A.M. BEST

METHODOLOGY MARCH 1, 2004

Best's Impairment Rate and Rating Transition Study—1977 to 2002

This is the first study conducted by A.M. Best Co. on the long-term impairment rates of A.M. Best-rated, U.S.-domiciled insurance companies. Impairment, generally defined as any official action by state regulators that restricts the business activity of an insurance organization, goes beyond the traditional concept of issuer defaults.

The study covers the 25 one-year periods from Dec. 31, 1977 to Dec. 31, 2002. Of the 4,936 individual U.S. companies that carried a Best's Financial Strength Rating (FSR) over this period, 583 companies became financially impaired.

The average annual impairment rate for all insurers was 0.71%. Secure companies (companies with FSRs of "B+" and above) and Vulnerable companies (companies with FSRs of "B" and below) had average annual impairment rates of 0.23% and 3.44%, respectively.

A.M. Best's rating transition rates remained stable over the period covered by the study. Among companies with Secure ratings, 97.9% maintained their ratings or were upgraded over a one-year period. The remaining 2.1% were downgraded or became impaired over a one-year period.

Motivation for This Study

Best's Impairment Rate and Rating Transition Study—1977 to 2002 responds to the need for insurance industry data for use in insurance-related structured finance transactions, including the securitization of trust-preferred securities and surplus notes, reinsurance recoverables and life settlements, among others. General corporate bond default statistics are inappropriate for assessing insurance credit risks in such transactions because of the unique regulatory and accounting environment in which insurers operate, and because relatively few insurers issue public debt.

A.M. Best embarked on this study to estimate rates of impairment for insurance companies that can serve as the basis for estimating the likelihood of defaults on financial obligations made by those companies. As further described later in this document, "impairment" is a substantially wider category of financial duress than an event of "default." In particular, impairment frequently occurs when an insurer still is able to meet its current policyholder obligations, yet regulators have become sufficiently concerned about the degree of current or future solvency to intervene in the insurer's business. This leads to substantially higher impairment rates at any given rating level than would be observed purely using default data.

This report was written by Emmanuel Modu in the structured finance group of A.M. Best Co.

This Study vs. Prior Best's Insolvency Studies

In June 1991, A.M. Best published an insurance impairment study titled *Best's Insolvency Study: Property/Casualty Insurers 1969-1990*. The life/health counterpart to this study was published in June 1992 and was titled *Best's Insolvency Study: Life/Health Insurers 1976-1991*. Second editions of these two studies—collectively referred to as the Insolvency Studies—will be published in the first half of 2004. These studies will give a comprehensive view of the insurance industry and provide insight into the underlying causes of impairments of insurance operating companies. The major differences between this study and the Insolvency Studies are:

• This study calculates one-year to 15-year cumulative average impairment rates by applying the static pool methodology commonly employed by the credit rating industry in issuer default studies. The Insolvency Studies do not calculate long-term impairment rates.

• This study covers impairments only of A.M. Best-rated companies with FSRs—those companies cover 98% of U.S. industry premium volume. The Insolvency Studies focus on impairments in the insurance industry regardless of whether the impaired companies are rated by A.M. Best.

• This study includes a conversion of insurance company impairment rates to the implied impairment rates associated with debt issued by insurance holding companies. The Insolvency Studies involve only FSRs.

• This study tabulates impairment statistics for the combined property/casualty and life/health sectors. The Insolvency Studies provide separate reports for each sector.

• This study covers the time period from year-end 1977 to year-end 2002. The property/casualty insolvency study covers the period from 1969 to 2002, and the life/health insolvency study covers the period from 1976 to 2002.

• This study covers insurers domiciled in the United States, excluding U.S. territories. The Insolvency Studies include U.S. territories.

Definition of Impairment

A.M. Best designates an insurer as a Financially Impaired Company (FIC) upon the first official action taken by the insurance department in its state of domicile. Such state actions include involuntary liquidation because of insolvency, as well as other regulatory processes and procedures such as supervision, rehabilitation, receivership, conservatorship, a cease-and-desist order, suspension, license revocation, administrative order and any other action that restricts a company's freedom to conduct business as normal. Companies that enter voluntary liquidation and are not under financial duress at that time are not counted as financially impaired.

Impairments vs. Defaults

The definition of financial impairment is different from that of issuer defaults generally used in the credit markets. The credit markets broadly deem an issuer default as having occurred when an issuer misses interest or principal payments on its obligations, restructures its debt in a way that is deleterious to investors or files for bankruptcy. Financial impairment of insurance companies, by contrast, often occurs even if an insurance company has not formally been declared insolvent. For instance, an FIC's capital and surplus could have been deemed inadequate to meet risk-based capital requirements, or there might have been regulatory concern regarding its general financial condition. Thus, at any given rating level, more insurers would be impaired, according to the A.M. Best definition, than would actually default on policyholder obligations.

Another important reason for focusing on impairment rates rather than defaults on policyholder obligations is the difficulty in defining what constitutes the latter. In particular, the common practice of commutation means that it often is unclear whether default, as normally defined in the credit markets, has taken place or not. This is because while the policyholder might be agreeing to a commutation to avoid the risk of the insurer becoming insolvent in the future, other factors, such as the liquidity value of receiving payment now, or the future uncertainty of the ultimate size of the claim, often influence commutation agreements.

Financial Strength Rating Categories

In 1977, A.M. Best had the following seven FSR categories (excluding the impaired category): "A+," "A," "B+," "B," "C+," "C" and "D." By 1992, the company had expanded its FSR scale to the following 13 categories to recognize finer distinctions in credit quality among insurance companies: "A++," "A+," "A," "A-," "B++," "B+," "B," "B-," "C++," "C+," "C," "C-" and "D." Companies rated "B+" and above are considered Secure, and companies rated "B" and

A.M. Best Co.

Methodology

March 1, 2004

below are considered Vulnerable. These same FSR categories remain in use today.

Please note that in Best's FSR scale, the symbol "D"[1] does not designate financial impairment. The designation for financial impairment in the period covered by the study includes the following ratings: "E," "F" and "NA-10." The "E" and "NA-10" ratings are used to indicate companies that are under regulatory supervision. The "F" rating is used for companies in liquidation. For the purposes of this study, the nomenclature "impaired" or "impairments" will appear on various tables and graphs to designate FICs with "E," "F" and "NA-10" ratings.

