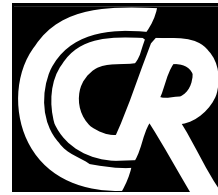


Moody's Special Report

Corporate Bond Defaults and Default Rates 1970 - 1992



January 1993

Contacts

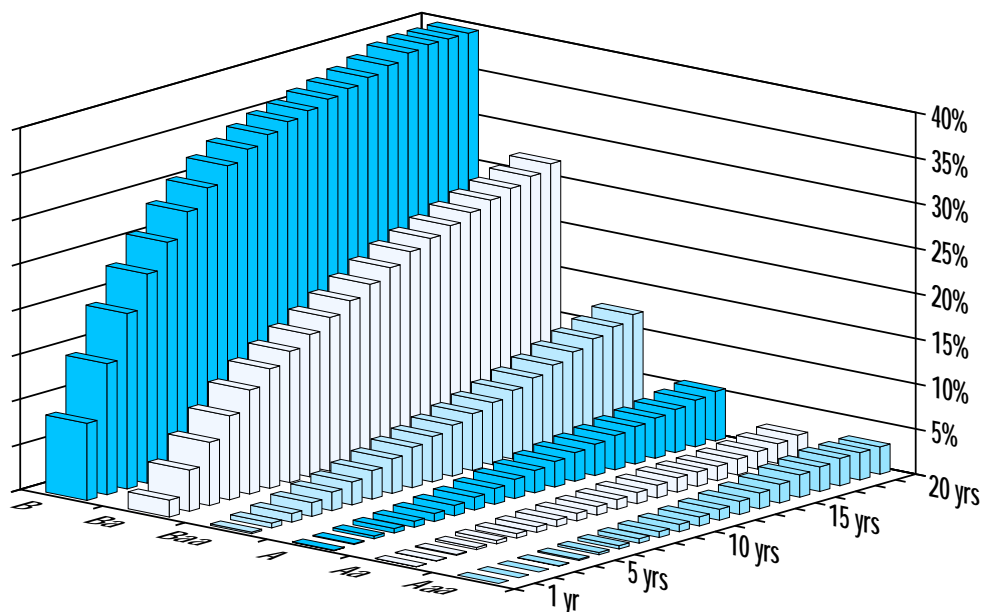
(212) 553-1654

Jerome S. Fons
Lea V. Carty
Denis Girault

This year-end update of Moody's ongoing default research summarizes long-term corporate bond default activity for the years 1970 through 1992. During this period, 452 rated issuers defaulted on their public debt. Aspects of these defaults including rating histories, rates of default by rating category, and information about non-rated defaulting issuers are presented here. Major findings are:

- 41 issuers defaulted in 1992. Of these, 27 held Moody's ratings—all of them speculative grade—as of January 1, 1992. By comparison, 1991 saw 94 issuers default.
- \$7.61 billion of debt was affected by defaults in 1992, down from \$20.3 billion in 1991.
- The one-year speculative grade default rate fell to 3.7 percent in 1992 from 9.5 percent in 1991. The one-year investment grade default rate for 1992 was 0.0 percent.
- Moody's forecasts the speculative grade default rate in 1993 to be 5.3 percent.
- Five of the 41 defaults in 1992 were by non-U.S. firms.

Average Cumulative Default Rates by Rating Category



CONTENTS

Discussion of Recent Default Experience

<i>Major Defaults of 1992</i>	3
<i>1992 Marks Recovery for the Speculative Grade Market and the Economy</i>	4
<i>Defaults by Industry Group</i>	6
<i>Other Aspects of Defaults</i>	6
<i>Recovery Rates of Defaulted Issues</i>	7

Default Methodology

<i>Definition of Default</i>	9
<i>Moody's Rating Database</i>	9

Corporate Default Rates

<i>Major Defaults and Historical Ratings</i>	10
<i>Defining Default Rates</i>	12
<i>One-Year Default Rates</i>	13
<i>Default Rates for Periods Longer Than a Year</i>	14
<i>Default Rate Volatility by Rating Category</i>	15
<i>Default Rates by Industry Group</i>	15
<i>Default Rate Forecast for 1993</i>	16

Tables

<i>1. Senior Rating Histories of Defaulting Issuers Rated Investment Grade</i>	11
<i>2. One-Year Default Rates by Year and Rating</i>	19
<i>3. One-Year Default Rates by Year and Modified Rating</i>	19
<i>4. Average Cumulative Default Rates</i>	19
<i>5. Cumulative Default Rates for Cohorts Formed from 1970 through 1992</i>	20

Mathematical Appendix	17
------------------------------------	----

Chronological Listing of 1992 Defaults	23
---	----

Copyright © 1993 by Moody's Investors Service, 99 Church Street, New York, NY 10007.

EDITOR'S NOTE- All information contained herein is copyrighted in the name of Moody's Investors Service, Inc. ("Moody's"), and none of such information may be copied or otherwise reproduced, repackaged, further transmitted, transferred, disseminated, redistributed or resold, or stored for subsequent use for any such purpose, in whole or in part, in any form or manner or by any means whatsoever, by any person without Moody's prior written consent.

All information contained herein is obtained by Moody's from sources believed by it to be accurate and reliable. Because of the possibility of human and mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind and Moody's, in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness or completeness of any such information. Under no circumstance shall Moody's have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to any error (negligent or otherwise) or other circumstance involved in procuring, collecting, compiling, interpreting, analyzing, editing, transcribing, transmitting, communicating or delivering any such information, or (b) any direct, indirect, special, consequential or incidental damages whatsoever, even if Moody's is advised in advance of the possibility of such damages, resulting from the use of, or inability to use, any such information.

The credit ratings and other opinions contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER. Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding or selling.

Pursuant to Section 17(b) of the Securities Act of 1933, Moody's hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's have, prior to assignment of any rating, agreed to pay Moody's for the appraisal and rating services rendered by it fees ranging from \$1,000 to \$125,000.

PRINTED IN U.S.A.

DEFAULT HIGHLIGHTS OF 1992

Major Defaults of 1992

After two years of intense default activity in which 190 corporate issuers defaulted on over \$42.7 billion of public debt, 1992 heralded a dramatic slowdown. Only 41 issuers—27 of which carried a Moody's long-term rating as of January 1, 1992—defaulted on \$7.61 billion of public long-term debt. While 41 is still a large number when compared to the 1970-1989 yearly average of 14.7 issuers, since July 1992 there have been only 9 defaults. The pace in the second half of the year may be a signal that default activity is returning to levels seen prior to the tumultuous 1989-1991 period.

Defaults and Distressed Exchanges on Long-Term Debt in 1992 (in millions)

Straight	\$6,932
Convertible	<u>\$677</u>
Total	\$7,609

R.H. Macy & Co., Inc. was the largest default with public debt totaling \$1.21 billion. In 1986, management took the department store chain private through a \$3.5 billion LBO. This left the company heavily leveraged and with little margin for error. The highly competitive retail environment induced by the recession that began in mid-1990 weakened the already strained capital structure of the firm until the notoriously poor sales of the 1991 Christmas season drove the company to file for Chapter 11 in late January.

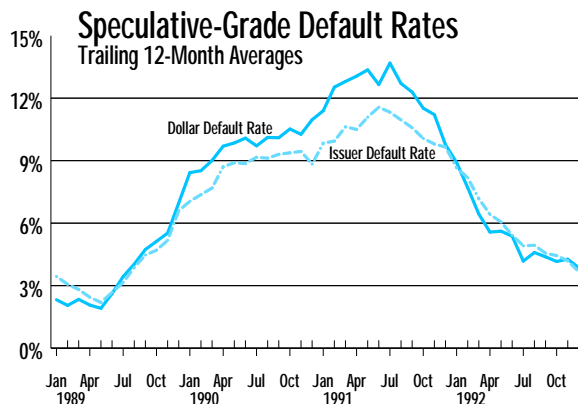
The other major defaults of 1992, in descending order of dollar amount of public debt affected, are:

- El Paso Electric Company along with its related financial services companies, Del Norte Funding Corporation and El Paso Funding Corporation, defaulted on a combined total of \$1.02 billion dollars;
- Heron International Finance, N.V., a holding company that operates primarily through the real estate development, goods transportation, and gasoline retailer Heron International plc, defaulted on the equivalent of \$580 million;
- Wang Laboratories, Inc., an early leader in integrated office automation, defaulted on \$441 million;
- Bramalea Limited, a leading North American property developer, defaulted on the equivalent of \$427 million.

These, and the remaining 1992 defaults, are described in greater detail in the Chronological Listing of Defaults at the end of this report.

1992 Marks Recovery for the Speculative-Grade Market and the Economy

While overall economic growth in 1992 was subdued, the performance of the speculative grade bond market was rather strong, as measured in a variety of ways. For instance, by late-1991 Moody's trailing 12-month issuer and dollar default rates started to show meaningful improvement. This trend accelerated during the first half of 1992 and continued through year-end. The speculative grade issuer default rate—the number of Moody's-rated defaults over a twelve month period divided by the number of speculative-grade rated issuers outstanding at the start of the twelve month period—closed 1992 at 3.67 percent, down from 9.65 percent at the start of the year. The trailing 12-month dollar default rate—where the numerator is the dollar volume of defaulting debt (rated & unrated) and the denominator is outstanding public non-investment grade debt (rated & unrated)—started 1992 at 9.77 percent and finished the year at 3.85 percent.



(Figure 1)

Changes in issuer ratings during 1992 revealed higher overall credit quality in the speculative grade population. During the year, Moody's downgraded \$26.5 billion of long-term debt (issued by 111 companies) into or within the speculative-grade category. At the same time, \$41.9 billion of debt (104 issuers) enjoyed a rating increase within or out of the speculative-grade rating categories. These figures represent a significant improvement over 1991 totals, a year in which \$69.6 billion of debt was downgraded (220 issuers) and \$42.2 billion of debt was upgraded (90 issuers).

Twenty-two companies moved from the speculative-grade category to investment grade standing ("rising stars") during 1992, while 18 firms did the opposite ("fallen angels"). Perhaps the most notorious fallen angel of the year was Marriott Corp., which alone accounted for \$2.6 billion of downgraded debt. In October, Marriott announced a controversial spin-off that would relieve the profitable hotel operations business of the heavily indebted real estate and concessions business. Such a move would have the effect of creating one very healthy and essentially debt-free company, Marriott International Inc., and another substantially weaker debt-laded firm, Host Marriott Corp. While issuer-bondholder talks are ongoing in the Marriott case, investors worry that such lopsided spin-offs may become more popular in the future.

Speculative grade corporate issuers that weathered the recent recession found 1992 interest rates and credit appetites attractive enough to refinance high-coupon debt incurred during the eighties. Equity markets played a supporting role by posting steady increases that boosted firms' capitalization. At the same time, relatively low short-term default-free interest rates left investors starved for higher yields. The significant increase in gross supply of and demand for speculative grade debt, in turn, led to record-setting new issuance. In 1992 \$34.77 billion of gross new straight speculative grade was issued and \$7.85 billion of convertible speculative grade was issued. By comparison, the combined (straight + convertible) totals for 1990 and 1991 were, respectively, \$3.34 billion and \$18.37 billion.

In addition to higher gross issuance, overall prices of speculative grade debt rallied in 1992. As measured by Moody's index of mutual fund net asset values, average prices rose 5.84 percent during the year.

(Figure 2)

Senior Debt Rating Changes -- January through December 1992
Senior Debt Rating Changed From

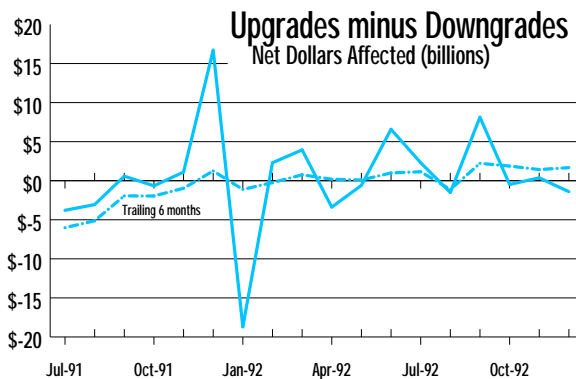
Senior Debt Rating Changed To	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3	Caa	Ca	C
Baa2			4	2		1			1		
Baa3			8	4	1						
Ba1	1	6		8	4				1		
Ba2		6	2		11	10					
Ba3		4	2	5		17	2			1	
B1			1	2	9		10	5			
B2				2	3	8		7	3	1	
B3					1	6	7		2		
Caa	1				1		9	14		1	
Ca								3	18		
C											

Upgrades
104 Companies

Downgrades
111 Companies

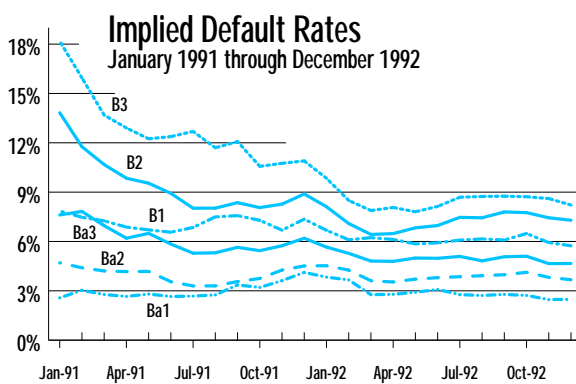
Another indicator of the strength of the rebound in the market for low-rated corporate debt in 1992 is the extent to which investors' assessment of default risk fell. The spread between the promised yield of a default-prone bond and a default-free bond, all else equal, has, as a major component, a premium investors demand for assuming greater risk of default. Invoking certain simplifying assumptions, it is possible to back out the default rate implied by that spread. The implied default rates presented in Figure 4 are based on month-end median yields.¹ To minimize tax distortions, we substitute the median yield of Aaa-rated corporate bonds for the default-free rate.

(Figure 3)



Implied default rates for issues rated Ba1 and Ba2 remained essentially stationary through the second half of the recession and into the recovery. Bonds rated Ba3 and B1 displayed relatively high implied default rates during the recession only to settle down in March of 1992. But implied default rates for lower-quality speculative-grade issues, those rated B2 and B3 in particular, have shown the most improvement. Most dramatic was the tremendous decline in the default premium for bonds rated B3. From January 1991 through December 1992 this measure fell 9.96 percentage points from 18.18 percent to 8.22 percent.

(Figure 4)

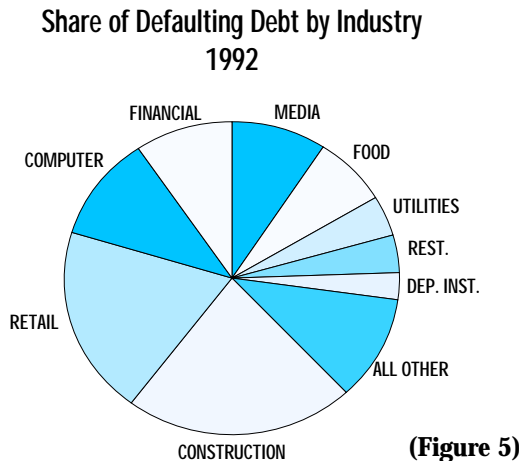


As concerns about default risk eased during 1992, the profile of newly-issued speculative grade debt shifted towards the lower-quality end of the spectrum. For example, in 1991 over 70 percent of the rated, straight, speculative grade debt issued carried a broad rating of Ba and 27 percent carried a broad rating of B. By 1992, only 45 percent of total speculative grade issuance carried the higher Ba rating while 54 percent carried the lower B rating.

¹ Assuming investors are risk-neutral and bonds are perpetuities that trade at par, the implied default rate, d , is $d = \frac{(1+i)}{1 - (1+r)} - \mu$, where i is the default-free yield, r is the risky yield, and μ is the recovery as a fraction of par. All bond yields are adjusted to a 7-year maturity equivalent, the approximate average maturity of all rated corporate bonds, and the recovery rate is assumed to be 40 cents on the dollar, a typical amount, as reported in this study.

Defaults by Industry Group

The construction/real estate sector was the single largest contributor to the defaulted debt market in 1992 as four issuers defaulted on \$1.69 billion of debt. This accounts for 22.2 percent of the year's dollar total. European-based Heron International Finance and Canadian-based Bramalea Limited were the largest defaulting firms in this sector.



The highest defaulter in each of the previous two years, the retail industry, followed closely with three issuers defaulting on \$1.48 billion of defaulted debt, or 19.4 percent of total dollar defaults. In the wake of dismal 1991 Christmas sales, several department stores succumbed to the prolonged pressures of a weak economy. In all three cases, the stores' capital cushion was sacrificed during the pro-leverage 1980s as a result of LBOs. The largest of the three stores, R.H. Macy & Co., accounted for the majority of the industry's total.

Defaults in the computer industry accounted for \$824 million, or 10.8 percent of total 1992 defaults. Wang Laboratories was the largest defaulter here. Financial firms in the form of funding vehicles and captive subsidiaries took fourth place in the default totals by defaulting on \$717 million, or 9.4 percent of the pie. Other industries worth mention in the default totals are media (9.4%), food (7.3%), utilities (4.0%), restaurants (3.8%) and deposit institutions (3.0%). Later in this report we will discuss default rates by industry group.

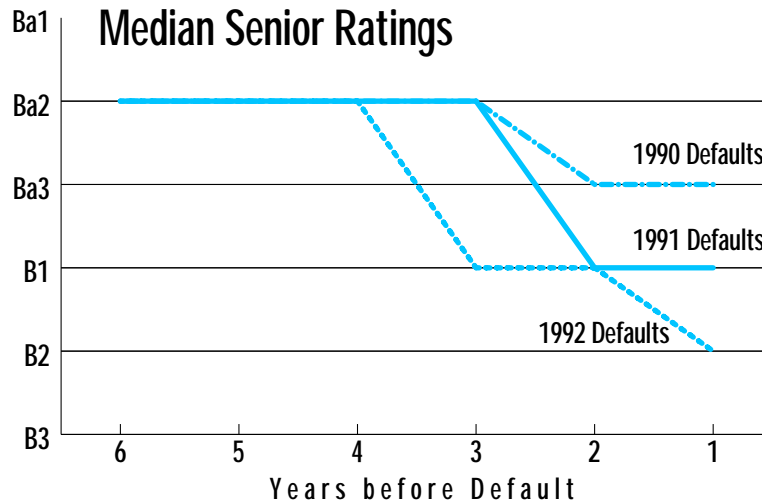
Other Aspects of Defaults

Default led to or was accompanied by a filing for protection from creditors in 16 of the 41 defaults in 1992, 15 of them under Chapter 11 of the U.S. bankruptcy code and one under the Canadian Companies Creditors Arrangements Act. And although defaults on public debt are still largely a phenomenon of the U.S. debt market, 1992 defaults included more issuer names ending in PLC, N.V., and LTD than any year since Moody's began tracking such phenomena. Five defaulting issuers, affecting the U.S. dollar equivalent of nearly \$1.6 billion, were non-U.S. firms. Four of these defaulted in non-U.S. debt markets. Three of the five, affecting some \$467 million, were Canadian firms. In addition, two U.S. firms defaulted on debt issued in the Eurobond market. Sub-par economic growth overseas, particularly in Europe, is likely to boost the share of non-U.S. defaults in coming years.

