

# **Market Size and Investment Performance Of Defaulted Bonds and Bank Loans: 1987 – Q2 2001**

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**HISTORICAL DEFAULT RATES - STRAIGHT BONDS ONLY**  
**EXCLUDING DEFAULTED ISSUES FROM PAR VALUE OUTSTANDING**  
**1971 - June 30, 2001 (\$ MILLIONS)**

YEAR	PAR VALUE OUTSTANDING (a)	PAR VALUE DEFAULTS	DEFAULT RATES	
2Q 01	\$613,200	\$29,437	4.801%	
2000	\$597,200	\$30,295	5.073%	
1999	\$567,400	\$23,532	4.147%	
1998	\$465,500	\$7,464	1.603%	
1997	\$335,400	\$4,200	1.252%	
1996	\$271,000	\$3,336	1.231%	
1995	\$240,000	\$4,551	1.896%	
1994	\$235,000	\$3,418	1.454%	
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	5.778%	
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 De viation
<b>ARITHMETIC AVERAGE DEFAULT RATE</b>		1971 TO 2000	2.713%	2.485%
		1978 TO 2000	2.948%	2.684%
		1985 TO 2000	3.719%	2.830%
<b>WEIGHTED AVERAGE DEFAULT RATE (b)</b>		1971 TO 2000	3.483%	2.559%
		1978 TO 2000	3.504%	2.564%
		1985 TO 2000	3.583%	2.565%
<b>MEDIAN ANNUAL DEFAULT RATE</b>		1971 TO 2000	1.656%	

