
Current Conditions in Global Credit Markets

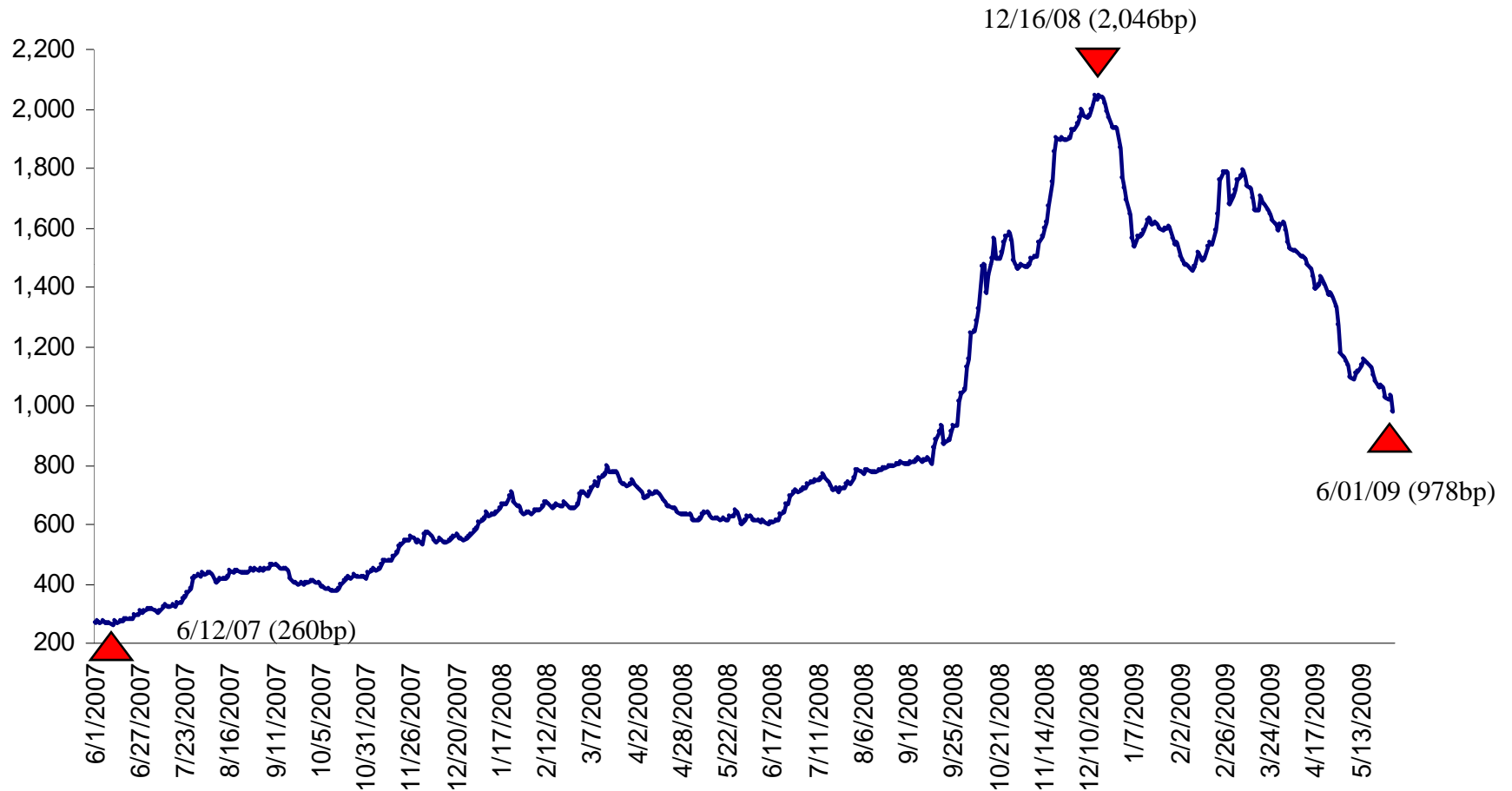
A Tale of Three Periods

Dr. Edward Altman
NYU Stern School of Business

Keynote Address
Family Office Forum Conference
Chicago, Illinois
June 09, 2009

YTM Spread Between High Yield Markets & 10 Year Treasury Notes

June 01, 2007 - June 01, 2009



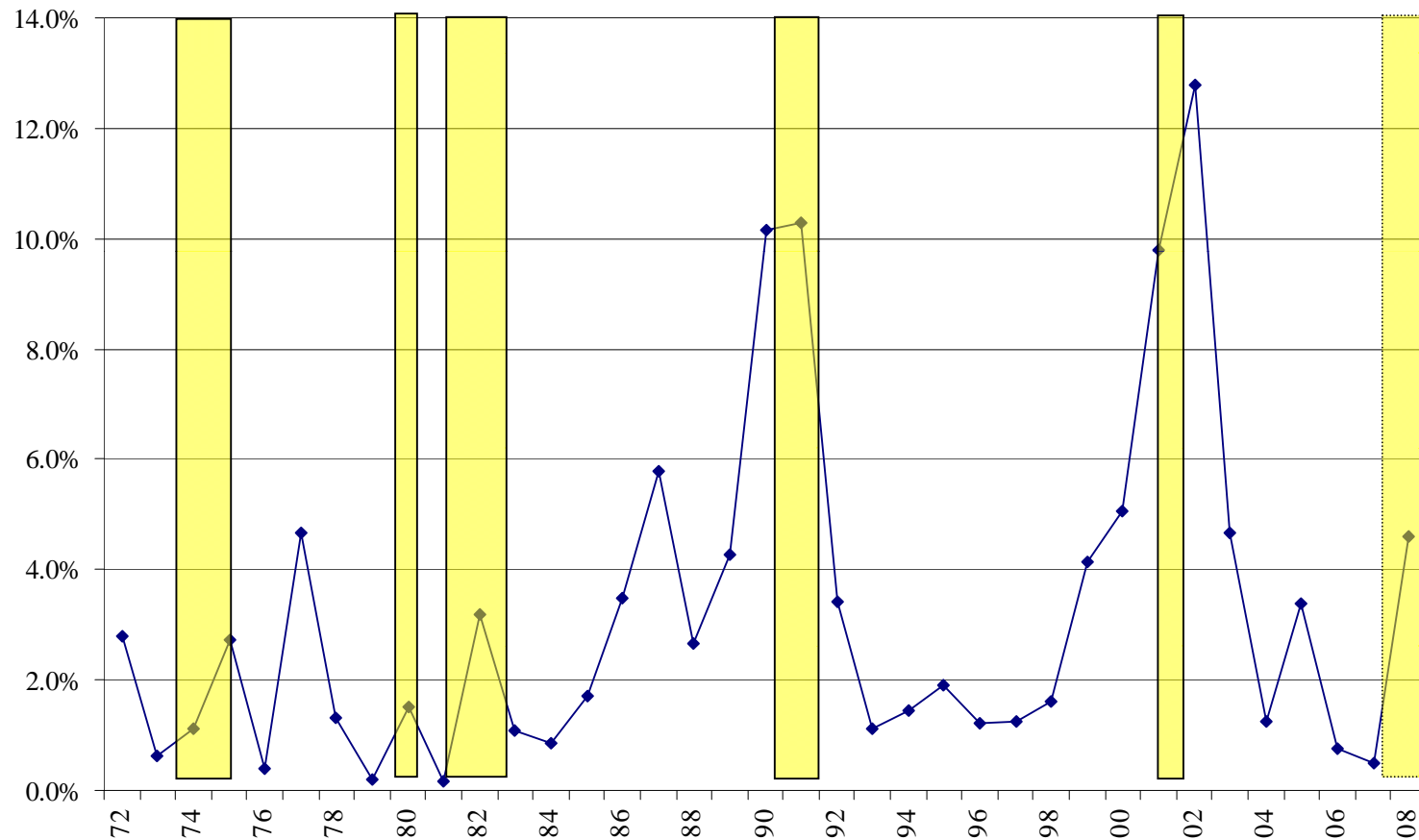
Source: Citigroup Yieldbook Index Data

Default and Recovery Forecasting Models

- Macro-Economic Models: Default Probabilities
- Mortality Rate Models: Default Probabilities
- Market Based Models: Default Probabilities
- Recovery Rate Models: Loss-Given-Default
- Distressed Debt Market Size Estimate

Historical Default Rates and Recession Periods in the U.S.

HIGH YIELD BOND MARKET 1972 – 2008*



Periods of Recession: 11/73 - 3/75, 1/80 - 7/80, 7/81 - 11/82, 7/90 - 3/91, 4/01 - 12/01, 12/07-present

*All annual rates.

Source: E. Altman (NYU Salomon Center) & National Bureau of Economic Research

Factors Affecting the Transformation of Credit Markets – The Seeds of the Meltdown

- Massive Global Liquidity
 - Petrodollars, Foreign Governments, Financial Institutions, Global Money Supply Expansion, etc.
- Explosion of Hedge Fund Activity
- Frenetic Activity in M&A/LBO transactions
- Growth of the Institutional Loan Market, esp. Leveraged Loans
- Easy Credit Standards by both Bank and Non-Bank Lenders
- Record Low Required Yield Spreads in a Higher Credit Risk Profile Environment until June '07
 - Second-Half 2007 Spread Volatility

Factors Affecting the Transformation of Credit Markets (continued)

