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Securities Valuation Office

Chris Evangel

Managing Director

212-386-1920

CEvangel@naic.org

Ray Spudeck, Ph.D.

Research Manager

212-386-1978

RSpudeck@naic.org

Shanique Hall-Barber

Research Analyst

212-386-1930

SBarber@naic.org

Dimitris Karapiperis

Research Analyst

212-386-1949

DKarapip@naic.org

Julius Vizner

Senior Associate Research Analyst

212-386-1926

JVizner@naic.org

Anthony Urick

Credit Manager, SVO

212-386-1938

Pradip Vyas

Credit Manager, SVO

212-386-1950

Cathy Weatherford

NAIC Executive Vice President

816-842-3600

Web Address:

www.naic.org/svo_research/index.htm

SVO Research

Update: Insurer Investment in Catastrophe Bonds

Julius Vizner, SVO Senior Associate Research Analyst

■ INTRODUCTION

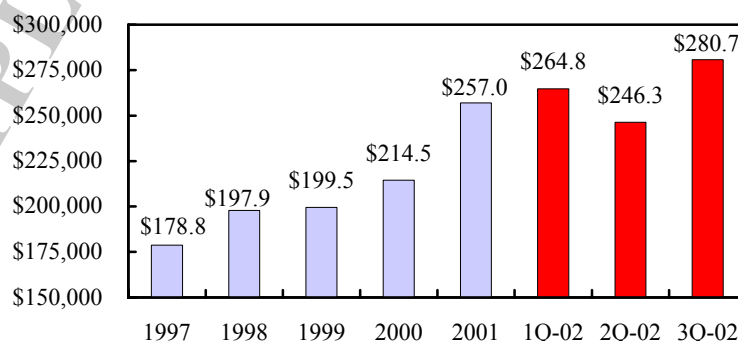
Catastrophe bonds, or “Cat bonds”, are defined as a type of high-yield insurance linked bond containing a provision causing interest and/or principal payments to be delayed or lost in the event of loss due to a specified catastrophe, such as an earthquake.¹ An article in the June 2001 edition of the *SVO Newsletter* examined insurer investment in these securities for the 2000 reporting year. This article quantifies the changes that have taken place in insurer bond portfolios with respect to catastrophe bonds since then and reviews the structure of a generic Cat bond. In general, Cat bonds play a small role in insurer bond portfolios. The basis risk transfer structure of these may, however, be a guide for future insurance risk transfers.

■ THE DATA

U.S. insurance companies reported owning only \$281 million in par value of Cat bonds, according to the latest statements filed with the NAIC (Figure 1)^{2,3}. Furthermore, only nineteen companies reported owning any Cat bonds whatsoever. The average Cat bond allocation was less than 1% of the total bond portfolio for the nineteen insurers that reported owning any. A single firm in the industry reported a Cat bond position of greater than 2.5% of total bond holdings.

(Continued on page 3)

Figure 1.
Insurer Investment in Catastrophe Bonds (\$000's)



Source: National Association of Insurance Commissioners.

¹ www.investorwords.com.

² NAIC: Life and P/C Annual and Quarterly Statements, 20001 and 2002, quarters 1-3. Kansas City: NAIC, 2002.

³ Year 2002 total differs from total published in June 2000 article due to expanded list of CAT bond CUSIPs.

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From the Director

Chris Evangel, SVO Manager Director

Back in the early 1980s, during the New York City Transit strike, then-mayor Ed Koch coined a phrase “how am I doing” as he walked to work. The mayor’s question appears appropriate for everyone to ask on a continuous basis to assess his or her performance, but not limited to times of crisis. The question put forth today is a similar one, “how are *we* (the SVO) doing?”

We believe the SVO’s recently completed 2002 securities filing reporting cycle concluded with notable achievements. In a year where we recorded a substantial increase in securities filing volume, the SVO saw an increase totaling 12% over the 2001 year of securities filings. The SVO was able to deliver NAIC rating designations on a greater number of transactions and a lower backlog than at any time since the SVO reorganization.

The SVO’s ability to continually make efforts to achieve prompt turnaround of their credit assessments and minimize the securities backlog well served both the regulators and the insurance companies. The year 2002 also represents our first complete year in our temporary quarters in mid-town Manhattan, which we believe to our customers the only transparency was the quality and timeliness of our services.

The men and women staffing the SVO are the primary reason our goals were reached in the 2002 securities reporting cycle. Through their hard work, dedication, and a commitment to excellence help this organization meet the mission before us in order for the greater organization to conduct its mission.

We fully expect the 2003 performance should be on par with the results from 2002. However, the more important question we can ask is “howwedding?”

Global Corner

Ray Spudeck, SVO Research Manager

U.S. state insurance regulators are actively involved in a growing international discussion regarding the regulation of financial services firms, loosely defined here as banks, securities firms and insurance companies. The Joint Forum, a combination of bank, insurance and securities regulators from around the world and the International Association of Insurance Supervisors (IAIS) in particular are involved in a variety of regulatory issues with the objective of understanding them in depth as well as recommending an efficient, consistent regulatory framework regarding these issues.