To facilitate the comparison across time, this study has grouped FSRs (excluding the impaired category) into the following seven categories[2]: "A++/A+," "A/A-," "B++/B+," "B/B-," "C++/C+," "C/C-" and "D."

The ratings in this study are determined at year-end. Multiple rating actions in a given year are ignored. The only exception to this rule is when a company becomes financially impaired. In that case, the impairment designation is maintained even if the company emerges from regulatory supervision by year-end.

Companies Covered

The study includes U.S.-domiciled property/casualty and life/health insurance companies that traditionally have filed statutory statements. As such, managed care companies are excluded from the life/health pool.

Specifically, the study covers 583 financially impaired companies out of the 4,936 insurance companies that had a Best's FSR at some point between Dec. 31, 1977 and Dec. 31, 2002.

The data in *Impairment Count by Year—1978 to 2002* (Exhibit 1) represent impaired companies that had received at least one Best's FSR between Dec. 31, 1977 and Dec. 31, 2002. This impairment list is markedly different from prior lists published by A.M. Best because it counts only companies previously rated by A.M. Best. Some of these companies had no A.M. Best rating assigned to them *at the time of impairment* since they became impaired after A.M. Best ceased to rate them. These companies are included in the study, however, as dictated by the static pool methodology described in the last section of this study titled *Static Pool-Based Calculation Methodology.*

The reader should be aware that A.M. Best will continue to improve and possibly expand the database upon which this impairment study is based. Updates, therefore, may include corrections to the data, or may include or exclude new insurance companies previously excluded from or included in prior studies. These adjustments to the data or inclusion criteria may make it difficult to compare the results of one study to its predecessors. To maintain as much consistency as possible, however, the study's updates and revisions will be done from the common starting point of Dec. 31, 1977.

Impairment Rates

Best's Cumulative Average Impairment Rates (Exhibit 2), *Cumulative Average Impairment Rates—All Best's Ratings* (Exhibit 3) and *Cumulative Average Impairment Rates—Secure vs. Vulnerable Best's Ratings* (Exhibit 4) show the cumulative average impairment rates calculated using the static pool methodology. The data show an inverse relationship between FSRs and impairment rates: the lower the FSR, the higher the rate of impairment. Specifically, over a one-year period, the impairment rate for companies in the

Illustration of Impairment Without Subsequent Default On Policyholder Obligations

To illustrate how financial impairments, as defined by A.M. Best, can occur without a default on an insurance company's obligations to its policyholders, it is instructive to observe the financial impairment of General American Life Insurance Co. (GALIC). In August 1999, the Missouri Department of Insurance placed GALIC under administrative supervision at the company's request to avoid a "run on the bank" by the company's policyholders. In January 2000, Metropolitan Life Insurance Co. purchased GALIC and its affiliates from General American Mutual Holding Co., the operating company's parent. Administrative supervision of GALIC ended at that time. Although the company was under administrative supervision for approximately five months, it was not liquidated and continued to satisfy its financial obligations under its insurance policies. Accordingly, no default event occurred. Because the company and its affiliates were under administrative supervision for a period, however, they were counted as impaired according to A.M. Best's definition of impairment.

1. The "NA-7" rating category is included in the "D" category.
2. The FSR groupings in this study include the Financial Performance Ratings (FPR), which were introduced in 1990 and discontinued in 2002. See the preface of a pre-2002 *Best's Insurance Reports* for groupings of FSRs and FPRs.

Exhibit 1
Impairment Count by Year—1978 to 2002

Year	Number of Impairments[1]	% of Total Impairments
1978	7	(7/583 x 100) = 1.2
1979	4	0.7
1980	4	0.7
1981	9	1.5
1982	6	1.0
1983	12	2.1
1984	18	3.1
1985	32	5.5
1986	26	4.5
1987	22	3.8
1988	25	4.3
1989	40	6.9
1990	33	5.7
1991	56	9.6
1992	40	6.9
1993	35	6.0
1994	22	3.8
1995	7	1.2
1996	14	2.4
1997	35	6.0
1998	19	3.3
1999	23	3.9
2000	31	5.3
2001	29	5.0
2002	34	5.8
	583	**100.0**

Note:
1 Includes companies that were not rated at the time of impairment but had a Best's FSR between Dec. 31, 1977 and the date of impairment. U.S life/health and property/casualty data.

Source: A.M. Best Co.

highest Best's Rating category, "A++/A+," was 0.06%. It is important to note that no insurance companies rated "A++" have become impaired since that rating category was introduced in 1992. The one-year impairment rate for companies in the lowest rating category, "D," was 7.20%. The rate of impairment for the companies in the "A/A-" rating category, where the highest percentage of insurance companies evaluated by A.M. Best are rated, was 0.24%.

Impairment rates also vary across time. The data in Exhibit 2 show that the insurance companies with FSRs of "A++/A+" had the lowest impairment rates, ranging from 0.06% over a one-year period to 4.86% over a 15-year period. By contrast, the insurance companies with an FSR of "D" had the highest impairment rates, ranging from 7.20% over a one-year period to 50.94% over a 15-year period. The one-year to 15-year impairment rates for the insurance companies with "A/A-" ratings ranged from 0.24% to 8.69%.

The data further show that the rate of increase in impairment rates is most significant in the early years. For example, the cumulative average impairment rate of "A++/A+"-rated companies moves from 0.06% in the first year to 0.21% in the second year—nearly a fourfold increase. By comparison, the increase in impairment rates from year two to year three (i.e., from 0.21% to 0.39%) is only about a twofold increase. This is the same trend found in issuer default studies, although with higher rates because of the substantially wider concept of impairment compared with default as described earlier.

The one-year impairment rate for all A.M. Best-rated companies was approximately 0.71%. Separating the ratings into Secure and Vulnerable rating categories, however, reveals that Secure companies have a one-year impairment rate of 0.23%, while Vulnerable companies have an impairment rate of 3.44%. Thus, the one-year impairment rate of Vulnerable companies is approximately 15 times the one-year impairment rate of Secure companies. Exhibit 4 shows the difference in impairment rates for Secure, Vulnerable and all companies.