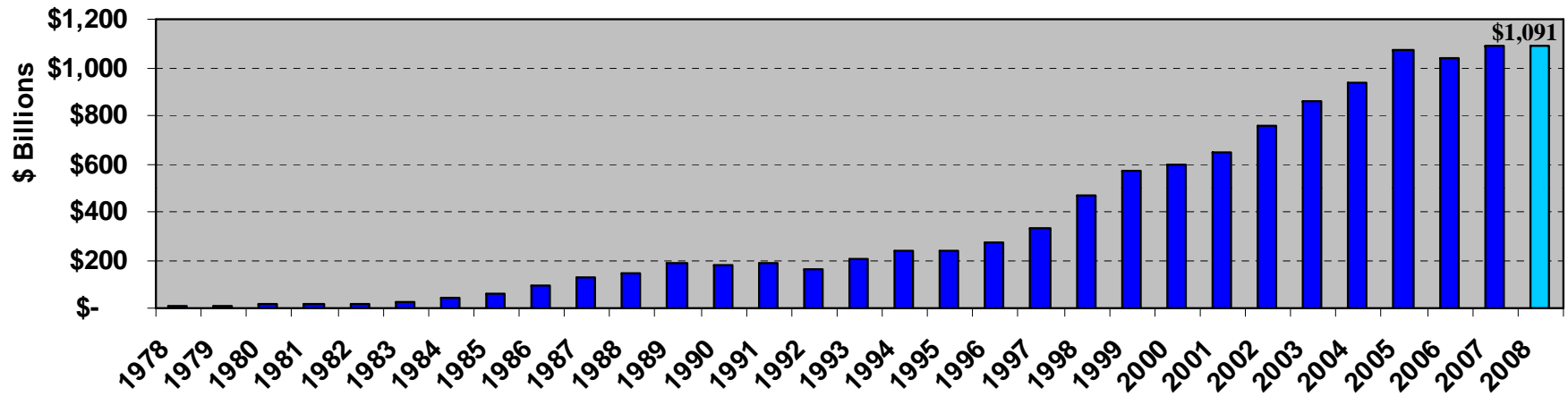
- Rapid Growth in Derivatives and Synthetics, esp. CDOs
- Rescue Financings Restructurings (Privatization of Bankruptcy)
- Distressed Debt Control Investing (Loan-to-Own)
- Historically Low Default Rates and High Recoveries
- Extremely Low Equity and Debt Volatility until Summer '07
- Recession Scenarios

Major Agencies Bond Rating Categories

<u>Moody's</u>		<u>S&P/Fitch</u>
Aaa		AAA
Aa1		AA+
Aa2		AA
Aa3		AA-
A1		A+
A2		A
A3		A-
Baa1		BBB+
Baa2	Investment	BBB
Baa3	Grade	BBB-
Ba1	High Yield	BB+
Ba2	("Junk")	BB
Ba3		BB-
B1		B+
B2		B
B3		B-
Caa1		CCC+
Caa		CCC
Caa3		CCC-
Ca		CC
C		C
		D

Size of the US High-Yield Bond Market

1978 – 2008
(Mid-year US\$ billions)



Historical Default Rates

Straight Bonds Only Excluding Defaulted Issues From Par Value Outstanding, 1971 – 2009 (6/01) (US\$ millions)

Year	Par Value Outstanding*	Par Value Defaults	Default Rates (%)	Year	Par Value Outstanding ^a	Par Value Defaults	Default Rates (%)
2009 (6/01)	\$1,083,600	\$78,904	7.282%	1984	\$40,939	\$344	0.840
2008	\$1,091,000	\$50,169	4.598	1983	\$27,492	\$301	1.095
2007	\$1,075,400	\$5,473	0.509	1982	\$18,109	\$577	3.186
2006	\$993,600	\$7,559	0.761	1981	\$17,115	\$27	0.158
2005	\$1,073,000	\$36,181	3.372	1980	\$14,935	\$224	1.500
2004	\$933,100	\$11,657	1.249	1979	\$10,356	\$20	0.193
2003	\$825,000	\$38,451	4.661	1978	\$8,946	\$119	1.330
2002	\$757,000	\$96,855	12.795	1977	\$8,157	\$381	4.671
2001	\$649,000	\$63,609	9.801	1976	\$7,735	\$30	0.388
2000	\$597,200	\$30,295	5.073	1975	\$7,471	\$204	2.731
1999	\$567,400	\$23,532	4.147	1974	\$10,894	\$123	1.129
1998	\$465,500	\$7,464	1.603	1973	\$7,824	\$49	0.626
1997	\$335,400	\$4,200	1.252	1972	\$6,928	\$193	2.786
1996	\$271,000	\$3,336	1.231	1971	\$6,602	\$82	1.242
1995	\$240,000	\$4,551	1.896	Standard Deviation (%)			
1994	\$235,000	\$3,418	1.454	Arithmetic Average Default Rate			
1993	\$206,907	\$2,287	1.105	1971 to 2008	3.135%	3.030%	
1992	\$163,000	\$5,545	3.402	1978 to 2008	3.405%	3.226%	
1991	\$183,600	\$18,862	10.273	1985 to 2008	4.052%	3.365%	
1990	\$181,000	\$18,354	10.140	Weighted Average Default Rate*			
1989	\$189,258	\$8,110	4.285	1971 to 2008	3.932%		
1988	\$148,187	\$3,944	2.662	1978 to 2008	3.942%		
1987	\$129,557	\$7,486	5.778	1985 to 2008	3.975%		
1986	\$90,243	\$3,156	3.497	Median Annual Default Rate			
1985	\$58,088	\$992	1.708	1971 to 2008	1.802%		

