Willis Re Analytics

SUBPRIME D&O CLAIMS: EARLY INDICATORS?

- Over the past several years, misaligned incentive structures, failures in underwriting, and poorly designed products set the stage for a crisis in subprime mortgage lending. This in turn has led to a broader credit crunch.
- The situation presents a significant risk to writers of professional liability insurance and reinsurance, especially Directors and Officers (D&O).
- Willis Re's Professional Liability Practice group is developing an approach, based on financial markets data, to assist our clients in understanding and managing this risk as well as future securities class-action hot spots.

INTRODUCTION

The collapse of the subprime mortgage market has caused considerable turmoil in the financial markets. Initial discussion of the effect this may have on the property and casualty insurance and reinsurance industry focused on (re)insurers' investment portfolios. For example, Fitch Ratings has stated that the crisis is likely to have little effect on the industry as most of the P&C companies they follow "do not have a lot of [subprime mortgage] exposure."[1]

However, underwriters of professional liability – both D&O and E&O – may face increased claims in the present environment. In this report, we focus on the possibility of shareholder class-action lawsuits, which could present significant exposure under D&O policies.

THE SUBPRIME CRISIS

Insurers and reinsurers face risk in both their investment and underwriting portfolios

[1] **Business Insurance**, December 3, 2007

In preparing this Report, Willis Re has relied upon data provided by external data sources. No attempt has been made to independently verify the accuracy of this data. Willis Re does not represent or otherwise guarantee the accuracy or completeness of such data, nor assume responsibility for the result of any error or omission in the data or other materials gathered from any source in the preparation of this Report. Willis Re shall have no liability in connection with results stemming from errors, omissions, inaccuracies, or inadequacies associated with the data. Willis Re expressly disclaims any and all liability to any third party in connection with this Report.

In preparing this Report, Willis Re has used procedures and assumptions that Willis Re believes are reasonable and appropriate. However, there are many uncertainties inherent in actuarial analyses. These include, but are not limited to, issues such as limitations in the available data, reliance on client data and outside data sources, the underlying volatility of loss and other random processes, uncertainties that characterize the application of professional judgment in estimates and assumptions, reinsurance collectability, etc. Ultimate losses, liabilities and claims depend upon future contingent events, including, but not limited to, unanticipated changes in inflation, laws, and regulations. As a result of these uncertainties, the actual outcomes could vary significantly from Willis Re's estimates in either direction. Willis Re makes no representation about and does not guarantee the outcome, results, success, or profitability of any insurance or reinsurance program or venture, whether or not such program or venture applies the analysis or conclusions contained herein.

This Report is not intended to be a complete actuarial communication. A complete communication can be provided upon request. Willis Re actuaries are available to answer questions about this Report.

© Copyright 2008, Willis Re Inc.
This Report and its contents are the property of Willis Re Inc. Willis Re Inc. owns all copyright, other intellectual property rights and any other rights associated with, emanating from or that attach to this Report and its contents.

Of the 175 shareholder class-action lawsuits filed during 2007, a total of 35 are related to the subprime collapse, as listed in Table 1.