Three of the four real estate-related defaults in 1992 were foreign issuers, two of them Canadian. Noteworthy for its exclusion from this study is the troubled Canadian developer Olympia & York and its subsidiaries. Among the potential trouble spots is the structured financing of the 55 Water Street building in Manhattan. Although defaulting on several billion dollars in bank loans and several hundred million dollars worth of Canadian commercial paper, O&Y has yet to miss an interest or principal payment on its public long-term debt.

Maintaining the pattern of the previous two years, more than one quarter of 1992 defaulters had an LBO or leveraged refinancing in its past. In particular, twelve issuers that defaulted in 1992 underwent a transformation from a publicly-controlled corporation to private control within the past decade. In 1991, 24 of the 94 issuers that defaulted underwent an LBO. Of the 96 issuers defaulting in 1990, 23 made this transformation.

(Figure 6)



Deterioration in credit quality of defaulting issuers was generally signaled by a lowering of Moody's rating as the default date approached. Figure 6 shows six years of median senior ratings for issuers defaulting in 1990, 1991 and 1992. Where a company had only subordinated debt rated, we implied a senior rating of either one or, more typically, two rating notches higher than the rating on the subordinated debt. The decline in median ratings prior to default indicates that Moody's ratings, on average, provide ample warning that risks have risen. The level of risk indicated by each rating category is discussed further in following sections.

Recovery Rates of Defaulted Issues

An important factor in weighing the distress caused by corporate defaults is the loss suffered in the event of default. The most straightforward methodology for calculating recovery rates is not particularly practical. It would track all payments made on a defaulted debt instrument, discount them back to the date of default, and present them as a percentage of the par value of the security. But that approach requires aging of defaults until final recovery has occurred; by the time such a study were completed, it would already be out of date. It is impractical also due to the difficulty in valuing certain forms of payment received in place of the original obligation including various equity instruments, certain enhancements in the terms of the surviving debt instrument, or sometimes even an asset delivered in lieu of cash payment.

For these reasons, we use a proxy in place of empirical recovery numbers. The trading price of the defaulted instrument is used as an approximation of ultimate recovery. It is at best a rough estimate. On the other hand, it is a definitive measure of the recovery realized by those debt-holders who liquidate a position immediately.

Our survey of recovery prices looks at prices as a percentage of par, not as a percentage of original issue price or accreted value. An investor is entitled to receive face value at maturity, even though he may have paid somewhat less or more for the bond either at issue or in the secondary market. Expressing recoveries as a fraction of some price other than par improperly biases loss rates. The exception is deferred interest debt or deep discount bonds, which we removed from the sample.

We collected price estimates from several sources for bonds defaulting between January 1, 1974 (the earliest point for which reliable price data is available) and December 31, 1992. For each defaulted issue, we looked at the type of debt, the coupon, the maturity, and the dollar amount outstanding at default. This data was compiled for 636 nonconvertible defaulted bonds, aggregating over \$56.01 billion in face value.

Recovery statistics by bond priority were calculated for the entire sample and for each year from 1974. The average recovery value for all 636 bonds (weighted by outstanding par amount at default) equaled \$40 per \$100 face value.

The results of the survey are presented in Figure 7. After default, the 84 senior secured bonds in our sample sold, on average, for \$66.79 per \$100 face amount; the 194 senior unsecured bonds sold for \$47.31; the 156 senior subordinated bonds sold for \$32.86; the 196 subordinated bonds sold for \$27.95; and the six junior subordinated bonds sold for \$17.95. As expected, there is a clear pattern of declining price as priority declines.

(Figure 7)

Recovery Price Survey										
	<u>1974-1992</u>	<u>1992</u>	<u>1991</u>	<u>1990</u>	<u>1989</u>	<u>1988</u>	<u>1987</u>	<u>1986</u>	<u>1985</u>	<u>1984</u>
Senior Secured	\$66.79	\$59.17	\$60.81	\$33.72	\$74.63	\$76.29	\$87.78	\$64.30	\$76.04	\$59.02
Senior Unsecured	47.31	51.08	45.50	35.29	43.26	44.57	67.39	33.65	69.97	64.56
Senior Subordinated	32.86	50.08	33.68	26.47	40.27	39.85	47.73	28.84	32.87	45.69
Subordinated	27.95	47.27	16.58	23.39	25.95	35.03	37.75	31.14	33.93	39.32
Junior Subordinated	17.95		3.63	18.86	17.50	55.00				
Weighted Average	40.00	50.50	32.65	28.17	39.11	44.29	72.57	35.76	40.29	48.83
	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>
Senior Secured		\$72.50					\$35.08		\$32.84	
Senior Unsecured	67.73	38.98	12.00	44.02		60.00	29.93		25.33	
Senior Subordinated		44.19					40.50			
Subordinated	40.18	36.48	40.00	40.63	34.50	67.00	35.00			5.81
Junior Subordinated										
Weighted Average	50.24	39.24	30.49	40.98	34.50	61.88	32.01		27.76	5.81

From a historical, expected-recovery point of view, 1992 was kind to holders of defaulted bonds. The weighted average recovery rate for the 46 securities included in the 1992 recovery price survey is \$50.50 per \$100 face amount. This represents a 55 percent increase over the same number for the previous year. It is also higher by 26 percent than the average recovery rate experienced over the entire sample period for all levels of seniority. This rebound in recovery rates reflects the economic revival, a better environment for refinancing and perhaps greater interest in the market for defaulted debt securities.

DEFAULT METHODOLOGY

Definition of Default

Moody's defines default as any missed or delayed disbursement of interest or principal. This definition includes distressed exchanges where (i) the issuer offered bondholders a new security or package of securities containing a diminished financial obligation such as preferred or common stock or debt with a lower coupon or par amount and (ii) the exchange had the apparent purpose of helping the borrower avoid default. There were no pure distressed exchange offers during 1992, in stark contrast to the 13 completed in 1991 and 21 in 1990.

Moody's default definition also includes companies that make a delayed payment within the grace period provided in the indenture. In 1992 two issuers, Pathe Communications Corp. and Spreckels Industries, missed an interest payment on the scheduled payment date only to make the contractual payment within the grace period of the bond indenture. Spreckels chose twice in 1992 to delay interest payments on its 14-1/4 percent senior subordinated notes, attributing the action to seasonal weather problems. Our rationale for including grace period defaults in this study is straightforward, that a contractual payment obligation was not made when due. In the case of Spreckels, the delay amounted to two involuntary 28-day loans to the company, a clear abuse of bondholders' legitimate expectations of payment.

Moody's Rating Database

The default rates and other figures cited in this report are calculated using Moody's proprietary database of public long-term debt ratings on U.S. and non-U.S. industrial companies, utilities, financial institutions, sovereign issuers, and structured finance entities. Municipal debt issuers were excluded, as were issuers with short-term debt ratings only. In total, our database includes more than 4,000 issuers that met these criteria over the past 23 years. As of January 1, 1993, the database contained long-term ratings for 3,589 non-defaulted issuers. These issuers account for the bulk of the outstanding dollar amount of U.S. public long-term corporate debt and a substantial part of public issuance abroad. Moody's default database also contains information about defaults and distressed exchanges of public issuers not rated by Moody's.

Rating statistics reported in the first part of this study are based on the number of debt issuers that default rather than on the par amount of defaulted debt and are limited to one count for each legal entity. Separately tabulating multiple issues of a single issuer would bias the results toward the default characteristics of issuers with multiple issues. Different issuers within an affiliated group of companies were counted separately because not all subsidiaries have cross-default provisions nor do affiliated companies always carry the same rating.

A Moody's rating is an opinion as to both default likelihood and severity of loss in the event of default. For purposes of this study, in which ratings are used to indicate default probability, we have tried to back severity considerations out of the rating. That is done by taking the rating on each company's senior unsecured debt or, if there is none, implying such a rating and using it as a proxy for default probability. In most cases, this will yield an assessment of risk that is relatively unaffected by special considerations of collateral or of position within the capital structure.

Moody's compiled the default histories used in this study from a variety of sources including our own library of financial reports, press releases, press clippings, internal memoranda, and records of analyst contact with rated issuers. Moody's also examined documents from the Securities and Exchange Commission, The Dun & Bradstreet Corp., the New York Stock Exchange, and the American Stock Exchange.

CORPORATE DEFAULT RATES

Major Defaults and Historical Ratings

Over the twenty-three year period covering 1970 through 1992, 452 rated issuers defaulted on their debt; at least eleven issuers defaulted twice.² All defaulting issuers except two—Manville Corporation, which was rated A, and Columbia Gas, which was rated Baa1—had actual or implied speculative-grade ratings at the senior unsecured debt level at the time of default.³ As expected, a historical search reveals more defaulting issuers that were rated investment grade prior to default. The seventeen defaulting issuers that were rated investment grade as of January 1 of the year of default are presented in Table 1 along with their ratings up to 20 years before default. Figure 8 traces the rating history of all rated defaulting issuers from one to 20 years prior to default. It shows, for example, that at default, just one issuer was rated Baa. But moving back in time to January 1 of the calendar year in which they defaulted, 14 issuers were rated Baa.

At the start of the second year before default, 31 issuers were rated Baa, and so forth. As mentioned above, only two issuers were rated investment grade at default; 17 issuers were rated investment grade on January 1 of the year they defaulted; 40 were rated investment grade at the start of the second year before default, and so on. The ratings of six defaulting issuers were withdrawn before they defaulted.

Still looking at Figure 8, the company with the Aaa rating as of the fourth January prior to default was Getty Oil, a subsidiary of Texaco. The default of Texaco and its affiliates stemmed from the parent's litigation with Pennzoil over the purchase of Getty Oil. As of the fifth January prior to default, both Texaco and Getty Oil were rated Aaa. Texaco and Federated Department Stores (which did a leveraged buyout two years before default) were the two companies with Aaa ratings 10 and 15 years prior to default.

(Figure 8)

		Rating History of 452 Defaulting Issuers								
		Rating at Default	Calendar Years Prior to Default							
			1	2	3	4	5	10	15	20
Investment Grade	Aaa	0	0	0	0	1	2	2	2	1
	Aa	0	2	1	3	6	5	1	1	2
	A	1	1	8	19	15	13	19	10	8
	Baa	1	14	31	33	44	39	36	32	20
Speculative Grade	Ba	43	116	174	157	140	128	59	33	30
	B	279	267	195	150	106	75	25	19	7
	Caa/Ca/C	126	52	16	12	11	11	9	7	3

² The eleven two-time defaulters are: A.M. International ('82 & '92); Continental Airlines Corp. ('83 & '90); Damson Oil Corp. ('86 & '91); Digicon, Inc. ('86 & '90); First City Bancorp. of Texas ('87 & '92); Harvard Industries, Inc. ('72 & '90); Lionel Corp. ('82 & '91); Savin Corp. ('86 & '92); Texas International Co. ('85 & '88); United Merchants and Manufacturers, Inc. ('77 & '90); and Western Union ('87 & '90).

³ The implied issuer rating is the rating statistically most likely to have been assigned on an issuer's senior unsecured debt, had the issuer such debt outstanding.

(Table 1)

Senior Rating Histories of All Defaulting Issuers Rated Investment Grade at January 1 of Year of Default

	Default date	Rating at default	1	2	3	4	5	10	15	20
Arlan's Department Stores	05/13/73	Ba	Baa	Baa	Baa	Baa	Baa			
Columbia Gas System	07/31/91	Baa1	Baa1	Baa1	Baa2	Baa2	Baa1			
DFC Financial (Overseas)	10/03/89	Ba1	Aa3	Aa3						
DFC Overseas Investment	10/03/89	Ba1	Aa3	Aa3						
Equitable Lomas Leasing	09/01/89	B1	Baa2	Baa1	A2	A2	A2			
Kaneb Services/Moran Brothers	11/01/86	Ba3	Baa3	Baa3	Ba3	Ba3	Ba3			
Kaneb Services/ Moran Energy	11/01/86	Ba3	Baa3	Baa3	Baa3					
Kaneb Services/ Moran Energy Int'l	11/01/86	Ba3	Baa3	Baa3						
Lomas Financial Corporation	09/01/89	B2	Baa3	A3	A3	A3	A3			
Manville Corporation	08/26/82	A3	A	A	A	Aa	Aa	A	A	A
Parkview-Gem	11/01/73	B	Baa	Baa	Baa	Baa	Baa			
Penn Central/Phil Balt & Wash Railroad	06/21/70	Ba	Baa	Baa	Baa	Baa	Baa	Baa	Baa	Baa
Revere Copper & Brass	10/27/82	Ba1	Baa	Baa	Baa	Baa	Baa	Baa		
Smith International	03/07/86	Caa	Baa3	A3	A1	A	A			
Storage Technology	10/31/84	B2	Baa3	Baa3	Baa3	Baa3				
Storage Technology/Documentation	10/31/84	B1	Baa3	Baa2	Baa	B				
United Merchants & Manufacturers	07/12/77	B	Baa	Baa	Baa	Baa	Baa			

Defining Default Rates

Figure 9 shows the annual number of rated issuer defaults from 1970 through 1992. While these figures are of interest to some observers, they don't answer the often asked question "What is the likelihood of default on a portfolio of corporate bonds?" Default rates have been constructed with this question in mind. They are typically based on the experience of the entire corporate bond market and are most useful to investors who hold portfolios that imitate the behavior of the overall corporate bond market. But they can equally serve small investors by acting as indicators of market stress.

The default rates presented in the following tables are calculated with the issuer as the unit of study, rather than on the more commonly-used basis of outstanding dollar amounts. The denominator used for Moody's issuer default rates is the number of rated issuers. This approach places equal weight on large and small issuers, under the rationale that the number of rating decisions (or in the case of an investor, buy/sell decisions) does not rise with the size of the issuer. This approach sidesteps the measurement-error problem associated with estimates of dollars outstanding in the murky speculative-grade market.

(Figure 9)

**Number of Defaulting Rated Issuers
By Year (1970-1992)**

<u>Year</u>	<u>Count</u>	<u>Year</u>	<u>Count</u>
1970	30	1982	14
1971	4	1983	13
1972	9	1984	14
1973	5	1985	18
1974	3	1986	33
1975	5	1987	28
1976	3	1988	29
1977	5	1989	55
1978	4	1990	78
1979	1	1991	75
1980	4	1992	27
1981	2		

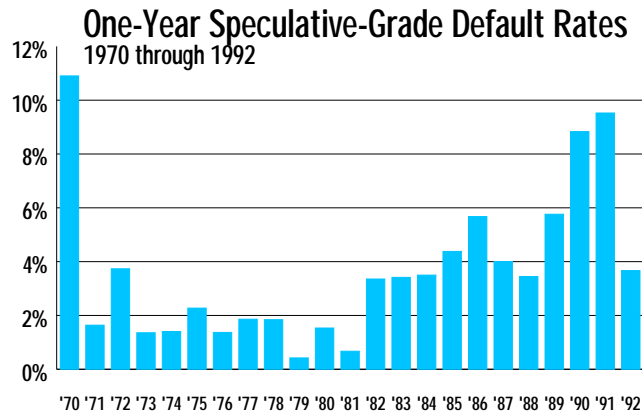
One-Year Default Rates

The most commonly reported default number is the one-year speculative-grade default rate. Moody's calculates this statistic by dividing the number of rated issuers defaulting over a calendar year by the number of speculative-grade issuers outstanding at the beginning of the year. Figure 10 plots one-year speculative-grade default rates from 1970 through 1992.

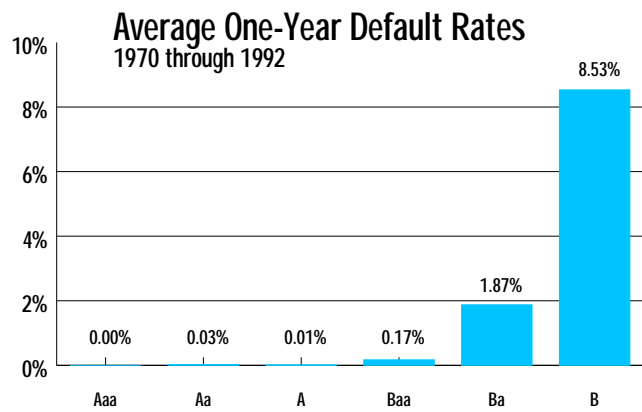
Table 2 (page 19) is a fuller representation of one-year default rates for each of the rating categories. These are computed as the number of defaulting issuers with a given rating at the beginning of a year divided by the number of outstanding issuers with the same rating on January 1 of that year. The last two rows of Table 2 give the one-year issuer default rates for investment-grade issuers and speculative-grade issuers, respectively. Note that for all but eight of the past 23 years, the one-year issuer default rate for investment-grade issuers was zero. On average over the last 23 years, 4.58 percent of speculative-grade issuers defaulted within one year, compared with 0.06 percent of investment-grade issuers. Average one-year default rates, displayed in Figure 11, climb from 0.00 percent for Aaa issuers to 8.53 percent for issuers rated single B.

Moody's refined its rating categories in 1982 by adding numerical modifiers. Table 3 (page 19) and Figure 12 suggest that the relationship between ratings and defaults also holds generally for issuers ranked by numerical-rating category over the period for which that system has been in effect: 1983 through 1992. Default rates climb from 0.00 percent for Aaa-rated issuers to 18.60 percent for issuers rated B3.