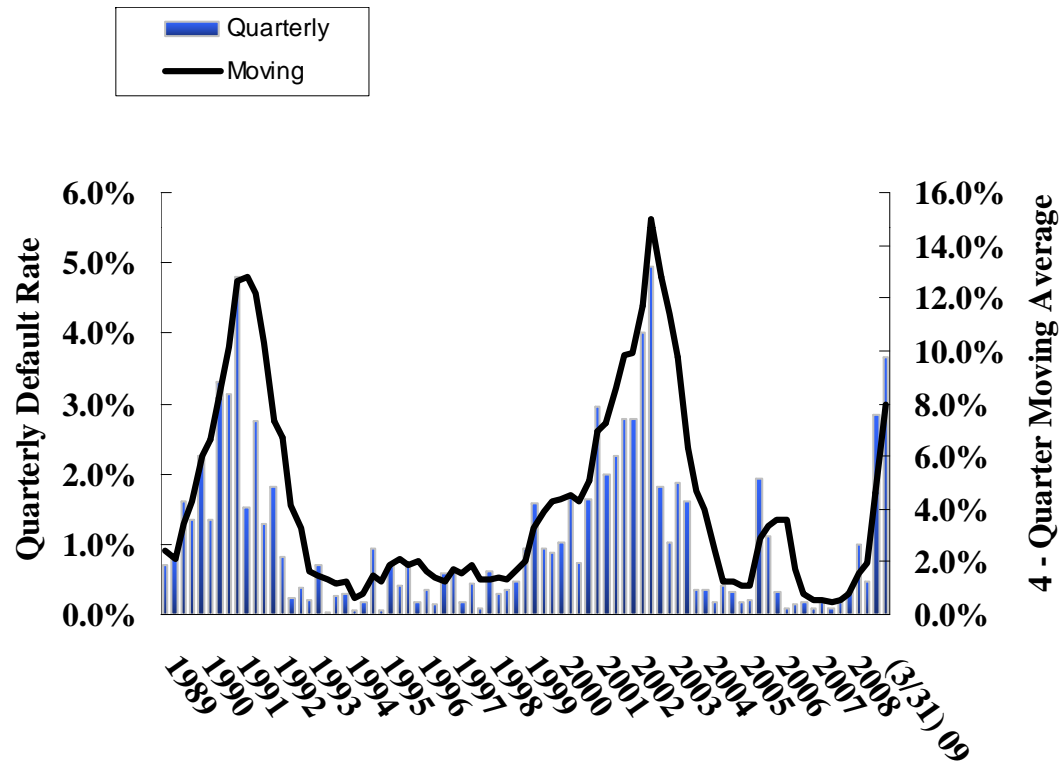
*Weighted by par value of amount outstanding for each year.

Source: Author's compilation and Citigroup estimates

Historical Default Rates

QUARTERLY DEFAULT RATE AND FOUR QUARTER MOVING AVERAGE

1991 - 2009 (3/31)



Source: Author's Compilations

High-Yield Bond Distressed Exchange Default & Recovery Statistics

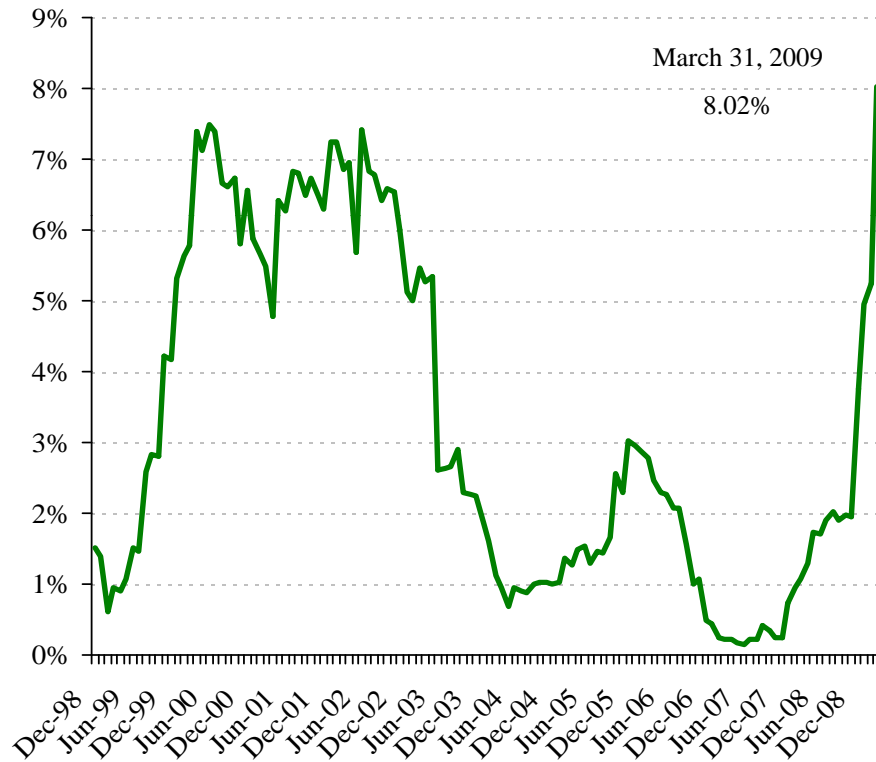
1984 – 2009 (May 8th)