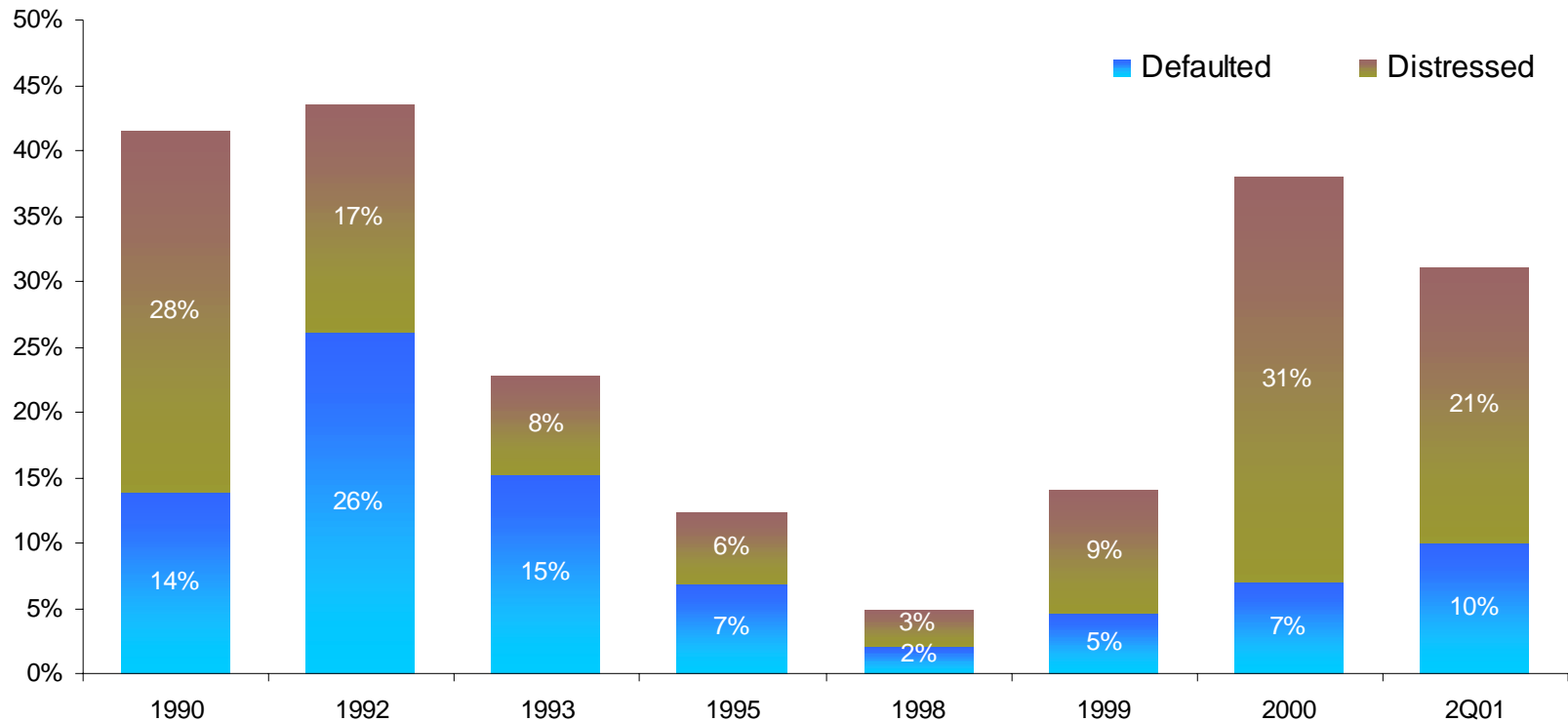
**Notes**

(a) As of mid-year.

(b) Weighted by par value of amount outstanding for each year.

Source: Authors' Compilation and Salomon Smith Barney Estimates

## DISTRESSED\* AND DEFAULTED DEBT AS A PERCENTAGE OF TOTAL HIGH YIELD DEBT MARKET



**\* Defined as yield-to-maturity spread greater than or equal to 1000bp over comparable Treasuries.**

Source: Salomon Smith Barney and NYU Salomon Center

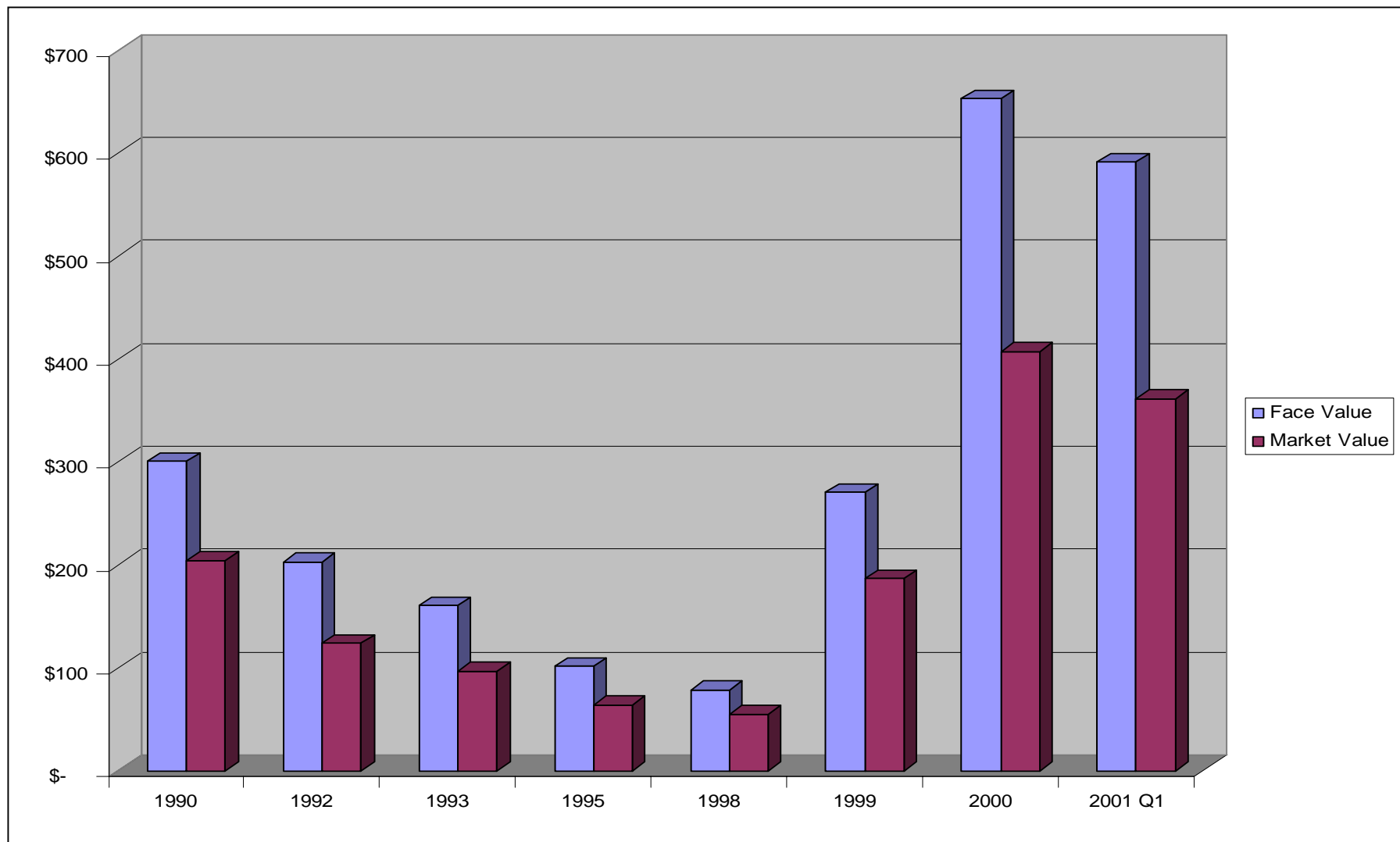
# ESTIMATED FACE AND MARKET VALUES OF DEFAULTED AND DISTRESSED DEBT

March 16, 2001  
(\$ Billions)

