

## U.S. Bond Insurers Withstand Subprime Stress

**Primary Credit Analysts:**

Dick P Smith  
New York  
(1) 212-438-2095  
dick\_smith@  
standardandpoors.com

**Secondary Credit Analysts:**

David Veno  
New York  
(1) 212-438-2108  
david\_veno@  
standardandpoors.com

Despite the well-documented deterioration in the world of subprime mortgages, this sector does not appear to be a threat to the rating stability of the bond insurers. We come to this view as the result of the insurers' underwriting standards, which typically target deals rated in the 'A' category or higher; their sound risk management practices, which have limited the exposure to subprime mortgages to typically 1% to 3% of total exposure; and their conservative capital management strategies, which result in cushions that allow for adverse development without jeopardizing their capital adequacy.

Total exposure to subprime direct RMBS transactions at June 30, 2007 for the nine primary bond insurers totaled \$36.8 billion, down from \$37.3 billion at Dec. 31, 2006 despite new business added in 2007 (see table 1). Exposure to 2006 and prior vintages at June 30, 2007 was \$30.2 billion, a reduction of \$7.1 billion due to normal amortization and prepayments. Total speculative grade exposure ('BB+' and below) at June 30, 2007 was \$1.5 billion, equal to 6.6% of statutory capital at March 31, 2007 (latest numbers available for all companies) down from \$1.7 billion at Dec. 31, 2006 (7.6%).

New subprime RMBS business written in 2007 was \$6.6 billion. Financial Guaranty Insurance Corp. (FGIC), XL Capital Assurance Inc. (XLCA), and Financial Security Assurance Inc. (FSA) accounted for nearly 75% of the 2007 volume.

For many of the bond insurers, the volatility in the subprime mortgage market is viewed as an opportunity rather than a challenge. Despite the weaker loan underwriting quality in more recent vintages, insurers reportedly have been able to get better structured deals with higher levels of protection and higher underlying ratings and have also been able to get significantly higher premium rates.

This "opportunity" theme has also carried over into the subprime-related CDO markets. The notional value of insured CDOs with subprime collateral stood at \$97.3 billion, up 36%

**Publication Date**

Aug. 2, 2007

from the \$71.4 billion outstanding at year end 2006 (see table 2). Ambac Assurance Corp. (Ambac), XLCA, ACA Financial Guaranty Corp. (ACA), and FGIC have been the most active during 2007. Business written in 2007 continues to be at the “super senior” level with many attachment points well-above the minimum 1.3x multiple of ‘AAA’ levels that defines the minimum “super senior” attachment point.

Attachment points are the level of losses that must be incurred before the bond insurer is responsible for covering losses. For example, a 30% attachment point means that a wrapped CDO tranche must incur losses equal to 30% of the original tranche before the bond insurer begins to cover losses. At the inception of a deal, the attachment point and the subordination supporting the bond insurer are one and the same. As the deal ages, the subordination may increase or decrease due to losses or various structural features of the deal.

### ***What If?***

One analytical tool we and the market have found helpful when significant events happen where the outcome is uncertain is to run a “what if” scenario to test the sensitivities of the bond insurers to a scenario that is deliberately crafted to be highly stressful. In this instance, our focus is on the 2006 vintage subprime RMBS. We applied assumed default rates to both the insured RMBS as well as CDOs that contained subprime RMBS collateral. The 2006 vintage was chosen because it is already exhibiting elevated levels of delinquencies, defaults and losses. We have also stressed speculative grade RMBS of any vintage.

To stress the subprime RMBS component of the bond insurers’ total exposure, we focused on the 2006 vintage exposure and speculative-grade exposure of any vintage. We developed incremental theoretic loss percentages for each of these components. The theoretic additional losses used in this stress test exercise are not projections of future expected losses; rather, the theoretic additional losses are deliberately set at what we believe to be conservative levels to assess the potential stress on an insurer’s capital adequacy in a “what if” context.

Incremental losses for the speculative-grade RMBS component were assumed to be 15% of the exposure. This loss rate is the result of a conservative assumption that there will be a 100% frequency of default and an average 15% severity of default. Assuming losses equal to 15% on a ‘BB’ rated, single-tranche RMBS deal is the same as assuming that the ‘BB’, ‘BBB’, and ‘A’ tranches of the typical tranching subprime deal will become worthless and that the ‘AA’ layer will incur some losses.