Year	Distressed Exchange Defaults (\$)	Distressed Total Defaults (\$)	% Distressed Exchange Defaults to Total (\$)	Distressed Exchange Defaults (# Issuers)	Distressed Total Defaults (# Issuers)	% Distressed Exchange Defaults to Total (# Issuers)	Distressed Exchange Recovery Rate	All Default Recovery Rate	Difference Between Distressed Exchange & All Default Recovery Rate
2009 (May 8th)	13,455.72	59,092.23	22.8%	9	45	20.0%	25.03	24.19	0.83
2008	30,329.42	50,763.26	59.7%	14	64	21.9%	52.41	42.50	9.91
2007	146.83	5,473.00	2.7%	1	19	5.3%	85.17	66.65	18.52
2006	0.00	7,559.00	0.0%	0	0	0.0%	n/a	n/a	n/a
2005	6,861.00	36,209.00	18.9%	1	34	2.9%	78.61	62.96	15.65
2004	537.88	11,657.00	4.6%	5	39	12.8%	58.05	57.72	0.33
2003	1,080.12	38,451.00	2.8%	8	86	9.3%	78.52	45.58	32.94
2002	764.80	96,858.00	0.8%	3	112	2.7%	61.22	25.3	35.92
2001	1,267.60	63,609.00	2.0%	5	156	3.2%	33.12	25.62	7.50
2000	50.00	30,295.00	0.2%	1	107	0.9%	77.00	26.74	50.26
1999	2,118.40	23,532.00	9.0%	6	98	6.1%	65.39	27.9	37.49
1998	461.10	7,464.00	6.2%	2	37	5.4%	17.34	40.46	(23.12)
1997	0.00	4,200.00	0.0%	0	0	0.0%	n/a	n/a	n/a
1996	0.00	3,336.00	0.0%	0	0	0.0%	n/a	n/a	n/a
1995	0.00	4,551.00	0.0%	0	0	0.0%	n/a	n/a	n/a
1994	0.00	3,418.00	0.0%	0	0	0.0%	n/a	n/a	n/a
1993	0.00	2,287.00	0.0%	0	0	0.0%	n/a	n/a	n/a
1992	0.00	5,545.00	0.0%	0	0	0.0%	n/a	n/a	n/a
1991	76.00	18,862.00	0.4%	1	62	1.6%	31.30	40.67	(9.37)
1990	1,044.00	18,354.00	5.7%	7	47	14.9%	43.15	24.66	18.49
1989	548.90	8,110.00	6.8%	6	26	23.1%	44.53	35.97	8.56
1988	390.30	3,944.00	9.9%	3	24	12.5%	28.40	43.45	(15.05)
1987	33.60	7,486.00	0.4%	2	15	13.3%	40.70	66.63	(25.93)
1986	114.80	3,156.00	3.6%	3	23	13.0%	47.68	36.6	11.08
1985	323.30	992.00	32.6%	2	19	10.5%	55.04	41.78	13.26
1984	100.10	344.00	29.1%	1	12	8.3%	44.12	50.62	(6.50)
Totals/ Averages	59,703.86	515,547.50	11.6%	80	1025	7.8%	50.88	41.37	9.51 11

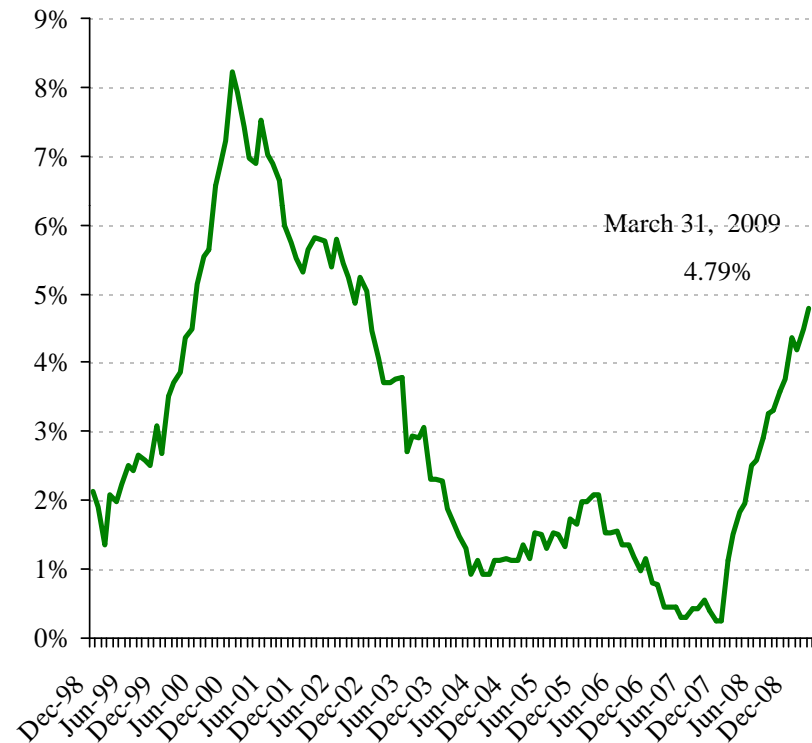
Source: Author's Compilations

Lagging Twelve-Month Leveraged Loan Default Rate by Principal Amount & Number of Issuers

Lagging 12-months Default Rate by Principal Amount



Lagging 12-months Default Rate by Number of Issuers



^a**Default rate** is calculated as the amount defaulted over the last twelve months divided by the amount outstanding at the beginning of the twelve-month period. ^b**Default rate** is calculated as the number of defaults over the last twelve months divided by the number of issuers in the Index at the beginning of the twelve-month period.