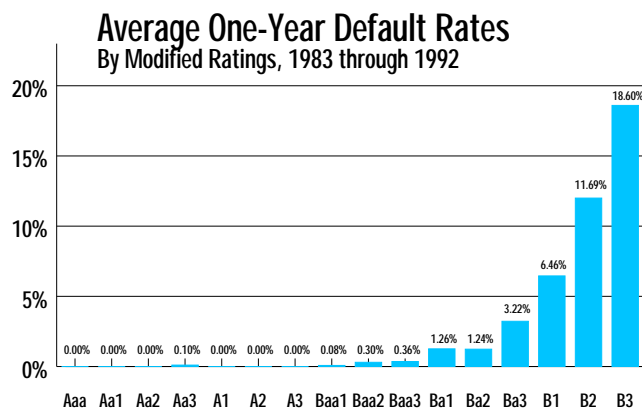
(Figure 10)



(Figure 11)



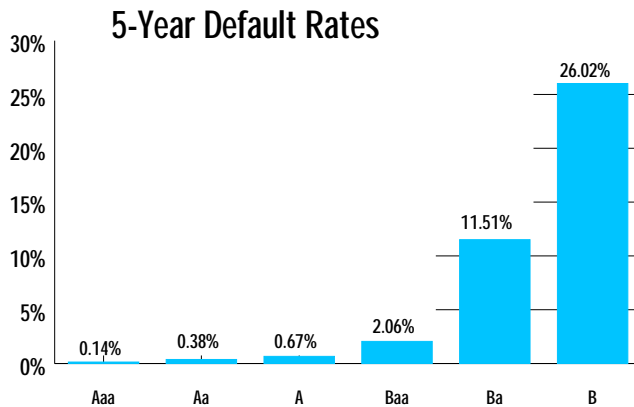
(Figure 12)



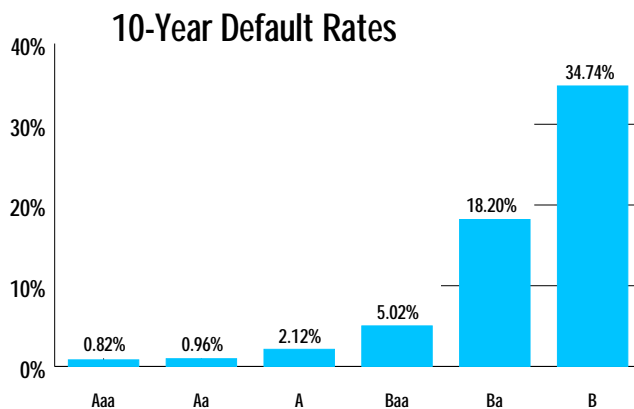
Default Rates for Periods Longer Than a Year

Because it is easy to describe, the one-year issuer default rate has garnered much attention. But a more relevant summary of issuer experience for many corporate bond investors is the cumulative default rate for groupings—or cohorts—of issuers. The idea is similar to one-year default rates except that cohorts are constructed at fixed points in time and followed for longer periods. Thus, cumulative default rates indicate the share of a portfolio of bonds formed at a given date that subsequently defaults.

(Figure 13)



(Figure 14)



(Figure 15)

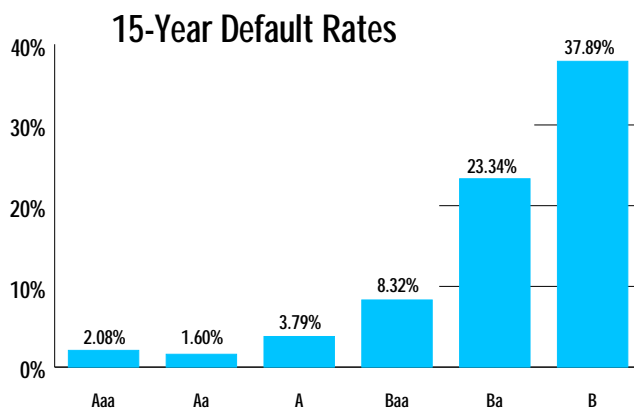


Table 5 (page 20) traces annually for up to 20 years the cumulative default rates of cohorts of Moody's-rated issuers formed at the beginning of each year from 1970 through 1992. Cohort groups are separated into different Moody's rating categories. Table 5 can be used to answer, for example, the question "What percent of B-rated issuers with bonds outstanding in 1983 defaulted by 1992?" The answer is found in the last row and last column of the section labeled "Cohort Formed January 1, 1983": 43.1 percent. The first column of each subsection, by definition, is the one-year issuer default rate and corresponds to that year's entry in Table 2 (page 19). For a more technical description of Moody's cohorts and cumulative default rates, see the Mathematical Appendix.

Some other studies look at cohorts of bonds issued during a given year and track the bonds' subsequent performance. In contrast, Moody's approach, which forms cohorts of all Moody's-rated issuers with debt outstanding at January 1 of each year, provides an indicator of the experience of a portfolio of both seasoned and new-issue bonds purchased in a given year. Table 4 (page 19), displayed on the cover of this report and described in detail in the Mathematical Appendix, gives average cumulative default rates by rating for investment horizons spanning one to twenty years. It shows that the higher default risk for lower rating categories remains evident as one considers investment periods exceeding one year. For example, average default rates for five-year holding periods climb from 0.1 percent for issuers rated Aaa to 26.0 percent for issuers rated B. Moreover, the same pattern holds for average default rates for ten-year and fifteen-year holding periods.

Throughout the study period, there is a sharp distinction between companies in the investment-grade Baa category and companies in the upper-speculative-grade Ba category. In the past 23 years, Ba companies have been two to ten times more prone to default than Baa-rated companies, over any time horizon. And with a one year investment horizon, B-rated companies have been over four times more prone to default than Ba-rated companies.

Default Rate Volatility by Rating Category

Another important aspect of default rates is their degree of stability from year to year. As shown in Figure 10 (page 13), the one-year default rate for speculative-rated companies varied from a high of 10.9 percent in 1970 to 0.4 percent in 1979. And as is clear from a glance at Table 2 (page 19), default rate volatility is significantly higher for the lower rating categories. That is, not only are default rates higher at the low end of the rating scale, but the rate of default is more volatile and less predictable in any given year. For example, the standard deviations of one-year default rates during the study period range from zero to 0.28 percent in the investment-grade categories (Figure 16). The Ba standard deviation rises to 1.87 percent and the B standard deviation is 4.93 percent.

A look at standard deviations of default rates over longer bond holding periods shows a similar finding. Five-, ten-, and fifteen-year default rate standard deviations for investment-grade issuers held below 1.9 percent each, but the corresponding speculative-grade default rate standard deviations were typically several times higher.

(Figure 16)

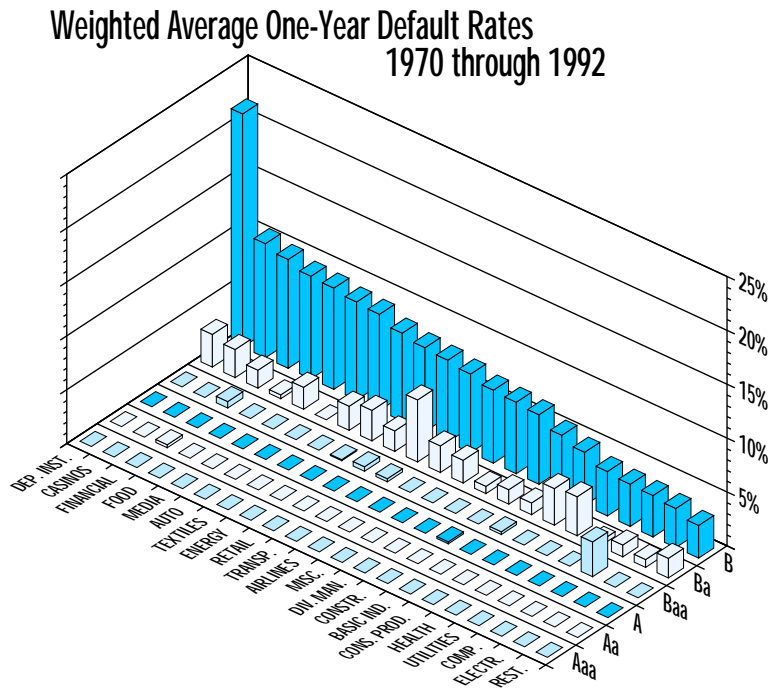
Standard Deviations of 1-, 5-, 10- and 15-Year Default Rates				
Rating	<u>1 year</u>	<u>5 year</u>	<u>10 year</u>	<u>15 year</u>
Aaa	0.00%	0.34%	0.72%	0.97%
Aa	0.06%	0.41%	0.60%	0.74%
A	0.05%	0.58%	1.08%	1.16%
Baa	0.28%	1.09%	1.86%	1.48%
Ba	1.87%	5.90%	6.48%	2.89%
B	4.93%	7.24%	7.52%	5.16%

Default Rates by Industry Group

Moody's on-going default rate research documents the high correlation between rating and subsequent default risk. As the database grows, certain patterns of defaulting issuer characteristics emerge and invite new comparisons. Yet database limitations, classification difficulties, and small sample sizes make some statistical comparisons quite hazardous. With this in mind, we carefully approach the concept of average default rates by industry grouping.

Ideally, default rates for a given rating category over any time period, investment horizon and sector will be equal in magnitude. But the reality of the ratings process is that short-term shocks affect individual sectors differently. And these shocks may land especially hard on a geographic region with a heavy concentration of a single industry. The situation is further complicated by the fact that, even if short-term weakness is anticipated for a particular industry, wholesale downgradings would be confusing and disruptive. By design, the rating time horizon is often longer than many business cycles.

(Figure 17)



With these caveats in mind, we present in Figure 17 weighted average one-year default rates for selected industry groups. At the start of each year, 1970 through 1992, cohorts were formed by industry group and rating category and followed for one year. The sum of defaults occurring within one year are divided by the sum of issuers in the cohorts. We ordered the industries by ascending single-B default rates.

With few exceptions, average one-year default experience rises as rating quality falls, suggesting a high level of intra-industry consistency. For each industry, the default rate of issuers rated B exceeded that for all other rating categories. Aside from deposit institutions, composed principally

of thrifts, the single-B default rate shows substantial uniformity across industry groups. The mean single-B default rate across non-depositories was 6.9 percent and the individual rates ranged from a low of 3.0 percent (restaurants) to a high of 10.6 percent (casinos/lodging).

Default Rate Forecast for 1993

We report in this section the latest readings from Moody's updated default forecast model, first introduced in a special report published in August 1991. The model hinges on the assumption that the default risk attributed to a particular rating category will tend toward its historical average value. Since we can observe the number of issuers in each rating category and we have already calculated default rates by rating class, the forecast should be straightforward.

The forecast starts with an "expected" default rate—the default rate that one would expect to see if the set of issuers currently rated within each grade were to default at the historical average rate for that rating class. Given the rating distribution of non-defaulted issuers as of January 1, 1993, and the weighted average one-year default rates by rating category presented in Figure 10 (page 13), without taking into account any forecast of economic activity, one would expect 37 rated issuers to default in 1993, or 5.4 percent of all speculative grade issuers. We adjust this expectation to reflect the median economic (GDP) growth forecast for 1993, compiled by Blue Chip Economic Indicators as of January 10, 1993, or 2.9 percent.

To do that, we constructed a simple regression model with actual default rates as the dependent variable and "expected" default rates and economic growth as the independent variables. The model was estimated for the period 1971 through 1992, omitting the highly unusual performance of 1970 and incorporating early estimates of actual 1992 full year economic growth. Using the coefficients of the model and the above information, we forecast a 1993 speculative grade default rate of 5.3 percent. Although this would mark an increase from 1992's 3.7 percent default rate, it is very much in line with the 1970 to 1992 overall average speculative grade default rate of 4.6 percent.

MATHEMATICAL APPENDIX

Cohorts

A cohort consists of all Moody's-rated issuers at the start of a given year grouped by rating category. Moody's formed the 1st cohort in January of 1970, the 2nd in January of 1971, and the 3rd in January of 1972, etc. Let $n(R, Y)$ be the number of issuers with rating R at the start of year Y. Then the cohort for year Y is a vector:

$$(n(Aaa, Y), n(Aa, Y), n(A, Y), \dots, n(B, Y)).$$

By the end of 1992 we had 23 years of history for the companies that comprise the 1970 cohort, 22 years of data for the companies that comprise the 1971 cohort, and so on. It is important to note that the populations of different cohorts often overlap. For example, we count a firm rated Aaa in January of 1970 in the number $n(Aaa, 1970)$ as a member of the 1970 cohort. If in 1986 we rate that same company Aa2, then it contributes to the number $n(Aa, 1986)$ as a member of the 1986 cohort.

Cumulative Default Rates

We define $d(R, Y, N)$ to be the number of issuers rated R from cohort Y that defaulted *in the Nth year after cohort Y was formed*. The cumulative default rate shown in table 5, $K(R, Y, N)$, is the the number of firms with rating R in cohort Y that have defaulted *by the Nth year* divided by the number of firms in that original cohort with rating R. For example, $K(Aa, 1983, 6) = 1.7\%$. In the notation introduced above:

$$K(R, Y, N) = \frac{\sum_{n=1}^N d(R, Y, n)}{n(R, Y)} .$$

Marginal Default Rates

We define $r(R, N)$ to be the issuer-weighted average default rate for R-rated issuers in their Nth year (hereafter simply referred to as the Nth year marginal default rate). It is:

$$r(R, N) = \frac{\sum_{n=1}^N d(R, Y, n)}{\sum_{Y=1970}^T n(R, Y)} , \text{ where } T = 1993 - N.$$

Here, T restricts us to those cohorts for which N years of data are available.¹ Hence $r(Aaa, 5)$ is the 5th year marginal default rate for Aaa-rated issuers. It draws upon the 5th year experiences of the 18 cohorts formed since 1970 that have 5 years of data available.

Average Cumulative Default Rates

We denote the average cumulative issuer default rate for a given rating category, R, and a given number of years, N, by $C(R, N)$. It expresses the fraction of an initial population of issuers that has historically defaulted on debt obligations N years after having the specified rating. $C(R, N)$ summarizes historical default experience through the Nth year via the N marginal default rates for rating category R. For the first year, the average cumulative issuer default rate is simply the 1st year marginal default rate:

$$C(R, 1) = r(R, 1).$$

Since only survivors can default, the average cumulative one-year survival rate is the fraction of firms that did not default: $(1 - C(R, 1))$. In the second year, we incorporate the 2nd-year marginal default rate. Of the firms surviving the first year, historically, $r(R, 2)$ of them have defaulted. Hence, we arrive at the cumulative fraction of the initial group of firms that defaulted over a two year period by adding to the fraction of firms that defaulted in the first year the fraction of those surviving firms that defaulted in the second year. Mathematically this is given by:

$$C(R, 2) = r(R, 2) \times (1 - C(R, 1)) + C(R, 1).$$

¹ Following the formation of a cohort in year Y, we do not subsequently revise $n(R, Y)$ downward to reflect withdrawn ratings or the disappearance of companies through mergers or other means. If we did so, our marginal default rates would be slightly higher.

We repeat this formula N times to get the Nth year average cumulative issuer default rate for a given rating category R. The result is the recursive formula:

$$C(R,N) = r(R,N) \times (1 - C(R,N - 1)) + C(R,N - 1).$$

The figure on the cover of this report portrays the behavior of average cumulative default rates.

Expected Loss Rates

The general method used to calculate an average cumulative default rate applies equally to the concept of loss rate. We define expected loss as the severity of loss times the probability of it occurring. Recall that $r(R,N)$ is the probability that an issuer defaults in the Nth year after holding a rating R.² Defining μ as the recovery rate (expressed as a fraction of par) on defaulted issues, the severity of default is simply $(1 - \mu)$. Hence the marginal expected loss rate for the Nth year is:

$$I(R,N) = r(R,N) \times (1 - \mu).$$

If we assume that the amount recovered after a loss is reinvested in securities of the same rating issued by other non-defaulted issuers represented in the same cohort of the defaulted issuer³ then losses accumulate in much the same way as defaults. We denote the cumulative loss rate for a rating category R after N years by $L(R,N)$. The marginal loss rate, $I(R,N)$, is analogous to the marginal default rate, $r(R,N)$, and the cumulative loss rate, $L(R,N)$, is analogous to the cumulative default rate, $C(R,N)$, described above. In particular,

$$L(R,1) = C(R,1) \times (1 - \mu).$$

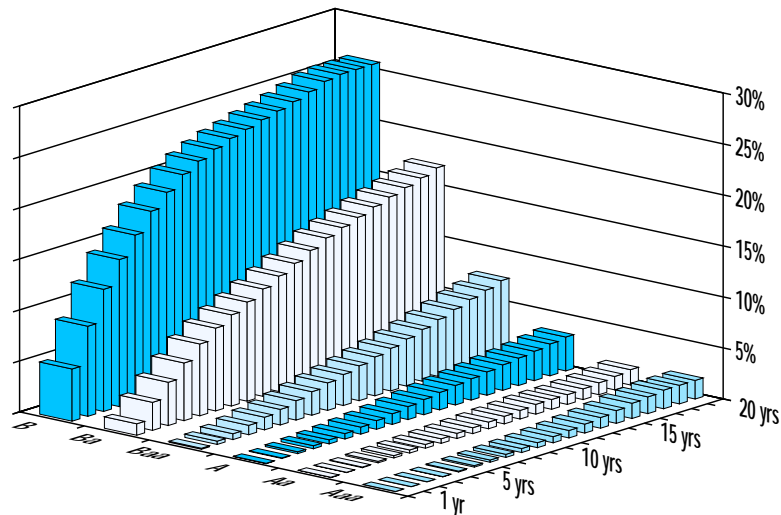
After a given number of years N, only the surviving principal, $(1 - L(R,N - 1))$, is subject to loss. The general recursive formula is thus:

$$L(R,N) = I(R,N) \times (1 - L(R,N - 1)) + L(R,N - 1).$$

Note that $L(R,N)$ addresses the expected loss in principal and coupon at period N due to default. It is not a statement as to the present value of future losses. Figure 18 illustrates the behavior of cumulative loss rates by rating category for a 20-year horizon using an assumed average recovery of 40¢ of every \$1 owed.

(Figure 18)

Average Cumulative Loss Rates by Rating Category



² Although our reported default rates are in terms of issuers, in theory they are valid for a portfolio of bonds. Hence the notion of loss relates to bonds affected by default.

³ This is to assure that the recovered capital is reinvested in securities with a risk structure similar to the risk structure of the non-defaulted bonds. The idea of cumulative loss may be generalized to permit a more general reinvestment scheme.