TABLE 1: IMPACT OF THE SUBPRIME CRISIS ON 2007 SECURITIES CLASS-ACTION FILINGS

	LITIGATION NAME	DATE	COURT
1	New Century Financial Corporation	2/8/2007	C.D. California
2	NovaStar Financial, Inc.	2/23/2007	W.D. Missouri
3	IndyMac Bancorp Inc.	3/12/2007	C.D. California
4	Accredited Home Lenders Holding Company	3/16/2007	S.D. California
5	Coast Financial Holdings, Inc.	3/20/2007	M.D. Florida
6	Beazer Homes USA, Inc.	3/29/2007	N.D. Georgia
7	Toll Brothers, Inc.	4/17/2007	E.D. Pennsylvania
8	First Home Builders of Florida	5/30/2007	M.D. Florida
9	Fremont General Corporation	6/15/2007	C.D. California
10	Moody's Corporation	7/19/2007	N.D. Illinois
11	American Home Mortgage Investment Corporation	7/31/2007	E.D. New York
12	RAIT Financial Trust	8/1/2007	E.D. Pennsylvania
13	Luminent Mortgage Capital, Inc.	8/8/2007	N.D. California
14	Countrywide Financial Corporation	8/14/2007	C.D. California
15	Radian Group Inc.	8/15/2007	E.D. Pennsylvania
16	Impac Mortgage Holdings, Inc.	8/17/2007	C.D. California
17	Thornburg Mortgage, Inc.	8/21/2007	D. New Mexico
18	The McGraw-Hill Companies, Inc.	8/28/2007	D. District of Columbia
19	Tarragon Corporation	9/11/2007	S.D. New York
20	Care Investment Trust Inc.	9/18/2007	S.D. New York
21	NetBank, Inc.	9/19/2007	N.D. Georgia
22	Opteum, Inc.	9/19/2007	S.D. Florida
23	E*TRADE Financial Corporation	10/2/2007	S.D. New York
24	Merrill Lynch & Co., Inc.	10/30/2007	S.D. New York
25	Washington Mutual, Inc.	11/5/2007	S.D. New York
26	Citigroup, Inc.	11/8/2007	S.D. New York
27	ACA Capital Holdings, Inc.	11/21/2007	S.D. New York
28	Federal Home Loan Mortgage Corporation	11/21/2007	S.D. New York
29	HomeBanc Corporation	11/30/2007	S.D. Florida
30	Morgan Asset Management, Inc. : Regions Morgan Keegan Select Funds	12/6/2007	W.D. Tennessee
31	Security Capital Assurance, Ltd.	12/6/2007	S.D. New York
32	UBS AG	12/13/2007	S.D. New York
33	Security Capital Assurance, Ltd.	12/6/2007	S.D. New York
34	UBS AG	12/13/2007	S.D. New York
35	Huntington Bancshares Incorporated	12/19/2007	S.D. Ohio

Source: Securities Class Action Clearing House (Stanford Law School in cooperation with Cornerstone Research)

Understandably, writers of D&O are trying to get a handle on this risk: both to quantify the potential exposure already on their books, and to guide their future underwriting.

WILLIS RE SUBPRIME HAZARD GROUPS BY INDUSTRY SECTOR

To assist our clients in this process, Willis Re reviewed the North American Industry Classification System (NAICS) codes to identify those segments with the greatest degree of exposure to subprime risk.

NAICS codes have a hierarchical structure. For those industry segments judged to have greater exposure to subprime risk, we drilled down to a more refined level of detail. An excerpt from our hazard grouping is shown in Table 2.

TABLE 2: EXCERPT FROM WILLIS RE SUBPRIME D&O HAZARD GROUPINGS

NAICS CODE	2007 NAICS TITLE	D&O SUBPRIME HAZARD
48	Transportation and Warehousing	L
51	Information	L
52	Finance and Insurance	H
521	Monetary Authorities - Central Bank	H
522	Credit Intermediation and Related Activities	H
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	H
524	Insurance Carriers and Related Activities	M
525	Funds, Trusts, and Other Financial Vehicles	H
53	Real Estate and Rental and Leasing	H
531	Real Estate	H
53111	Lessors of Residential Buildings and Dwellings	H
53112	Lessors of Nonresidential Buildings (except Miniwarehouses)	H
53113	Lessors of Miniwarehouses and Self-Storage Units	H
53119	Lessors of Other Real Estate Property	H
5312	Offices of Real Estate Agents and Brokers	H
531311	Residential Property Managers	H
531312	Nonresidential Property Managers	H
53132	Offices of Real Estate Appraisers	H
53139	Other Activities Related to Real Estate	M
532	Rental and Leasing Services	H
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	L

Source: Willis Re Professional Liability Practice Group

It is worth noting that highly exposed enterprises may still be coded to an apparently innocuous industry group. For example, both the A.M. Best rating agency and McGraw-Hill, the parent of Standard & Poor's, fall into 511 (Publishing).

While the industry hazard groups are a helpful guide, we wanted to establish further distinctions among the companies in each category. As noted in "D&O Reinsurance Pricing – A Financial Market Approach,"[2] credit ratings, credit spreads, and movements in these metrics can provide valuable information about the market's assessment of a company's real-time condition. This financial markets perspective is the basis for Willis Re's proprietary D&O model, eSCAPE℠, described in detail in a separate Willis Re briefing.[3]

THE SUBPRIME CRISIS

The bond, equity, and credit default swaps markets offer insight into firms' current risk

APPLYING FINANCIAL MARKETS DATA

Credit ratings provided by the major ratings agencies provide valuable guidance on firms' financial health. However, by their nature, such ratings are slow to move. More responsive indicators can be obtained by analyzing the credit risk implied by bond, equity, and credit default swap data. Moody's Market Implied Ratings (MIR®) offer a convenient source for such information.