Rating Distributions Prior To Recessions

(Percent of Issuers)

	<u>1990</u>	<u>2000</u>	<u>2007</u>	<u>2008¹</u>	<u>2009²</u>
Ba	54%	32%	29%	43%	27%
B	44%	54%	57%	35%	46%
Caa	2%	14%	14%	22%	27%

Subsequent Default Rates By Rating Category

	<u>1991</u>	<u>2001</u>	<u>2009 Forecasts*</u> <u>1991/2001 Scenarios</u>	<u>2010 (Q1)</u> <u>Forecasts*</u> <u>1991/2001 Scenarios</u>
Ba	4%	2%	1.7% / .09%	1.1% / 0.5%
B	16%	11%	5.6% / 3.9%	7.4% / 5.1%
Caa	37%	34%	8.1% / 7.5%	10.0% / 9.2%
H.Y. Default Rate	11.0%	10.6%	15.4% / 12.3%	18.5% / 14.8%

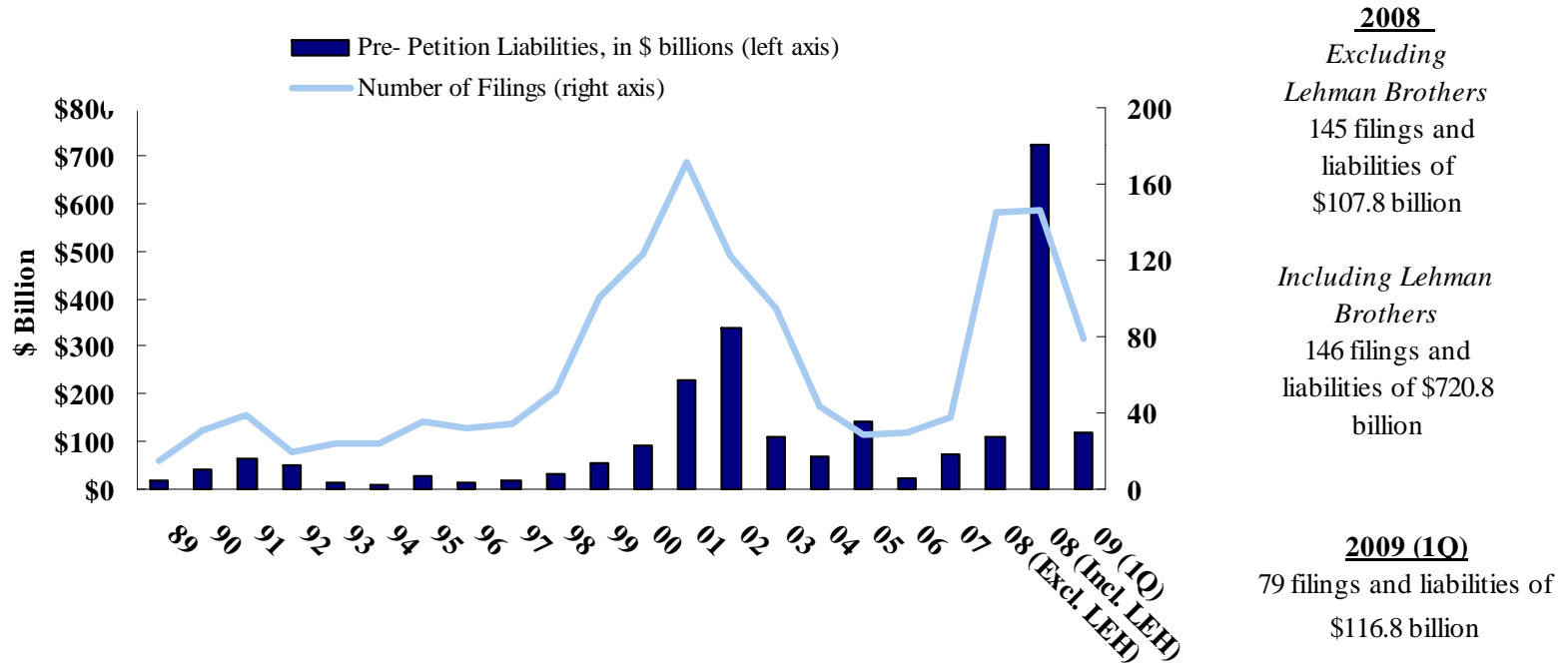
¹Year-end based on Moody's, S&P, and Fitch ratings in 2008 (based on dollar amounts), Moody's only in prior years. ²As of Q1-2009 (Moody's data).

Source: M. Friedson: *Distressed Debt Investor* (September 28, 2006, April 17, 2008) and author updates.