For the 2006 vintage exposure, the downgrade rate of similarly rated tranches from the July 2007 downgrades (based on Standard & Poor’s updated mortgage criteria; see “Various U.S. First-Lien Subprime RMBS Classes Downgraded”, RatingsDirect, July 12, 2007) was used as a default rate and was doubled to conservatively account for the potential for continued adverse development. For example, of the universe of ‘BBB’ subprime tranches examined, approximately 25% were downgraded. For purposes of this stress test, we assumed a default rate of 50.36%. We also assumed a 100% loss given default on any tranche that defaulted. To determine the overall incremental loss rate for single tranche deals, we combined the tranche-specific loss frequencies and severities with the sizes of the tranches. (See table 3 for a complete listing of assumed overall incremental loss rates on single tranche subprime RMBS transactions and incremental tranche loss rates on tranching subprime RMBS transactions.) In all cases the incremental losses are in addition to the capital charges that had already been assigned to the deals and were reflected in the capital adequacy results as of Dec. 31, 2006.

For each CDO we computed incremental losses on 2006 vintage collateral based on the same conservative methodology as described for RMBS transactions and computed the collateral impairment equal to the incremental losses as a percent of the collateral pool. The collateral impairment was then compared to the subordination supporting the tranche that the bond insurer had insured. In a high percentage of cases, the insurers have insured a super senior tranche, meaning that the attachment point for the insurer is at least 30% higher than the 'AAA' attachment point as determined by a rating agency. The "subordination impairment ratio," the ratio of collateral impairment divided by available subordination, shows how much of the available subordination would be lost to theoretic incremental losses.

Subordination impairment ratios above 1.0 signify that theoretic incremental losses would exceed the available subordination at the lowest 'AAA' level for the deal plus 30% of the wrapped tranche balance. The loss that the insurer would incur would be equal to the excess of collateral impairment over the subordination times the collateral pool. Subordination impairment ratios below 1.0 signify that theoretic incremental losses would be less than the available subordination in the CDO. In this case, the insurer would not incur any losses. Four categories of CDOs with subordination impairment ratios under 1.0 were defined and incremental capital charges were assigned to three of these categories despite the fact that the stress test signified that no incremental losses were projected for these transactions. For the category where the subordination impairment ratio was between 0.75 and 1.0, additional capital charges were set at 4% of the notional amount insured; for subordination impairment ratios between 0.50 and 0.75 additional capital charges were set at 2% of the notional amount; and for subordination impairment ratios between 0.25 and 0.50, additional capital charges were set at 0.5% of the notional amount. No incremental capital charges were assumed when the subordination impairment ratio was less than 0.25.

Finally, for ACA, we assumed that theoretic incremental losses included the excess of the net investment in equity tranches of CDOs with subprime exposure that it manages over the capital charges on the CDO asset management business that have already been included in our capital adequacy model as of Dec. 31, 2006. As the equity holder, ACA is at risk for the performance of all the collateral backing these transactions, with losses limited to the notional value of the equity layer. Since 56% of the collateral was subprime and the weighted average rating was 'A', it is reasonable to assume the equity layers would be complete losses in an adverse scenario.

### ***Stress Test Results Are Positive***

The sum of the incremental theoretic losses on RMBS and CDOs — and for ACA, the incremental theoretic losses on the equity tranches — defines the additional stress test losses (see table 4.) These losses are compared to the capital cushion an insurer has in excess of the minimum amount necessary to maintain its current rating. The capital cushion is the amount of additional losses an insurer could incur and still pass Standard & Poor's capital adequacy test. It is calculated using the margin of safety from capital adequacy model results as of Dec. 31, 2006 by solving for that amount of additional theoretic losses possible that would bring the margin of safety down to the minimum. The margin of safety is computed as the ending capital plus theoretic losses incurred divided by the theoretic losses incurred. For 'AAA' rated insurers, the minimum is 1.25x. For 'AA'- and 'A'-rated insurers, the minimums are 1.0x and 0.8x, respectively.

