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Defaults and Returns on High Yields Bonds: Analysis Through 1994

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REPORT ON

**DEFAULTS AND RETURNS ON HIGH YIELD BONDS:
ANALYSIS THROUGH 1994**

By

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Introduction and Overview

Nineteen-ninety-four was a relatively lackluster year for the high yield market with relatively low defaults combined with slightly negative total returns. When viewed in comparative terms with other fixed income securities markets, however, high yield debt performed quite well. Compared to long term U.S. Government securities, the average yield spread on high yield debt dropped to the lowest year-end level (3.44%) since 1984.

This report documents the high yield debt market's risk and return performance in 1994 by presenting default and mortality statistics and provides a matrix of average returns and other performance statistics over the relevant periods of the market's evolution. Our analysis covers the period 1971-1994 for defaults and 1978-1994 for returns.

Default Rates

During 1994, \$3.42 billion of high yield debt defaulted, was exchanged under distressed conditions or an exchange was announced. This amount was comprised of 24 issues from 18 defaulting companies and resulted in a default rate of 1.45%. A list of 1994 defaults appear in Appendix A. The 1994 default rate was up slightly from 1.11% in 1993 but considerably below the historic weighted average annual rate from 1971-1994 of 4.21% per year (2.76% arithmetic average rate and just 1.60% median annual rate over the same 24 year period). The relevant par value of defaults was about \$1.13 billion greater in 1994 than one year earlier.

Included in 1994 total defaults are seven issues from two relatively large companies (Grand Union and TWA) which announced restructuring efforts but whose bonds had not legally defaulted nor had agreements been reached with their creditors.¹ Without these issues, the 1994 default rate was 0.64%. In the case of the zero-coupon Grand Union bonds, we use the accreted values as the par amount and, for TWA we use the prices that the bonds started trading at in 1993 when they were issued in a prior distressed restructuring (Appendix A).

The 1.45% 1994 default rate is based on a mid-year population estimate of \$235 billion -- an amount that does not include issues that defaulted prior to 1994 but are still

¹Grand Union subsequently declared bankruptcy on January 25, 1995 and announced that it would file a prepackaged plan of reorganization.

trading. **Exhibits 1 and 3** show the annual default rates from 1971-1994 as well as the average annual rates. For those analysts who prefer to calculate the default rate with prior defaults in the population base (\$249 billion), **Exhibit 2** shows that the 1994 rate was 1.37% and the weighted average rate from 1971-1994 was 3.88% per year.

Appendix B calculates default rates on a quarterly basis since 1990 and **Appendix C** lists the defaults since 1970 by industry affiliation. Leisure and entertainment and telecommunication companies topped the list of 1994 failures and indications are that this might continue in the near future.

Default Losses and Recovery at Default

Default losses were also up slightly in 1994 to 0.96% versus 0.56% in 1993 but still far below the average from 1985-1994 of 2.88% per year (3.02 weighted average annual rate). **Exhibits 4 and 5** calculate the 1994 loss rate, which includes the loss of one-half of the average annual coupon, and the default losses for the last ten years.

The average recovery rate on the 22 issues for which we had end-of-default month prices was 39.9% -- incredibly close to the venerable 40% historical average recovery rate and slightly below the average rate since 1985 (44.4% - **Exhibit 5**). **Exhibit 6** lists the recovery rates (prices just after default) by seniority for 1994 and for the past ten years. Most seniority levels recovered lower amounts in 1994 than the historical 10-year average,

especially secured and senior-subordinated debt. Keep in mind, however, that the sample sizes are quite limited. The overall 10-year recovery rate of \$40.95 per \$100 is based on almost 600 issues, however, a very respectable sample.

In **Exhibit 7** we list the average recovery at default stratified by original bond rating for the period 1971-1994 as well as the sub-periods 1971-1987 and 1988-1994. We continue to observe lower recovery rates since 1988, especially in the investment grade original rating categories.² **Exhibit 8** lists the original Standard & Poor's ratings of defaulting issues, as well as the one year and six-months-prior ratings. Of the 646 issues tabulated, 74.6% were original issue high yield bonds and 25.4% were originally rated as investment grade but eventually defaulted. About 9% of the defaulted issues were still rated investment grade one year prior to default and 7% six months prior (multiple issues from a few distinct high grade issuers, e.g., Columbia Gas System, accounted for a large proportion of the 12 and 6 month prior investment grade defaults).

Mortality Rates, Losses and Simulated Return Spreads

Updated mortality rates and losses from 1971-1994 are reported in **Exhibits 9 and 10**. Our total defaulted issue population that had a rating upon issuance numbers 553. The

²We have always segregated the post-1988 defaults from the total for the entire sample period since the former includes a large number of ill-fated highly leveraged restructurings. It is not as clear today that this dichotomy should be continued.

results through 1994 reflects the huge number of calls in 1993 when over \$94 billion of corporate bonds issued from 1971-1992 were redeemed by companies who took advantage of lower interest rates throughout the year.

It appears that the relatively low 1994 default rate reduced slightly most of the cumulative mortality rates and losses, especially at the five year and ten year horizons. For example, the ten year cumulative rates through 1993 vs. 1994 were for BBB (4.78% vs. 3.66%), for BB (15.68% vs. 15.21%) and for B (36.65% vs. 35.91%). Only the CCC rates rose consistently with the five year cumulative rate at the end of 1994 equal to 45.63% vs. 37.02% at the end of 1993.

As for the aging effect of bond defaults, we do not find any for investment grade bonds. For example, the BBB marginal (yearly) rates in **Exhibit 9** typically ranged in the 0.23 to 0.59 interval with a few outlier years of as low as 0.00% (year 8) and as high as 0.89% (year 5). The BB marginal rates are erratic, rising for the first four years and then actually falling thereafter. Single-B marginal rates also rise but only for the first two years, then reach a steady state of about 7% per year for years two through four and then fall off to a range of between 2-3% per year in most years after year four. Recall that these marginal and cumulative rates reflect underlying cohort populations that are adjusted each year for defaults, distressed restructurings and calls.