As the work relates to the investment/financial market areas, two current areas are being explored. The Joint Forum has created a working group on enhanced disclosure, designed to ascertain the level of risk disclosures currently available in public financial statements, and the level of desired risk disclosures by market participants. This working group consists of U.S.

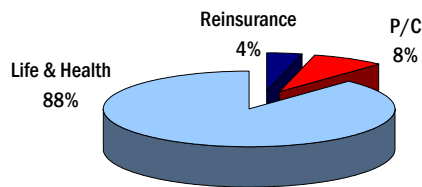
and European regulators from the banking, insurance and securities sectors. This working group has met several times to consider previously established recommendations as well as current practice and will conclude its efforts with a white paper report on enhanced financial disclosure.

Similarly, the IAIS has also formed a working group of insurance regulators to consider enhanced disclosure recommendations from previous work and their suitability and relevance for firms engaged in the business of insurance.

A second major area being explored is using financial markets for credit risk transfer. The IAIS has formed a working group designed to get a measure of the extent to which this is occurring as well as the appropriate regulatory response. This group is working on finalizing an issues paper summarizing the state of the market and the implications for insurance companies, including U.S. companies.

Update: Insurer Investment in Catastrophe Bonds (Continued)

Figure 2. Catastrophe Bond Holdings: 3Q-02



Source: National Association of Insurance Commissioners.

Clearly, catastrophe bonds are a very small asset class within insurers' portfolios.

Insurer investment in these risk-linked securities has trended upwards over the past few years. Cat bonds came into existence in the mid-1990's. Since then, the insurance industry has increased its Cat bond holdings each year. Life insurers own far more Cat bonds than all other insurer classes combined (Figure 2).

In the first three quarters of 2002, the life industry increased its net position by about \$48 million. Only two non-life firms increased their Cat bond positions.

■ CATASTROPHE BOND STRUCTURE

The diagram in Figure 3 depicts the basics of a typical Cat bond transaction. The bond is sold in the private placement market to institutional investors. Usually with the help of an investment bank, the bond is issued by a special purpose vehicle (SPV) or, more recently, a special purpose reinsurance vehicle (SPRV). The ultimate beneficiary of the coverage, the insured, is known as the sponsor.

Most sponsors are insurance companies. There have been a few exceptions, however. Both Vivendi Universal and

Disneyland Tokyo hedged against earthquake risk via Cat bonds, in 2002 and 1999, respectively⁴. Essentially, the sponsor purchases reinsurance from the capital markets. Conversely, investors gain access to securitized risk.

The proceeds from the sale of securities go to the SPV from investors. Investors, in return, receive coupons and repayment of principal at maturity should the catastrophe not occur. If there is a qualifying catastrophe, investors forfeit all or part of the coupon and/or principal. The amount of the reduction in repayments and the triggering event vary from bond to bond.

The SPV places the investor funds in risk-free assets such as U.S. Treasuries. These funds serve as collateral in the event that a catastrophe takes place. The SPV will draw on them if the contractual trigger is reached. These triggers may be based on the insurer's actual losses, an index of losses for that event for the covered region, or a metric appropriate to the covered catastrophe (e.g. Barometric pressure for a hurricane, seismic levels for an earthquake, etc). A sliding schedule of reductions can accommodate a range of losses and risks.

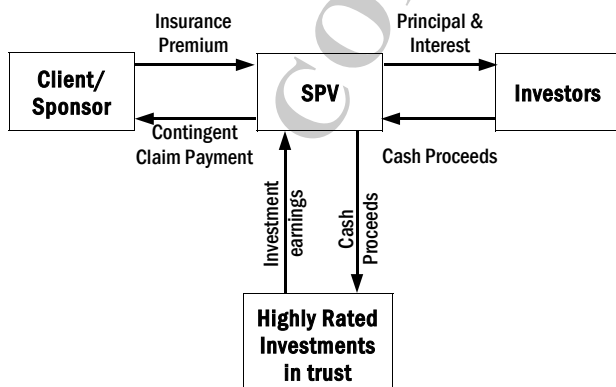
The reinsurance contract between the SPV and the sponsor spells out how and under what conditions the collateral is disbursed. The contract stipulates that a portion of the collateral will be used to indemnify the sponsor in the event of a catastrophe. Analogous to traditional reinsurance, the sponsor pays the SPV a premium. If the catastrophe does not occur, scheduled coupon payments are made and the principal is returned to the investor.

■ CONCLUSION

Cat bonds are a relatively small portion of the insurance industry bond portfolio. On an individual basis, insurers have limited their exposure to this type of investment to minimal levels. Thus, catastrophe bonds do not appear to pose a systemic risk to the assets of insurance companies in any way. The SVO Research department will, however, monitor insurer investment in this financial product and keep its subscribers updated as to any new structural or covered risk developments.