To investigate what financial markets data might reveal, we began with the companies listed in the 2007 Fortune 1000. We eliminated privately held firms and those for which a history of Moody's senior debt ratings from December 2006 to present was not available, leaving 664 companies in our sample. Of these, the "High" hazard group comprised 78 companies, or approximately 12% of the total. While as of January 2008, companies in the Fortune 1000 are more likely than the average public company to be involved in a subprime related securities class action, the filings-per-firm ratio observed in our test sample was similar to that of the Fortune 1000 as a whole.

TABLE 3: TEST SAMPLE IS REPRESENTATIVE OF FORTUNE 1000

GROUP DESCRIPTION	# OF FIRMS	# OF SUBPRIME RELATED FILINGS IN 2007	FILINGS PER FIRM
All Public Companies	7700 (approx)	35	0.5%
Fortune 1000	1000	15	1.5%
Test Sample	664	12	1.8%

Source: Securities Class Action Clearing House (Stanford Law School in cooperation with Cornerstone Research)

As of December 2006, the average senior debt rating for companies in the "High" subprime hazard grouping was Baa1, while the average rating for companies in the "Medium" subprime hazard rating was Baa3, and the average "Low" subprime hazard rating was Ba1. (See Table 4 for a listing of Moody's rating categories.) It is perhaps not surprising that before the credit crisis manifested itself, those companies most exposed to subprime mortgage risk enjoyed the

[2] "D&O Reinsurance Pricing – A Financial Market Approach" by Athula Alwis, ACAS, MAAA, Vladimir Kremerman, Ph.D., and Junning Shi, FCAS, MAAA; *Casualty Actuarial Society Forum,* Winter 2005.
[3] "Willis Re eSCAPE℠: A Paradigm Shift in D&O Risk Analysis," Willis Re, October 2006.

strongest credit ratings, because this group included financial institutions. But over the course of 2007, while average ratings for the "Medium" and "Low" subprime hazard groupings remained unchanged, the average rating for companies in the "High" subprime hazard grouping fell to Baa3.

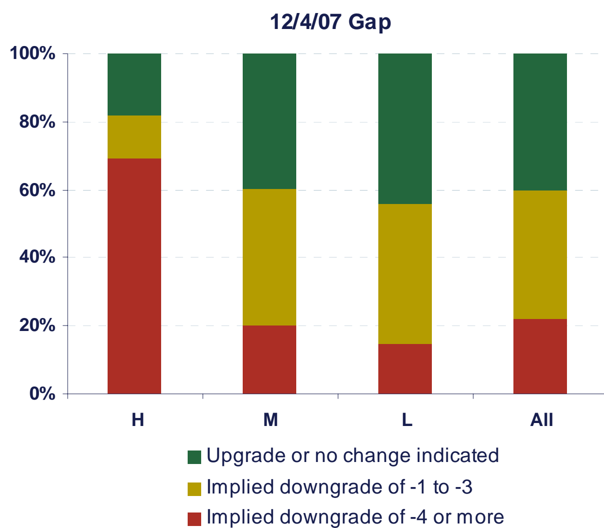
TABLE 4: MOODY'S RATING CATEGORIES

MOODY'S RATING	MEANING
Aaa	Highest quality, minimal credit risk.
Aa1, Aa2, Aa3	High quality, very low credit risk.
A1, A2, A3	Upper-medium grade; low credit risk.
Baa1, Baa2, Baa3	Medium grade; may possess certain speculative characteristics; moderate credit risk.
Ba1, Ba2, Ba3	Speculative; substantial credit risk.
B1, B2, B3	Speculative; high credit risk.
Caa1, Caa2, Caa3	Poor standing; very high credit risk.
Ca	Highly speculative; likely in, or very near, default; some prospect of recovery.
C	Lowest rated class; typically in default; little prospect for recovery.

Source: Moody's

We next analyzed the gap between the senior debt rating and the credit ratings implied by bond, equity, and credit default swap pricing. The MIR® gap at any point in time is defined as the number of levels between the senior debt rating and the lowest of these Market Implied Ratings, with a negative number representing an implied downgrade and a positive number representing an implied upgrade.