Filings for Chapter 11

Number of Filings and Pre-petition Liabilities of Public Companies

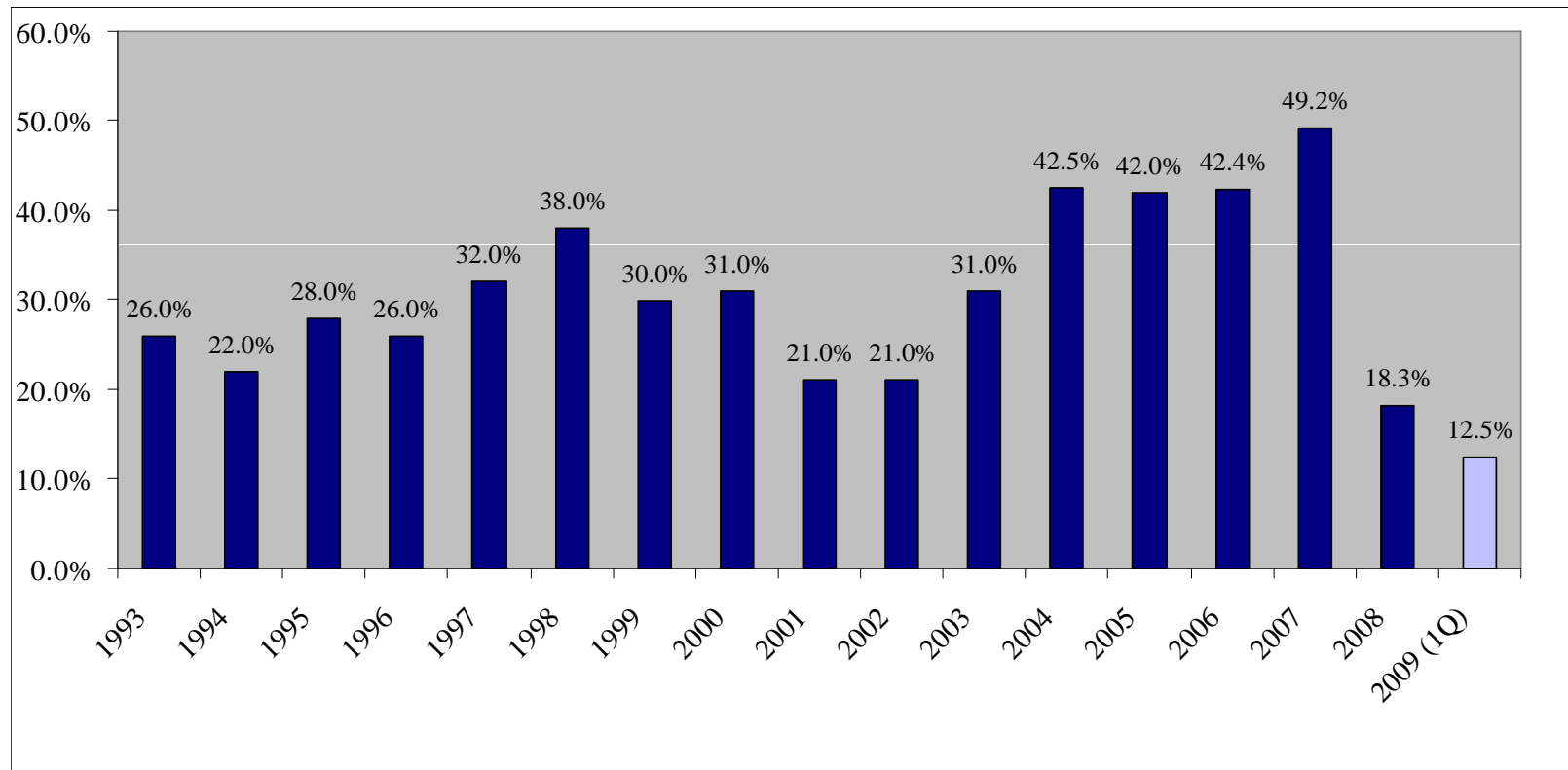
1989 – 2009 (3/31)



Note: Minimum \$100 million in liabilities
 Source: NYU Salomon Center Bankruptcy Filings Database

Credit Statistics Trends and Leveraged Market Activity

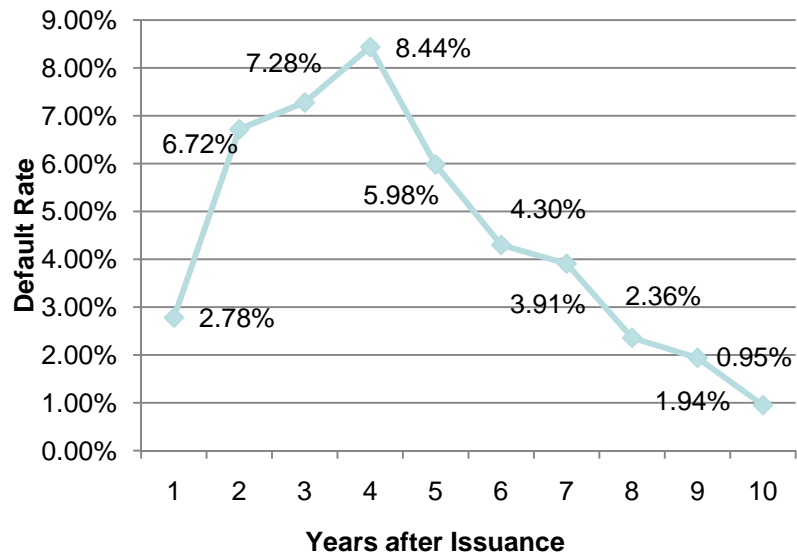
New Issues Rated B- or Below as Percentage of all New Issues (1993 – 2009 (1Q))