Should use of Cat bonds expand greatly, it would be interesting to examine the recursive element of the insurance industry's simultaneous selling and buying of catastrophic risk. Also, it is not yet fully appreciated what effect, if any, guidance issued recently by the Financial Accounting Standards Board (FASB Interpretation No. 46) on the consolidation of variable interest entities will have on insurer investment in Cat bonds. A future article will examine this new rule and its effect on special-purpose entities, in general.

Figure 3. Basic Structure of a Catastrophe Bond



⁴ "Vivendi Universal Insurers Its Assets via Bond Issue," Dow Jones Newswires, January 10, 2003.

Semiconductor Industry: Review and Outlook

John J. Quinn, SVO Credit Analyst

■ BACKGROUND

Semiconductors are the ubiquitous components included in virtually all electrical, communications and electronics industry products, with a growing list of new applications. They are descended from the vacuum tubes and switches of the 1940s and 50s, which performed tasks such as switching, amplification and modulation necessary to operate electrically powered devices. The invention of the transistor allowed the execution of these same tasks, but at considerable savings in power usage, space requirements, heat generation, and useful life. The later invention of the integrated circuit combined multiple transistors, resistors, and rectifiers on a semiconductor (usually silicon based due to desirable electrical properties) platform (wafer).

Continued advances in miniaturization, circuit design and optics allowed production of higher capacity semiconductors in smaller sizes, because of the ability to shrink circuitry on the chips to sizes, which are currently microscopic. This allowed the evolution of increasingly complex and higher capacity electronic products in smaller configurations. State of the art microprocessor chips, used in today's PCs, incorporate millions of transistors in their circuitry. "Moore's Law", which owes its name to the Intel Corporation scientist and co-founder, who predicted that the number of transistors on a chip (indicating its capacity) would double every 2 years, has held true, or been exceeded, since the mid-seventies.

Advances in the design and capabilities of semiconductors, as well as decreases in the size of the devices, have triggered increasing demand for their utilization in new applications, leading to economies of scale resulting from lower unit costs of production. This has, in turn, allowed lower prices, further increasing demand. Secular revenue growth for the industry, ignoring the cyclical volatility, has averaged 17% annually over its 40-year history. The industry is dominated by larger companies, because of the very high barriers to entry, particularly the requirement for huge investments in R&D and plant and equipment. The top ten semiconductor manufacturers worldwide accounted for 54% of sales, with U.S. based Intel the largest player, with a 17% market share. The next highest market share in 2001 was Toshiba (Japan), with 5% and the remaining eight, including U.S. based Texas Instruments (4.4%) and Motorola (3.5%), each had roughly 3-4% market shares. Intel's market share in microprocessors, which power personal computers, is approximately 80%.

The largest user of semiconductors, based upon 1999 statistics, was the computer industry, which accounted for 49% of industry output, followed by communications (18%), consumer products (17%), industrial and instrument (9%), auto industry (6%) and government (1%). For 2003, the Semiconductor Industry Association (a trade group for virtually all North American Semiconductor Producers) forecasts growing importance for communications chips, which are expected to absorb 22% of semi-industry output, while computers' share is forecast to decrease to 45%. Semiconductor content in discrete products continues to grow. According to the Semiconductor Industry Association (SIA), "semiconductor content in personal computers now stands at 40%, in contrast to the 1970s mainframe which had 5% content. All the new electronic products such as 3G (multimedia) cell phones and HDTV (high density television) will have a far higher semiconductor content than the products they replace."

The industry is very capital intensive. Building a fabrication facility ("fab") to produce semiconductors involves huge upfront investments, currently in the area of \$2 billion per plant, including very expensive high-technology production, assembly and testing equipment, as well as high construction costs to incorporate manufacturing environmental controls in the design of the plants. Because of the operating leverage, as well as the extreme volatility of demand for new applications, the industry has shown wide variability of its operating earnings results.

The industry has, for many years, demonstrated a highly variable four year earnings cycle, typified by the introduction of, and growing demand for new applications, followed by increasing capacity utilization of existing semiconductor plants, until utilization grows to the point where new plants are required (design and construction is typically a two year process from start to finish). The new plants reach completion just as the growth in demand for the new applications peak and begin to level off. Unit prices weaken, as well, because of the growing overcapacity, resulting in increasingly lower operating margins and negative operating leverage, until semiconductor demand resumes new growth with the introduction of the next generation of new applications.