Table 2

	One-Year Default Rates by Year and Rating 1970-1992 (Percent)																							
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	Wtd Avg
Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
Aa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.03
A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01
Baa	0.3	0.0	0.0	0.5	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.6	0.0	1.1	0.0	0.0	0.5	0.0	0.2	0.0	0.17
Ba	8.4	1.5	0.5	0.0	1.6	1.1	0.6	1.1	0.5	0.0	0.0	0.0	2.6	1.0	0.5	2.0	1.9	2.6	1.5	2.7	3.3	5.1	0.2	1.87
B	21.6	0.0	11.8	3.4	6.9	3.0	0.0	8.8	5.3	0.0	4.4	4.1	2.2	6.0	7.3	8.7	11.6	5.3	5.7	8.6	12.9	13.1	6.1	8.53
Investment Grade	0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.0	0.06
Speculative Grade	10.9	1.6	3.7	1.4	1.4	2.3	1.4	1.9	1.8	0.4	1.5	0.7	3.4	3.4	3.4	4.4	5.7	4.0	3.4	5.8	8.8	9.5	3.7	4.58

Table 3

	One-Year Default Rates By Year and Modified Rating 1983-1992 (Percent)											
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	Wtd Avg	
Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
Aa1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
Aa2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
Aa3	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.10	
A1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
A2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
A3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	
Baa1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.08	
Baa2	0.0	0.0	0.0	2.5	0.0	0.0	0.7	0.0	0.0	0.0	0.30	
Baa3	0.0	1.8	0.0	0.9	0.0	0.0	0.9	0.0	0.0	0.0	0.36	
Ba1	0.0	0.0	0.0	1.2	5.1	0.0	1.0	3.2	1.3	0.0	1.26	
Ba2	0.0	1.5	4.6	1.1	0.8	0.0	1.7	3.3	0.0	0.0	1.24	
Ba3	2.4	0.0	1.8	2.6	2.4	2.9	3.8	3.4	9.6	0.7	3.22	
B1	1.3	9.5	4.4	9.8	4.2	5.0	7.3	9.5	8.7	1.3	6.46	
B2	18.5	3.7	17.9	7.0	6.8	7.0	11.7	12.4	16.8	14.3	11.69	
B3	11.1	0.0	5.0	26.9	8.7	8.3	11.8	41.2	21.1	18.5	18.60	

Table 4

Years:	Average Cumulative Default Rates 1 to 20 Years (Percent)																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Aaa	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.5	0.7	0.8	1.0	1.2	1.5	1.7	2.1	2.5	2.7	3.0	3.0	3.0
Aa	0.0	0.0	0.1	0.2	0.4	0.5	0.6	0.7	0.8	1.0	1.1	1.2	1.4	1.6	1.6	1.6	1.7	1.9	2.2	2.5
A	0.2	0.1	0.3	0.5	0.7	0.9	1.1	1.4	1.7	2.1	2.5	2.8	3.2	3.5	3.8	4.1	4.4	4.8	5.2	5.5
Baa	0.2	0.5	1.0	1.5	2.1	2.5	3.2	3.8	4.5	5.0	5.6	6.3	6.9	7.6	8.3	9.1	9.9	10.7	11.4	12.2
Ba	1.9	4.6	7.0	9.3	11.5	13.2	14.5	15.7	17.0	18.2	19.4	20.6	21.7	22.6	23.3	24.1	24.9	25.5	26.2	27.0
B	8.5	14.5	19.4	23.1	26.0	28.8	30.8	32.6	33.8	34.7	35.5	36.1	36.8	37.3	37.9	38.6	39.3	39.6	39.6	39.6
Investment Grade	0.1	0.2	0.4	0.7	1.0	1.3	1.6	2.0	2.4	2.8	3.2	3.7	4.1	4.5	5.0	5.5	6.0	6.6	7.1	7.6
Speculative Grade	4.6	8.5	11.8	14.5	16.9	18.9	20.4	21.7	22.9	24.1	25.1	26.2	27.2	27.9	28.6	29.4	30.1	30.6	31.1	31.7

Table 5

		Cumulative Default Rates for Cohorts Formed 1970 through 1992 (Percent)																			
Years:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Cohort Formed January 1, 1970		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.7	0.7	1.1	1.4	1.4	1.4	1.8	1.8	2.5	2.5	2.5
Baa	0.3	0.3	0.6	1.2	1.5	1.8	2.4	2.7	2.7	3.0	3.0	3.0	3.0	3.9	4.2	4.5	5.2	6.1	7.0	7.3	7.6
Ba	8.4	9.9	10.3	11.3	11.8	12.8	13.3	13.8	15.3	15.3	15.3	16.3	16.7	17.2	17.2	17.2	17.7	19.7	19.7	20.2	20.2
B	21.6	21.6	27.5	27.5	29.4	29.4	29.4	33.3	33.3	33.3	33.3	33.3	33.3	37.3	37.3	37.3	39.2	39.2	39.2	39.2	39.2
Cohort Formed January 1, 1971		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.7	0.7	1.1	1.4	1.4	1.4	1.4	1.8	1.8	2.5	2.5	2.5
Baa	0.0	0.3	0.9	1.1	1.1	1.1	2.0	2.6	2.6	2.8	2.8	3.0	3.7	4.0	4.3	4.8	5.7	6.6	6.8	7.1	8.3
Ba	1.5	2.0	3.0	3.6	5.1	5.6	6.1	7.1	7.1	8.1	8.1	8.6	9.1	9.1	9.1	9.6	12.2	12.2	12.2	12.7	12.7
B	0.0	8.3	8.3	11.1	11.1	11.1	16.7	16.7	16.7	16.7	16.7	22.2	22.2	22.2	22.2	25.0	25.0	25.0	25.0	25.0	25.0
Cohort Formed January 1, 1972		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.6	1.0	1.0	1.0	1.3	1.3	1.9	1.9	2.3	2.9
Baa	0.0	0.5	0.8	0.8	1.1	1.6	2.2	2.2	2.7	3.3	3.3	3.5	3.8	4.3	5.1	6.0	6.8	8.1	8.1	10.0	10.0
Ba	0.5	1.5	2.0	3.5	4.0	4.5	5.6	5.6	5.6	6.6	7.6	8.1	9.1	10.1	12.6	12.6	12.6	12.6	13.1	13.1	16.2
B	11.8	11.8	14.7	14.7	14.7	20.6	20.6	20.6	20.6	20.6	26.5	26.5	26.5	26.5	29.4	29.4	29.4	29.4	29.4	29.4	29.4
Cohort Formed January 1, 1973		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.9	0.9	0.9	0.9	1.3	1.3	1.9	1.9	2.2	2.8	3.5
Baa	0.5	0.8	1.0	1.3	1.8	2.3	2.3	2.8	2.8	3.3	3.8	4.6	5.1	5.8	6.6	6.8	7.3	8.9	8.9	10.6	10.6
Ba	0.5	1.1	2.2	2.7	3.2	4.3	4.3	4.3	5.4	7.0	7.5	7.5	8.6	11.3	11.8	11.8	12.4	13.4	13.4	17.2	17.7
B	3.4	6.9	6.9	6.9	13.8	13.8	13.8	13.8	13.8	20.7	20.7	20.7	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1
Cohort Formed January 1, 1974		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.6	1.0	1.0	1.0	1.6	1.6	1.9	2.5	3.2	3.5
Baa	0.0	0.5	0.8	1.3	1.8	1.8	2.3	2.8	2.8	3.3	4.1	4.6	4.8	5.6	5.9	6.4	7.6	9.4	9.4	9.4	9.4
Ba	0.0	1.1	1.7	2.2	3.4	3.4	3.4	3.9	5.6	6.1	6.1	7.8	11.7	12.3	12.3	12.8	14.5	17.9	18.4	18.4	18.4
B	6.9	6.9	6.9	13.8	13.8	13.8	13.8	17.2	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1	27.6	27.6	27.6	27.6
Cohort Formed January 1, 1975		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.6	0.6	0.6	1.2	1.2	1.5	2.5	2.8	2.8	2.8
Baa	0.0	0.0	0.3	0.8	0.8	1.3	1.3	2.1	2.6	3.4	4.0	4.7	5.0	5.5	5.5	7.1	9.0	9.2	9.2	9.2	9.2
Ba	1.6	2.7	3.8	4.4	4.4	4.4	4.9	6.6	7.1	7.1	8.7	12.6	13.7	14.2	14.2	15.3	17.5	18.0	18.0	18.0	18.0
B	3.0	3.0	9.1	12.1	12.1	12.1	15.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	24.1	27.6	27.6	27.6	27.6

Table 5 (continued)

Years:	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>
Cumulative Default Rates for Cohorts Formed 1970 through 1992 (Percent)																	
Cohort Formed January 1, 1976	Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.2	1.2	2.4	2.4	2.4
	Aa	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	1.7	1.7	1.7	1.7	1.7
	A	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.8	0.8	1.6	1.6	2.2	3.5	3.5
	Baa	0.0	0.3	0.6	0.6	0.9	2.0	2.6	3.5	4.1	4.3	4.9	4.9	5.5	7.2	9.0	9.6
	Ba	1.1	2.2	3.2	3.2	4.3	5.4	5.9	5.9	7.6	11.4	12.4	12.4	13.0	14.1	17.3	17.8
	B	0.0	6.3	9.4	9.4	12.5	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	25.0	25.0
Cohort Formed January 1, 1977																	
	Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	2.3	2.3	2.3	2.3
	Aa	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	1.6	1.6	1.6	1.6	1.6	1.6
	A	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.8	0.8	2.1	2.1	2.8	4.1	4.1	4.1
	Baa	0.3	0.6	0.6	0.6	1.8	2.3	3.2	3.8	4.1	4.7	4.7	5.3	6.7	8.5	9.1	9.1
	Ba	0.6	1.7	1.7	2.2	3.9	4.4	4.4	6.1	10.0	11.1	11.1	11.7	12.8	16.1	16.7	16.7
	B	8.8	11.8	11.8	14.7	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	29.4	29.4	29.4
Cohort Formed January 1, 1978																	
	Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0
	Aa	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	A	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.8	0.8	1.9	1.9	2.9	4.0	4.0	4.0	4.0
	Baa	0.0	0.0	0.0	0.0	1.2	1.5	2.4	3.2	3.8	4.1	4.7	6.2	8.3	8.8	8.8	8.8
	Ba	1.1	1.1	1.1	1.7	2.8	3.9	6.7	11.8	13.5	13.5	14.0	15.7	19.1	19.7	19.7	19.7
	B	5.3	5.3	10.5	13.2	18.4	21.1	21.1	23.7	23.7	23.7	23.7	23.7	28.9	28.9	28.9	28.9
Cohort Formed January 1, 1979																	
	Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.9	1.9	1.9	1.9	1.9	1.9
	Aa	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	A	0.0	0.0	0.0	0.0	0.3	0.3	0.8	0.8	1.9	1.9	2.7	3.7	3.7	3.7	3.7	3.7
	Baa	0.0	0.3	0.3	1.5	1.8	2.1	3.2	3.8	4.1	4.7	6.8	8.8	9.4	9.4	9.4	9.4
	Ba	0.5	0.5	1.0	2.0	4.0	6.6	14.6	16.2	16.2	16.7	18.7	22.7	23.7	23.7	23.7	23.7
	B	0.0	5.3	7.9	13.2	15.8	18.4	23.7	23.7	23.7	23.7	23.7	26.3	26.3	26.3	26.3	26.3
Cohort Formed January 1, 1980																	
	Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	Aa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.4	1.4	1.4	1.4	1.4
	A	0.0	0.0	0.3	0.5	0.5	1.3	1.6	2.3	2.3	3.1	4.2	4.2	4.2	4.2	4.2	4.2
	Baa	0.0	0.0	0.9	1.2	1.8	2.9	3.2	3.8	4.7	6.7	8.5	8.8	8.8	8.8	8.8	8.8
	Ba	0.0	0.5	2.8	3.8	6.6	9.9	14.6	16.0	16.4	17.8	24.4	25.8	25.8	25.8	25.8	25.8
	B	4.4	6.7	13.3	17.8	22.2	24.4	31.1	31.1	31.1	33.3	37.8	37.8	37.8	37.8	37.8	37.8
Cohort Formed January 1, 1981																	
	Aaa	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
	Aa	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	2.0	2.0	2.0	2.0	2.0	2.0
	A	0.0	0.3	0.3	0.3	1.0	1.3	1.8	1.8	2.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
	Baa	0.0	0.6	1.1	1.7	2.5	2.8	3.4	4.5	6.5	7.9	8.4	8.4	8.4	8.4	8.4	8.4
	Ba	0.0	2.9	4.1	6.1	15.5	16.7	17.1	18.4	21.2	26.5	28.2	28.2	28.2	28.2	28.2	28.2
	B	4.1	10.2	14.3	20.4	30.6	30.6	30.6	30.6	32.7	36.7	36.7	36.7	36.7	36.7	36.7	36.7

Table 5 (continued)

Cumulative Default Rates for Cohorts Formed 1970 through 1992 (Percent)

Years:	1	2	3	4	5	6	7	8	9	10	11
Cohort Formed January 1, 1982											
Aaa	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	1.6	1.6	1.6
Aa	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.8
A	0.2	0.2	0.2	0.2	1.0	1.0	1.5	1.5	2.4	3.6	3.6
Baa	0.3	0.3	1.5	2.4	2.7	3.3	3.9	5.0	6.8	8.0	8.6
Ba	2.6	4.8	6.6	10.6	16.1	17.2	17.6	18.7	21.6	25.6	26.7
B	2.2	8.9	13.3	15.6	24.4	24.4	24.4	24.4	28.9	37.8	40.0

Cohort Formed January 1, 1983

Aaa	0.0	0.0	0.0	0.0	1.4	1.4	1.4	2.0	2.0	2.0	2.0
Aa	0.0	0.0	0.0	0.0	0.4	1.7	1.7	1.7	1.7	1.7	2.1
A	0.0	0.0	0.0	0.2	0.2	0.7	0.7	1.5	2.4	2.9	2.9
Baa	0.0	1.3	1.6	2.5	2.8	3.1	4.4	6.0	8.5	8.8	8.8
Ba	1.0	2.6	6.1	11.7	12.8	14.3	15.8	17.3	21.9	22.4	22.4
B	6.0	10.3	17.2	25.0	26.7	28.4	29.3	36.2	41.4	43.1	43.1

Cohort Formed January 1, 1984

Aaa	0.0	0.0	0.0	0.8	0.8	0.8	1.5	1.5	1.5	1.5	1.5
Aa	0.0	0.0	0.0	0.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5
A	0.0	0.2	0.4	0.6	1.3	1.3	2.3	3.1	3.8	3.8	3.8
Baa	0.6	0.6	0.6	0.9	1.2	2.2	2.8	5.3	5.6	5.6	5.6
Ba	0.5	3.7	11.1	12.5	14.8	17.6	20.8	25.9	25.9	25.9	25.9
B	7.3	15.4	22.8	25.2	28.5	32.5	39.0	43.9	45.5	45.5	45.5

Cohort Formed January 1, 1985

Aaa	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7
Aa	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
A	0.0	0.2	1.1	1.9	1.9	3.0	3.7	4.1	4.1	4.1	4.1
Baa	0.0	1.2	1.2	1.5	2.5	2.8	4.9	5.2	5.2	5.2	5.2
Ba	2.0	6.3	8.2	10.9	15.2	18.0	22.3	23.4	23.4	23.4	23.4
B	8.7	17.3	21.3	24.7	28.0	35.3	40.0	41.3	41.3	41.3	41.3

Cohort Formed January 1, 1986

Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.0	0.6	0.6	0.9	0.9	0.9	0.9	0.9	0.9	0.9
A	0.0	0.2	0.7	0.8	1.3	1.9	2.0	2.0	2.0	2.0	2.0
Baa	1.1	1.1	2.3	3.4	3.9	5.1	5.6	5.6	5.6	5.6	5.6
Ba	1.9	5.6	7.8	11.5	15.3	19.9	21.5	21.5	21.5	21.5	21.5
B	11.6	15.5	19.3	22.7	29.3	35.9	38.1	38.1	38.1	38.1	38.1

Cohort Formed January 1, 1987

Aaa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
A	0.0	0.0	0.2	1.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Baa	0.0	0.8	1.8	2.6	4.6	5.4	5.4	5.4	5.4	5.4	5.4
Ba	2.6	4.5	8.5	13.2	19.3	20.9	20.9	20.9	20.9	20.9	20.9
B	5.3	11.4	17.1	24.0	30.0	33.1	33.1	33.1	33.1	33.1	33.1

Table 5 (continued)

Cumulative Default Rates for Cohorts Formed 1970 through 1992 (Percent)

Years:	1	2	3	4	5
Cohort Formed January 1, 1988					
Aaa	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.2	0.4	0.4	0.4
A	0.0	0.2	0.9	1.2	1.2
Baa	0.0	0.3	0.8	2.7	3.5
Ba	1.5	6.6	11.5	17.7	19.4
B	5.7	11.4	19.3	27.4	30.4

Cohort Formed January 1, 1989

Aaa	0.0	0.0	0.0	0.0	0.0
Aa	0.3	0.3	0.3	0.3	0.3
A	0.0	0.3	0.8	0.8	0.8
Baa	0.5	1.3	2.1	3.2	3.2
Ba	2.7	8.6	15.3	17.3	17.3
B	8.6	18.9	27.8	31.1	31.1

Cohort Formed January 1, 1990

Aaa	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.0	0.0	0.0	0.0
A	0.0	0.2	0.2	0.2	0.2
Baa	0.0	0.8	0.8	0.8	0.8
Ba	3.3	10.5	12.2	12.2	12.2
B	12.9	22.2	26.8	26.8	26.8

Cohort Formed January 1, 1991

Aaa	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.0	0.0	0.0	0.0
A	0.0	0.0	0.0	0.0	0.0
Baa	0.2	0.2	0.2	0.2	0.2
Ba	5.1	6.3	6.3	6.3	6.3
B	13.1	18.9	18.9	18.9	18.9

Cohort Formed January 1, 1992

Aaa	0.0	0.0	0.0	0.0	0.0
Aa	0.0	0.0	0.0	0.0	0.0
A	0.0	0.0	0.0	0.0	0.0
Baa	0.0	0.0	0.0	0.0	0.0
Ba	0.2	0.2	0.2	0.2	0.2
B	6.1	6.1	6.1	6.1	6.1

Chronological List of 1992 Public Corporate Bond Defaults (\$Millions)

Company	Defaulted Debt	Not Defaulted	Status
<hr/> January 1992			
El Paso Electric Company†	\$305.8		In Chapter 11
Del Norte Funding Corporation†	\$200.0		In Chapter 11
El Paso Funding Corporation†	\$516.8		In Chapter 11
Galactic Resources Ltd*	\$31.1		Exchange offer outstanding
R.H. Macy & Co., Inc.	\$1,210.2		In Chapter 11
Perpetual Financial Corporation	\$61.1		Seized and sold by government
Seaman Furniture Co., Inc.*	\$54.8		In Chapter 11
Telemundo Group, Inc.†	\$171.8	\$103.0	Negotiating with bondholders
<i>Defaulted Debt (mil):</i>	<i>\$2,551.6</i>		
<i>Number of Companies:</i>	<i>8</i>		
<hr/> February 1992			
Envirodyne Industries, Inc.	\$459.4		In Chapter 11
McCrorry Corporation	\$214.5		In Chapter 11
<i>Defaulted Debt (mil):</i>	<i>\$673.9</i>		
<i>Number of Companies:</i>	<i>2</i>		
<hr/> March 1992			
The Horn & Hardart Company	\$24.3	\$14.9	Completed a partial restructuring
Marquest Medical Products, Inc.*	\$11.3		Negotiating with banks and bondholders
Spreckels Industries, Inc.	\$54.2		Made September interest payment w/in grace period
Thousand Trails, Inc.*	\$12.5		Exchange offer completed
<i>Defaulted Debt (mil):</i>	<i>\$102.3</i>		
<i>Number of Companies:</i>	<i>4</i>		
<hr/> April 1992			
Pathe Communications Corporation	\$34.9	\$17.0	Bank services debt until May 1993
Ladish Company, Inc.*	\$110.0		Negotiating with banks & noteholders
Savin Corporation*	\$10.2		In Chapter 11
SPI Holding, Inc.	\$296.2		Emerged from Chapter 11; reorganization complete
<i>Defaulted Debt (mil):</i>	<i>\$451.3</i>		
<i>Number of Companies:</i>	<i>4</i>		
<hr/> May 1992			
Alliant Computer Systems Corporation	\$39.2		In Chapter 11
American Eagle Petroleum Ltd.*	\$8.9		Negotiating a restructuring
Florida Steel Corporation	\$125.0		Tender offer outstanding
Heron International Finance N.V.*	\$851.8		Exchange offer outstanding
HomeFed Corporation†	\$118.5		Placed in receivership
Live Entertainment Inc.	\$110.0		Exchange offer outstanding
Mountleigh Group plc*	\$243.8		Placed in receivership
Robertson-Ceco Corporation*	\$62.9		Negotiating with noteholders
Rops Textiles, Inc.*	\$29.0		In Chapter 11
<i>Defaulted Debt (mil):</i>	<i>\$1,589.1</i>		
<i>Number of Companies:</i>	<i>9</i>		

