	9.02	65.00	65.00	63.29	47.87	NAIC 6	30.00	30.00	30.00	30.00	0.00	0.00	0.00	0.00	30.00	30.00	30.00	30.00	COMMERCIAL MORTGAGE-BACKED SECURITIES FIVE TO 10 YEARS:						
AA	1.01	0.94	0.87	0.71	1.16	0.99	0.90	0.63	2.18	1.93	1.77	1.34	Standard & Poor's rating of 'AA'	1.01	0.94	0.87	0.71	7.35	6.48	5.92	4.43	8.36	7.42	6.79	5.14	Standard & Poor's rating of 'A'	1.01	0.94	0.87	0.71	23.85	21.13	19.32	14.56	24.86	22.08	20.20	15.27	Standard & Poor's rating of 'BBB'	4.33	4.12	3.84	3.35	39.49	34.80	31.76	23.58	43.82	38.92	35.60	26.92	Standard & Poor's rating of 'BB' and lower	13.87	13.21	12.54	11.14	46.30	40.22	36.34	25.83	60.17	53.43	48.88	36.97	UNAFFILIATED																			
AAA	3.64	3.41	3.07	2.50	1.67	1.57	1.41	1.15	5.32	4.97	4.47	3.64	NAIC Class 2	6.36	6.09	5.69	5.03	1.68	1.61	1.50	1.33	8.04	7.69	7.19	6.36	NAIC Class 3	22.26	21.15	19.58	16.94	6.99	6.64	6.15	5.32	29.25	27.79	25.73	22.26	NAIC Class 4	36.79	35.42	33.82	31.44	6.27	6.03	5.76	5.35	43.06	41.45	39.58	36.79	NAIC Class																																

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