As discussed in this document, impairment rates associated with insurance company FSRs are not equivalent to issuer defaults. Insurance company impairment rates, however, can be translated to the impairment rates of debt securities of insurance companies, had those companies issued debt securities. The sidebar, *Converting Insurance Company Impairment Rates to Debt Impairment Rates,* on page 6, describes the translation from FSR impairment rates to implied impairment rates of senior unsecured debt issued by insurance entities.

Rating Transition

Rating transition tables can reveal how stable ratings are across different periods. Exhibit 7, *Best's One-Year Rating Transition Matrix*, shows the percentage of ratings that moved from one rating category to another in a one-year period. For example, 90.18% of the companies rated "A/A-" remained in the "A/A-" category one year later. The percentage of the "A/A-" companies that were upgraded one year later to "A++/A+" is 4.72%, while the percentage of the "A/A-" companies that were downgraded to "B++/B+" is 3.96%. The percentage of the "A/A-" companies that were

Exhibit 2

Best's Cumulative Average Impairment Rates

U.S. life/health and property/casualty data from 1977 to 2002.

Rating	1-Year	2-Year	3-Year	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year	11-Year	12-Year	13-Year	14-Year	15-Year
A++/A+	0.06%	0.21%	0.39%	0.59%	0.78%	1.04%	1.32%	1.63%	2.03%	2.45%	2.89%	3.39%	3.91%	4.45%	4.86%
A/A-	0.24	0.64	1.16	1.68	2.29	2.97	3.67	4.43	5.10	5.78	6.48	7.08	7.70	8.23	8.69
B++/B+	0.54	1.52	2.44	3.72	5.09	6.35	7.68	8.68	9.43	10.24	11.10	12.15	13.05	13.92	14.56
B/B-	1.80	3.73	5.56	7.26	9.07	10.97	12.79	14.73	16.57	18.20	19.80	21.55	23.37	25.12	26.54
C++/C+	2.65	4.74	7.45	10.27	12.77	15.15	17.52	20.28	22.48	24.37	26.13	27.57	28.54	29.86	30.82
C/C-	5.51	8.43	11.12	14.17	17.38	21.58	25.04	28.68	31.63	33.81	36.36	38.21	39.61	41.10	42.75
D	7.20	12.20	16.92	21.25	25.58	29.72	33.39	36.57	39.43	42.13	44.58	46.48	48.27	49.69	50.94
Secure	0.23	0.64	1.10	1.62	2.19	2.79	3.41	4.01	4.56	5.14	5.74	6.35	6.97	7.55	8.01
Vulnerable	3.44	6.18	8.89	11.52	14.18	16.94	19.49	22.08	24.38	26.44	28.41	30.17	31.79	33.33	34.63
All	0.71	1.46	2.25	3.08	3.96	4.89	5.80	6.69	7.52	8.32	9.14	9.94	10.72	11.47	12.08

Source: A.M. Best Co.

downgraded to any rating below "A/A-," including the impaired category, is 5.10%[3].

Generally, as ratings decline, the percentage of companies maintaining the same rating over a one-year period also declines. For example, 90.18% of the companies with an "A/A-" rating remained in that same rating category one year later, but only 79.77% of companies with a "B++/B+" rating stayed in that category one year later.

Overall, the likelihood of a Secure company keeping its Secure rating over a one-year period is 97.93%, while the likelihood of a Vulnerable company keeping its Vulnerable rating over the same period is 90.13%, as shown in the bottom of Exhibit 7.

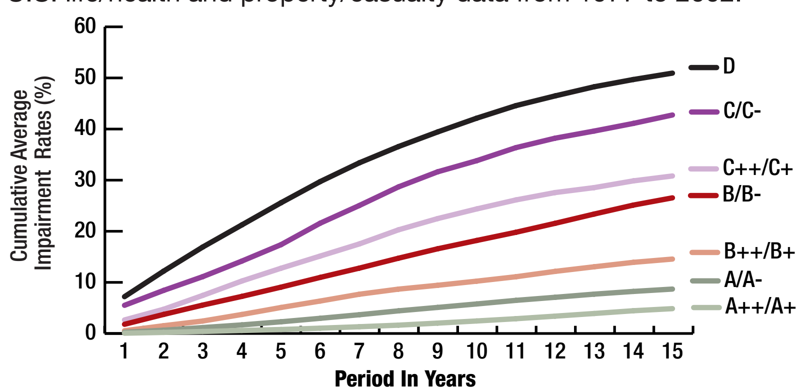
Ratings also migrate from the Secure rating categories to the Vulnerable rating categories as impairment approaches. Exhibit 8, *Impaired Companies in Each Rating Category by Years Before Impairment*, displays the number of companies in each rating category at various times before impairment. To illustrate rating movements as impairments approach, observe the number of FICs in the "A++/A+" and the "D" rating categories before impairment. There are 31 FICs in the "A++/A+" rating category five years before impairment, but there are only 13 one year before impairment. By contrast, there are 74 companies rated "D" five years before impairment, but that number increases to 151 one year before impairment. In general, the decline in the number of FICs in the higher-rated categories is offset by the increase in the number of companies in the lower-rated categories.

3. 3.96% + 0.58% + 0.11% + 0.06% + 0.15% + 0.24% = 5.10%

Exhibit 3

Cumulative Average Impairment Rates—All Best's Ratings

U.S. life/health and property/casualty data from 1977 to 2002.

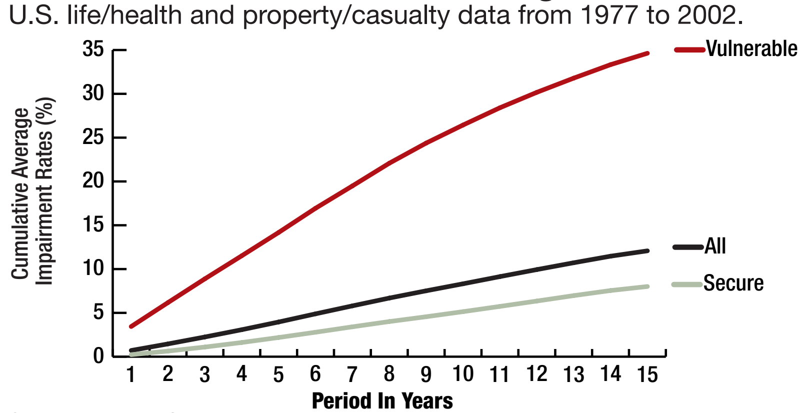


Source: A.M. Best Co.