In all cases, the incremental theoretic losses were less than the capital cushion, signifying that our conservatively estimated amount of subprime-related losses and incremental capital charges would not impair the insurers' financial strength ratings. Furthermore, it is important to note that the insurers' capital cushions have not been adjusted for earnings generated in the first half of the year, while exposure includes deals booked in the first half of the year.

The bulk of the incremental theoretic losses for all companies other than ACA were from the RMBS sector. Within the RMBS sector, losses on speculative-grade exposure were generally the largest contributor to losses, followed by losses on the 2006 vintage. The insurers' typical target rating for RMBS deals of 'A' or better helped to limit the negative effects of the higher assumed loss rates on the 2006 vintage. For ACA, because it does not insure RMBS transactions, the bulk of the incremental theoretic losses were from the structured credit business, where it insures CDOs. These losses were much greater than at the other insurers given ACA's higher exposure to the 2006 vintage and the higher component of subprime collateral in the CDOs. The balance of ACA's incremental theoretic losses were related to the equity tranches that it owns. For the other insurers, incremental theoretic losses from CDOs were generally limited reflecting the high "super senior" attachment points and the generally 'A' quality or better average ratings of the underlying collateral.

Standard & Poor's will continue monitoring this developing situation and will issue periodic reports to update the status of the insurers.

Table 1

**'AAA' Bond Insurers' Exposure To Subprime Mortgages**

*As of June 30, 2007*

<i>(Mil. \$)</i>	<i>Ambac</i>	<i>AGC</i>	<i>CIFG</i>	<i>FGIC</i>	<i>FSA*</i>	<i>MBIA</i>	<i>XLCA/ Radian</i>	<i>ACA</i>	<i>Total</i>
							<i>XLFA†</i>		
Net subprime mortgage par exposure by vintage									
2007	609	887	0	2,516	1,020	91	1,389	70	0 6,583
2006	1,095	3,610	370	353	150	1,649	0	110	0 7,336
2005	1,636	66	1,484	3,797	766	1,369	334	42	9 9,503
2004 and prior	5,962	589	47	2,129	1,870	2,022	431	327	0 13,377
Total subprime mortgage net par	9,302	5,153	1,900	8,795	3,807	5,131	2,154	549	9 36,799
2006 vintage (par) as % of total subprime mortgage net par	11.77	70.06	19.46	4.01	3.95	32.14	-	20.00	-
Subprime mortgage case reserves									- 56,908
	1,000	4,687	-	22,064	632	28,057		468	
Case reserves as a % of subprime mortgage net par	0.01	0.05	-	0.25	0.02	0.55	-	0.09	0.15
Weighted average rating of total net subprime mortgage par	A-	AA+	AAA	A	AA+	AA	AA+	A-	BB
Speculative-grade subprime par									9 1,528
	577	68	-	282	108	366	2	117	
Speculative-grade exposure as a % of subprime mortgage net par	6.20	1.32	-	3.21	2.83	7.13	0.11	21.32	100.00 4.15
'BBB' exposure subprime par									- 6,633
	4,472	235	-	1,531	7	180	2	206	
'BBB' exposure as a % of subprime mortgage net par	48.08	4.56	-	17.40	0.19	3.52	0.07	37.52	18.02

Table 1

<b>'AAA' Bond Insurers' Exposure To Subprime Mortgages (cont. 'd)</b>										
Qualified statutory capital (Mar. 31, 2007)	6,569	935	679	2,461	2,602	6,751	1,415	1,383	388	23,183
Total claims-paying resources (Mar. 31, 2007)	13,240	2,008	1,359	4,831	6,119	13,763	2,745	2,793	972	47,830
Speculative-grade exposure % of qualified statutory capital	8.79	7.26	-	11.46	4.12	5.42	0.16	8.46	2.19	6.59
Speculative-grade exposure % of total claims-paying resources	4.36	3.38	-	5.84	1.76	2.66	0.08	4.19	0.87	3.20
'BBB' exposure % of qualified statutory capital	68.08	25.12	-	62.19	0.27	2.67	0.11	14.89	-	28.60
'BBB' exposure % of total claims-paying resources	33.78	11.70	-	31.68	0.12	1.31	0.06	7.37	-	13.87