Returning to the call data, we can observe in **Exhibit 11** the

number of issues and dollar amounts called in 1993 segregated by original bond rating and original year of issuance. **Exhibit 12** shows the percentage of the total issuance in each year, 1971-1992, called in 1993. We see that 8 AAA issues, totaling \$1.1 billion, from 1971 were called in 1993 and this represented as much 23.0% of the total AAA issuance from 1971! Some of the more remarkable call redemption original issue years for high yield bonds since 1977 were for BB rated bonds 17.4% (1978), 21.5% (1985) and 28.5% (1988) and for single-B's, 15.2% (1981) and 17.8% (1988). Even substantial amounts of 1992 new issuance was called just one year or so later -- almost \$2 billion in total including \$931 million of single-B's. Of course, 1992 and 1993 new issuance were also very high.

Exhibit 13 lists a type of "simulated-actual" return spread of corporate bonds (per \$100 of investment) over long-term U.S. Treasuries for up to ten years after issuance, covering the period 1971-1994. This analysis assumes the investor bought the indicated rating category and held for ten years (semi-annual holding periods). The yield spread changes over time as rates change and returns are adjusted for reinvested cash flows from coupon payments and recoveries on defaults. Prices of individual issues, however, do not change unless a default occurs. Data on defaults and losses are derived from the same information that was used in **Exhibits 9 and 10**.

Results through 1994 indicate that the Double-B class

clearly does best,³ followed by Triple-B bonds. Single-B return spreads are lower than many classes, but they improved from last year's results (\$22.07 vs. \$14.33 for the 10 year horizon) due to slightly lower cumulative mortality losses. Indeed, all of the rating classes below A improved in 1994 vs. 1993 while the three highest rating classes' spreads narrowed slightly (e.g., \$22.75 in 1994 vs. \$23.35 in 1993 for single-A).

Total Returns

Exhibits 14-16 document the actual total returns and spreads on high yield bonds compared to U.S. Treasuries for the period 1978-1994 inclusive. **Exhibit 14** shows each year's return and return spread as well as the promised yield to maturity and yield spread. Note that the high yield bond return spread (based on the Merrill Lynch High Yield Master Index vs. 10-Year U.S. Treasuries) was +7.13%, higher than last year's differential of +5.11% and considerably greater than the arithmetic annual average of +2.13%. The returns are net of defaults. The news was not all good since total returns were actually a negative -1.17% on high yield bonds but still considerably better than most other fixed income indexes for 1994.

The compound average annual return spread climbed to 2.32% in 1994 from 1.97% through 1993. The average arithmetic return

³Please note that Exhibit 13 does not include the impact of price changes caused by interest rate fluctuations or those caused by overall market perceptions. Indeed, in 1994 BB-rated bonds actually performed more poorly than single-B's but this is not recorded in our simulated return measures.

spread was 2.13% compared to an average annual yield spread of 4.53%. The difference (2.40% per year) is close to our average annual default loss (Exhibit 5).

Exhibit 14 also shows promised yields and spreads. At the end of 1994, the yield spread was only 3.44%, the lowest end-of-year spread since 1984. The precipitous rise in Treasury rates in 1994, combined with continued low actual and expected default rates and losses, contributed to the decline in promised risk premiums. These same factors will no doubt affect yields and returns in the future.

Exhibits 15 and 16 show matrices of high yield compound returns and spreads over ten-year U.S. Treasuries for all possibly beginning-of-year and end-of-year points. Note the relatively high absolute compound returns for most investment horizons, translating to double-digit absolute returns. Return spreads are for the most part positive, although not for every possible horizon.

EXHIBIT 1

**HISTORICAL DEFAULT RATES - STRAIGHT DEBT ONLY
DEFAULTED ISSUES EXCLUDED IN PAR VALUE OUTSTANDING
1971-1994 (\$ MILLIONS)**

<u>YEAR</u>	<u>PAR VALUE OUTSTANDING</u>	<u>PAR VALUE DEFAULTS</u>	<u>DEFAULT RATES</u>
1994	\$235,000	\$3,418 (c/d)	1.454% (c/d)
1993	206,907	2,287	1.105%
1992	163,000	5,545	3.402%
1991	183,600	18,862	10.273%
1990	181,000	18,354	10.140%
1989	189,258	8,110	4.285%
1988	148,187	3,944	2.662%
1987	129,557	7,486 (a)	5.778% (a)
1986	90,243	3,156	3.497%
1985	58,088	992	1.708%
1984	40,939	344	0.840%
1983	27,492	301	1.095%
1982	18,109	577	3.186%
1981	17,115	27	0.158%
1980	14,935	224	1.500%
1979	10,356	20	0.193%
1978	8,946	119	1.330%
1977	8,157	381	4.671%
1976	7,735	30	0.388%
1975	7,471	204	2.731%
1974	10,894	123	1.129%
1973	7,824	49	0.626%
1972	6,928	193	2.786%
1971	6,602	82	1.242%

**Standard
Deviation**

ARITHMETIC AVERAGE DEFAULT RATE	1971 TO 1994	2.758%	2.672%
	1978 TO 1994	3.095%	2.976%
	1985 TO 1994	4.431%	3.177%

WEIGHTED AVERAGE DEFAULT RATE	1971 TO 1994	4.208%	3.424%
	1978 TO 1994	4.282%	3.438%
	1985 TO 1994	4.553%	3.404%

MEDIAN ANNUAL DEFAULT RATE	1971 TO 1994	1.604%
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Notes

- (a) \$1,841.7 million without Texaco, Inc., Texaco Capital, and Texaco N.V.
The default rate is 1.345%
- (b) Weighted by par value of amount outstanding for each year
- (c) Includes Grand Union debt of \$1,631 million and Trans World Airlines debt of \$231 million in 1994 defaults;
if both were not included, the default rate would be 0.64%.
- (d) Amount of defaults in 1994 adjusted for accreted values of two Grand Union issues and the original discounted trading values of the two TWA issues.