<u>Public Debt:</u>	<u>Face Value</u>	<u>3/16/01</u>	<u>Market Value</u>	<u>3/16/01</u>
Defaulted (1)	\$ 47.0	\$ 57.0	\$ 11.8 (.25xFV)	\$ 14.3
Distressed (2)	<u>\$ 186.0</u>	<u>\$ 154.0</u>	<u>\$ 93.0 (.50xFV)</u>	<u>\$ 77.0</u>
Total Public	\$ 233.0	\$ 211.0	\$104.8	\$ 91.3
<b>Private Debt (3)</b>				
Defaulted	\$ 84.6	\$ 102.6	\$ 50.8 (.60xFV)	\$ 61.6
Distressed	<u>\$ 334.8</u>	<u>\$ 277.2</u>	<u>\$251.1 (.75xFV)</u>	<u>\$ 207.9</u>
Total Private	\$ 419.4	\$ 379.8	\$301.9	\$ 269.5
<b>Total Public and Private</b>	<b><u>\$ 652.4</u></b>	<b><u>\$ 590.8</u></b>	<b><u>\$406.7</u></b>	<b><u>\$ 360.8</u></b>

Sources: Estimated by Professor Edward Altman, NYU Stern School of Business from Salomon Smith Barney's High Yield Bond DataBase, NYU Salomon Center Defaulted Bond Database, New Generation Research Corporation.

## SIZE OF DEFAULTED AND DISTRESSED DEBT MARKET NOW EXCEEDS RECORD LEVELS OF EARLY 1990s



**SIZE OF THE ALTMAN-NYU SALOMON CENTER  
DEFAULTED BOND INDEX  
(1986 - 2Q 2001)**

<b>Year End</b>	<b>Number of Issues</b>	<b>Number of Firms</b>	<b>Face Value (\$ Billions)</b>	<b>Market Value (\$ Billions)</b>	<b>Market / Face Ratio</b>
1986	30	10	1.7	0.5	0.29
1987	53	18	5.7	4.2	0.74
1988	91	34	5.2	2.7	0.52
1989	111	35	8.7	3.4	0.39
1990	173	68	18.7	5.1	0.27
1991	207	80	19.6	6.1	0.31
1992	231	90	21.7	11.1	0.51
1993	151	77	11.8	5.8	0.49
1994	93	35	6.3	3.3	0.52
1995	50	27	5.0	2.3	0.46
1996	39	28	5.3	2.4	0.45
1997	37	26	5.9	2.7	0.46
1998	36	30	5.5	1.4	0.25
1999	83	60	16.3	4.1	0.25
2000	129	72	27.8	4.3	0.15
2Q 2001	140	78	33.8	9.5	0.28