■ RECENT INDUSTRY PERFORMANCE

The semiconductor industry is currently showing signs of recovery, after a severe cyclical downturn, following boom year results during the year 2000. Global industry
(Continued on page 5)

Semiconductor Industry: Review and Outlook (Continued)

revenues declined 32% in 2001, to \$139 billion, from the \$204 billion in 2000, according to the SIA, the industry's main trade group. During the March 2002 quarter, sales of semiconductor chips increased 5.8% over the previous quarter, signaling that excess customer inventories had finally been whittled down to levels where new orders would resume. However, the recovery since has been more restrained than had been hoped for at the start of the year. Utilization at semiconductor wafer fabrication plants troughed at 64% in the 3rd quarter of 2001, compared with 96% plant utilization in the year earlier quarter.

Volatile revenue conditions are the norm for this industry, which is heavily influenced by capital spending decisions of other industries. However, the most recent downturn is the worst yet experienced by the industry. The most severe previous contraction in sales occurred in 1985, when revenues declined 16%. In addition to the weakening of general economic conditions, revenues were directly affected by the recent (mid 2001) and continuing cratering in communications equipment spending, as well as a generalized contraction of other industries IT spending, following two years of heavy investment, prior to year-end 2000, to avoid potential problems from the "millennium bug". Unexpectedly weaker personal computer sales, which fell 5% in 2001 and showed practically no growth in 2002 also was heavily responsible for the lack of improvement.

■ CURRENT TRENDS

Beginning during the 1980's, but accelerating during the last industry upturn, which ended in 2000, the semiconductor industry has seen the growth of contract manufacturers (foundries) to manufacture growing portions of their chip production. Initially the foundry manufacturers were utilized to produce commodity chips, allowing the outsourcing firms to concentrate their resources on R&D and manufacturing more advanced chips. However, during the late 90's "fabless" semiconductor firms, which focused their resources solely on development and marketing of new chips, while outsourcing all manufacturing activities, have become more common. In addition, some larger integrated semiconductor manufacturers have announced plans to farm out larger proportions of their estimated production requirements. This development reflects the increased sophistication of the contract manufacturers, as well as the very high capital costs of building greenfield fabrication plants independently, particularly for more modestly capitalized firms.

As the technology advances, with state of the art chips incorporating extremely small line-widths, as small as .13 microns (13/100,000 of a centimeter) currently, and .07 microns by 2005, for the circuitry on the chips, extremely sophisticated (expensive) equipment is required to achieve the new standards. Larger wafer sizes, on which the chips are imprinted, allow a much larger amount of chips to be produced from each wafer, substantially reducing the cost per chip. However, equipment to handle the larger wafers is also extremely expensive. Capital costs continue climbing toward the range of \$2.5–\$3.0 billion for a new semiconductor fabrication plant, prohibitively high for all but the largest semiconductor firms. Several mid-sized integrated semiconductor firms have recently formed alliances to collaborate in building future fabrication plants, with the objective of lessening the individual cost and risks of independently building.

■ OUTLOOK

Although it appears that the downturn in semiconductor sales bottomed in late 2001, only a modest recovery during 2002 was forecasted by the SIA. In its Annual Report published earlier in the year, it projected a 6.3% full year increase (later revised in November to a 1.8% gain). Fabrication plant utilization had recovered by the 3rd quarter of 2002 to 86%, versus 64% in the year earlier 3rd quarter, when excess inventories were being absorbed and new demand was depressed. However, the conditions for a dynamic recovery, as seen in earlier semiconductor industry upturns, are not yet evident.

Computer sales, which remain the largest end use of semiconductors and thus are a critical factor in forecasting semiconductor industry revenue levels, still have exhibited only tepid recovery. Personal computer unit shipments in 2002, after falling 5% in 2001, were forecasted by S&P in July at 0%–2% over 2001 levels. Capital spending budgets remain under pressure and the expected beginning of a new three year PC replacement cycle by businesses, following the surge prior to year-end 1999, has not materialized in strength to date. In addition, the typically strong "back-to-school" and Christmas sales seasons were disappointments during the Fall of 2002.

Lack of revolutionary new software, which often leads to computer upgrades, could be a primary reason, in addition to the lingering effects of the recent recession. In its January 13th "Outlook 2003" edition, *Business Week* estimates that approximately 500 million PCs worldwide, with relatively

(Continued on page 6)

Semiconductor Industry: Review and Outlook (Continued)

slow processor speeds of 700 megahertz or less, are still in service and are candidates for replacement. Laptop computers are one bright spot in the computer (semiconductor) industry outlook, for the current year. According to Gartner Inc. (as cited by *Business Week*), which monitors industry conditions, worldwide sales of laptops will grow 8.8% over 2002 levels in the current year.

Communications equipment sales for the full year 2002, based upon a survey conducted by Standard & Poor's (S&P) in July, were expected to decline 50% to \$37.6 billion, from \$71.7 billion spent in 2001. Overbuilt telecom networks, and strained telecom service providers finances are combining to prevent any recovery in that sector for a protracted period. According to S&P, long-haul telecom networks are still only operating at 35%–50% of capacity, leaving little incentive to increase capital spending at this time.