Note: * indicates a company unrated by Moody's

† indicates a company that has debt outstanding that previously carried an investment-grade rating

Chronological List of 1992 Public Corporate Bond Defaults (\$Millions) cont'd

Company	Defaulted Debt	Not Defaulted	Status
June 1992			
Adience Inc.	\$66.0		Negotiating prepackaged reorganization plan
Cook Inlet Communications Corporation	\$51.2	\$43.6	Missed Dec interest & principal payment on zero cpn notes
Bramalea Limited*	\$427.2		Filed for bankruptcy protection in Canada
Lomas Nettleton Mortgage Investors	\$100.0		Negotiating with bondholders
Town & Country Corporation	\$118.9		Missed December interest payment
<i>Defaulted Debt (mil):</i>	<i>\$763.3</i>		
<i>Number of Companies:</i>	<i>5</i>		
July 1992			
<i>Number of Companies:</i>	<i>0</i>		
August 1992			
NRM Energy Company, L.P.	\$102.6		In Chapter 11
DR Holdings Inc.	\$343.9		In Chapter 11
Wang Laboratories, Inc. †	\$440.7		In Chapter 11
<i>Defaulted Debt (mil):</i>	<i>\$887.2</i>		
<i>Number of Companies:</i>	<i>3</i>		
September 1992			
First City Bancorporation of Texas, Inc. †	\$47.7		In Chapter 11
<i>Defaulted Debt (mil):</i>	<i>\$47.7</i>		
<i>Number of Companies:</i>	<i>1</i>		
October 1992			
Rymer Foods Inc.	\$38.6		Exchange offer outstanding
<i>Defaulted Debt (mil):</i>	<i>\$38.6</i>		
<i>Number of Companies:</i>	<i>1</i>		
November 1992			
Cherokee Inc.	\$105.3		Agreement in principle on restructuring
<i>Defaulted Debt (mil):</i>	<i>\$105.3</i>		
<i>Number of Companies:</i>	<i>1</i>		
December 1992			
AM International, Inc.	\$84.0		
Carolco Pictures Inc.	\$49.2		
The Restaurants Enterprises Group, Inc.*	\$265.4		
<i>Defaulted Debt (mil):</i>	<i>\$398.6</i>		
<i>Number of Companies:</i>	<i>3</i>		
Year-to-Date Through December 31	1992	1991	1990
<i>Defaulted Debt (mil):</i>	<i>\$7,608.9</i>	<i>\$20,281.6</i>	<i>\$22,429.5</i>
<i>Number of Companies:</i>	<i>41</i>	<i>94</i>	<i>96</i>

Note: * indicates a company unrated by Moody's

† indicates a company that has debt outstanding that previously carried an investment-grade rating

1992 Corporate Bond Defaults

Adience Inc.

Diversified industrial products manufacturer

\$66.0 mil 15% Senior Subordinated Reset Notes due 1999

• Adience, founded in 1985, expanded its activities through a succession of acquisitions. Positioned in a fairly small market, the company primarily manufactures refractory products (75% of sales) used mostly in basic industries. It also provides, through its subsidiary Information Display Technology Inc., diverse writing and information boards for offices. Finally, Adience supplies other diversified industrial products and services. Its refractory business was directly hit by the severe production drop in the steel industry during the last two years, combined with an unanticipated soft demand from customers in non-basic industries. As a result, Adience's sales in 1991 plummeted by 36% to \$169.6 million from \$263.5 million a year earlier. As operating cash flow (EBITDA) was insufficient to cover interest expense, Adience increased its borrowing under its revolving credit until it ultimately exhausted its bank credit availability. Despite a reduction of operating costs, divestiture of unprofitable entities undertaken in 1991, and the beginning of a sales recovery in 1992, cash flow remained too weak to allow the company to service its debt obligations. With only \$9.6 million in cash at the end of 1991, no external credit facility, and poor operating cash flow, Adience faced a liquidity strain in June with the repayment of \$15 million due under its bank credit facility, as well as \$10 million in interest on the reset notes. The company defaulted on the payment of interest on its reset notes in June.

06/15/92—missed interest payment on 15% notes

10/13/92—announced the possible filing of a prepackaged Chapter 11 reorganization plan

12/29/92—began negotiation with noteholders on a prepackaged bankruptcy plan of reorganization

(Moody's contact: Robert McCreary)

Alliant Computer Systems Corporation

Mini-supercomputer manufacturer

\$39.2 mil 7-1/2% Convertible Subordinated Debentures due 2012

• Founded in 1982, Alliant rapidly became a leading designer and manufacturer of mini-supercomputers by the mid 80s. The company primarily targeted the engineering and scientific computing markets. Facing the aging of its product line, Alliant launched a new generation of supercomputers to boost revenues in January 1990. The transition to a new family of products is a crucial period for a computer manufacturer and Alliant was unsuccessful in managing it. The expected increase in sales did not materialize. In addition, clients were unsatisfied due to deficiencies in operating software and delays in shipment. Although Alliant increased its prices to compensate for the decline in sales volume, it reported a net loss of \$34.4 million, including a write-off of \$24.7 million, at the end of 1990. Despite the introduction of an innovative massively parallel computer in February 1991, sales further deteriorated due to soft demand and the obsolescence of the company's traditional product line. Revenues fell off by 40% to \$43.8 million. For the second consecutive year, Alliant recorded a net loss of \$9.4 million in 1991. At the end of 1991, the company had no credit facility and was forced to rely on its \$4.7 million unrestricted cash to fund its future working capital needs. When sales continued to drop during the first quarter of 1992, Alliant experienced a liquidity crunch and on May 26, 1992 filed for bankruptcy protection under Chapter 11.

05/26/92—filed for bankruptcy protection under Chapter 11

(Moody's contact: Juanita Mayr)

AM International, Inc.

Provides printing-related products and services

\$84.0 mil 12% Senior Subordinated Debentures due 2001

• AM International, Inc., headquartered in Chicago, Illinois, is a worldwide supplier of graphics equipment and services. The company operates through two divisions: AM Graphics and AM Multigraphics. Struggling with an old line of products and a high level of debt coupled with a continuous shuffle in management, AM International filed for bankruptcy protection in the early 1980s. Under the leadership of Merle H. Banta, the company's current chairman, AM International finally emerged from bankruptcy in September 1984. Since then, it has reported periodic profits punctuated by substantial charge-offs. In recent years, weak demand in printing, publishing and advertising markets, the aging of the company's products line in its more profitable segment and the intensification of competition from new technologies such as xerography triggered a drop in revenue and an erosion in backlog level. For the fiscal year ended July 31, 1992, revenues plummeted 28% to \$618.7 million from the \$857.8 million in fiscal 1991 partially due to the sale of assets. As a result, operating losses grew to \$36.5 million and net loss to \$124.8 million, including a \$75 million charge-off for goodwill. In fiscal 1993, the continuing decline in demand further hampered the company's results. For the first three months of operations, AM International posted a 13% decrease in revenues to \$137.3 million. Consequently, net loss widened to \$21.6 million from \$5.8 million in 1991. In its quarterly financial reports, the company stressed that it wouldn't be able to operate as a going concern unless it pursued a restructuring of its balance sheet, including a possible filing for bankruptcy protection under Chapter 11. Given its financial position, AM International voluntarily failed to satisfy its debt obligations in December 1992.

12/15/92—missed interest payment on due 12% debentures

(Moody's contact: Juanita Mayr)

American Eagle Petroleum Limited

Oil and Gas producer

SFr13.3 mil 6-1/2% Swiss Convertible Bonds due 1994 [US\$ 8.9 mil]

American Eagle Petroleum is a Canadian company engaged in the exploration and extraction of oil (one-third of production) and natural gas (two-thirds of production) in Alberta, Saskatchewan, and British Columbia. The company's revenues are highly sensitive to energy price fluctuations. The steady decline in both gas and oil prices for the last ten years seriously affected the company's results. In 1991, the average selling price of a barrel of crude oil diminished by \$3.18 per barrel from the average price in 1990 to stabilize around \$18.42 a barrel. This 15% fall in the oil price contributed to a 20% plunge in total revenues. Revenues amounted to \$19.4 million in 1991 versus \$24.5 million in 1990. As a result, American Eagle reported a net loss of \$51 million including a full cost accounting write-off of \$52.5 million for 1991. In addition, despite the reduction of structural costs, cash flows from operations were insufficient to cover upcoming maturities. Struggling with its poor operating results, American Eagle predictably breached several restrictive covenants of its senior credit agreement. However, banks waived the covenants. A succession of net losses progressively depleted the company's net worth. Consequently, the net worth fell below the \$35 million minimum required in the company's subordinated debt indenture. However, bondholders chose not to force the company to file for bankruptcy. On March 31, 1992, the company announced that it will withhold interest payments on its Swiss convertible bonds due in early May until completion of a recapitalization plan. The company is currently negotiating with its bondholders and senior creditors.

05/04/92—missed interest payment due on 6-1/2% bonds

(Moody's contact: Scott Peterson)

Bramalea Limited

Real estate developer

CS\$151.6 mil Floating Rate Senior Debentures due 1995 [US\$ 126.7 mil]

CS\$84.2 mil 11-1/8% Senior Debentures due 1992 [US\$ 70.4 mil]

CS\$100.0 mil 10-1/5% Senior Debentures due 1999 [US\$ 83.7 mil]

CS\$75.0 mil 10-1/2% Senior Debentures due 1998 [US\$ 62.7 mil]

CS\$100.0 mil 10-1/2% Senior Debentures due 2000 [US\$ 83.7 mil]

Bramalea is a leading property developer in North America, managing a large, diversified real estate portfolio of properties located mainly in Ontario and California. Bramalea is controlled by the Bronfman family through Trizec Corporation, which owns 72% of the company's shares. The collapse of the real estate market, partly due to an excess of space available in the U.S. and in Canada, magnified by the economic recession, severely affected Bramalea's businesses. While revenues from rental operations moderately increased to C\$486.8 million in 1991 from C\$450.2 in 1990, earnings generated by real estate sales plummeted by 32% to C\$355.5 million from C\$522.0 million for the same period due to the weak real estate market and despite the decrease in mortgage interest rates. In addition, interest expense simultaneously rose to C\$195.6 million from C\$161.2 million, further eroding cash flow from operations. At the end of fiscal 1991, Bramalea carried C\$4.7 billion in long-term debt including C\$632.8 million as the current portion of long-term debt due in 1992 on assets of C\$6.2 million. Burdened with a high level of debt and shrinking cash flow, Bramalea was forced to raise cash. The company sold new stock to existing shareholders, which provided C\$76.4 million in April of 1992, and also attempted to sell assets despite an adverse real estate market. Although Bramalea used the proceeds to reduce its long-term debt, it remained highly leveraged. Results from operations continued to deteriorate and the company reported a net loss of C\$18.6 million and a negative cash flow net of capitalized expenses estimated at almost C\$80.0 million for the second quarter of fiscal 1992. Unable to cope with its debt obligations, Bramalea missed the C\$5.1 million in interest expense due at the end of June.

06/30/92—missed interest payment due on 10-1/2% debentures

08/05/92—missed principal payment due on 11-1/8% debentures

09/23/92—reached agreement with debenture holder committee

12/10/92—95% of bondholders approved in principle restructuring plan

12/22/92—filed for bankruptcy protection under the Companies Creditors Arrangements Act in Canada

(Moody's contact: Denis Girault)

Carolco Pictures Inc.

Movie producer

\$33.2 mil 14% Senior Notes due 1993

\$16.0 mil 13% Senior Subordinated Notes due 1996

Carolco, engaged in the production and leasing of motion picture rights worldwide, became one of the most visible movie studios in Hollywood in the short period of time since its establishment in 1986. While the majority of movie makers in Hollywood attempted to reduce production costs in recent years, Carolco offered generous amounts for screenwriters and actors, ballooning up its operating costs. In 1991, successful releases such as "Terminator 2" boosted revenues to almost \$600 million, a 130% increase versus the \$260 million in revenues reported in 1990. However, the increase in feature revenues was somewhat offset by disappointing results at the company's 53%-owned subsidiary, Live Entertainment. Engaged in the distribution and retail of diversified entertainment software, Live Entertainment proved unable to cure its financial problems and ultimately defaulted in May 1992. Although revenues increased, overhead and cost of goods sold expenses exploded to \$125.6 million and \$129.9 million in 1991 from \$18.6 million and \$32.9 million in 1990, respectively. Net loss soared to \$265 million including about \$130 million in extraordinary charges, compared to a net income of \$17.3 million in 1990. As a result, the company was not in compliance with certain covenants of its bank credit agreements. Bank covenants were waived and Carolco reached an agreement on a restructuring with its major shareholders and banks on March 24, 1992. Although the restructuring eased somewhat the company's financial difficulties, it did not cure them. Results remained weak. In addition, Carolco was prohibited from drawing additional funds on its credit lines after it violated the covenants of its amended bank credit agreements in June. Facing maturities at the end of the year and the possibility of an acceleration of debt repayments, the company operated on a day to day basis, selling some assets to alleviate its debt burden. Although Carolco made an interest payment on its 10% private placement in November, it was not able to raise the capital necessary to service its public debt obligations in December.

12/01/92—missed interest payments due on both 14% notes and 13% subordinated notes

12/27/92—filed a restructuring plan with SEC

(Moody's contact: Karl Bergqvist)

Cherokee Inc.

Apparel and footwear manufacturer

\$105.3 mil 15-1/2% Senior Subordinated Reset Notes due 1999

• Cherokee Inc., formally known as Green Acquisition Co., was originally formed by Deutschman Clayton in 1989 to acquire the Cherokee Group in a leveraged buyout. The company, engaged in the design and the manufacture of apparel and footwear goods, came out of the acquisition with a high debt burden representing almost 80% of book capitalization. Positioned principally in moderately priced segments in the highly competitive and volatile fashion industry, Cherokee was seriously affected by the soft retail environment. Although sales increased in fiscal 1991, operating margins were under pressure due to intense competition triggered by the economic slowdown. Fiscal 1992 has been dramatic for the company. Sales plummeted 18% to \$195 million due to the loss of business in private label markets and a decrease in demand from key customers. Interest coverage tests narrowed, both as a result of the erosion of internal cash flow and a coupon reset on the senior subordinated discount notes to 15-1/2% from 9% in May 1992, increasing annual interest expense by approximately \$6 million. Faced with a liquidity problem, Cherokee proposed an exchange offer, which, however, had failed by mid-summer. Left undercapitalized, Cherokee announced that it would miss payment on \$8.2 million of interest due in November. Having no access to external credit facilities, Cherokee could seek protection from creditors under bankruptcy law.

11/01/92—missed interest payment due on 15-1/2% notes

11/10/92—reached an agreement in principle with noteholders on restructuring plan. The plan includes a distribution of almost all the company's common stock and \$53 million of new senior notes.

(Moody's contact: Christian Voss)

Cook Inlet Communications Corporation

TV station operator

\$21.3 mil Zero Coupon Senior Notes due 1992

\$21.8 mil Zero Coupon Senior Notes due 1993

\$21.8 mil Zero Coupon Senior Notes due 1994

\$29.9 mil 13-7/8% Subordinated Debentures due 1997

• Cook Inlet Communications (CIC), owned by Aleut and Eskimo shareholders, was formed in 1985 to acquire WTNH-TV, a New Haven/Hartford affiliate of ABC, from Capital Cities Communications, Inc. At the time of the debt-financed transaction, WTNH had an estimated market value of \$200 million, about 12 times its 1985 operating cash flow. Because of the tax advantages that accrue to the seller of a broadcast property to a minority group, Capital Cities sold the station to Cook Inlet Communications for \$170 million. Although WTNH is one of the top stations in its market, the company has been hit hard by the recession and the subsequent drop in advertising revenues during the past three years. National advertising revenues (about 53% of gross operating revenues) dropped 22% from \$25.1 million in 1989 to \$19.5 million two years later and, although local advertising revenues (about 41% of revenues) increased slightly from 1989 to 1990, local revenues fell about 18% from \$19.1 million in 1990 to \$15.7 million in 1991 as the local economy worsened. During this time, operating expenses remained relatively constant at about \$18 million. By December 1991, net operating income had fallen to \$15 million from almost \$21 million in 1989. The burden of the debt assumed to finance the 1985 acquisition remained high. CIC has repaid almost \$32 million of its bank debt over the course of the last three years, decreasing its bank loan interest expense from \$5.1 million in 1989 to \$1.7 million in 1991 but simultaneously depleting its cash reserves, which dropped to only \$731,799 at 12/31/91 from more than \$2.5 million at the beginning of the year. In addition, certain covenants of the bank credit agreement were triggered. Although the covenants were waived by the banks, CIC agreed to repay the entire amount due under its bank credit agreement (about \$14 million at 12/31/91) during 1992. In addition to that obligation, CIC's Series 1 zero coupon senior notes mature in December 1992, bringing the total amount of principal repayments due to about \$38 million. According to the company's 1991 annual report, "[projected] cash flows from operations will not be sufficient to fund these required principal reductions..." CIC's cash position did not improve during the first six months of 1992. Net operating income was only \$5.5 million, while \$4.2 million was paid to reduce the principal of the bank loan. CIC was unable to make the \$2.1 million interest payment due on its subordinated debentures on a timely basis.