\* The effect of first loss reinsurance is not included. ¶ Pro forma

Table 2

<b>Bond Insurers' Exposure To CDOs With Subprime Collateral</b>										
<b>As of June 30, 2007</b>										
<b>(Mil. \$)</b>	<b>Ambac</b>	<b>AGC</b>	<b>CIFG</b>	<b>FGIC</b>	<b>FSA</b>	<b>MBIA</b>	<b>XLCA/</b>	<b>Radian</b>	<b>ACA</b>	
							<b>XLFA</b>			
CDOs net par insured with subprime exposure	29,276	453	9,136	10,279	373	15,870	15,489	765	15,709	
% subprime collateral*	33.8	30.9	47.0	54.1	15.3	32.9	18.4	35.1	79.3	
Subprime collateral % of total collateral by vintage										
2007	3.1e	0.0	0.7	1.5	0.0	4.1	4.3	0.0	3.3	
2006	16.6e	15.5	17.1	30.7	0.5	17.7	8.0	12.9	44.5	
2005	10.1e	4.4	18.7	16.2	14.7	6.0	3.4	10.8	29.7	
Case reserves	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Case reserves as a % of 2006-2007 vintage subprime collateral	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Insured CDO tranche weighted average rating	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AAA	
Underlying subprime collateral weighted average rating*	AA-	AAA	BBB+	A-	A+	A+	AAA	AA-	A-	
Equity tranche exposure										118.2
% subprime collateral										55.6
Underlying collateral weighted average rating										A

\* Excludes CDO collateral where the underlying collateral contains mezzanine classes of subprime and midprime RMBS but may also include corporate debt and/or CMBS.

e-Standard & Poor's estimate.

Table 3

<b>Assumed Incremental Loss Rates on 2006 Vintage RMBS Transactions (%)</b>		
	<b>Tranches</b>	<b>Single Tranche Transactions</b>
AAA	0.10	0.10
AA	0.30	0.13
A	11.06	0.79
BBB	50.36	2.87
BB	100.00	3.89

Table 4

<b>Stress Test</b>										
<b>(Mil. \$)</b>		<b>Ambac</b>	<b>AGC</b>	<b>CIFG</b>	<b>FGIC</b>	<b>FSA</b>	<b>MBIA</b>	<b>XLCA/ XLFA</b>	<b>Radian Asset</b>	<b>ACA</b>
<b>Capital resources</b>										
Capital cushion at Dec. 31, 2006		1,100- 1,150	250- 300	150- 200	300- 350	700- 750	500- 550	600- 650	450-500	450- 500
Subprime-related case-basis reserves at June 30, 2007		1	2	0	22	1	28	0	0	0
Total		1,100- 1,150	250- 300	150- 200	300- 350	700- 750	550- 600	600- 650	450-500	450- 500
<b>RMBS</b>										
2006 Vintage		1,095	3,610	370	353	150	1,649	0	110	0
Speculative Grade Sub-Prime		577	68	0	282	108	366	2	117	9
Total Sub-Prime		9,302	5,153	1,900	8,795	3,807	5,131	2,154	549	9
<b>Theoretic Losses on 2006 Vintage</b>										
Incremental net loss as % of exposure		2.9	0.1	0.1	0.4	0.1	0.1	0.0	1.4	
Incremental net loss		31	4	0	1	0	2		2	
<b>Theoretic Losses on Speculative grade exposure</b>										
Incremental net loss as % of exposure		15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Incremental net loss		87	10	0	42	16	55	0	18	1
Total Incremental RMBS theoretic losses		118	14	0	44	16	56	0	19	1
<b>CDOs</b>										
CDOs net par insured with subprime exposure		29,276	453	9,136	10,279	373	15,870	15,489	765	15,709
Weighted average subordination impairment ratio		0.181	0.004	0.346	0.242	0.009	0.133	0.022	0.039	0.496
CDOs with subordination impairment ratios greater than 1.0		0	0	0	0	0	0	0	0	1,404
CDOs with subordination impairment ratios > 0.75 < 1.0		510	0	793	708	0	0	0	0	2,219
CDOs with subordination impairment ratios > 0.5 < 0.75		1,230	0	724	900	0	0	0	0	3,256
CDOs with subordination impairment ratios > 0.25 < 0.50		5,431	0	2,637	2,704	0	1,650	0	0	2,856
CDOs with subordination impairment ratios < 0.25		22,105	453	4,981	5,967	373	14,220	15,489	765	5,974
<b>Theoretic Losses and Incremental Capital Charges</b>										
CDOs with subordination impairment ratios greater than 1.0		0	0	0	0	0	0	0	0	214
CDOs with subordination impairment ratios > 0.75 < 1.0		20	0	32	28	0	0	0	0	89