Consumer electronics products sales, which are large users of semiconductors, have been a source of support. Post September 11, 2001, sales of products for the home improved as Americans showed much stronger tendencies to cocoon. Global sales of digital cameras rose 25% in 2002, and shipments of DVD machines increased 33%, probably due to more competitive pricing, as well as the tendency to stay closer to home. Sales of video game hardware and software grew 25% in 2002, through

October, according to NPD Funworld, an industry researcher cited by *BusinessWeek* in a recent publication. According to *Business Week*, the Consumer Electronics Association trade group is projecting 30% increases in digital TV sets, and 25% increases in digital cameras for the year ahead.

In its Annual Forecast, released in early November of 2002, the SIA expected more robust conditions in 2003 and 2004, with worldwide semiconductor sales increasing 19.8% in 2003 and 21.7% in 2004, following expected sales growth of 1.8% in 2002. However, the SIA also forecast a slowing in the industry's long-term secular growth rate to a range of 8%–10% from previous history of 16%–17% annual growth. Regionally, the Far East and Asia Pacific markets, spurred by lower product saturation, and faster industrialization and economic growth rates, are expected to grow faster than the overall worldwide trend during the 2002–2005 period. Chips for inclusion in wired and wireless communications devices currently are expected by the SIA to experience the fastest growth in demand during the forecast period, with respective 33% sales increases in 2003 and 29% growth in 2004. Microprocessors, utilized extensively in computers, however, were forecast to grow below the overall industry trend, with 12% growth expected in 2003, followed by a 14% increase in 2004.

Default Watch

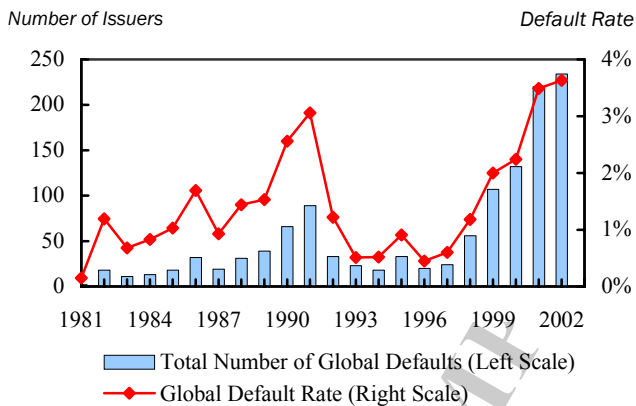
Shanique Hall-Barber, SVO Research Analyst

Corporate bond defaults set records in 2002 for the fourth consecutive year. In 2002, 234 Standard & Poor's (S&P) rated companies defaulted on \$178 billion of debt—the largest number and volume (53% increase from 2001) on record (Figure 1). For the first quarter of 2003, 35 S&P rated companies have defaulted on \$12.1 billion of debt.

Both S&P and Moody's Investors Services (Moody's) believe that defaults have reached their peak and will remain high, on a historical basis, descending slowly through year-end with more improvement expected in 2004.

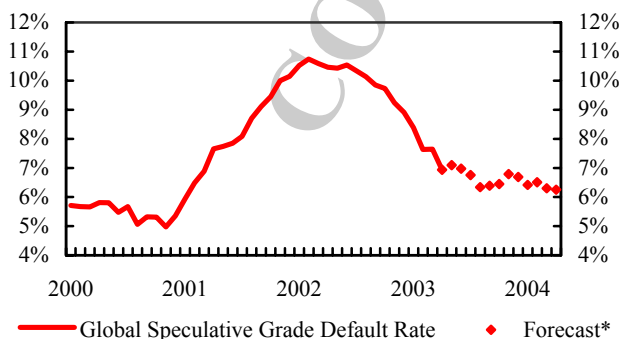
Meanwhile, the global speculative-grade corporate bond default rate, according to Moody's, fell for the tenth straight month in March to 6.9%, down from 7.7% in February and 8.3% at the quarter's beginning (Figure 2). Additionally, the pace of credit rating downgrades thus far in 2003 has slowed relative to that of 2002.

Figure 1. Global Corporate Default Summary



Source: Standard and Poor's, Risk Solutions.

Figure 2. Global Speculative Grade Default Rate



* Moody's Forecast. Source: Moody's Investors Services, Default Research.