EXHIBIT 2

**HISTORICAL DEFAULT RATES - STRAIGHT DEBT ONLY
INCLUDING DEFAULTED ISSUES FROM PAR VALUE OUTSTANDING
1970-1994 (\$MILLIONS)**

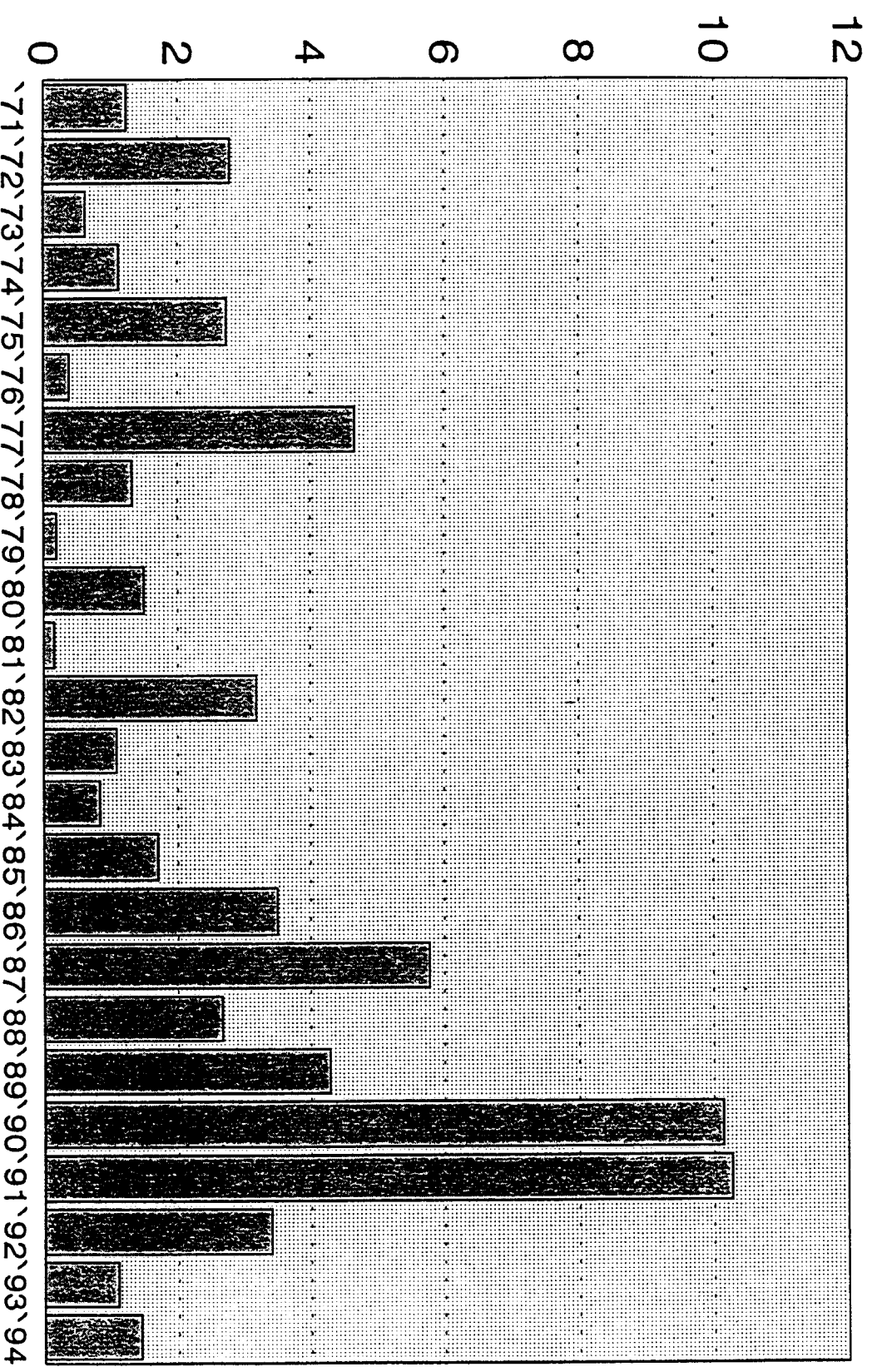
<u>YEAR</u>	<u>PAR VALUE OUTSTANDING (a)</u>	<u>PAR VALUE DEFAULTS</u>	<u>DEFAULT RATES</u>	
1994	\$249,000	\$3,418 (c/d)	1.373% (c/d)	
1993	234,727	2,287	0.974%	
1992	194,100	5,545	2.857%	
1991	209,400	18,862	9.008%	
1990	210,000	18,354	8.740%	
1989	201,000	8,110	4.035%	
1988	159,223	3,944	2.477%	
1987	136,952	7,486 (b)	5.466% (b)	
1986	92,985	3,156	3.394%	
1985	59,078	992	1.679%	
1984	41,700	344	0.825%	
1983	28,233	301	1.066%	
1982	18,536	577	3.115%	
1981	17,362	27	0.156%	
1980	15,126	224	1.482%	
1979	10,675	20	0.187%	
1978	9,401	119	1.265%	
1977	8,479	381	4.488%	
1976	8,015	30	0.368%	
1975	7,720	204	2.644%	
1974	11,101	123	1.106%	
1973	8,082	49	0.607%	
1972	7,106	193	2.720%	
1971	6,643	82	1.234%	
1970	6,996	797	11.388%	
				Standard Deviation
ARITHMETIC AVERAGE DEFAULT RATE 1970 TO 1994			2.906%	2.876%
1978 TO 1994			2.829%	2.595%
1985 TO 1994			4.000%	2.741%
				(e)
WEIGHTED AVERAGE DEFAULT RATE 1970 TO 1994			3.875%	2.782%
1978 TO 1994			3.908%	2.755%
1985 TO 1994			4.131%	2.701%

Notes

- (a) Market size includes defaulted issues
- (b) \$1,841.7 million without Texaco, Inc., Texaco Capital, and Texaco N.V.
The default rate is 1.345%
- (c) Includes Grand Union debt of \$1,271.0 million and Trans World Airlines debt of \$231 million in 1994 defaults;
if both were not included, the default rate would be 0.64%.
- (d) Amount of defaults in 1994 adjusted for accreted value of two TWA issues and two Grand Union issues
- (e) Weighted by par value of amount outstanding per year

HISTORICAL DEFAULT RATES (1971-1994)