06/15/92—missed interest payment due on 13-7/8% debentures

07/92—made interest payment within grace period

12/12/92—missed principal payment due on zero coupon notes

12/15/92—missed interest payment on 13-7/8% debentures

(Moody's contact: Karl Bergqwist)

Del Norte Funding Corporation

Provides financial services to El Paso Electric Company

\$158.4 mil 11-1/4% Secured Lease Obligation Bonds due 2014

\$25.8 mil 9.95% Secured Lease Obligation Bonds due 1998

\$15.8 mil 9.05% Secured Lease Obligation Bonds due 1993

• See El Paso Electric Company

01/08/92—filed for Chapter 11 bankruptcy protection

09/08/92—filed reorganization plan

11/18/92—reorganization plan approved by bankruptcy court

(Moody's contact: F. Joseph Messina)

DR Holdings Inc.

Hardware and software producer

\$343.9 mil 15-1/2% Senior Subordinated Debentures due 2002

• In 1989, DR Holdings was formed by J.H. Whitney & Co., a private investment company, for the purpose of acquiring Prime Computer, Inc. through a leveraged buyout. As a holding company, DR Holdings' only source of revenues were the dividends paid by Prime. In acquiring Prime, DR Holdings gambled that increasing cash flows stemming from Prime's strong market position in an expanding computer industry would be sufficient to redeem the debt incurred during the LBO. However, Prime's operating cash flow was insufficient to meet its growing fixed-charge obligation. DR Holdings failed to anticipate the rapid obsolescence of Prime's hardware products line and underestimated the volatility of the computer industry. Although Prime expanded its product mix to include software, the introduction of the new software products was insufficient to offset the decrease in sales of hardware. In addition, Prime suffered from weak worldwide economic conditions and customers delaying their investment in new hardware systems while waiting for the introduction of new hardware generations. As a result, cash flow provided by operating activities before working capital changes decreased from \$202.7 million in 1990 to \$77.1 million in 1991. In December 1991, Prime's senior credit agreement was amended to give it some financial flexibility. However, the amended credit agreement prohibited DR Holdings from making the cash interest payment on its 15-1/2% senior subordinated debt until the full repayment of Prime's bank credits. In 1992, the combined effect of the persistent decline in sales of the hardware line and the unfavorable economic environment continued to narrow sales. Struggling with high interest expense from the 1988 debt-financed acquisition of Computervision Corporation and deteriorating cash flow, Prime was forced to undertake a recapitalization. In June 1992, Prime made a public offering of a combination of common stock and long-term securities. Because the proceeds of Prime's recapitalization would not be used to redeem DR Holdings' debt, DR Holdings, facing a reduction of its ownership in Prime, was forced to file for bankruptcy protection under Chapter 11.

08/26/92—filed for bankruptcy protection under Chapter 11

(Moody's contact: Craig Fitt)

El Paso Electric Company

Electric Utility

\$10.4 mil 4-5/8% First Mortgage Bonds due 1992

\$24.8 mil 6-3/4% First Mortgage Bonds due 1998

\$15.4 mil 7-3/4% First Mortgage Bonds due 2001

\$25.0 mil 8-1/2% First Mortgage Bonds due 2007

\$20.0 mil 9% First Mortgage Bonds due 2004

\$18.6 mil 9.95% First Mortgage Bonds due 2004

\$15.0 mil 10-1/2% First Mortgage Bonds due 2005

\$153.0 mil 11.1% First Mortgage Bonds due 2001

\$23.6 mil 13-1/4% First Mortgage Bonds due 1994

• Created in 1901, El Paso Electric generates and provides electricity to approximately 250,000 customers in El Paso and the Rio Grande Valley in Texas and in southern New Mexico. The company recently faced a liquidity crisis directly related to its heavy investment in the Palo Verde Nuclear Generating Station in Arizona. Development costs exceeded estimates considerably due to the unfamiliarity of management with this type of project and continuous changes in government regulations. Subject to stringent regulations on rates enacted by the Public Utility Commission of Texas (PUCT), the company was not allowed to reflect the total costs of its investment in Palo Verde in its rates. Given the \$550 million plus of debt obligations due at the end of 1991, El Paso was forced to restructure its debt. As a part of its restructuring plan, the company requested a \$131 million increase in rates in July 1991 from the PUCT. Although the Commission ordered a \$52 million increase in November, the increase was insufficient to meet the company's needs. During this time the company was negotiating with its creditors. The Commission's decision regarding the rate increase seriously compromised the on-going negotiations and no agreement was reached. As a result letters of credit were withdrawn. However, El Paso did receive an extension on \$400 million of bank credit facilities until January 31. On January 2, El Paso skipped lease payments of \$20 million. Following the PUCT's refusal to grant any additional increase of rates on January 8, 1992, El Paso filed for Chapter 11. El Paso is only the second U.S. investor-owned electric utility to file for bankruptcy protection since the Great Depression, following Public Service of New Hampshire's bankruptcy in 1988.

01/08/92—filed for Chapter 11 bankruptcy protection

09/08/92—filed reorganization plan

11/18/92—reorganization plan approved by bankruptcy court

(Moody's contact: F. Joseph Messina)

El Paso Funding Corporation

Provides financial services to El Paso Electric Company

\$14.5 mil 8.1% Lease Obligation Bonds due 1992

\$24.1 mil 9.2% Lease Obligation Bonds due 1997

\$59.2 mil 9-3/8% Lease Obligation Bonds due 1996

\$107.7 mil 10-3/8% Lease Obligation Bonds due 2011

\$311.3 mil 10-3/4% Lease Obligation Bonds due 2013

• See El Paso Electric Company

01/08/92—filed for Chapter 11 bankruptcy protection

09/08/92—filed reorganization plan

11/18/92—reorganization plan approved by bankruptcy court

(Moody's contact: F. Joseph Messina)

Envirodyne Industries, Inc.

Diversified plastic containers producer

\$168.0 mil Zero Coupon Senior Discount Notes due 1997

\$200.0 mil 14% Senior Subordinated Debentures due 2001

\$91.4 mil 13-1/2% Subordinated Notes due 1996

• Founded in 1970, Envirodyne is a food packaging producer that operates through three subsidiaries. Viskase Corporation, the main subsidiary, manufactures cellulosic casings and plastic films for the food industry. Sandusky Plastics and Clear Shield National, the two other subsidiaries, are respectively engaged in manufacturing plastic containers and producing disposable plastic cutlery and drinking straws. All three subsidiaries are leaders in their respective segments. In addition to plants located in the U.S., the company owns factories in Europe and Canada. As a result of a \$736 million leveraged buyout in 1989, interest expense increased to \$102 million in 1990 from \$72 million the previous year, while operating margins deteriorated. Due to liquidity difficulties, Envirodyne entered into a \$170 million sale/leaseback transaction in December 1990. Although the company reduced debt by \$170 million and extended maturities, high interest expense was replaced by rental payments as a drag on cash resources. For the nine months ended September 30, 1991, the company recorded a decrease in sales of 3.2% compared to the same period in 1990 and operating margins dropped from 13.2% to 9%, mainly due to an increase of price competition in Clear Shield's markets and to technical problems in plastic film production which caused the temporary loss of customers. Faced with \$33.2 million of lease rental and interest payments in February 1992 and a severe liquidity crunch, the company announced that it would not pay \$14 million in interest due February 1, 1992. It also disclosed its intention to proceed with an exchange offer.

02/03/92—missed interest payment due on 14% senior subordinated debentures

06/15/92—missed interest payment due on 13-1/2% subordinated notes

11/19/92—reached agreement in principle with noteholders

01/07/93—filed for bankruptcy protection under Chapter 11

(Moody's contact: Karl Bergqvist)

First City Bancorporation of Texas, Inc.

Bank

\$22.2 mil 13-1/4% Notes due 1992

\$10.2 mil Floating Rate Notes due 1995

\$15.3 mil Floating Rate Notes due 1996

• First City Bancorporation of Texas (FCBT), a Texas-based bank holding company operating 20 banks in the state, built a significant loan portfolio in the oil drilling industry as well as in real estate during the boom years of the oil industry. However, FCBT suffered from the local economic turmoil provoked by the collapse of oil prices in the early 80s. Struggling with increasing non-performing assets coupled with depressed real estate values, FCBT was forced to pursue a restructuring in 1987. After months of negotiations, a private investor group led by Robert Abboud in association with the investment bank Donaldson, Lufkin & Jenrette acquired FCBT through a FDIC-assisted purchase in April 1988. Almost \$1.5 billion—including federal assistance of approximately \$1 billion—was invested to recapitalize the failing bank. In addition, to strengthen the company's balance sheet, a collecting bank was set up to liquidate FCBT's non-performing assets. Investors anticipated a steady and significant recovery of the state economy that would enable FCBT to return to profitability. However, the recovery was slow to materialize and the recapitalization was insufficient to insure the long-term viability of FCBT. As the recession dragged on, non-performing assets continued to rise. In addition, the collecting bank encountered difficulties recovering on FCBT's bad loans, further pressuring FCBT's cash flow. FCBT accumulated losses, quarter after quarter, due to continuing declines in asset quality and high operating expenses, despite an intensive cost-reduction program. At the end of 1991, net losses jumped to \$224.8 million from \$158.3 million in 1990, while non-performing assets increased by 35% to \$667.0 million in 1991. FCBT fell out of compliance with regulatory capital minimums. To avoid a new federal bailout, FCBT released a recapitalization plan to cure its capital problem. Because the plan is still pending, FCBT has elected to withhold principal payment on its public notes.

09/15/92—missed principal payment due on 13-1/4% notes

10/15/92—made interest payment on notes due 1996

10/31/92—noteholders forced the company into bankruptcy under Chapter 11

(Moody's contact: Gunther Stur)

Florida Steel Corporation

Steel producer

\$125.0 mil 14-1/2% Subordinated Debentures due 2000

• Taken private in a management-led leveraged buyout in July 1988, the company has struggled with high interest expenses due to a heavy debt burden. Florida Steel is an efficient and low-cost steel producer that operates five electric steel mini-mills and several manufacturing plants in the Southeast. After two years of flat sales, the company's activities were seriously hurt by the combined effect of decreasing prices in the steel industry and a significant downturn in the construction industry, which generally accounts for 80% of company's revenues. As prices diminished, operating margins shrank and operating cash flow (EBITDA) decreased by almost 40% to \$43 million in fiscal 1991 from \$71 million in fiscal 1990, while interest expense remained around \$35 million. Due to its poor operating results, the company was not in compliance with its bank credit covenants. However, Florida Steel obtained waivers for a leeway period of six months. Despite the improvement of operations during the second quarter of 1992, the company again breached certain covenants. Although the bank group granted an extension of the waivers to September 31, 1992, it also blocked the company from remitting \$9 million in interest due on the subordinated debentures.

05/15/92—missed interest payments due on 14-1/2% debentures

06/26/92—Kyoei Steel, Ltd., a Japanese mini-mill, agreed to acquire the company by the end of 1992

09/22/93—announced the beginning of a tender offer

12/21/92—parent company, FLS Holdings Inc., acquired by Kyoei after the expiration of tender offer

(Moody's contact: Robert McCreary)

Galactic Resources Ltd.

Gold mining company

\$31.1 mil 7% Exchangeable Debentures due 1995

• Galactic, a Canadian company headquartered in Vancouver, British Columbia, is engaged in exploration, development and extraction of mineral resources with an emphasis on the discovery of precious metals. At the end of September 1991, the company operated two mines, Ivanhoe and Summitville, located in Nevada and Colorado and had a 48% interest in Ridgeway mine, South Carolina, managed by Kennecott Ridgeway Mining Company. In addition, Galactic owned or leased exploitable properties in the U.S. and Canada. During the first nine months of 1991, harder ore requiring the installation of a second ball mill at Ridgeway led to a decrease in the quantity of Galactic's share of gold sold to 46,200 ounces versus 63,100 ounces in 1990. The company was also affected by a drop in the average market prices of gold from \$417 per ounce in 1990 to \$394 in 1991. In addition, production levels at Ivanhoe, where mining began in October 1990, did not meet projections. As a result, operating cash flow was negative \$2.8 million. In order to finance future development costs of the Ivanhoe property including capital expenditures and debt repayments required in the project agreement, on December 24, 1991 Galactic sold its 48% stake in Ridgeway for \$16 million in cash and the assumption of an estimated \$20 million in related debt to its co-owner, Kennecott. However, the company will report a \$11.7 million loss for the sale. Given the on-going operations and the current level of gold prices, as well as rising environmental costs due to stringent environmental regulations, the company decided to reorganize its operations. Galactic announced on January 31, 1992 that it would not make the \$1.1 million interest payment due on that date on its 7% debentures and was working on a restructuring proposal that will be presented to the debenture holders by February 15, 1992. At present each \$1,000 debenture is exchangeable for 16.15 shares of Newmont (held in trust by Galactic) and 50.72 shares of Galactic.

01/31/92—missed interest payment due on 7% debentures

12/22/92—announced that it may seek bankruptcy protection

(Moody's contact: Robert McCreary)

Heron International Finance N.V.

Diversified international company

SFr138.4 mil 5-1/4% Eurobonds due 1994 [US\$ 91.7 mil]

SFr138.4 mil 5-1/2% Eurobonds due 1996 [US\$ 91.7 mil]

SFr136.0 mil 5-1/2% Eurobonds due 1999 [US\$ 90.1 mil]

SFr139.0 mil 5-5/8% Eurobonds due 1995 [US\$ 92.1 mil]

SFr93.0 mil 6% Eurobonds due 1995 [US\$ 61.6 mil]

SFr138.2 mil 6-3/8% Eurobonds due 1999 [US\$ 91.5 mil]

ECU60.0 mil 9-3/8% Eurobonds due 1997 [US\$ 75.0 mil]

ECU19.7 mil 11% Eurobonds due 1997 [US\$ 24.6 mil]

DM100.0 mil 7-1/4% Eurobonds due 1995 [US\$ 61.0 mil]

FFr400.0 mil 8-5/8% Eurobonds due 1993 [US\$ 72.5 mil]

\$100.0 mil Floating Rate Notes due 1993

• Incorporated in the Netherlands Antilles, Heron International Finance N.V. is a holding company which principally operates through Heron International plc, a subsidiary registered in the United Kingdom. Heron's business consists of real estate development, automotive vehicle distribution, gasoline retailing, and goods transportation. Revenues generated in the U.K. generally account for 80% of total revenues. In fiscal 1991, Heron reported a 20% net decrease in revenues following an increase of 14% in fiscal 1990. In fiscal 1992, like Olympia & York, Mountleigh, or other well-publicized real estate company failures, Heron suffered from the downturn of the real estate market in the U.K. as well as in continental Europe and in the United States. In addition, the worsening of the economic recession put further pressure on the company's commercial activities. Gambling on bondholders' reaction, the company announced its intention to suspend all future debt payments on March 27, 1992. With this announcement, the company put itself in technical default with regard to the indentures of its subordinated debt. As a result several lead managers of the Swiss Franc-denominated subordinated debt, doubtful of the company's ability to shore up its revenues, declared the bonds in default and enforced their rights to accelerate the debt repayment. However, Heron was not able to raise the capital necessary to satisfy its obligations.

05/08/92—missed repayments on subordinated issues denominated in Swiss Francs

06/26/92—missed interest payment due on the subordinated debt denominated in Deutsch Mark

09/09/92—made interest payment due on DM-denominated debt and partial payments on previously defaulted issues

11/26/92—missed balance interest payment on 8-5/8% eurobonds

12/14/92—missed balance interest payments on both 9-3/8% eurobonds and 11% eurobonds

12/26/92—missed balance interest payment on floating rate notes

(Moody's contact: Denis Girault)

HomeFed Corporation

Thrift

\$118.5 mil 6-1/2% Convertible Subordinated Debentures due 2011

• HomeFed Corporation is a savings and loan holding company that operates 201 branches in California through wholly-owned subsidiary HomeFed Bank, FBS. The company also controls two other companies that invest in real estate development businesses: HomeFed Communities, Inc. and HomeFed Resources Corporation. As many of the savings & loans did in the early 80s, HomeFed lent and invested money in commercial real estate projects. By 1990, the company's first financial difficulties appeared when the real estate markets in the Mid-Atlantic and Southeastern areas suffered. Later the decline of the California market resulted in further deterioration of the company's already precarious financial situation. At the end of 1991, its net loss reached a staggering \$808 million, up from \$248 million in 1990, and its ratio of non-performing assets to total consolidated assets more than doubled, from 6.4% in 1990 to 14.8% in 1991. The 1991 loss primarily resulted from total provisions for bad loans and losses of almost \$797 million. Because of the loss, the company's capital has been negative since September 1991. On April 3, 1992, the Office of Thrift Supervision notified the company that it had been placed under the Accelerated Resolution Program (ARP). ARP is a government program whose objective is to sell troubled institutions in order to protect their franchise value before placing these institutions under conservatorship or receivership. While seeking a buyer, the government agency prohibited all cash outflows to bondholders and shareholders, including the \$3.8 million interest payment on May 15, 1992.

05/15/92—missed interest payment due on 6-1/2% debentures

07/06/92—seized by government and placed in receivership

(Moody's contact: Scott Peterson)

Ladish Company, Inc.

Forged and formed metal parts manufacturer

\$110.0 mil 11-3/4% Subordinated Notes due 1997

• Ladish, acquired in a leveraged buyout in 1987, is a leading manufacturer of forged and formed metal components destined for use in three different industries: commercial aerospace, defense, and industrial. Each industry provides approximately one-third of the company's revenues. As a result of the LBO, the company was left highly leveraged, with equity at less than 10% of capitalization. Positioned in two cyclical industries, Ladish suffered from the negative effects of the current economy and a slackening demand in the aerospace industry. Under the impact of military budget cuts, management adopted a wait-and-see policy due to the uncertainty of future funding for certain military programs. Consequently, for the first nine months of 1991 sales decreased by 12%, from \$231 million in 1990 to \$204 million in 1991. Despite the implementation of a cost reduction plan, reductions were insufficient to counterbalance dwindling revenues. Sales activity did not improve much during the last quarter of 1991 and Ladish recorded a net loss. In addition, the company was forced to close its wholly-owned subsidiary Ladish Pacific, Inc., in January 1992. Because of its poor results, Ladish was no longer in compliance with its senior loan agreement covenants. Its major lending bank, Barclays Business Credit, Inc., precluded the company from paying the \$6.7 million interest due on April 1.

04/01/92—missed interest payment due on 11-3/4% notes

(Moody's contact: Robert McCreary)

Live Entertainment Inc.