Figure 3. Recent U.S. Bankruptcy Filings

Company	Type	Date
1. In Productions, Inc.	Private	4/17/2003
2. Inline, Inc.	Private	4/15/2003
3. Leap Wireless International, Inc.	Public	4/13/2003
4. Recoton, Inc.	Public	4/8/2003
5. Cellpoint, Inc.	Public	4/7/2003
6. Eagle Food Centers, Inc.	Public	4/7/2003
7. Tray, Inc.	Private	4/7/2003
8. Fleming Companies, Inc.	Public	4/1/2003
9. Hauser, Inc.	Public	4/1/2003
10. HomeGold Financial, Inc.	Public	3/31/2003
11. James River Coal Co.	Private	3/30/2003
12. Venure Industries, Inc.	Private	3/29/2003
13. Olympic Pipe Line Co.	Private	3/28/2003
14. Venture Holdings Co.	Private	3/28/2003
15. Antex Biologics, Inc.	Public	3/27/2003
16. Avianca, Inc.	Private	3/21/2003
17. SONICblue, Inc.	Public	3/21/2003
18. Evolve Software, Inc.	Public	3/20/2003
19. DirecTV Latin America, LLC	Private	3/18/2003
20. LapLink, Inc.	Private	3/18/2003
21. Spiegel, Inc.	Public	3/17/2003
22. Boundless Corp.	Public	3/12/2003
23. IHEALTH TECHNOLOGIES, LLC	Private	3/11/2003
24. THREE WAY COMMUNICATIONS	Private	3/11/2003
25. Texas Commercial Energy	Private	3/6/2003
26. Longview Aluminum, LLC	Private	3/4/2003
27. NTELOS, Inc.	Public	3/4/2003
28. Today's Man, Inc.	Public	3/4/2003
29. Superior Telecom, Inc.	Public	3/3/2003
30. Combustion Engineering	Private	02/28/03
31. BioTransplant, Inc.	Public	02/27/03
32. MSU Devices, Inc.	Public	2/27/2003
33. divine, inc.	Public	02/25/03
34. TAYLOR ENTERPRISES	Private	02/25/03
35. iPCS, Inc.	Public	02/23/03
36. THE HOUSE DEPOT	Private	02/20/03
37. Allied Devices Corp	Public	02/19/03
38. Quantech Ltd.	Public	02/18/03
39. Dice, Inc.	Public	02/14/03
40. Maxim Medical, Inc.	Private	02/11/03
41. Rand McNally & Co.	Private	02/11/03
42. Lumenon Innovative Lightware Technology, Inc.	Public	02/09/03

Source: BankruptcyWeek (www.bankruptcyweek.com).

Market Data Watch

Shanique Hall-Barber, SVO Research Analyst

Investment performance of corporate bonds has improved so far this year and the data suggest that the corporate credit cycle is bottoming. Corporate bond spreads have narrowed from the start of the year. The S&P Investment and Speculative grade indices have dropped from 241 and 1317 basis points at year-end 2002 to a recent 202 and 1098 points, respectively (Figure 4).

Spreads have continued to narrow in basis points terms as the equity markets have rallied. According to Moody's Investors Services "both markets are no doubt benefiting from more optimistic outlook for companies' earnings and profits."

Figure 1. Selected Key Interest Rates

Rate	Apr. 25	Week Ago	6-Mths Ago	Year Ago
3-Month T-Bill	1.12%	1.16%	1.22%	1.71%
1-Year T-Notes	1.26	1.34	1.56	2.33
5-Year T-Notes	2.88	2.99	3.26	4.52
10-Year T-Notes	3.91	3.98	4.19	5.10
30-Year T-Bond	4.91	4.99	5.17	5.75
Moody's Aaa*	5.60	5.76	6.37	6.73
Moody's Baa*	6.73	6.84	7.61	7.93
Conventional Fixed Rate Mortgage	5.79	5.82	6.13	6.88

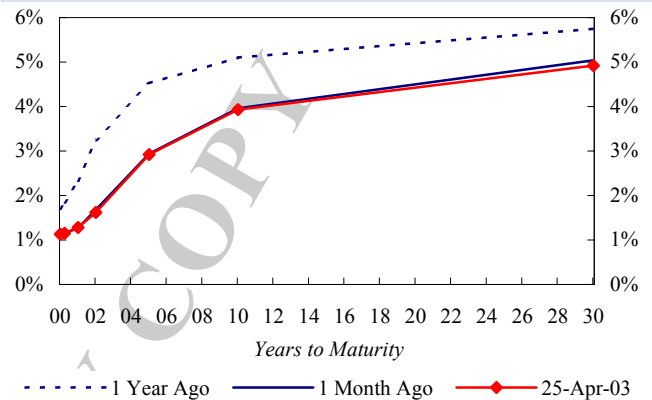
* Corporate Industrial Bonds. Source: Federal Reserve Board (H.15).