EXHIBIT 1: UNFAVORABLE MIR® GAPS MORE PREVALENT IN HIGH SUBPRIME HAZARD GROUP



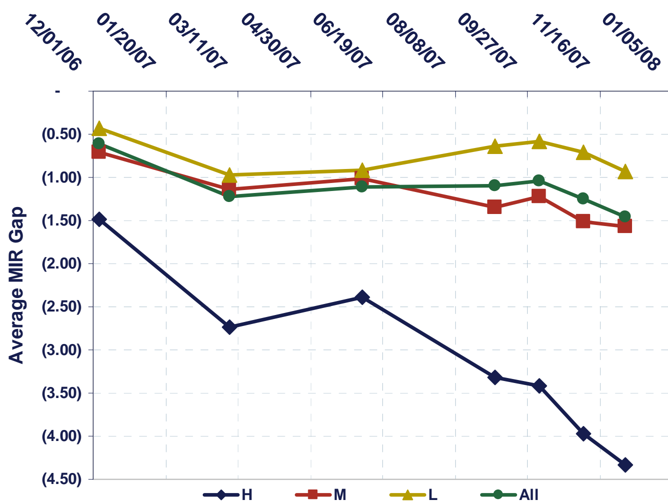
Source: Moody's MIR® Service and Willis Re Professional Liability Practice Group

As seen in Exhibit 1, there is a strong correspondence between the "High" subprime hazard category and unfavorable MIR® gaps. This leads to the question of how far in advance the financial markets might have signaled problems in the "High" hazard industry group. While problems at subprime lenders became public in February and March 2007, the impact of the broader credit crunch was not felt until August. When did the MIR® gaps appear and widen?

THE SUBPRIME CRISIS

MIR® implied ratings gaps signaled potential problems months in advance of the broader crunch

EXHIBIT 2: HIGH SUBPRIME HAZARD GROUP SHOWS WIDENING MIR® GAPS



Source: Moody's MIR® Service and Willis Re Professional Liability Practice Group

While, as Exhibit 2 illustrates, there is little difference between the behavior of MIR® gaps of the "Low" and "Medium" categories as compared to the entire sample, the "High" hazard category declined markedly in March and again between June and September. It is also interesting to note that the "High" category already had a worse than average MIR® gap as of December 2006.

CONCLUSIONS

How useful is this information as a predictor of potential securities class-action vulnerability? The "High" hazard grouping comprises 12% of our sample (78 out of 664 companies); those firms with an indicated downgrade MIR® gap of -4 or worse made up about 17% of the total as of March (110 out of 664), and about 22% as of December (148 of the 664). Those firms in the "High" subprime hazard group that have large downgrade MIR® gaps (highlighted in Table 5) are likely the companies at greatest risk.

TABLE 5: SUBPRIME HAZARD GROUPINGS VS. MIR® GAPS

	GAPS AS OF 3/5/07				GAPS AS OF 12/5/07			
	H	M	L	All	H	M	L	All
Downgrade of -4 or more	**31**	25	54	110	**54**	27	67	148
Downgrade of -1 to -3	35	45	207	287	10	53	186	249
Upgrade or no change	12	63	192	267	14	53	200	267
All	78	133	453	664	78	133	453	664

Source: Moody's MIR® Service and Willis Re Professional Liability Practice Group

Of the 664 companies in our sample, twelve are named in subprime related filings. All but one of these fall into the "High" subprime hazard category, the single exception being McGraw-Hill. Eleven of the twelve companies had MIR® gaps of -4 or worse as of 12/4/07, and as of 3/5/07 already nine of the twelve had MIR® gaps of -4 or worse.

As the impact of the credit crisis continues to make itself felt, insurance and reinsurance companies will need to remain vigilant. We believe that the Willis Re hazard classification, combined with analysis of the market implied credit ratings gaps, may prove very helpful to companies seeking to quantify their exposures and/or re-underwrite their portfolios. And more generally speaking, financial markets data, as implemented in our proprietary eSCAPE℠ model, may also help to offer a leading indicator of new issues confronting Directors & Officers business in the future.

- The subprime mortgage situation presents a significant risk to writers of professional liability insurance and reinsurance.
- To assist our clients in managing this risk, Willis Re has developed a D&O hazard grouping system, reflecting vulnerability to subprime related lawsuits by industry sector.
- Willis Re's hazard grouping is strongly correlated with MIR® gaps.
- Moody's Market Implied Ratings may offer early indication of problems that could lead to securities class-action lawsuits.