Diversified entertainment software distributor and retailer

\$110.0 mil 14-1/2% Subordinated Notes due 1999

• Created in 1988, Live Entertainment is engaged in the distribution of home video films and the retail sale of diversified video and audio products through 139 stores under the names "Strawberries" and "Waxie Maxie". The stores are located in the Northeast of the United States. In 1991, Live sustained a 11% drop in sales due mainly to the soft retail environment in the Northeast. The home video subsidiary suffered from disappointing home video rentals and an unusually high level of returns. In addition, retail division sales were hurt by a lack of audio hits and a liquidity drain that provoked a shortage of supplies and froze store renovations and expansions. Consequently, EBIT dropped from \$62.7 million in 1990 to \$17.4 in 1991. At the end of 1991, Live had only \$12 million in unrestricted cash available, while \$65 million outstanding under its bank facility was coming due. However, repayment was extended to December 2, 1992 and covenant violations waived. The amended revolving credit agreement stipulated that Live must reduce the borrowed amount to \$35 million through mandatory repayments by October 13, 1992. With limited existing credit to fund its on-going operations and negative cash flow from operations, the company sought funding alternatives. In addition, the company's major shareholder, Carolco Pictures Inc. which owns 53% of the company, underwent a major restructuring. Both companies received qualified opinions from auditors citing doubt regarding their ability to continue as ongoing concerns. Unable to provide funds to service its obligations, Live defaulted.

05/15/92—missed interest payment due on 14-1/2% notes

09/15/92—filed a prepackaged reorganization plan with SEC

(Moody's contact: Karl Bergqvist)

Lomas & Nettleton Mortgage Investors

Real Estate Investment Trust

\$100.0 mil 10-1/2% Subordinated Notes due 1993

• Lomas & Nettleton Mortgage Investors (LNMI), a wholly-owned subsidiary of Lomas Financial Corporation, is a real estate investment trust (REIT) that invests in real estate and lends capital to property developers in the form of mortgage loans. Revenues generated are passed through to shareholders. The collapse of the real estate market in the U.S., largely due to an excess of new properties and the effect of the economic recession, put the company's operating cash flow under pressure. Because of the deterioration of revenues due to the increase of non-performing assets and the reduction of funding available to new investment, LNMI rapidly encountered severe financial difficulties magnified by the exhaustion of its external credit facility. The reduction of funding for real estate projects forced the company to cease its investing activities by 1991, which ultimately triggered the shrinkage of its real estate and loans portfolio. Although LNMI liquidated assets in adverse market conditions to deleverage its debt burden and to reduce interest expense, operating cash flows further deteriorated due to the increase of non-performing assets. At March 31, 1992, non-performing assets totaled \$189.4 million (47% of total assets), up by 11% from \$170.3 million (36% of total assets) at the end of fiscal 1991, while revenues collected on mortgage loans, investments and foreclosed real estate plunged 54% to \$15.9 million for the first nine months of fiscal 1992 from \$34.7 million for the same period in 1991. A possible violation of covenants under the senior credit agreement, a probable failure to comply with the REIT status, and the anticipation of a rise in non-operating assets led LNMI to initiate the negotiation of a restructuring and to suspend interest payment on its subordinated debt.

06/01/92—missed interest payment due on 10-1/2% notes

12/20/92—changed its name to Liberte Investors

(Moody's contact: Deborah Perry)

Marquest Medical Products, Inc.

Medical equipment supplier

SFr17.1 mil 6% Eurodebentures due 1994 [US\$11.3 mil]

• Based in Englewood, Colorado, Marquest Medical is a manufacturer and distributor of disposable medical devices and equipment used in hospitals. Since its formation in 1979, Marquest has enjoyed a good market position in its niche businesses in the North American market in spite of its fairly small size. Historically, the company has primarily relied on bank debt to fund its operations. In addition, Marquest diversified its funding sources by doing an IPO in 1983 and by selling SFr25 million in Eurobonds in 1986. The funds raised were primarily used to repay bank debt. For the two fiscal years prior to fiscal 1992, the company broke even. In August 1991, Marquest was not in compliance with the manufacturing practice regulations enforced by the FDA. Consequently, the federal agency shut down production lines and suspended distribution activities. The interruption of operations lasted for 5 months until January of 1992, when Marquest was allowed to resume its operations after moving to accept the FDA's regulatory requirements. As a result, revenues from continuing operations for fiscal 1992 plummeted 36% to \$30.3 million from \$47.1 million the previous year and a net loss of \$10 million was reported. The company's precarious financial position was further pressured when the bondholders of the Swiss debentures decided early January 1992 to exercise their put option rights to tender for redemption on March 11, 1992. In addition, Marquest was forced by its bank to pay down its outstanding revolving credit on February 24, 1992. The bank line, repayment of which was mostly financed by the proceeds of the divestiture of non-core businesses, was subsequently terminated. Lacking liquidity, Marquest failed to redeem the Eurobonds by mid-March. After its default, Marquest attempted to restructure its debt without success. On December 17, 1992, the company announced its intention to proceed with a bankruptcy filing under Chapter 11 unless a restructuring agreement could be promptly reached with its creditors.

03/11/92—missed interest and principal payments due on 6% debentures

(Moody's contact: Randal Gaulke)

McCrorry Corporation

Discount and Variety Store Operator

\$14.8 mil 7-1/2% Sinking Fund Debentures due 1994

\$11.8 mil 7-5/8% Sinking Fund Debentures due 1997

\$14.7 mil 7-3/4% Sinking Fund Debentures due 1995

\$26.0 mil 9-1/2% Sinking Fund Debentures due 2008

\$28.2 mil 9-5/8% Sinking Fund Debentures due 2008

\$39.5 mil 9-3/4% Sinking Fund Debentures due 2008

\$3.4 mil 6-1/2% Convertible Debentures due 1992

\$1.1 mil 6-1/2% Convertible Debentures due 1994

\$75.0 mil Senior Subordinated Exchangeable Variable Rate Notes due 1994

• In a complex transaction including transfer of ownership, Riklis Holding Corporation, controlled by the financier Meshulam Riklis, acquired McCrorry Parent Corporation and its wholly-owned subsidiary McCrorry Corporation from E-II Holding in December 1990. Following the transaction, McCrorry Parent Corporation and E-II Holding defaulted respectively in March and April 1991. McCrorry manages over 1,000 variety stores under several names. The stores are primarily located along the east coast, with additional stores in California and Texas. The company, positioned mainly in the low price range, was particularly hurt by the lingering effects of the recession. Revenues were also affected by the closing of 91 unprofitable stores. Although management attempted to boost sales by selling off inventory through promotions, narrowed operating margins resulted. For the first nine months of fiscal 1992, sales decreased by 9% from the previous year to \$961 million. While McCrorry's net loss remained flat at about \$42 million, operating cash flow improved from a \$63 million deficit to a \$5 million deficit due to the reorganization. In addition, suppliers voluntarily limited their credit granted to the company resulting in a shortage of supplies. Although McCrorry had sufficient cash to meet 1993 debt maturities despite a sales decline in fiscal 1992, a liquidity crisis developed on July 15, 1992 when holders of \$75 million of senior subordinated notes exercised their right to tender for redemption. On February 15, 1992, the company decided to withhold the \$3.5 principal and interest payments due on its 6-1/2% convertible subordinated debentures.

02/15/92—missed principal and interest payments on 6-1/2% convertible debentures due 1992

02/26/92—filed for Chapter 11 bankruptcy protection in the Southern District of New York

12/07/92—announced the filing of a reorganization plan, which is expected to pay bondholders in full

(Moody's contact: Richard Mercier)

Mountleigh Group plc

Real estate developer

SFr118.8 mil 5-1/4% Eurobonds due 1995 [US\$ 80.3 mil]

SFr105.2 mil 5-3/4% Eurobonds due May 1992 [US\$ 71.1 mil]

SFr87.9 mil 5-3/4% Eurobonds due June 1992 [US\$ 59.4 mil]

SFr48.8 mil 3-1/4% Convertible Eurobonds due 1997 [US\$ 33.0 mil]

• Mountleigh grew from a small textiles group in the 70s, into one of the largest real estate companies in the U.K. under the control of its former chairman Tony Clegg in the 80s. The company was known as one of the fastest growing in the country. The group was sold in 1989 to two American investors, Nelson Peltz and Peter May. Although the company diversified its activities by acquiring real estate companies in continental Europe and moving into the retail industry in Spain, it was directly hit by the collapse of the U.K. real estate market. When the value of its property portfolio shrank, Mountleigh attempted to sell off assets, including its largest asset, Merry Hill (a shopping mall in West Midlands), to fulfill its debt obligations. Unable to obtain adequate bids for its real estate property, the company gave up its divestment policy and was forced to enter into negotiations with its senior lenders to restructure its debt burden. Unable to reach an agreement, the company, with total liabilities estimated at \$1 billion, was placed in receivership on May 25, 1992.

05/25/92—placed in receivership

(Moody's contact: Robert McCreary)

NRM Energy Company, L.P.

Oil and Gas producer

\$102.6 mil 13-7/8% Senior Notes due 1999

• NRM Energy Company, L.P. (NRM) is a wholly-owned subsidiary of Edisto Resources Corporation (Edisto), a holding company engaged in oil and gas exploration and production, and natural gas transmission and marketing. NRM performs the onshore operations for the benefit of Edisto. While results from operations substantially improved in 1990 as a result of a temporary increase in oil prices due to the Gulf conflict, results in 1991 decreased because of depressed natural gas prices. Revenues in 1991 fell 17%, in part due to the sale of productive assets during the year, on which the company reported losses. In 1992, the average gas price per thousand cubic feet dropped by 9% during the first six months of the calendar year versus the average price for the same period in 1991. As a result, net cash flow provided by operating activities amounted to \$2.2 million at June 30, 1992 compared to \$5.9 million the previous year. Meanwhile, borrowings continued to go up. In February 1992, the company sold an oil production payment to Enron Gas Services for \$18 million, temporarily alleviating its short-term liquidity problem. The lack of financial flexibility prevented NRM from maintaining its base of oil and gas reserves and servicing its debt on a regular basis. Despite several amendments of its bank debt, which eased debt requirements, NRM had no alternative other than to propose a restructuring of its balance sheet. With its exchange offer pending, NRM announced on August 12, 1992 that the payment of \$7.1 million in interest due on the 13-7/8% senior notes would be omitted. In addition, the company and its parent stressed that unless an agreement with its creditors could be reached in the next months, they would file for bankruptcy under Chapter 11.

08/17/92—missed interest payment due on 13-7/8% notes

10/26/92—filed for bankruptcy protection under Chapter 11

(Moody's contact: Scott Peterson)

Pathe Communications Corporation

Motion picture producer and distributor

\$17.0 mil 12-3/8% Senior Subordinated Notes due 1994

\$31.1 mil 12-7/8% Senior Subordinated Debentures due 2001

\$3.8 mil 8-7/8% Convertible Senior Subordinated Debentures due 2001

• Despite financing difficulties, Giancarlo Parretti, an Italian entrepreneur, managed to raise the funds to acquire MGM-UA Corporation in a leveraged buyout in November 1991. While half of the \$1.3 billion deal was financed by bank loans from the Dutch subsidiary of Credit Lyonnais, the other half came from proceeds of the sale of the United Artists library and a majority of the distribution rights of MGM's library. As a result of this transaction, Parretti stripped the company of substantial future cash flow and forced it to rely principally on the success of new production. At the end of 1990, the newly renamed MGM-Pathe reported a net loss of \$107 million because of too few releases during the year and increased interest expense. This loss further weakened the financial situation of the company, which was already precarious due to transactions initiated by its former owner, Kirk Kerkorian. Credit Lyonnais unsuccessfully pressured Parretti to reduce Pathe's bank debts. The company had counted on revenues from new releases and increased international distribution to pay maturing debt, but the new productions had limited success at the box-office. In Spring 1991, Credit Lyonnais took control of the company. After almost one year during which the bank looked for a buyer, Credit Lyonnais decided to suspend its financial support and to proceed with the foreclosure of Pathe's stake in MGM-Pathe. Consequently, interest payments have been stopped.

04/15/92—missed interest payments due on 12-7/8% and 8-7/8% debentures

05/01/92—Credit Lyonnais agreed to service debt until May 5, 1993

05/08/92—made tender offer for all outstanding debt

05/13/92—made payments within the grace period

06/05/92—tender offer expired

(Moody's contact: Karl Bergqwist)

Perpetual Financial Corporation

Largest thrift in Virginia

\$61.1 mil 7-1/4% Convertible Subordinated Debenture due 2011

• Perpetual Financial Corporation, incorporated in 1987, operated 61 offices in Virginia, Maryland, and the District of Columbia through its wholly-owned subsidiary, Perpetual Savings Bank, F.S.B., acquired in October 1988. Perpetual experienced a continuous deterioration of its asset quality due to an increase in non-performing commercial real estate. Non-performing assets increased from \$184 million or 4.4% of loans in December 1989 to \$477 million or 25% of loans in September 1991. Although the company tried to improve its capital ratios by shedding assets, its poor asset quality depressed returns and required large loss provisions. At the end of fiscal 1991, Perpetual was not in compliance with the FIRREA regulatory capital requirements, and its capital restoration plan was rejected by the Office of Thrift Supervision (OTS) in July 1991 because of the high level of non-performing assets and its negative earnings trend. Consequently, in August Perpetual entered into an agreement with the OTS that would ultimately appoint a receiver pending the sale of the company to a third party under the Accelerated Resolution Program. The objective of this program is to sell troubled institutions prior to placing them in either conservatorship or receivership. Generally, shareholders and bondholders lose their investments under this program. As a result of the company's agreement with the OTS for the appointment of a receiver, Perpetual was not in compliance with the covenants of the indenture of its 7-1/4% convertible subordinated debenture. On January 10, 1992, the Resolution Trust Corporation approved the sale of the thrift to Crestar Financial Corporation and subsequently the company was closed. Through the transaction, Crestar will acquire approximately \$2.6 million in deposits, \$11 million in consumer loans, and 22 additional branches.

01/10/92—seized and sold by government

(Moody's contact: Scott Peterson)

R. H. Macy & Co., Inc.

National retail department store

\$371.2 mil 14-1/2% Senior Subordinated Debentures due 1998

\$377.9 mil 14-1/2% Subordinated Debentures due 2001

\$461.1 mil 16-1/2% Junior Subordinated Discount Debentures due 2006

• In 1986, Macy's management team in association with General Electric Credit Corporation and Goldman Sachs took the company private in a \$3.5 billion leveraged buyout. Macy operated through four regional department store groups: Macy's Northeast, Inc.; Macy's California, Inc.; Macy's South, Inc.; and Bullock's, Inc. and I. Magnin. The purchase of Bullock's and I. Magnin from Federated Department Stores, which filed for Chapter 11 in 1990, further burdened the company. Macy owns or leases 144 department stores located in 18 states. In addition, it operates 107 specialty stores under the names Aeropostale, Charter Club, and Fantasies By Morgan Taylor. Focusing on medium-to-high-priced lines, 79% of the company's sales are from ready-to-wear apparel and accessories and 18% from home products. As the company struggled to cope with the recession and an increasingly competitive retail environment, sales decreased by 7%, from \$7.3 billion in 1990 to \$6.7 billion in 1991, while the company's losses mounted to \$155 million. In addition, inventory reductions and the restriction of promotional events further eroded operating margins to 4.0% in 1991 versus 6.6% in 1990. In May 1991, in an effort to deleverage its capital structure, Macy sold its credit card operations to General Electric Capital. The company also raised equity through the issuance of additional preferred stock for more than \$200 million. In addition, Macy paid back \$40 million of its short-term borrowings by diminishing 50% of its participation in the Valley Fair Shopping Center. At the end of 1991, Macy successfully obtained an amendment of its \$587.7 million credit revolver. However, to obtain the waiver, it agreed to reduce borrowings under this credit agreement by \$225 million during the first quarter of 1992. Despite the debt restructuring, the company remained highly leveraged. For 1992, interest expense was estimated at \$520 million, of which \$400 million was due in cash, in addition to a \$82 million principal repayment. The poor first quarter results recorded after the critical Christmas season accelerated the company's decline. On January 27, 1992, Macy filed for Chapter 11, submitting a debtor-in-possession program. Under the program, management would continue to operate the business and would negotiate new credit to provide working capital.

01/27/92—filed for Chapter 11 bankruptcy protection

(Moody's contact: Pam Stubing)

Robertson-Ceco Corporation

Manufactures building components, provides installation services

\$62.9 mil 15-1/2% Subordinated Notes due 2000

• In November 1990, Ceco Industries and H. H. Robertson merged to form Robertson-Ceco. The new company provides a number of building products (including the manufacture, sale, and installation of commercial building components and of pre-engineered metal buildings) and various services necessary to erect poured-in-place, reinforced concrete buildings. By the end of 1991, beset with unexpected difficulties in completing the merger during the current recession, Robertson-Ceco could not contain serious operational difficulties. In response, the company unsuccessfully attempted to implement a restructuring plan, which included asset sales and a cost-cutting program. At the end of 1991, the company's operating loss rose to \$62.7 million due to a decline in gross margin and a restructuring expense of \$34.8 million. For the first quarter of 1992, revenues plummeted by \$56 million to \$89 million from a \$144 million in the equivalent quarter in 1991. Unable to cope with the deterioration of its businesses, the company faced a liquidity crunch. Although the sale of assets brought cash inflows of almost \$150 million, the proceeds were mostly used to pay back outstanding debt under the company's old revolving credit. The company obtained waivers after it breached the covenants of its bank loan but was requested to cure its non-compliance before April 30, 1992. Still not in compliance at the end of May, the company was prohibited from making the interest payment due.

05/31/92—missed interest payment due on 15-1/2% notes

(Moody's contact: Joseph Chakra)

Rops Textiles, Inc.

Home furnishing textiles manufacturer

\$29.0 mil 13-1/2% Senior Subordinated Notes due 1996

• Rops Textiles was formed to acquire Arley Merchandise Corporation in a management-led leveraged buyout in 1986. The transaction amounted to \$50 million. The company manufactures curtains, draperies, and bed coverings and distributes imported window coverings. Due to the limited number of bondholders, Rops stopped filing financial information with the SEC in 1987. On May 22, 1992 the company filed a prepackaged Chapter 11 voluntary petition. At the filing, Rops had \$65.5 in debt outstanding, including \$29 million in subordinated debt, and total assets estimated at \$13 million.

05/26/92—filed for bankruptcy protection under Chapter 11

07/07/92—bankruptcy court confirmed prepackaged bankruptcy plan of reorganization

(Moody's contact: Christian Voss)

Rymer Foods Inc.

Food processor and distributor

\$38.6 mil 13% Senior Subordinated Sinking Fund Debentures due 1995

• Rymer provides a full line of beef and chicken portion-controlled food entrees for restaurants and other food service customers. In addition, the company imports and distributes seafood products in bulk. Beef and chicken sales represent 40% of total sales each, while the remaining 20% is generated by the sale of seafood products. Operating in highly competitive markets where products are commodity-like, the company failed to remain competitive in a depressed price environment. The increase in processing capacity in the chicken meat industry in recent years—in anticipation of an expansion in demand that failed to materialize—has driven prices down and intensified competition. Simultaneously, meat sales dropped due mainly to a slowdown in frequency of restaurant attendance triggered by the economic recession. Consequently, competition strengthened and margins were further eroded. Although the company implemented a cost reduction program, its efforts to boost competitiveness were insufficient and its customer base shrank further. With revenues under pressure, Rymer relied on its credit line to fund operations. As result of the decision of Continental Bank N.A. to not renew its credit line to Rymer in June 1992, the company had no alternative other than to pursue a restructuring. Following the public announcement of an intended recapitalization in September, Rymer decided to omit the \$2.5 million interest payment due on October 15.