EXCLUDING DEFAULTED ISSUES IN PAR VALUE OUTSTANDING



SIMPLE AVERAGE DEFAULT RATE: 2.758%
WEIGHTED AVERAGE DEFAULT RATE: 4.208%

STANDARD DEVIATION: 3.424%

EXHIBIT 4

1994 DEFAULT LOSS RATE

BACKGROUND DATA	INCLUDING DEFAULTS (a)	EXCLUDING DEFAULTS (a)
AVERAGE DEFAULT RATE 1994	1.37%	1.45%
AVERAGE END OF MONTH PRICE AFTER DEFAULT	39.86%	39.86%
AVERAGE LOSS OF PRINCIPAL	60.14%	60.14%
AVERAGE COUPON PAYMENT	11.50%	11.50%
DEFAULT RATE	1.37%	1.45%
X LOSS OF PRINCIPAL	60.14%	60.14%
DEFAULT LOSS OF PRINCIPAL	0.825%	0.875%
DEFAULT RATE	1.37%	1.45%
X LOSS OF 1/2 COUPON	5.75%	5.75%
DEFAULT LOSS OF COUPON	0.08%	0.08%
DEFAULT LOSS OF PRINCIPAL AND COUPON	0.90%	0.96%

Notes:

(a) Calculations are weighted by par value of amount outstanding.

EXHIBIT 5

DEFAULT RATES AND LOSSES
1985-1994

YEAR	PAR VALUE OUTSTANDING (a) (\$ MM ⁹)	PAR VALUE OF DEFAULT (\$ MM ⁹)	DEFAULT RATE (%)	WEIGHTED PRICE AFTER DEFAULT	WEIGHTED COUPON (%)	DEFAULT LOSS (%)
1994	\$235,000	\$3,418	1.45%	\$39.9	11.50%	0.96%
1993 (b)	206,907	2,287	1.11%	56.6	12.98%	0.52%
1992	163,000	5,545	3.40%	50.1	12.32%	1.91%
1991	183,600	18,862	10.27%	36.0	11.59%	7.16%
1990	181,000	18,354	10.14%	23.4	12.94%	8.42%
1989	189,258	8,110	4.29%	38.3	13.40%	2.93%
1988	148,187	3,944	2.66%	43.6	11.91%	1.66%
1987 (c)	129,557	7,486	5.78%	75.9	12.07%	1.74%
1986	90,243	3,156	3.50%	34.5	10.61%	2.48%
1985	58,088	992	1.71%	45.9	13.69%	1.04%
ARITHMETIC AVERAGE 1985-1994				\$44.42	12.30%	2.88%
WEIGHTED AVERAGE 1985-1994					4.43%	3.03%
					4.55%	

Notes

- (a) Excludes defaulted issues
- (b) Includes Mesa
- (c) Includes Texaco

EXHIBIT 6

AVERAGE RECOVERY RATES ON DEFAULTED DEBT BY SENIORITY PER \$100 FACE AMOUNT; 1985-1994 (a)

YEAR	SECURED		SENIOR		SENIOR SUBORDINATED		SUBORDINATED CASH PAY		SUBORDINATED NON-CASH PAY	
1994	\$48.66	(5)	\$51.14	(8)	\$19.81	(5)	\$37.04	(3)	\$5.00	(1)
1993	55.75	(2)	33.38	(7)	51.50	(10) (b)	28.38	(9)	NONE	
1992	59.85	(15) (c)	35.61	(8)	58.20	(17)	49.13	(22)	15.00	(2)
1991	54.50	(2)	58.15	(62) (d)	34.62	(21)	20.28	(35)	21.06	(4)
1990	35.04	(7)	32.02	(27)	24.04	(28)	17.93	(17)	18.99	(12)
1989	82.69	(9)	53.70	(16)	19.60	(21)	23.95	(30)	NONE	
1988	67.96	(13)	41.99	(19)	30.70	(10)	35.27	(20)	NONE	
1987	12.00	(1)	70.52	(29) (e)	53.50	(10)	40.54	(7)	NONE	
1986	48.32	(7)	37.09	(8)	37.74	(10)	31.58	(34)	NONE	
1985	74.25	(2)	34.81	(3)	36.18	(7)	41.45	(15)	NONE	

AVERAGE 1985-1994	\$59.26	(63)	\$50.81	(187)	\$36.48	(134)	\$30.55	(192)	\$18.73	(18)
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AVERAGE ALL ISSUES	\$40.95	(594)
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Notes

Number of issues in parentheses.

(a) Prices at end of default month.

(b) Includes 2 issues of Mesa. Without, recovery would be \$38.13.

(c) All 15 issues are El Paso Electric.

(d) Includes 23 issues of Columbia Gas, without these issues the recovery rate was \$43.30.

(e) Without Texaco, 1987 recovery rate was \$29.77.

Exhibit 8

RATING DISTRIBUTION * OF DEFAULTED ISSUES
AT VARIOUS POINTS PRIOR TO DEFAULT

1970 - 1994

S & P Rating	ORIGINAL RATING		RATING ONE YEAR PRIOR TO DEFAULT		RATING SIX MONTHS PRIOR TO DEFAULT	
	Number	%	Number	%	Number	%
AAA	5	0.8%	0	0.0%	0	0.0%
AA	25	3.9%	0	0.0%	0	0.0%
A	63	9.8%	2	0.4%	2	0.4%
BBB	71	11.0%	45	8.3%	36	6.4%
Total Investment Grade	164	25.4%	47	8.7%	38	6.8%
BB	64	9.9%	52	9.6%	34	6.1%
B	321	49.7%	260	48.2%	212	37.9%
CCC	93	14.4%	163	30.2%	229	40.9%
CC	4	0.6%	12	2.2%	41	7.3%
C	0	0.0%	5	0.9%	6	1.1%
Total Noninvestment Grade	482	74.6%	492	91.3%	522	93.2%
Total of All Issues	646	100.0%	539	100.0%	560	100.0%