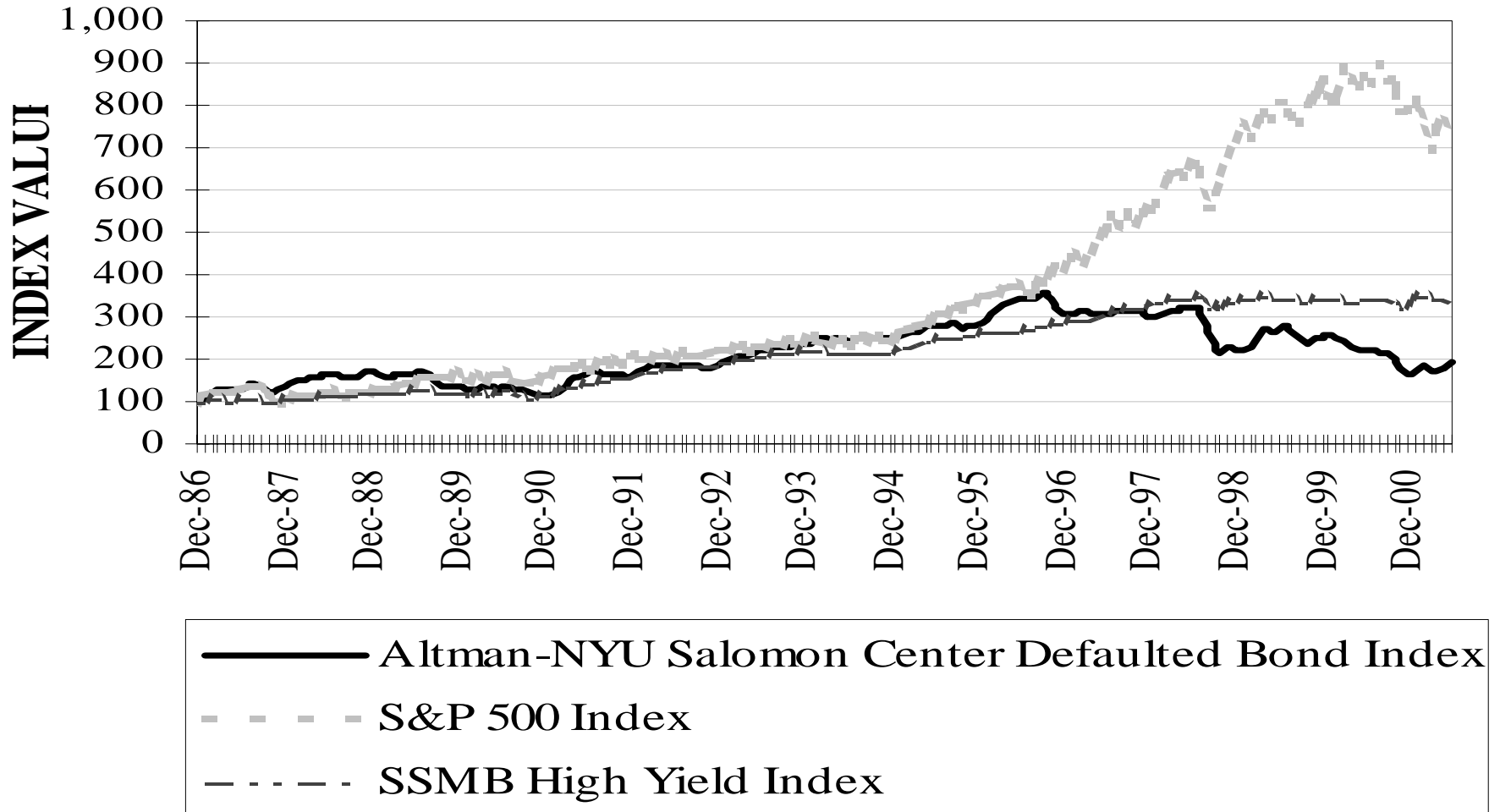
**ALTMAN-NYU SALOMON CENTER  
DEFAULTED BOND INDEX**

**COMPARISON OF RETURNS  
(1987 - 2Q 2001)**

<b>Year</b>	<b>Altman-NYU Salomon Center Defaulted Bond Index</b>	<b>S&amp;P 500 Stock Index</b>	<b>Salomon Smith Barney High Yield Market Index</b>
1987	37.85%	5.26%	4.67%
1988	26.49%	16.61%	13.47%
1989	-22.78%	31.68%	2.75%
1990	-17.08%	-3.12%	-7.04%
1991	43.11%	30.48%	39.93%
1992	15.39%	7.62%	17.86%
1993	27.91%	10.08%	17.36%
1994	6.66%	1.32%	-1.25%
1995	11.26%	37.56%	19.71%
1996	10.21%	22.96%	11.29%
1997	-1.58%	34.36%	13.18%
1998	-26.91%	28.58%	3.60%
1999	11.34%	20.98%	1.74%
2000	-33.09%	-9.11%	-5.68%
2Q 2001	14.78%	-6.69%	3.25%
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1987 - 2Q 2001 Arithmetic Average (Annual) Rate <sup>a</sup>	6.90%	15.24%	8.99%
Standard Deviation	23.22%	15.65%	11.99%
1987 - 2Q 2001 Compounde Average (Annual) Rate	4.36%	14.23%	8.41%
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1987 - 2Q 2001 Arithmetic Average (Monthly) Rate	0.46%	1.25%	0.72%
Standard Deviation	4.28%	4.47%	1.86%
1987 - 2Q 2001 Compounde Average (Monthly) Rate	0.37%	1.15%	0.70%

<sup>a</sup> Annual returns are computed assuming that 2Q 2001 returns are the returns for the entire year