Figure 2. Selected U.S. Market Indices

Indices	Apr. 25	Week Ago	Year-to-Date	Last 12 Months
DJIA	8306.35	-0.38%	-0.42%	-17.23%
NASDAQ	1434.54	+0.65	+7.42	-16.29
S&P 500	898.81	+0.59	+2.15	-17.65
Russel 2000	388.50	+1.25	+1.41	-23.65
Wilshire 5000	8525.89	+0.70	+2.19	-17.64
S&P Insurance	251.69	+0.60%	-0.55%	N/A
S&P Energy	122.96	+0.83	-2.32	N/A
S&P Financial	110.23	-0.36	+3.51	N/A
S&P Telecom	51.60	+1.32	+6.41	N/A
S&P Utilities	127.09	+1.80	-1.41	N/A

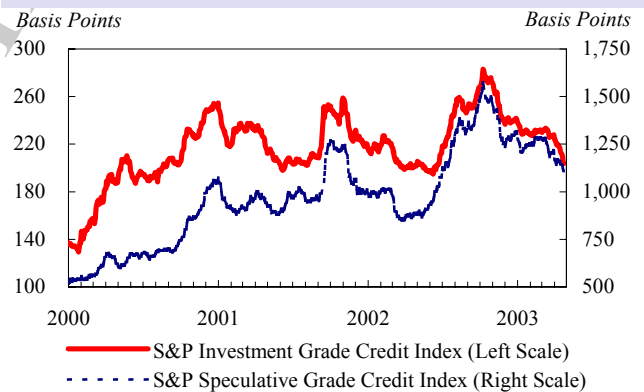
N/A denotes Not Available. Source: Yahoo! Finance.

Figure 3. Treasury Yield Curve



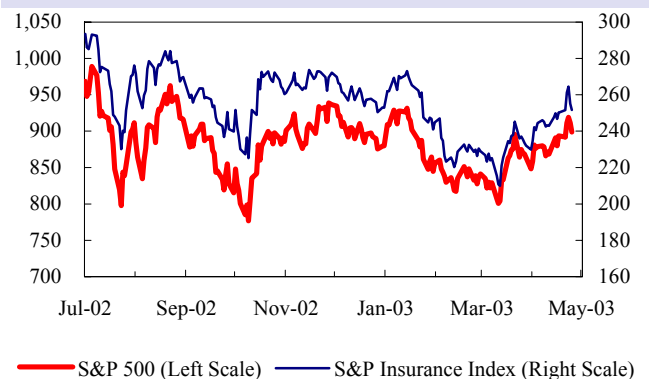
Source: Federal Reserve Board (H.15).

Figure 4. S&P U.S. Industrial Credit Indices*



*Spread over US Treasury Yield Curve. Daily data as of April 25, 2003. Source: Standard & Poor's (S&P Credit Indices).

Figure 5. S&P 500 vs. S&P Insurance Index



Daily data as of April 25, 2003. Source: Yahoo! Finance.

Recent Rating Agency Actions for Insurance Companies

	RATING AGENCY	DATE OF ACTION	ACTION
Odyssey America Reinsurance Corporation	Moody's	4/25/2003	Confirmed its Baa1 insurance financial strength ratings.
UnumProvident Corporation	AM Best	4/25/2003	Downgraded the financial strength ratings to A- from A.
The Progressive Corporation	Moody's	4/24/2003	Upgraded senior unsecured debt rating to A1 from A2 and the insurance financial strength ratings for the company's operating insurers to Aa2 from Aa3.
Americo Financial Life and Annuity Insurance Company	Moody's	4/23/2003	Assigned a Baa1 insurance financial strength rating.
Americo Life Inc.	S&P	4/23/2003	Assigned its 'BBB-' rating.
Americo Life, Inc.	Moody's	4/23/2003	Assigned a Ba1 rating to its senior notes due May, 2013.
Lumley General Insurance Ltd.	S&P	4/23/2003	Affirmed its 'A' insurer financial strength and counterparty credit ratings.
Aetna Inc. and its affiliate	Moody's	4/22/2003	Changed the outlook to positive from stable and simultaneously confirmed those ratings.
Deutscher Herold	Moody's	4/22/2003	Downgraded its rating to A1 from Aa3.
Eagle Star Life Assurance Company	Moody's	4/22/2003	Downgraded to A3 from A2 the insurance financial strength ratings.
Alfa Insurance Group	S&P	4/21/2003	Affirmed its 'AA' ratings.
Nationwide Mutual	Fitch	4/19/2003	Lowered the insurer financial strength ratings.
Conseco Inc.'s insurance subsidiaries	Moody's	4/16/2003	Placed the B2 ratings on review for possible downgrade.
Munich Re Finance B.V.	Moody's	4/16/2003	Assigned A2 ratings to Munich Re Finance B.V.'s two guaranteed subordinated notes.
Allmerica Financial Corporation	AM Best	4/15/2003	Upgraded the financial strength ratings to B- from C++.
CIGNA	Fitch	4/15/2003	Affirmed the ratings.
AMP Bank Limited	Moody's	4/14/2003	Affirmed the ratings.
General Re Corporation	Moody's	4/11/2003	Withdrawn its Aa1 senior unsecured long term, and Prime-1 short term, ratings on the Euro Medium Term Note programs.
Lloyd's Syndicate 0962	Moody's	4/11/2003	Placed the C+ Below Average Syndicate Performance Rating of syndicate 962 – Creechurch Underwriting Ltd – and its parallel syndicate 2962 under review for possible upgrade.
Royal & Sun Alliance Insurance Group and its subsidiaries.	Moody's	4/11/2003	Placed under review for possible downgrade.
Abbey National	Moody's	4/10/2003	The deposit rating was lowered to Aa3 from Aa2. The bank's financial strength rating was lowered to B from B+.
Scottish Mutual Assurance plc	Moody's	4/10/2003	Downgraded the insurance financial strength and subordinated debt ratings of to A2 and Baa1.
Swiss Reinsurance Company and subsidiaries	Moody's	4/10/2003	Changed the rating outlook to negative from stable.