Exhibit 4

Cumulative Average Impairment Rates—Secure vs. Vulnerable Best's Ratings

U.S. life/health and property/casualty data from 1977 to 2002.



Source: A.M. Best Co.

Converting Insurance Company Impairment Rates To Debt Impairment Rates

The tabulation of impairment rates in this document is based on Financial Strength Ratings (FSRs) of insurance operating companies. A Best's FSR is an opinion as to an insurer's ability to meet policyholder obligations. Thus, the impairment rates based on FSRs are not directly comparable to impairment rates on debt securities, which by definition are subordinate to policyholder obligations.

A.M. Best's debt securities rating methodology is set forth in *A.M. Best's Ratings & the Treatment of Debt*, published July 17, 2003. The methodology outlines how an FSR translates into an Issuer Credit Rating (ICR), which is an opinion as to an issuer's ability to meet its senior-most obligations.

In the U.S. insurance industry, corporate debt generally is issued at the holding company level, as opposed to the operating company level. A.M. Best uses notching criteria to convert the operating company ICR to that of the holding company where debt securities would be issued. This notching is shown in Exhibit 5.

An example will help illustrate the process of assigning ratings to debt securities issued by an insurance holding company.

Assume that the FSR of an insurance operating entity is "A-," and that the holding company associated with that insurance company wants to issue senior unsecured debt to fund its operating subsidiary. The equivalent operating company ICR on the credit market scale would be an "a-." The ICR of the holding company, which is equivalent to the rating of the most senior obligations of the holding company—normally senior unsecured debt—generally would be three notches from the "a-" operating company ICR, or a rating level of "bbb-."

Using an algorithm, which applies the notching process to convert all the FSRs to implied debt ratings at the holding company level, A.M. Best calculates the one-year through 15-year implied cumulative average impairment rates for insurance company debt as shown in Exhibit 6.

Exhibit 5

Notching from Operating Company ICR To Holding Company ICR

FSR (Operating Insurance Co.)	Equivalent ICR on the Credit Market Scale (Operating Insurance Co.)	Number of Notches from Operating Company ICR to Holding Company ICR (i.e., to Holding Company Senior Unsecured Debt)
A++	aaa	0 to 2
	aa+	2 to 3
A+	aa	2 to 3
	aa-	2 to 3
A	a+	3
	a	3
A-	a-	3
B++	bbb+	3 to 4
	bbb	3 to 4
B+	bbb-	3 to 4
B	bb+	4 to 5
	bb	4 to 5
B-	bb-	4 to 5
C++	b+	5
	b	5
C+	b-	5

Source: A.M. Best Co.

Exhibit 6

Best's Implied Impairment Rates of Holding Company Senior Unsecured Debt

Grouped by ICR.

Rating	1-Year	2-Year	3-Year	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year	11-Year	12-Year	13-Year	14-Year	15-Year
aaa	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
aa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
a	0.07	0.23	0.43	0.64	0.84	1.12	1.41	1.73	2.14	2.56	3.01	3.50	4.02	4.56	4.97
bbb	0.24	0.64	1.16	1.68	2.29	2.97	3.67	4.43	5.10	5.78	6.48	7.08	7.70	8.23	8.69
bb	0.54	1.52	2.44	3.72	5.09	6.35	7.68	8.68	9.43	10.24	11.10	12.15	13.05	13.92	14.56
b	1.55	3.26	5.22	7.18	8.97	10.85	12.70	14.60	16.37	18.06	19.78	21.61	23.48	25.25	26.66
c	4.58	7.95	11.13	14.18	17.41	20.71	23.72	26.74	29.38	31.67	33.81	35.52	36.98	38.36	39.58
Investment Grade	0.16	0.44	0.80	1.16	1.56	2.03	2.51	3.04	3.55	4.09	4.64	5.18	5.75	6.28	6.71
Non-Investment Grade	1.94	3.76	5.56	7.50	9.53	11.56	13.53	15.37	16.96	18.45	19.94	21.39	22.71	23.96	24.99
All	0.71	1.46	2.25	3.08	3.96	4.89	5.80	6.69	7.52	8.32	9.14	9.94	10.72	11.47	12.08

Source: A.M. Best Co.

Time to Impairment

There is a strong relationship between the initial rating of FICs and the time to impairment. As shown in Exhibit 9, *Average Years to Impairment for the 583 Impaired Companies*, the higher the initial rating of FICs, the longer it takes for those companies to become financially impaired. For example, it took an average of 13.4 years for FICs that were initially rated "A++/A+" to become financially impaired, but only an average of 8.8 years for FICs rated "B/B-" to become financially impaired. The most noticeable outlier in Exhibit 9 is the "C/C-" rating category. It took an average of 10.2 years for companies in this category to become financially impaired. This aberration might be the result of a small sample size—only 24—that originally was rated "C/C-." This rating category constitutes only 1.2% of all Best's Ratings between year-end 1977 and year-end 2002 as shown in Exhibit 10, *Historical Rating Distribution*. The rating distribution on this graph is based on the count of FSRs for the period covered by this study.

It is important to emphasize that Exhibit 9 displays the initial ratings of the 583 insurance companies that became impaired from year-end 1977 to year-end 2002. For example, one of the 83 companies in the "A++/A+" category had an initial rating of "A+" in 1977. That company's rating steadily declined to "B-" five years before its impairment, and then to "C-" one year before its impairment in 2002. Therefore, that company was counted in the "A++/A+" initial rating category, even though its rating in the years before impairment was far below its initial rating of "A+."

Overall, the average years to impairment for FICs that had initial ratings in the Secure and Vulnerable categories were 11.8 years and 8.5 years, respectively.

Relationship Between the Economy and Rating Movements

There are relationships among the A.M. Best impairment count, the general economy and the A.M. Best downgrade/upgrade ratio, although these relationships might occur with time lags. It is important to note that the finan-

Exhibit 7

Best's One-Year Rating Transition Matrix

U.S. life/health and property/casualty data from 1977 to 2002.