# DEFAULTED BOND, STOCK, AND HIGH YIELD BOND INDICES 1987-2Q 2001



**CORRELATION OF ALTMAN-NYU SALOMON CENTER INDEXES  
OF DEFAULTED BONDS WITH OTHER SPECULATIVE  
SECURITIES INDEXES 1987 - 2Q 2001**

**Correlation of Monthly Returns**

	<b>Altman-NYU Bond Index</b>	<b>S&amp;P 500 Stock Index</b>	<b>Salomon Smith Barney High Yield Index</b>
<b>Altman-NYU Bond Index</b>	100.00%	23.71%	55.30%
<b>S&amp;P 500 Stock Index</b>		100.00%	49.31%
<b>Salomon Smith Barney High Yield Index</b>			100.00%

**Correlation of Quarterly Returns**

	<b>Altman-NYU Bond Index</b>	<b>S&amp;P 500 Stock Index</b>	<b>Salomon Smith Barney High Yield Index</b>
<b>Altman-NYU Bond Index</b>	100.00%	28.71%	56.68%
<b>S&amp;P 500 Stock Index</b>		100.00%	43.75%
<b>Salomon Smith Barney High Yield Index</b>			100.00%

**SIZE OF THE ALTMAN-NYU SALOMON CENTER  
DEFAULTED BANK LOAN INDEX  
(1995 - 2Q 2001)**

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<b>Year End</b>	<b>Number of Issues</b>	<b>Number of Firms</b>	<b>Face Value (\$ Billions)</b>	<b>Market Value (\$ Billions)</b>	<b>Market/ Face Ratio</b>
1995	17	14	2.9	2.0	0.69
1996	23	22	4.2	3.3	0.79
1997	18	15	3.4	2.4	0.71
1998	15	13	3.0	1.9	0.63
1999	45	23	12.9	6.8	0.53
2000	100	39	26.9	13.6	0.51
2Q 2001	116	46	36.5	20.9	0.57

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**ALTMAN-NYU SALOMON CENTER  
BANK LOAN INDEX**

**COMPARISON OF RETURNS  
(1996 - 2Q 2001)**

<b>Year</b>	<b>Altman-NYU Salomon Center Bank Loan Index</b>	<b>S&amp;P 500 Stock Index</b>	<b>Salomon Smith Barney High Yield Market Index</b>
1996	19.56%	22.96%	11.29%
1997	1.75%	34.36%	13.18%
1998	-10.22%	28.58%	3.60%
1999	0.65%	20.98%	1.74%
2000	-6.59%	-9.11%	-5.68%
2Q 2001	12.78%	-6.69%	3.25%
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1996 - 2Q 2001 Arithmetic Average (Annual) Rate	2.99%	19.55%	4.83%
Standard Deviation	11.35%	16.85%	7.63%
1996 - 2Q 2001 Compounded Average (Annual) Rate	2.47%	13.87%	4.38%
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1996 - 2Q 2001 Arithmetic Average (Monthly) Rate	0.25%	1.36%	0.46%
Standard Deviation	2.90%	4.83%	1.86%
1996 - 2Q 2001 Compounded Average (Monthly) Rate	0.22%	1.19%	0.39%

<sup>a</sup> Annual returns are computed assuming that 2Q 2001 returns are the returns for the entire year

**CORRELATION OF ALTMAN-NYU SALOMON CENTER INDEXES  
OF DEFAULTED LOANS WITH OTHER SPECULATIVE  
SECURITIES INDEXES 1996 - 2Q 2001**

**Correlation of Monthly Returns**

	<b>Altman-NYU Loan Index</b>	<b>S&amp;P 500 Stock Index</b>	<b>Salomon Smith Barney High Yield Index</b>	<b>Altman-NYU Bond Index</b>
<b>Altman-NYU Loan Index</b>	100.00%	-15.77%	40.95%	60.74%
<b>S&amp;P 500 Stock Index</b>		100.00%	48.07%	12.25%
<b>Index</b>			100.00%	52.58%
<b>Altman-NYU Bond Index</b>				100.00%

**Correlation of Quarterly Returns**

	<b>Altman-NYU Loan Index</b>	<b>S&amp;P 500 Stock Index</b>	<b>Salomon Smith Barney High Yield Index</b>	<b>Altman-NYU Bond Index</b>
<b>Altman-NYU Loan Index</b>	100.00%	-9.23%	44.18%	68.94%
<b>S&amp;P 500 Stock Index</b>		100.00%	46.39%	35.18%
<b>Index</b>			100.00%	42.34%
<b>Altman-NYU Bond Index</b>				100.00%