* Based on Standard & Poor's ratings

MORTALITY RATES BY ORIGINAL RATING - ALL RATED CORPORATE BONDS*

(1971 - 1994)
Years After Issuance

Rating		1	2	3	4	5	6	7	8	9	10
AAA	Yearly	0.00%	0.00%	0.00%	0.00%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%
	Cumulative	0.00%	0.00%	0.00%	0.00%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%
AA	Yearly	0.00%	0.05%	1.06%	0.09%	0.00%	0.00%	0.01%	0.00%	0.06%	0.04%
	Cumulative	0.00%	0.05%	1.11%	1.20%	1.20%	1.20%	1.20%	1.20%	1.26%	1.30%
A	Yearly	0.00%	0.19%	0.07%	0.21%	0.06%	0.06%	0.20%	0.19%	0.00%	0.00%
	Cumulative	0.00%	0.19%	0.26%	0.47%	0.53%	0.59%	0.78%	0.98%	0.98%	0.98%
BBB	Yearly	0.41%	0.25%	0.32%	0.55%	0.89%	0.39%	0.09%	0.00%	0.59%	0.23%
	Cumulative	0.41%	0.66%	0.97%	1.51%	2.39%	2.77%	2.86%	2.86%	3.44%	3.66%
BB	Yearly	0.50%	0.58%	4.15%	4.84%	1.13%	0.52%	2.69%	0.27%	0.79%	0.78%
	Cumulative	0.50%	1.08%	5.19%	9.78%	10.79%	11.26%	13.64%	13.87%	14.55%	15.21%
B	Yearly	1.59%	7.12%	6.80%	7.29%	3.40%	5.90%	2.80%	2.13%	2.83%	3.43%
	Cumulative	1.59%	8.60%	14.82%	21.02%	23.71%	28.21%	30.22%	31.70%	33.63%	35.91%
CCC	Yearly	8.32%	10.69%	18.53%	10.26%	9.18%	5.56%	2.49%	2.97%	12.28%	0.00%
	Cumulative	8.32%	18.13%	33.30%	40.14%	45.63%	48.66%	49.94%	51.42%	57.39%	57.39%

* Rated by S & P at issuance;

Based on 493 issues that defaulted within 10 years of Issuance.

Exhibit 10

MORTALITY LOSSES BY ORIGINAL RATING - ALL RATED CORPORATE BONDS*

(1971 - 1994)

Years after Issuance

Rating		1	2	3	4	5	6	7	8	9	10
AAA	Yearly	0.00%	0.00%	0.00%	0.00%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%
	Cumulative	0.00%	0.00%	0.00%	0.00%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%
AA	Yearly	0.00%	0.02%	0.21%	0.03%	0.00%	0.00%	0.00%	0.00%	0.04%	0.02%
	Cumulative	0.00%	0.02%	0.23%	0.26%	0.26%	0.26%	0.26%	0.26%	0.30%	0.32%
A	Yearly	0.00%	0.03%	0.02%	0.15%	0.06%	0.03%	0.11%	0.13%	0.00%	0.00%
	Cumulative	0.00%	0.03%	0.05%	0.20%	0.26%	0.29%	0.40%	0.52%	0.52%	0.52%
BBB	Yearly	0.27%	0.10%	0.21%	0.26%	0.36%	0.30%	0.06%	0.00%	0.41%	0.14%
	Cumulative	0.27%	0.37%	0.58%	0.84%	1.19%	1.49%	1.55%	1.55%	1.95%	2.08%
BB	Yearly	0.26%	0.26%	3.34%	2.14%	0.70%	0.33%	0.94%	0.23%	0.64%	0.58%
	Cumulative	0.26%	0.51%	3.84%	5.90%	6.56%	6.86%	7.74%	7.95%	8.54%	9.07%
B	Yearly	0.83%	5.12%	5.02%	5.95%	2.44%	3.93%	2.06%	1.64%	1.98%	1.59%
	Cumulative	0.83%	5.90%	10.63%	15.95%	18.00%	21.22%	22.84%	24.11%	25.61%	26.79%
CCC	Yearly	7.22%	8.87%	15.30%	6.82%	6.76%	3.29%	2.49%	0.91%	0.00%	0.00%
	Cumulative	7.22%	15.45%	28.39%	33.27%	37.78%	39.83%	41.33%	41.87%	47.47%	0.00%

* Rated by S & P at Issuance;

Based on 493 issues that defaulted within 10 years of issuance

Exhibit 11

Volume and Number of Issues Called in 1993 by S & P Bond Rating and Year of Issue (1971 - 1992)
(\$ Millions)