	<------Rating One Year Later------>							
	A++/A+	A/A-	B++/B+	B/B-	C++/C+	C/C-	D	Impaired
A++/A+	92.36%	7.11%	0.44%	0.02%	0.00%	0.00%	0.00%	0.06%
A/A-	4.72	90.18	3.96	0.58	0.11	0.06	0.15	0.24
B++/B+	0.41	11.69	79.77	5.87	0.72	0.34	0.65	0.54
B/B-	0.20	1.03	15.43	75.07	3.99	1.09	1.39	1.80
C++/C+	0.25	0.68	1.98	18.15	66.98	5.68	3.64	2.65
C/C-	0.00	0.66	0.26	4.59	15.62	65.09	8.27	5.51
D	0.10	0.81	1.57	3.62	3.29	3.38	80.03	7.20

	Rating One Year Later	
	Secure	Vulnerable
Secure	97.93%	2.07%
Vulnerable	9.87%	90.13%

Source: A.M. Best Co.

Exhibit 9

Average Years to Impairment For the 583 Impaired Companies

U.S. life/health and property/casualty data from 1977 to 2002.

Initial Rating Category	Number of Impairments	Average Years to Impairment from Initial Rating Date[1]
A++/A+	83	13.4
A/A-	117	12.5
B++/B+	107	9.8
B/B-	95	8.8
C++/C+	44	7.6
C/C-	24	10.2
D/NA-7	113	8.4
Secure	**307**	**11.8**
Vulnerable	**276**	**8.5**
All	**583**	**10.3**

1 Initial rating date is the later of Dec. 31, 1977, or the date of the original rating.

Source: A.M. Best Co.

Exhibit 8

Impaired Companies in Each Rating Category By Years Before Impairment

U.S. life/health and property/casualty data from 1977 to 2002.

	<----- No. of Years Before Impairment ----->					In Year of
Rating Category	5 Years	4 Years	3 Years	2 Years	1 Year	Impairment
A++/A+	31	33	33	28	13	2
A/A-	101	96	103	85	57	10
B++/B+	93	96	77	90	55	21
B/B-	62	64	75	87	89	79
C++/C+	30	36	37	31	43	22
C/C-	18	18	17	20	42	46
D	74	76	86	97	151	196
Not Formally Followed[1]	174	164	155	145	133	207
All	583	583	583	583	583	583

1 The "Not Formally Followed" category represents companies that did not have a Best's FSR during the time period in question.

Source: A.M. Best Co.

cial health of the insurance industry is affected not only by general economic factors, but also by catastrophes and underwriting issues that are not necessarily correlated directly with economic activity.These relationships are explored fully in the second editions of the Insolvency Studies due to be published in the first half of 2004.

Exhibit 11, *Impairments vs. Rating Movements and the Economy,* shows the economy as represented by the yearly growth in real, inflation-adjusted, U.S. gross domestic product (GDP); the impairment count as previously presented; and the ratio of A.M. Best-rated companies that were downgraded—including the companies that became impaired—to the number of A.M. Best-rated companies that were upgraded.

The most notable periods of low economic activity as measured by real growth in GDP are the double-dip recession that occurred from 1980 to 1982, and the 1991 and 2001 recessions.

Economic activity generally is inversely related to impairments—the lower the economic activity, the higher the impairments, and vice versa. Exhibit 11 shows the double-dip recession that occurred through 1980 and 1982, when annual real GDP decreased by 0.2% and 1.9%, respectively. Since low economic activity generally leads financial impairments in the insurance industry, the effect of this recessionary period was manifested in the increase in the impairment count from 12 in 1983 to 32 in 1985.

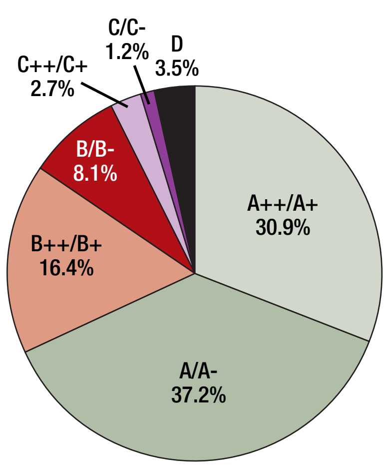
Exhibit 12, *Impairment Count vs. Real GDP Growth,* also shows clearly the inverse relationship between the impairment count and real growth in GDP. Note that in 1982, when the economy was in its second recession since 1980, the impairment count was relatively low. The impairment count, however, subsequently increased in 1983, 1984 and 1985, when it hit its peak for that general time period. Likewise, when real growth in GDP was at its peak in 1984, compared with the overall period of this study, the impairment count did not hit its low point after that steep economic growth until 1987. The lag between economic activity and impairment is clearly evident with the recession and the economic boom examined between 1980 and 1984.

The relationship between the economy and the downgrade/upgrade ratio is similar to the relationship between the economy

Exhibit 10

Historical Rating Distribution[1]

U.S. life/health and property/casualty data from 1977 to 2002.



1 In 2002, the ratings distribution (excluding the "E," "F," and "NA-10" impaired categories) was as follows: "A++/A+" at 22.8%; "A/A-" at 50.7%; "B++/B+" at 18.0%; "B/B-" at 6.0%; "C++/C+" at 1.8%; "C/C-" at 0.4%; "D" at 0.2%.

Source: A.M. Best Co.

Exhibit 11

Impairments vs. Rating Movements and the Economy

Year	Impairments[1]	Real GDP Growth[2]	Downgrade/ Upgrade Ratio[1]
1978	7	5.6%	0.45
1979	4	3.2	0.41
1980	4	-0.2	0.43
1981	9	2.5	0.42
1982	6	-1.9	0.68
1983	12	4.5	1.22
1984	18	7.2	1.71
1985	32	4.1	4.93
1986	26	3.5	1.12
1987	22	3.4	0.44
1988	25	4.1	0.58
1989	40	3.5	0.82
1990	33	1.9	0.99
1991	56	-0.2	1.05
1992	40	3.3	1.78
1993	35	2.7	1.10
1994	22	4.0	0.83
1995	7	2.5	1.56
1996	14	3.7	1.08
1997	35	4.5	0.80
1998	19	4.2	0.51
1999	23	4.5	0.41
2000	31	3.7	0.74
2001	29	0.5	1.98
2002	34	2.2	3.78

1 U.S. life/health and property/casualty data.
2 Annual growth as reported by the Bureau of Economic Analysis, Department of Commerce.