10/15/92—missed interest payment due on 13% debentures

10/29/92—filed a restructuring plan with SEC

12/21/92—SEC declared effective the proposed financial restructuring plan

(Moody's contact: Karl Bergqvist)

Savin Corporation

Office equipment distributor

\$3.9 mil 14% Senior Debentures due 2000

\$1.4 mil Zero Coupon Convertible Senior Subordinated Notes due 1996

\$0.2 mil Zero Coupon Convertible Senior Subordinated Notes due 1996

\$4.7 mil 11-3/8% Subordinated Debentures due 1998

• Originally founded in 1959, Savin grew mainly through acquisitions during the 70s. Although Savin asserted itself as a leading distributor of facsimile machines and copiers in the U.S., the company suffered a succession of poor operating results that progressively eroded its equity. Unable to generate sufficient funds from operations for working capital, Savin had to rely on external financing. HCS Technology, N.V., a Dutch company, which owns more than 50% of the company's stock, helped Savin to obtain short-term credits by backing the company's borrowings. Struggling with its financial difficulties, Savin was forced to delay payments to its sole supplier, Ricoh. As a result, Ricoh held deliveries, which provoked shortage of product. When the company's dealers turned to competitors for substitute products, sales dropped. Despite the sale of the Canadian company's subsidiary, Savin failed to pay back \$10 million in principal due under its senior credit facility in November 1991. That in turn blocked interest and principal payments on the subordinated debentures. Savin has suspended all debt payments since November 1991.

04/01/92—missed interest payment due on 11-3/8% debentures

08/01/92—missed interest payment due on 14% debentures

08/25/92—filed for bankruptcy protection under Chapter 11

(Moody's contact: Juanita Mayr)

Seaman Furniture Co., Inc.

Largest furniture retailer in the Northeast

\$54.8 mil 12% Junior Subordinated Debenture due 1999

• Seaman Furniture, taken private in a \$360 million leveraged buyout by Kohlberg Kravis Roberts & Co (KKR) in 1987, was the largest furniture retailer in the Northeast. At the end of 1991, it operated 37 stores located in Connecticut, New York, New Jersey, Pennsylvania, and Delaware. As a result of the LBO, the company was highly leveraged. In 1989, after missing a crucial debt payment, it was on the verge of filing for bankruptcy protection. However, bondholders agreed to exchange \$150 million in debt for a one-third stake in the company. KKR invested another \$42 million and issued new stock to the lending banks, led by Manufacturers Hanover Trust Corp. Consequently, KKR ownership dropped from 80% to 48%. Subsequently, the company was directly hit by the Northeast's deep economic recession. In addition, new competitors, such as Ikea, the Swedish furniture retailer, entered the market. In 1991, revenues slipped 1% to \$264.3 million. Operating income sank 80% to \$2 million, following a 53% fall in 1990. As the retail furniture market continued to decline, the company's earnings deteriorated further. Despite replacement of the management team in August 1991, Seaman was forced to file for Chapter 11 bankruptcy protection on January 3, 1992 in Manhattan. The company announced its intention to refocus its current business on its principal stores and to close 15 stores representing 20% of the company's sales.

01/03/92—filed under Chapter 11 bankruptcy protection

(Moody's contact: Richard Mercier)

SPI Holding, Inc.*Leading provider of in-room movies for lodging companies***\$221.2 mil 14-7/8% Senior Subordinated Reset Notes due 1999****\$75.0 mil 14-3/4% Subordinated Debentures due 2002**

• In 1987, Spectradyne, a leading provider of in-room entertainment services on a pay-per-view basis, was acquired in an almost half-billion-dollar leveraged buyout by SPI Holding. Spectradyne became a wholly-owned subsidiary and the sole operating auxiliary of the holding company. Two years later, Marvin Davis, through DP Acquisitions Corporation, took SPI Holding private in a second leveraged buyout for a total purchase price of \$680 million, which further leveraged the company's financial structure. Historically, revenues have grown an average of 18% per year. However, cash flows remained weak as SPI grappled with high interest expense. During the last four years, EBITDA fell just short of covering interest expense. As a result, the company borrowed under its bank credit to service debt and to fund capital expenditures. In 1991, having exhausted its credit capacity, facing a cash outflow of \$37.8 million in 1992 for maturities, and the first cash interest payment due on its reset notes on October 1, 1992, SPI's only viable option was to recapitalize its financial structure. A reorganization plan providing a debt swap and \$20 million equity injection from Davis, submitted to the bondholders in October 1991, was rejected. At the end of 1991, the company fell out of compliance with a coverage covenant in its bank credit facility, which led the banks to block payment in the subordinated debt.

04/01/92—missed interest payment due on 14-3/4% debentures

09/17/92—filed a prepackaged Chapter 11 reorganization plan

11/09/92—emerged from Chapter 11

11/23/92—financial restructuring completed

*(Moody's contact: Karl Bergqwist)***Spreckels Industries, Inc.***Sugar producer and diverse industrial products manufacturer***\$54.2 mil 14-1/4% Senior Subordinated Notes payable 1996 to 1998**

• Formed in 1987, Spreckels is primarily engaged in the refinement and marketing of sugar, principally extracted from sugar beets. The sugar business, along with a smaller industrial products division, was acquired from Amstar Corporation in a \$172 million leveraged buyout of the company in 1987. A year later, Spreckels diversified its activities by buying Yale Industrial Products, Inc., a manufacturer of materials-handling equipment for \$32 million. The sugar business represents 60% of the company's sales while materials-handling equipment and industrial products stand for 30% and 10% respectively. In spring 1991, a severe drought in California drastically reduced the bulk of beets harvested, causing a shortage of supply and an increase in raw beet prices. In order to compensate for the shortage of beet sugar and to fulfill demand, the company increased the quantity of processed cane sugar. However, the cost of cane sugar, generally higher than that of beet sugar, strained operating margins. In addition, domestic prices of sugar dropped due to aggressive price competition initiated by other producers. When the company maintained prices, sales were hurt. During the first 6 months of fiscal 1992, sugar sales decreased by 12%. Simultaneously, the company struggled with its deteriorating materials-handling equipment and industrial product businesses, which were hit by recession. In order to make its interest payment in March, Spreckels was dependent on the early March harvest, which would allow it to draw on its credit provided by the Commodity Credit Corporation. However, unexpected heavy rainfall delayed the first harvest of the year. With just \$1.7 million in cash and approximately \$3 million available under its bank revolving credit facility at the end of 1991, the company chose to delay the payment of \$4 million in interest, pending the start of production after improved weather conditions.

03/15/92—missed interest payment due on 14-1/4% senior subordinated note

04/92—made payment within grace period

09/15/92—missed interest payment due on 14-1/4% senior subordinated notes

10/92—made payment within grace period

*(Moody's contact: Karl Bergqwist)***Telemundo Group, Inc.***National Spanish-language television network***\$2.5 mil Zero Coupon Senior Notes due 1992****\$101.0 mil Zero Coupon Senior Notes due 1992****\$103.0 mil Zero Coupon Senior Notes due 1993****\$47.0 mil 13-5/8% Subordinated Debentures due 1998****\$21.3 mil 12% Junior Subordinated Discount Debentures due 2001**

• In 1987, Reliance Group Holding acquired John Blair & Company, a diversified media company, to repel a hostile takeover by McFadden Holdings. With only two Spanish-language television stations remaining after the sale of most of the company's assets, the holding company decided to create a Spanish-language television network and changed the company's name to Telemundo. By the end of 1991, it owned and operated ten television stations and had 32 affiliated television stations, which together covered 42 markets including Puerto Rico—84% of Hispanic households in the country. The creation and development of a national Spanish-language television network was based on the assumption that advertising expenditures targeting Hispanic audiences would increase. The expected increase never materialized, due primarily to the lack of a credible audience measurement system and, in fact, total television advertising expenditures on Spanish language television have remained relatively flat since 1986. In order to attract new sponsors, Telemundo, in association with its main competitor Univision, recently entered into a joint venture with Nielsen Media Research to develop a credible Hispanic TV rating system. But the system will not become fully operational until later this year. Although sales increased continuously since 1987, the company has had operating losses every year. At the end of the first nine months of 1991, the net loss amounted to \$35.3 million and retained cash flow deficit was \$4.4 million. Telemundo's principal shareholder, Reliance, which had provided additional equity over the last few years, decided to suspend its financial support and to write off its investment. Faced with over \$100 million in debt maturities in August 1992, Telemundo was forced to undertake a financial restructuring. On January 15, 1992, Telemundo announced that it would miss the \$3.2 million interest payment due on its subordinated debentures and that it would unveil a restructuring plan by March.

01/15/92—missed interest payment due on 13-5/8% subordinated debentures

03/31/92—missed interest payment due on 12% junior debentures

08/15/92—missed principal payments due on the two zero coupon notes

(Moody's contact: Karl Bergqwist)

The Horn & Hardart Company

Eighth largest direct marketer in the United States

\$24.3 mil 14% Senior Subordinated Debentures due 1997

\$14.9 mil 7-1/2% Convertible Subordinated Debentures due 2007

• Known as the inventor of the Automat concept, Horn & Hardart put a definitive end to 80 years in the restaurant business by selling International King's Table in March 1991. When revenues had started to decline in the early 80s, Horn & Hardart defensively launched out into restaurant acquisitions. The succession of rapid acquisitions combined with mismanagement resulted in dramatic losses and burdened the company's capital structure with debt. In 1988, a new management decided to divest the restaurant segment and to refocus on the historically profitable direct marketing business operated by the wholly-owned subsidiary, Hanover Direct, Inc. With 21 specialized catalogs offering diversified consumer products in fashion, giftware, and home furnishing, Hanover is a leading mail order company in the United States. However, despite sale of assets and debt-for-asset swaps, the company soon faced a liquidity crunch. Although Hanover's revenues soared from \$388 million in 1989 to \$556 million in 1990, operating cash flow remained insufficient to allow the company to service upcoming maturities. During 1991, weak economic conditions impaired the company's business, while a rise in postage costs tightened profit margins resulting in further liquidity drains. Hanover suffered from the lack of cash, which led to a shortage of supplies that resulted in order cancellations at an unprecedented level. Despite a recent agreement signed with North American Resources Limited, which granted \$50 million in equity, on March 1 the company failed to pay \$1.7 million in interest due on its 14 debentures as it attempted to grapple with \$150 million in debt maturities in 1992.

03/01/92—missed interest payment due on 14% senior subordinated debentures

05/21/92—reached an agreement in principle with debenture holders on restructuring

09/26/92—exchange of 14% debentures completed

12/10/92—announced immediate exchange of new common stock for 95% of 7-1/2% debentures

(Moody's contact: Christian Voss)

The Restaurant Enterprises Group, Inc.

Restaurant operator

\$186.8 mil 12-1/4% Senior Subordinated Notes due 1996

\$78.6 mil 12-3/4% Subordinated Notes due 1998

• The Restaurant Enterprises Group, Inc. (REG) was formed in 1986 to acquire the restaurant activities of W.R. Grace & Co in a \$750 million management-led buyout. Positioned in three markets, Mexican, family, and dinnerhouse, REG operates about 600 full-service, moderately-priced restaurants, 70 of which are located in California. In addition, the company licenses approximately 190 restaurants located mostly in the Pacific Rim. For each of the five years before 1992, with the exception of 1989, REG reported losses caused by declining revenues, shrinking operating margins, and a high level of interest expense resulting from the LBO. In 1992, the lingering effect of the severe economic recession in California further hampered the company's operations. For the nine months of 1992 ended in September, sales for comparable restaurants decreased by \$19.5 million or 3% compared to sales recorded for the same period in 1991. In addition, a decline in alcoholic beverage sales, for which the company generally enjoyed high margins, also contributed to the deterioration of cash flow. Although the company attempted to spin off assets and pursue lease-back transactions to raise funds, such efforts were insufficient to significantly improve cash flow. REG reported a net loss of \$12.7 million at end of September on \$238.7 million in sales. Despite its unstable financial situation, the company acquired 109 restaurants from Marriott Corporation in early 1992 for a total purchase price of \$68 million, including \$10 million in cash and the balance in fixed income securities. Although the acquisition allowed the company to report an increase in sales to \$238.7 million in September 1992 from \$216.7 million in September 1991 and to provide assets for sale, it also contributed to a substantial increase in capital expenditures. Facing a short-term liquidity problem to finance its daily operations because of its meager cash flow and lack of external liquidity, the company chose successively to omit a partial \$13 million principal payment due on the notes held by Marriott and the \$34 million in interest due on both outstanding publicly-held note issues. On December 16, 1992, REG filed a reorganization plan with the SEC.

12/15/92—missed interest payments due on both public note issues

12/16/92—filed a reorganization plan with SEC

(Moody's contact: Randal Gaulke)

Thousand Trails, Inc.

Membership campgrounds operator

\$12.5 mil 14-5/8% Senior Subordinated Notes due 1992

• While under protection of Chapter 11 bankruptcy law, NACO Finance Corporation (NFC) acquired 69% of the common stock of Thousand Trails (Thousand) and 100% of the common stock of National American Corporation (NACO), two companies operating membership campground resorts and other recreational properties. NFC provided receivable financing for the two operating companies. Since 1988, NACO and Thousand have coordinated their marketing actions and combined their membership programs to support sales in a declining industry. However, the impact was limited. Following an increase in revenues in 1990 to \$58.1 million, revenues plunged to \$39.4 million in 1991 mainly due to a fall in membership. During the same time, operating expenses increased due to aggressive marketing to shore up the decline in membership. Because cash flow was negative, Thousand had no alternative other than to rely on NFC for its working capital needs; the bankruptcy court approved NFC to provide a credit line to Thousand. Although this credit line has eased the company's liquidity problems, Thousand was unable to arrange the financing needed to make principal payment of its subordinated notes due in March 1992. In order to avoid a bankruptcy filing of Thousand, NFC, which changed its name to USTrails upon emerging from bankruptcy in December 1991, offered to swap Thousand's notes for a combination of additional new 12% secured notes due 1998 and warrants of USTrails. In addition, for tax purposes, USTrails completed a tender offer for 11% of the common stock of Thousand, thus increasing its ownership to 81%. On June 12, 1992, the exchange offer of the Thousand's notes was completed; 70% of the holders chose to accept the offer.

03/15/92—missed principal payment due on 14-5/8% notes

06/12/92—exchange offer completed

(Moody's contact: Scott Peterson)

Town & Country Corporation

Leading jewelry manufacturer

\$95.4 mil 13% Senior Subordinated Notes due 1998

\$23.4 mil 10-1/4% Subordinated Notes 1995

• Town & Country, founded by its current chairman C. William Carey in the 50s, established itself as one of the world's largest fine jewelry manufacturers. Initially specializing in supplying independent retailers, the company expanded its business to national retailers, department stores and catalog showrooms during the 80s. The company also made two large acquisitions at the end of 1988, L.G. Balfour Co. and Feature Enterprises Inc., both debt-financed transactions. The acquisitions weakened the company's financial structure and, as a result, Town & Country became more sensitive to economic downturns. Although sales almost doubled to \$424 million in fiscal 1990 from \$240 million a year earlier, operating margins declined and yearly interest expense jumped to \$27 million during the same period from \$14 million in fiscal 1989. However, with the beginning of the recession, consumers proved to be more reluctant to spend on discretionary items such as jewelry, and operating results started to deteriorate. Although the company's subsidiary, Little Switzerland, Inc., a luxury retailer with 17 stores located in the Caribbean, sustained the sagging earnings of the parent company with its steady cash flow, Town & Country was forced to sell 68% of that entity's shares through an IPO in order to raise cash in July 1991. While the company struggled with poor operating performance, it also faced a reduction of orders from its customers spurred by anticipation of a slow Christmas season. In addition, the company voluntarily limited its shipments to certain customers experiencing financial difficulties, which put more pressure on earnings. The bankruptcy filing early this year of Zale Corporation, Town & Country's major client, seriously affected the on-going business. The continuing deterioration in operating results triggered the violation of covenants in the bank agreement. Consequently, the banks blocked payment of interest due mid-June on senior subordinated notes.

06/15/92—missed interest payment on 13% notes

07/01/92—missed interest payment on 10-1/4% notes

07/13/92—made interest payments within grace period

12/15/92—missed interest payment on 13% notes

(Moody's contact: Karl Bergqvist)

Wang Laboratories, Inc.

Computer manufacturer

SFr200.0 mil 4-1/2% Convertible Swiss Bond due 1999 [US\$151.2 mil]

SFr200.0 mil 4-1/2% Convertible Swiss Bond due 2000 [US\$151.2 mil]

\$56.5 mil 7-3/4% Convertible Subordinated Debentures due 2008

\$81.8 mil 9% Convertible Subordinated Debentures due 2009

• Wang Laboratories Inc. (Wang), created in 1951 by prolific inventor An Wang, was a leading computer company in the word processing industry for over thirty years. Wang marketed integrated office automation systems offering both word and data processing in a single system. After decades of growth sustained by the continuous introduction of revolutionary products, competition in the company's traditional strong business niches began to challenge Wang's operations. During the 1980s, inadequate implementation of industrial strategies to cope with changing demand, deterioration of the company's image due to poor customer service, and inaccurate forecasts of future revenues, which led to increased structural costs, severely affected the company's businesses. As a result, cumulative losses for the five years ending 1991 amounted to \$1.5 billion. The company undertook a reorganization and restructuring to remedy its inappropriate expense structure and its business fundamentals. However, Wang's efforts were offset by decreasing demand for its existing product line and a shift to lower-margin products coupled with an increasing price competition. Wang's competitiveness was also altered by its small economies of scale and its continuing financial difficulties, as well as its late reaction to shifts in market demand. Consequently, market share shrank and revenues declined. At the end of fiscal 1991, sales amounted to \$2 billion, a 16% drop versus 1991, and net loss was \$385 million. In 1992, the decline continued. For the nine months ended March 1992, sales, at \$1.4 billion, were almost \$180 million lower than sales in 1991. Aware that the company would not be able to survive given its financial structure and market position without a major restructuring, Wang filed for bankruptcy protection under Chapter 11. At the filing, total debt was estimated at \$1.3 billion for \$1 billion in assets.

08/17/92—filed for bankruptcy protection under Chapter 11

(Moody's contact: Craig Fitt)