Year of Issue	AAA		AA		A		BBB		BB		B		CCC		Total Rated Called	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount
1971	8	\$1,181	28	\$1,444	38	\$1,729	14	\$558	0	\$0.0	0	\$0.0	0	\$0.0	88	\$4,913
1972	5	\$532	18	\$940	27	\$1,203	9	\$625	1	\$6.6	0	\$0.0	0	\$0.0	60	\$3,307
1973	5	\$1,144	14	\$1,081	18	\$871	14	\$910	0	\$0.0	1	\$56.0	0	\$0.0	52	\$4,062
1974	5	\$522	15	\$1,430	14	\$609	6	\$395	0	\$0.0	1	\$80.5	0	\$0.0	41	\$3,037
1975	7	\$688	11	\$906	13	\$788	6	\$291	0	\$0.0	0	\$0.0	0	\$0.0	37	\$2,673
1976	8	\$1,102	16	\$2,077	22	\$987	10	\$695	0	\$0.0	0	\$0.0	0	\$0.0	56	\$4,860
1977	11	\$1,816	29	\$3,228	20	\$1,191	19	\$1,081	0	\$0.0	0	\$0.0	0	\$0.0	79	\$7,316
1978	5	\$825	16	\$1,986	16	\$1,535	6	\$561	2	\$70.8	0	\$0.0	0	\$0.0	45	\$4,977
1979	1	\$250	1	\$450	5	\$277	1	\$42	0	\$0.0	3	\$75.5	0	\$0.0	11	\$1,094
1980	0	\$0	0	\$0	1	\$100	1	\$100	0	\$0.0	3	\$98.3	0	\$0.0	5	\$298
1981	0	\$0	1	\$300	0	\$0	0	\$0	0	\$0.0	2	\$136.2	0	\$0.0	3	\$436
1982	1	\$17	0	\$0	3	\$148	0	\$0	0	\$0.0	1	\$37.4	0	\$0.0	5	\$202
1983	4	\$89	7	\$710	5	\$601	1	\$55	0	\$0.0	3	\$190.0	0	\$0.0	20	\$1,644
1984	0	\$0	6	\$768	8	\$1,058	2	\$400	0	\$0.0	2	\$260.0	1	\$65.0	19	\$2,551
1985	2	\$350	5	\$557	3	\$150	9	\$1,647	3	\$439.0	3	\$225.9	1	\$144.0	26	\$3,512
1986	9	\$2,175	58	\$8,058	75	\$9,867	32	\$4,333	7	\$1,105.9	15	\$2,041.1	1	\$41.7	197	\$27,622
1987	0	\$0	11	\$1,146	13	\$1,508	15	\$2,492	2	\$350.0	10	\$1,463.8	5	\$715.5	56	\$7,675
1988	3	\$446	16	\$1,534	16	\$1,685	17	\$1,884	4	\$733.4	24	\$3,243.0	4	\$679.0	84	\$10,204
1989	0	\$0	3	\$490	5	\$579	0	\$0	0	\$0.0	2	\$443.0	1	\$75.0	11	\$1,587
1990	0	\$0	0	\$0	1	\$15	1	\$25	1	\$100.0	1	\$28.8	0	\$0.0	4	\$169
1991	0	\$0	1	\$150	1	\$100	0	\$0	0	\$0.0	0	\$0.0	0	\$0.0	2	\$250
1992	1	\$500	0	\$0	0	\$0	0	\$0	3	\$433.0	3	\$931.0	1	\$115.0	8	\$1,979
Total	75	\$11,636	256	\$27,254	304	\$25,001	163	\$16,093	23	\$3,238.7	74	\$9,310.5	14	\$1,835.2	909	\$94,368

Source: S P Bond Guides, Monthly - 1993

Exhibit 12
Percentage of New Issues From 1971 - 1992 Called in 1993
(By S & P Original Bond Rating)

Year of Issue	AAA	AA	A	BBB	BB	B	CCC	Total Rated Called
1971	23.0%	26.4%	25.9%	26.1%	0.0%	0.0%	0.0%	24.8%
1972	16.7%	21.7%	24.8%	52.2%	2.6%	0.0%	0.0%	23.8%
1973	28.3%	29.5%	20.5%	97.1%	0.0%	40.0%	0.0%	30.9%
1974	7.0%	16.3%	7.3%	31.6%	0.0%	81.6%	0.0%	11.6%
1975	6.1%	9.5%	6.2%	12.3%	0.0%	0.0%	0.0%	7.4%
1976	11.1%	21.7%	12.2%	23.7%	0.0%	0.0%	0.0%	15.7%
1977	16.4%	43.1%	22.8%	69.4%	0.0%	0.0%	0.0%	27.6%
1978	10.4%	26.9%	28.8%	37.1%	17.4%	0.0%	0.0%	21.0%
1979	2.4%	7.6%	4.3%	3.4%	0.0%	8.2%	0.0%	4.3%
1980	0.00%	0.0%	0.8%	3.9%	0.0%	11.2%	0.0%	0.8%
1981	0.0%	2.6%	0.0%	0.0%	0.0%	15.2%	N.A.	1.1%
1982	0.3%	0.0%	1.1%	0.0%	0.0%	3.3%	0.0%	0.5%
1983	2.3%	5.0%	10.9%	0.9%	0.0%	5.1%	0.0%	4.5%
1984	0.0%	4.2%	8.6%	7.7%	0.0%	4.0%	3.4%	5.0%
1985	3.9%	2.4%	0.6%	14.9%	21.5%	3.8%	8.6%	4.6%
1986	15.1%	17.2%	28.9%	19.7%	15.6%	9.6%	0.9%	18.3%
1987	0.0%	3.7%	6.5%	15.3%	7.0%	8.2%	15.5%	7.1%
1988	2.4%	8.0%	5.6%	9.7%	28.5%	17.8%	12.0%	9.0%
1989	0.0%	2.1%	1.9%	0.0%	0.0%	2.3%	6.3%	1.5%
1990	0.0%	0.0%	0.0%	0.2%	12.3%	7.7%	N.A.	0.2%
1991	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	N.A.	0.2%
1992	2.0%	0.0%	0.0%	0.0%	3.6%	4.2%	20.0%	0.8%
Total	4.6%	6.4%	4.3%	6.2%	4.7%	6.1%	8.3%	5.3%

Source: S P Bond Guides, Monthly - 1993

Exhibit 13

RETURN SPREAD OF CORPORATE BONDS OVER RISK FREE GOVERNMENTS FOR THE PERIOD 1971-1994*

Bond Rating At Issuance

Years After Issuance	AAA	AA	A	BBB	BB	B	CCC
0.5	\$0.22	\$0.36	\$0.50	\$0.64	\$1.18	\$1.56	\$0.28
1.0	\$0.46	\$0.75	\$1.05	\$1.35	\$2.48	\$3.28	\$0.59
1.5	\$0.72	\$1.16	\$1.63	\$2.22	\$3.91	\$2.78	\$0.04
2.0	\$1.00	\$1.62	\$2.26	\$3.17	\$5.48	\$2.23	(\$0.56)
2.5	\$1.30	\$1.99	\$2.95	\$4.14	\$5.31	\$1.71	(\$4.99)
3.0	\$1.63	\$2.40	\$3.70	\$5.20	\$5.10	\$1.14	(\$9.65)
3.5	\$1.99	\$2.96	\$4.44	\$6.32	\$5.69	(\$0.07)	(\$9.44)
4.0	\$2.38	\$3.58	\$5.25	\$7.54	\$6.32	(\$1.39)	(\$9.18)
4.5	\$2.74	\$4.27	\$6.18	\$8.79	\$8.07	(\$0.35)	(\$8.85)
5.0	\$3.14	\$5.01	\$7.19	\$10.16	\$9.98	\$0.80	(\$8.46)
5.5	\$3.63	\$5.82	\$8.32	\$11.68	\$12.36	\$0.87	(\$5.54)
6.0	\$4.16	\$6.70	\$9.54	\$13.33	\$14.97	\$0.96	(\$2.25)
6.5	\$4.73	\$7.65	\$10.78	\$15.35	\$17.26	\$2.62	\$2.04
7.0	\$5.34	\$8.67	\$12.13	\$17.54	\$19.74	\$4.44	\$6.84
7.5	\$6.01	\$9.79	\$13.57	\$19.98	\$23.17	\$6.84	
8.0	\$6.73	\$10.99	\$15.13	\$22.62	\$26.90	\$9.48	
8.5	\$7.50	\$12.26	\$16.95	\$25.04	\$30.52	\$12.00	
9.0	\$8.34	\$13.63	\$18.92	\$27.65	\$34.45	\$14.77	
9.5	\$9.24	\$15.13	\$21.05	\$30.82	\$38.81	\$18.25	
10.0	\$10.21	\$16.74	\$23.35	\$34.24	\$43.53	\$22.07	