Source: A.M. Best Co.

and impairments—the lower the economic activity, the higher the downgrade/upgrade ratio, and vice versa. Exhibit 13, *Downgrade/Upgrade Ratio vs. Real GDP Growth,* shows that the 1980 to 1982 double-dip recession increased the downgrade/upgrade ratio from 1.22 in 1983 to 4.93 in 1985—the highest downgrade/upgrade ratio in the period covered by the study. Likewise, when real growth in GDP hit its peak in 1984, the downgrade/upgrade ratio did not hit its low point for that general time period until 1987. As is the case with impairment counts, the downgrade/upgrade ratio lags economic activity as represented by real growth in GDP.

There is a correlation between impairments and the downgrade/upgrade ratio as shown in Exhibit 14, *Downgrade/Upgrade Ratio vs. Impairment Count*. As is to be expected, the two indicators generally move in tandem—the higher the impairment count, the higher the downgrade/upgrade ratio, and vice versa.

The economy began slowing in late 1989, leading into the 1990-1991 recession. A resulting crisis in the commercial mortgage market led to a rapid upturn in the impairment count. Combined with a weather catastrophe in 1992, these factors boosted the downgrade/upgrade ratio as well.

The recession of 2001, which was preceded by a slowing of the economy in 2000, coupled with fallout from the Sept. 11, 2001 terrorist attacks, helped boost the 2001 and 2002 impairment counts and the downgrade/upgrade ratios in those years.

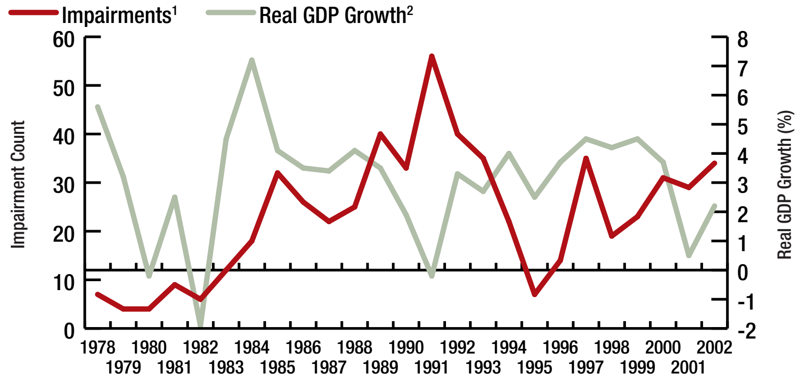
It is important to point out that the longest soft market in history in the property/casualty underwriting cycle—about a decade long—preceded the 2001 recession. Generally in soft markets, insurers price coverage aggressively. While the property/casualty sector was experiencing a soft market, however, the economy was experiencing a prolonged expansion that was reflected in the robust equity market of the 1990s. This factor tended to mask the effect of the soft market as equity returns buoyed the performance of the insurance sector—both property/casualty and life/health—even in the midst of falling premiums for property/casualty insurers.

Static Pool-Based Calculation Methodology

This study applies the static pool approach commonly used in credit market default stud-

Exhibit 12

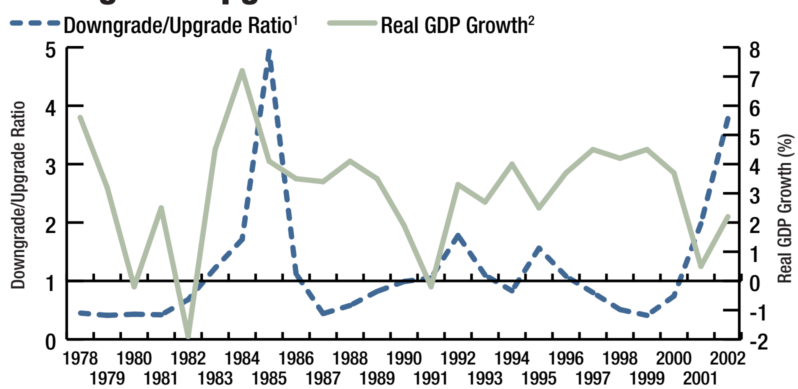
Impairment Count vs. Real GDP Growth



1 U.S. life/health and property/casualty data.
2 Annual growth as reported by the Bureau of Economic Analysis, Department of Commerce.
Source: A.M. Best Co.

Exhibit 13

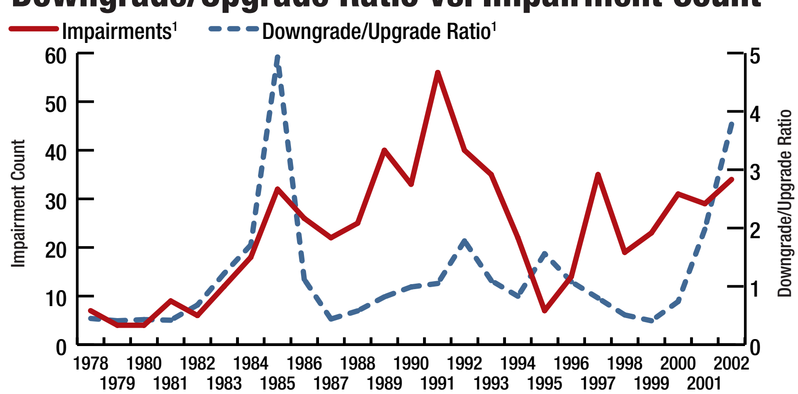
Downgrade/Upgrade Ratio vs. Real GDP Growth



1 U.S. life/health and property/casualty data.
2 Annual growth as reported by the Bureau of Economic Analysis, Department of Commerce.
Source: A.M. Best Co.

Exhibit 14

Downgrade/Upgrade Ratio vs. Impairment Count



1 U.S. life/health and property/casualty data.
Source: A.M. Best Co.

ies to calculate the cumulative average impairment rates shown in Exhibit 2, *Best's Cumulative Average Impairment Rates*. In general, yearly average impairment rates are accumulated to calculate cumulative average impairment rates. An example will illustrate how this approach is applied in practice to determine the one-year and two-year cumulative average impairment rates.