Sources: AM Best Company (ambest.com), Fitch, Inc. (fitchratings.com), Moody's Investors Services (moodys.com), and Standard & Poor's (standardandpoors.com).

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Recent Rating Agency Actions for Insurance Companies (Continued)

	RATING AGENCY	DATE OF ACTION	ACTION
Trenwick Group Ltd. and its subsidiaries.	Moody's	4/10/2003	Withdrawn all debt and preferred stock ratings.
Oxford Health Plan	Moody's	4/9/2003	Assigned a Ba2 rating to proposed \$400 million senior secured bank term loan, due 2009.
State Farm	Fitch	4/9/2003	Lowered its insurer financial strength ratings.
White Mountains Insurance Group	Fitch	4/9/2003	Assigned a 'BBB' long-term rating.
ING Groep N.V. (ING Group)	Moody's	4/8/2003	Lowered the debt ratings to Aa3 from Aa2 for senior debt and to A1 from Aa3 for subordinated debt.
Insurance Corp. of Hannover	S&P	4/8/2003	Lowered its counterparty credit and financial strength rating to 'BBB+'.
Liberty Mutual Insurance Co.	S&P	4/8/2003	Placed its 'A+' counterparty credit and financial strength ratings on CreditWatch with negative implications.
Presidential Life	Fitch	4/8/2003	Downgraded long-term issuer rating.
Radian Reinsurance Inc.	Fitch	4/8/2003	Downgrades the insurer financial strength rating to 'AA' from 'AAA'.
RAM Reinsurance Co. Ltd.	S&P	4/8/2003	Affirmed its 'AAA' financial strength, financial enhancement, and counterparty credit ratings.
Sage Life Assurance of America	AM Best	4/8/2003	Downgraded the financial strength rating to B++ from A-.
The Underwriter	Fitch	4/8/2003	Downgraded its Insurer Financial Strength (IFS) rating 'BB+' from 'A-'.
ACE Limited and ACE INA Holdings, Inc.	Moody's	4/7/2003	Lowered the long-term and short-term debt ratings.
American Safety Insurance Co.	S&P	4/4/2003	Lowered its counterparty credit and financial strength ratings to 'BBB'.
American Southern Insurance Co.	S&P	4/4/2003	Lowered its counterparty credit and financial strength ratings to 'BBB'.
Association Casualty Insurance Co.	S&P	4/4/2003	Lowered its counterparty credit and financial strength ratings to 'BBB'.
Bankers Fidelity Life Insurance Co.	S&P	4/4/2003	Lowered its counterparty credit and financial strength ratings to 'BBB'.
Munich Reinsurance Company	Moody's	4/4/2003	Downgraded to Aa3 from Aa1 the financial strength ratings.
Protective Life Insurance Co.	S&P	4/4/2003	Affirmed its 'AA' ratings.
Lloyd's Syndicate 0980	Moody's	4/3/2003	Changed the outlook on the B Average performance rating to stable.
Nichido Fire & Marine	Moody's	4/3/2003	Affirmed the insurance financial strength ratings.
Oxford Health Plans Inc.	S&P	4/3/2003	Affirmed its 'BB+' counterparty credit rating.
Tokio Marine & Fire Insurance Co.	Moody's	4/3/2003	Affirmed the insurance financial strength ratings.
Erie Insurance Group	Fitch	4/2/2003	Downgraded the financial strength rating to A+ from A++.
The St. Paul Companies, Inc. and subsidiaries	Moody's	4/2/2003	Lowered the long-term and short-term ratings
Lloyd's	AM Best	4/1/2003	Affirmed the financial strength rating of A-.
Vesta Insurance Group	AM Best	4/1/2003	Downgraded the financial strength rating to B from B+.

Sources: AM Best Company (ambest.com), Fitch, Inc. (fitchratings.com), Moody's Investors Services (moodys.com), and Standard & Poor's (standardandpoors.com).

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Executive Headquarters

2301 McGee Street
Suite 800
Kansas City, MO 64108
Phone: 816-842-3600
Fax: 816-783-8175

**Federal and International
Relations**

Hall of the States
444 North Capital Street NW
Suite 701
Washington, DC 20001
Phone: 202-624-7790
Fax: 202-624-8579

Securities Valuation Office

1411 Broadway
9th Floor
New York, NY 10018
Phone: 212-398-9000
Fax: 212-382-4206

Web Address:

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