**Net Investment each period adjusted for cumulative mortality rates, calls and sinking fund redemptions. Assume sale of defaulted debt at the average price at the end of the month after default, minus loss of one semi-annual coupon payment. Assume reinvestment of all cash flows at the actual average annual YTM for the appropriate bond rating class; long-term average annual YTM used for Government bonds. Returns are expressed in dollars per \$100 of investment.*

EXHIBIT 14

**ANNUAL RETURNS, YIELDS AND SPREADS
ON TEN-YEAR TREASURY (TREAS)
AND HIGH YIELD (HY) BONDS**

YEAR	RETURN(%)			PROMISED YIELD(%) *		
	HY	TREAS	SPREAD	HY	TREAS	SPREAD
1994	-1.17	-8.29	7.13	11.27	7.83	3.44
1993	17.18	12.08	5.11	9.61	5.80	3.81
1992	18.16	6.50	11.66	11.28	6.69	4.59
1991	34.58	17.18	17.40	13.11	6.70	6.41
1990	(4.36)	6.88	(11.24)	17.58	8.83	8.75
1989	1.62	15.99	(14.37)	15.41	7.93	7.48
1988	13.47	9.20	4.27	13.95	9.00	4.95
1987	4.67	(2.67)	7.34	12.66	8.75	3.91
1986	16.09	24.08	(7.99)	14.45	9.55	4.90
1985	22.51	31.54	(9.03)	15.40	11.65	3.75
1984	8.50	14.82	(6.32)	14.97	11.87	3.10
1983	21.80	2.23	19.57	15.74	10.70	5.04
1982	32.45	42.08	(9.63)	17.84	13.86	3.98
1981	7.56	0.48	7.08	15.97	12.08	3.89
1980	(1.00)	(2.96)	1.96	13.46	10.23	3.23
1979	3.69	(0.86)	4.55	12.07	9.13	2.94
1978	7.57	(1.11)	8.68	10.92	8.11	2.81

ARITHMETIC AVERAGE:

1978-1994	11.96	9.83	2.13	13.86	9.34	4.53
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COMPOUND AVERAGES:

1978-1994	11.42	9.10	2.32
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* End of year yields.

EXHIBIT 15

COMPOUND AVERAGE ANNUAL RETURNS OF HIGH YIELD BONDS (%)
1978-1994

BASE PERIOD (JAN 1)	TERMINAL PERIOD (DECEMBER 31)																	
	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	
1978	7.57																	
1979		5.61																
1980			3.36															
1981				4.39														
1982					9.48													
1983						11.45												
1984							11.02											
1985								12.40										
1986									12.80									
1987										11.96								
1988											12.10							
1989												11.18						
1990													9.90					
1991														11.50				
1992															11.94			
1993																12.26		
1994																	11.42	
																		11.66
																		12.22
																		13.23
																		13.67
																		12.24
																		11.40
																		11.70
																		10.56
																		9.89
																		10.65
																		10.19
																		11.99
																		16.49
																		11.02
																		7.62
																		-1.17

Source: Merrill Lynch High Yield Master Index; Edward I. Altman, New York University Salomon Center

EXHIBIT 16

COMPOUND ANNUAL RETURN SPREADS BETWEEN
HIGH YIELD AND LT GOVERNMENT BONDS (%)
1978-1994

BASE PERIOD (JAN 1)	TERMINAL PERIOD (DECEMBER 31)																	
	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	
1978	8.68																	
1979		6.60																
1980			5.01															
1981				5.51														
1982					3.17													
1983						5.82												
1984							4.13											
1985								2.70										
1986									1.59									
1987										2.22								
1988											2.41							
1989												0.98						
1990													0.23					
1991														0.43				
1992															1.76			
1993																1.96		
1994																	2.32	
																		1.89
																		1.69
																		1.67
																		1.22
																		1.95
																		1.02
																		0.35
																		1.98
																		3.11
																		2.45
																		2.15
																		5.47
																		10.07
																		7.96
																		6.23
																		7.13

Source: Merrill Lynch High Yield Master Index; Edward I. Altman, New York University Salomon Center