Table 4

<b>Stress Test (cont. 'd)</b>									
<b>(Mil. \$)</b>	<b>Ambac</b>	<b>AGC</b>	<b>CIFG</b>	<b>FGIC</b>	<b>FSA</b>	<b>MBIA</b>	<b>XLCA/ XLFA</b>	<b>Radian Asset</b>	<b>ACA</b>
CDOs with subordination impairment ratios > 0.5 < 0.75	25	0	14	18	0	0	0	0	65
CDOs with subordination impairment ratios > 0.25 < 0.50	27	0	13	14	0	8	0	0	14
Total CDO Incremental Theoretic Losses and Capital Charges	72	0	59	60	0	8	0	0	382
<b>Equity Investment in CDOs with Subprime Exposure</b>									
Equity investment as March 31, 2007									118
Less capital charges already taken as of Dec. 31, 2006									86
Total CDO Equity Incremental Theoretic Losses									32
Total Subprime-Related Theoretic Losses	190	14	59	104	16	64	0	19	415
Total Subprime-Related Theoretic Losses % of Capital Cushion (approximate)	16.6	4.9	30.0	31.8	2.2	12.0	0.1	3.9	84.0

Published by Standard & Poor's, a Division of The McGraw-Hill Companies, Inc. Executive offices: 1221 Avenue of the Americas, New York, NY 10020. Editorial offices: 55 Water Street, New York, NY 10041. Subscriber services: (1) 212-438-7280. Copyright 2007 by The McGraw-Hill Companies, Inc. Reproduction in whole or in part prohibited except by permission. All rights reserved. Information has been obtained by Standard & Poor's from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, Standard & Poor's or others, Standard & Poor's does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or the result obtained from the use of such information. Ratings are statements of opinion, not statements of fact or recommendations to buy, hold, or sell any securities.

Standard & Poor's uses billing and contact data collected from subscribers for billing and order fulfillment purposes, and occasionally to inform subscribers about products or services from Standard & Poor's, our parent, The McGraw-Hill Companies, and reputable third parties that may be of interest to them. All subscriber billing and contact data collected is stored in a secure database in the U.S. and access is limited to authorized persons. If you would prefer not to have your information used as outlined in this notice, if you wish to review your information for accuracy, or for more information on our privacy practices, please call us at (1) 212-438-7280 or write us at: [privacy@standardandpoors.com](mailto:privacy@standardandpoors.com). For more information about The McGraw-Hill Companies Privacy Policy please visit [www.mcgraw-hill.com/privacy.html](http://www.mcgraw-hill.com/privacy.html).

Analytic services provided by Standard & Poor's Ratings Services ("Ratings Services") are the result of separate activities designed to preserve the independence and objectivity of ratings opinions. Credit ratings issued by Ratings Services are solely statements of opinion and not statements of fact or recommendations to purchase, hold, or sell any securities or make any other investment decisions. Accordingly, any user of credit ratings issued by Ratings Services should not rely on any such ratings or other opinion issued by Ratings Services in making any investment decision. Ratings are based on information received by Ratings Services. Other divisions of Standard & Poor's may have information that is not available to Ratings Services. Standard & Poor's has established policies and procedures to maintain the confidentiality of non-public information received during the ratings process.

Ratings Services receives compensation for its ratings. Such compensation is normally paid either by the issuers of such securities or by the underwriters participating in the distribution thereof. The fees generally vary from US\$2,000 to over US\$1,500,000. While Standard & Poor's reserves the right to disseminate the rating, it receives no payment for doing so, except for subscriptions to its publications.

Permissions: To reprint, translate, or quote Standard & Poor's publications, contact: Client Services, 55 Water Street, New York, NY 10041; (1) 212-438-7280 option 1; or by e-mail to: [research\\_request@standardandpoors.com](mailto:research_request@standardandpoors.com).