The 1977 static pool consists of insurance companies that had a Best's FSR as of Dec. 31, 1977, and were not financially impaired. Those same insurance companies are observed again at the end of 1978 to see how many had become financially impaired during 1978. A new static pool is determined at the end of 1978 and followed to the end of 1979, once again to observe the number of financial impairments. This pattern is repeated until the last static pool formed at the end of 2001 is followed to the end of 2002. The total number of impairments in the 25 static pools—formed from year-end 1977 to year-end 2001—are added and then divided by the total number of companies in the static pools. This calculation is used to produce the one-year average impairment rate for each of the seven rating categories described earlier.

To calculate the two-year average impairment rate, a methodology similar to the one used for the one-year average impairment rate is applied, except that the impairment count used in this case is the impairment in the second year after the formation of each static pool. Specifically, the 1977 static pool is observed two years later to see how many had become financially impaired by year-end 1979. The 1978 static pool is observed two years later to see how many insurance companies had become financially impaired by year-end 1980, and so on. Note that the static pools used for the two-year average impairment rate calculation are the static pools formed from year-end 1977 to year-end 2000, since the last data in the study are from 2002. The total number of impairments in the second year for each static pool is added and then divided by the total applicable static pools to produce the two-year average impairment rate. To calculate the two-year cumulative average impairment rate, the one-year average impairment rate is added to the two-year average impairment rate. This process is continued until the 15-year cumulative average impairment rate is calculated.

To illustrate the process further, observe how the one-year, two-year and three-year cumulative average impairment rates in Exhibit 2—0.06%, 0.21% and 0.39%, respectively—are calculated for the "A++/A+" rating category. The one-year, two-year and three-year average impairment rates calculated using the methodology described in the previous paragraphs are 0.06%, 0.15% and 0.18%. The one-year cumulative average impairment rate is simply the one-year average impairment rate of 0.06%. The two-year cumulative average impairment rate, 0.21%, is the sum of the one-year and the two-year average impairment rates (0.06% + 0.15%=0.21%). The three-year cumulative average impairment rate, 0.39%, is the sum of the one-year, two-year and three-year average impairment rates (0.06% + 0.15% + 0.18%=0.39%).

Note that although this study presents only the one-year to 15-year cumulative average impairment rates, the data underpinning these calculations cover the 25 one-year periods from year-end 1977 to year-end 2002. Thus, the one-year cumulative average impairment rate uses 25 data points for the calculation, the two-year cumulative average impairment rate uses 24 data points, the three-year cumulative average impairment rate uses 23 data points, and so on.

These calculations are adjusted for withdrawal of ratings. Ratings can be withdrawn for several reasons, including: voluntary liquidations, mergers and acquisitions, company request, lack of proper financial information for the evaluation of companies and substantial changes in companies that make the A.M. Best rating process inapplicable. In the event that a company requests that its rating be withdrawn, the study captures the last rating just before the withdrawal.

The adjustments for withdrawals are made by reducing the static-pool count—the denominator in the impairment rate calculation—by the number of withdrawals in the calculation period, while maintaining the same impairment count—the numerator in the impairment rate calculation. The effect is to increase the impairment rate over what it would have been without the adjustment.

GUIDE TO BEST'S FINANCIAL STRENGTH RATINGS

A Best's Rating is an independent opinion, based on a comprehensive quantitative and qualitative evaluation, of a company's balance sheet strength, operating performance and business profile. Best's Ratings are not a warranty of a company's financial strength and ability to meet its obligations to policyholders.

Financial Strength Ratings

A **Best's Financial Strength Rating (FSR)** is an opinion of an insurer's ability to meet its obligations to policyholders.

	Rating	Descriptor	Definition
Secure	A++, A+	Superior	Assigned to companies that have, in our opinion, a superior ability to meet their ongoing obligations to policyholders.
Secure	A, A-	Excellent	Assigned to companies that have, in our opinion, an excellent ability to meet their ongoing obligations to policyholders.
Secure	B++, B+	Very Good	Assigned to companies that have, in our opinion, a good ability to meet their ongoing obligations to policyholders.
Vulnerable	B, B-	Fair	Assigned to companies that have, in our opinion, a fair ability to meet their current obligations to policyholders, but are financially vulnerable to adverse changes in underwriting and economic conditions.
Vulnerable	C++, C+	Marginal	Assigned to companies that have, in our opinion, a marginal ability to meet their current obligations to policyholders, but are financially vulnerable to adverse changes in underwriting and economic conditions.
Vulnerable	C, C-	Weak	Assigned to companies that have, in our opinion, a weak ability to meet their current obligations to policyholders, but are financially very vulnerable to adverse changes in underwriting and economic conditions.
Vulnerable	D	Poor	Assigned to companies that have, in our opinion, a poor ability to meet their current obligations to policyholders and are financially extremely vulnerable to adverse changes in underwriting and economic conditions.
Vulnerable	E	Under Regulatory Supervision	Assigned to companies (and possibly their subsidiaries/affiliates) that have been placed by an insurance regulatory authority under a significant form of supervision, control or restraint whereby they are no longer allowed to conduct normal ongoing insurance operations. This would include conservatorship or rehabilitation, but does not include liquidation. It may also be assigned to companies issued cease and desist orders by regulators outside their home state or country.
Vulnerable	F	In Liquidation	Assigned to companies that have been placed under an order of liquidation by a court of law or whose owners have voluntarily agreed to liquidate the company. Note: Companies that voluntarily liquidate or dissolve their charters are generally not insolvent.
Vulnerable	S	Suspended	Assigned to companies that have experienced sudden and significant events affecting their balance sheet strength or operating performance and whose rating implications cannot be evaluated due to a lack of timely or adequate information.

Rating Modifiers and Affiliation Codes

A rating modifier can be assigned to indicate that a Best's Rating may be subject to near-term change (under review), that a company did not subscribe to Best's interactive rating process (public data) and that the rating is assigned to a syndicate operating at Lloyd's. Affiliation codes (g, p, and r) are added to Best's Ratings to identify companies whose assigned ratings are based on group, pooling or reinsurance affiliation with other insurers.