APPENDIX A

1994 DEFAULTED STRAIGHT DEBT (Through December 31, 1994)

<u>Company (a)</u>	<u>Bond Issue</u>	<u>Coupon (%)</u>	<u>Outstanding Amount (\$ MM)</u>	<u>Default/ Exchange Date</u>
Woodward & Lothrop Inc.	Sub Nts '95	14.75	83.5	Jan-94
Fair Lanes Inc.	Sr. Sec. Nts 11 7/8 '97	11.88	138.0	Feb-94
Equitable Bag Co.	Sr. Nts. 12 3/8 '02	12.38	105.0	Feb-94
Evergreen Intn'l Aviation	Sr. Nts. 13 1/2 '02	13.50	125.0	Feb-94
Maryland Cable Corp.	Sr. Sub Disc. Nts. 15 3/8 '98	15.38	162.4	Mar-94
Kane Industries	Sr. Sub Disc. Nts. 8 '98	8.00	62.8	Mar-94
Kash-N-Karry	Sr. Nts. '99	12.38	50.0	May-94
Kash-N-Karry	Sub. Deb. '01	14.00	105.0	May-94
Acme Holdings	Sr. Nts. 11 3/4 '00	11.75	78.0	Aug-94
Belle Casinos	1st Mtge. Nts. 12 '00	12.00	75.0	Aug-94
Busse Broadcasting Corp.	Sr. Zero Coupon Nts.'94	0.00	110.0 (c)	Aug-94
Intelogic Trace Inc.	Sub. Deb. 11.99 '96	11.99	49.9	Aug-94
Megafoods Stores, Inc.	Sr. Nts. 10 1/4 '00	10.25	100.0	Aug-94
Carolco Pictures, Inc.	Sr. Nts. 11 1/2 '00	11.50	41.5	Oct-94
Trans World Airlines, Inc.	Sr. Sec. 10 '98	10.00	176.0 (b)	Oct-94
Trans World Airlines, Inc.	Sr. Sec. 8 '00	8.00	55.0 (b)	Oct-94
Cherokee, Inc.	Sr. Sub. Nts. 11 '99	11.00	71.5	Nov-94
Grand Union Capital Corp.	Zero 15 '04	15.00	512.0 (c)	Nov-94
Grand Union Capital Corp.	Sr. Sub. Zero '07	0.00	146.0 (c)	Nov-94
Grand Union Co.	Sr. 11 1/4 '00	11.25	350.0	Nov-94
Grand Union Co.	Sr. Ser. B 11 3/8 '99	11.38	175.0	Nov-94
Grand Union Co.	Sr. Sub. 12 1/4 '02	12.25	500.0	Nov-94
Sam Houston Race Park Ltd.	Sr. Sec. 11 3/4 '10	11.75	75.0	Nov-94
F&M Distributors, Inc.	Sr. Nts. 11.5 '03	11.50	70.9	Dec-94

Notes

- (a) Does not include Confederation Life Insurance Company's non-US dollar denominated defaulted debt: 9.875% Subordinated Eurobonds due 2003 and 8.375% Subordinated Eurobonds due 2000, US\$154.9 mil. and US\$30.6 mil. respectively.
- (b) The outstanding amounts are based on what an investor would have paid for the bonds when they were in a distressed exchange (11/93).
- (c) The outstanding amounts are accreted values.

QUARTERLY DEFAULT RATES: HIGH YIELD
DEBT MARKET 1989-1994 (a)

QUARTER	PAR VALUE OF DEBT OUTSTANDING (\$Billions)		AMOUNT OF DEBT DEFAULTED BY QUARTER (\$ BILLIONS)	QUARTERLY DEFAULT RATES (%)		
	(W/ DEFAULTS)	(W/O DEFAULTS)		(W/ DEFAULTS)	(W/O DEFAULTS)	
1989	1Q	\$183.72 (est.)	NA	\$1.03	0.56%	NA
	2Q	191.19 (est.)	NA	1.13	0.59%	NA
	3Q	201.00	NA	3.54	1.76%	NA
	4Q	204.33 (est.)	NA	2.41	1.18%	NA
1990	1Q	\$209.23 (est.)	\$185.00 (est.)	\$4.16	1.99%	2.25%
	2Q	209.62 (est.)	\$185.00 (est.)	2.51	1.20%	1.36%
	3Q	210.00	\$181.00	6.01	2.86%	3.32%
	4Q	210.00 (est.)	\$181.00 (est.)	5.67	2.70%	3.13%
1991	1Q	\$210.00 (est.)	\$182.00 (est.)	\$8.74	4.16%	4.80%
	2Q	210.00 (est.)	\$182.00 (est.)	2.75	1.31%	1.51%
	3Q	210.00	\$183.00	5.01	2.41%	2.74%
	4Q	210.00	\$183.00 (est.)	2.36	1.13%	1.29%
1992	1Q	\$214.90	\$183.20	\$3.33	1.55%	1.82%
	2Q	178.70	151.10	1.26	0.70%	0.83%
	3Q	194.10	163.00	0.37	0.19%	0.23%
	4Q	191.16	151.89	0.52	0.31%	0.39%
1993	1Q	\$224.90	\$193.23	\$0.38	0.17%	0.20%
	2Q	224.90	193.23	1.33	0.59%	0.69%
	3Q	234.73	206.91	0.05	0.02%	0.03%
	4Q	211.87	190.42	0.52	0.25%	0.27%
1994	1Q	\$263.00	\$232.60	\$0.67	0.25%	0.29%
	2Q	255.00	230.00	0.16	0.06%	0.07%
	3Q	249.00	235.00	0.41	0.16%	0.17%
	4Q	249.00 (est.)	235.00 (est.)	2.18	0.88%	0.93%
Notes				3.42		

(a) Par value at beginning of quarter; NA = Not Available.

APPENDIX C
CORPORATE BOND DEFAULTS BY INDUSTRY
(NUMBER OF COMPANIES)

INDUSTRY	1970-75	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Total	
Airlines/Air Cargo	3							1	2						1	1	2				2	12
Auto/Motor Carrier						1		2							3	3						9
Conglomerates													1	3	1	1	3	3				12
Consumer Goods													1			1	2	1				5
Energy	1			1				2	3	5	7	12	2	4	4	7	4	2	2	3		46
Financial Services	3				1	1	1	1	1	1	1			4	11	7	14	3	2		1	52
Leisure/Entertainment													2	4	4	8	2	4	4	3	4	31
General Manufacturing	5	1						7	1	1	2	6	2	3	1	4	6	7	7	7	3	56
Health Care													1	2		2	1	1	1			8
Miscellaneous Industrie	5	1			1		1	1	1	2	6	3	1			4	4	3	1		1	34
Ocean Carriers	1						1				1	1										4
Railroads	9		1																			10
Real Estate/Constructio	5	1		1		1		2		1	1		1	1	3	7		5	1			30
REIT	1	3		1				1	1									1				13
Retailing	9		1	2				1	1					1	2	6	15	6	4		5	53
Telecom/Technology	9	1	1			2	1		2	2	1	1	3	1		3	4	1	1		3	37
Utilities													1	1								3
Total	51	7	4	5	3	5	4	17	12	14	19	23	15	24	29	47	92	34	22	19	415	