	Modifier	Descriptor	Definition
Rating Modifiers	u	Under Review	A modifier that generally is event-driven (positive, negative or developing) and is assigned to a company whose Best's Rating opinion is under review and may be subject to change in the near-term, generally defined as six months.
Rating Modifiers	pd	Public Data	Assigned to insurers that do not subscribe to Best's interactive rating process. Best's "pd" Ratings reflect qualitative and quantitative analyses using public data and information.
Rating Modifiers	s	Syndicate	Assigned to syndicates operating at Lloyd's.

Affiliation Codes	g	Group	p	Pooled	r	Reinsured

Not Rated Categories (NR)

Assigned to companies reported on by A.M. Best, but not assigned a Best's Rating. The five categories are:

NR-1: Insufficient Data.	NR-2: Insufficient Size and/or Operating Experience.	NR-3: Rating Procedure Inapplicable.
NR-4: Company Request.	NR-5: Not Formally Followed.	

Rating Outlook

Best's interactive Ratings (A++ to D) are assigned a Rating Outlook that indicates the potential direction of a company's rating for an intermediate period, generally defined as the next 12 to 36 months. Rating Outlooks, which appear in the rating rationale section of the company's *Best's Company Report*, are as follows:

Positive	Indicates a company's financial/market trends are favorable, relative to its current rating level and, if continued, the company has a good possibility of having its rating upgraded.
Negative	Indicates a company is experiencing unfavorable financial/market trends, relative to its current rating level and, if continued, the company has a good possibility of having its rating downgraded.
Stable	Indicates a company is experiencing stable financial/market trends and there is a low likelihood that its rating will change in the near term.

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 Version 011304

GUIDE TO BEST'S DEBT RATINGS

A Best's Rating is an independent opinion, based on a comprehensive quantitative and qualitative evaluation, of a company's balance sheet strength, operating performance and business profile. Best's Ratings are not a warranty of a company's ability to meet its financial obligations.

Long-Term Credit Ratings

A **Best's Long-Term Debt Rating** (issue credit rating) is an opinion as to the issuer's ability to meet its financial obligations to security holders when due. These ratings are assigned to debt and preferred stock issues.

	Rating	Descriptor	Definition
Investment Grade	aaa	Exceptional	Assigned to issues, where the issuer has, in our opinion, an exceptional ability to meet the terms of the obligation.
	aa	Very Strong	Assigned to issues, where the issuer has, in our opinion, a very strong ability to meet the terms of the obligation.
	a	Strong	Assigned to issues, where the issuer has, in our opinion, a strong ability to meet the terms of the obligation.
	bbb	Adequate	Assigned to issues, where the issuer has, in our opinion, an adequate ability to meet the terms of the obligation; however, is more susceptible to changes in economic or other conditions.
Non-Investment Grade	bb	Speculative	Assigned to issues, where the issuer has, in our opinion, speculative credit characteristics, generally due to a moderate margin of principal and interest payment protection and vulnerability to economic changes.
	b	Very Speculative	Assigned to issues, where the issuer has, in our opinion, very speculative credit characteristics, generally due to a modest margin of principal and interest payment protection and extreme vulnerability to economic changes.
	ccc, cc, c	Extremely Speculative	Assigned to issues, where the issuer has, in our opinion, extremely speculative credit characteristics, generally due to a minimal margin of principal and interest payment protection and/or limited ability to withstand adverse changes in economic or other conditions.
	d	In Default	In default on payment of principal, interest or other terms and conditions. The rating also is utilized when a bankruptcy petition, or similar action, has been filed.

A.M. Best's Long-Term Credit Rating scale also is used when assigning a **Best's Long-Term Issuer Credit Rating (ICR),** which is an opinion as to the ability of the rated entity to meet its senior-most obligations.

Ratings from “aa” to “ccc” may be enhanced with a “+” (plus) or “-” (minus) to indicate whether credit quality is near the top or bottom of a category. A company's Long-Term Credit Rating also may be assigned an Under Review modifier (“u”) that generally is event-driven (positive, negative or developing) and indicates that the company's Best's Rating opinion is under review and may be subject to near-term change. Ratings shown as *(italicized)* denote indicative shelf ratings. Ratings may also be assigned a Public Data modifier (“pd”) which indicates that a company does not subscribe to A. M. Best’s interactive rating process.

Short-Term Credit Ratings

A **Best's Short-Term Debt Rating** is an opinion as to the issuer’s ability to meet its obligations having maturities generally less than one year, such as commercial paper.

	Rating	Descriptor	Definition
Investment Grade	AMB-1+	Strongest	Assigned to issues, where the issuer has, in our opinion, the strongest ability to repay short-term debt obligations.
	AMB-1	Outstanding	Assigned to issues, where the issuer has, in our opinion, an outstanding ability to repay short-term debt obligations.
	AMB-2	Satisfactory	Assigned to issues, where the issuer has, in our opinion, a satisfactory ability to repay short-term debt obligations.
	AMB-3	Adequate	Assigned to issues, where the issuer has, in our opinion, an adequate ability to repay short-term debt obligations; however, adverse economic conditions will likely lead to a reduced capacity to meet its financial commitments on short-term debt obligations.
Non-Investment Grade			
	AMB-4	Speculative	Assigned to issues, where the issuer has, in our opinion, speculative credit characteristics and is vulnerable to economic or other external changes, which could have a marked impact on the company's ability to meet its commitments on short-term debt obligations.
	d	In Default	In default on payment of principal, interest or other terms and conditions. The rating also is utilized when a bankruptcy petition, or similar action, has been filed.

A.M. Best's Short-Term Credit Rating scale also is used when assigning a **Best's Short-Term Issuer Credit Rating (ICR),** which is an opinion as to the ability of the rated entity to meet its senior financial commitments on obligations maturing in generally less than one year.

Rating Outlook

Best's Credit Ratings (aaa to c and AMB-1+ to AMB-4) are assigned a Rating Outlook that indicates the potential direction of a company's rating for an intermediate period, generally defined as the next 12 to 36 months. Rating Outlooks are as follows:

Positive	Indicates a company's financial/market trends are favorable, relative to its current rating level, and if continued, the company has a good possibility of having its rating upgraded.
Negative	Indicates a company is experiencing unfavorable financial/market trends, relative to its current rating level, and if continued, the company has a good possibility of having its rating downgraded.
Stable	Indicates a company is experiencing stable financial/market trends and that there is a low likelihood that its rating will change in the near term.

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