Source: Standard & Poor's Global Fixed Income Research

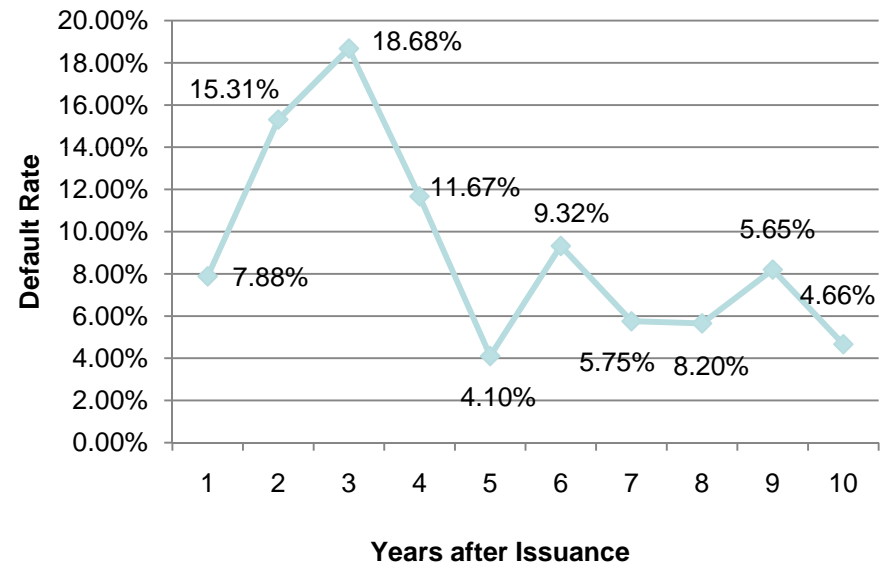
Default Lag After Issuance: 'B' & 'CCC' Rated Corporate Bonds

Default Lag after Issuance for B Ratings



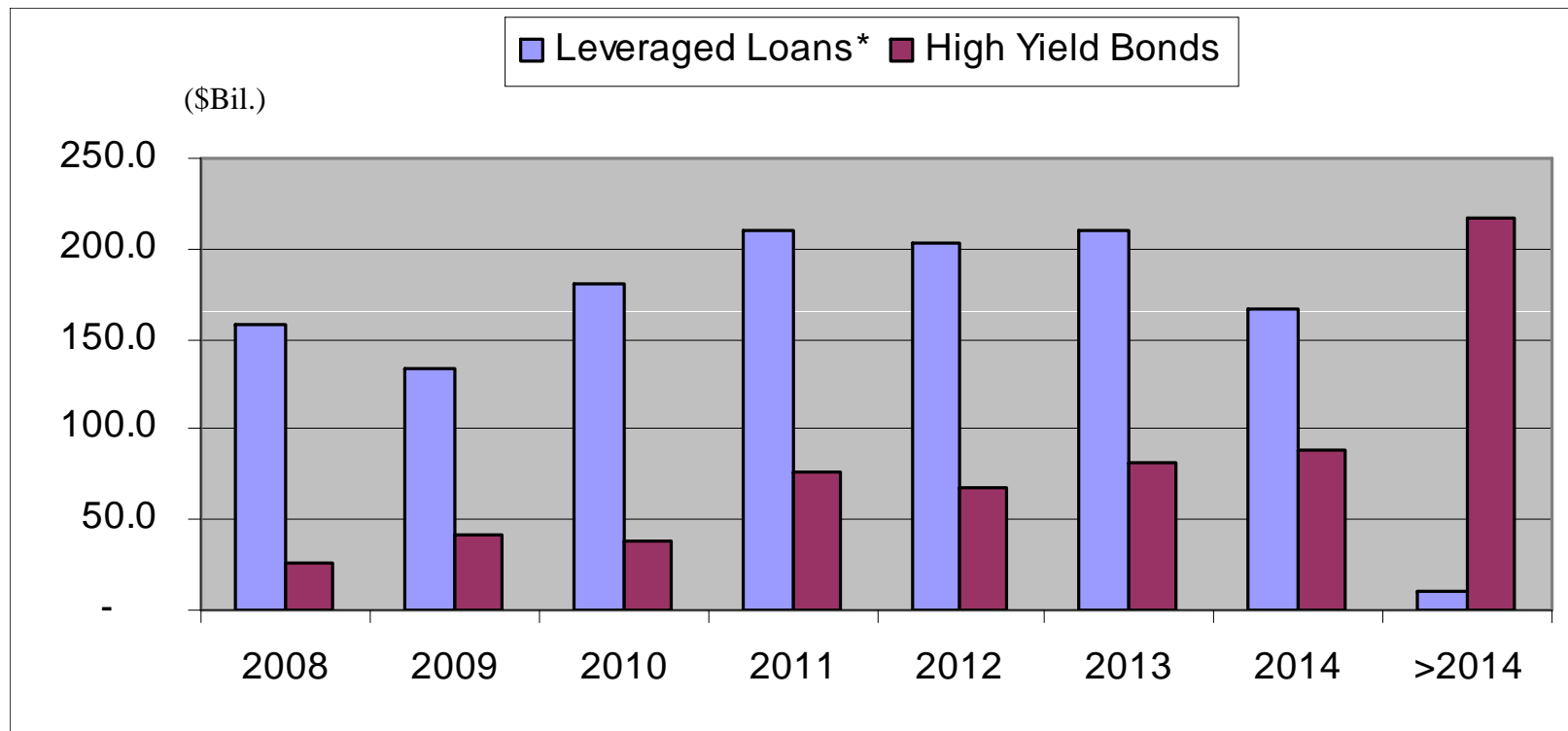
Source: Altman Mortality Tables (1971-2007)

Default Lag after Issuance for CCC Ratings



Source: Altman Mortality Tables (1971-2007)

Below Investment Grade Debt Maturity Schedule (U.S.)

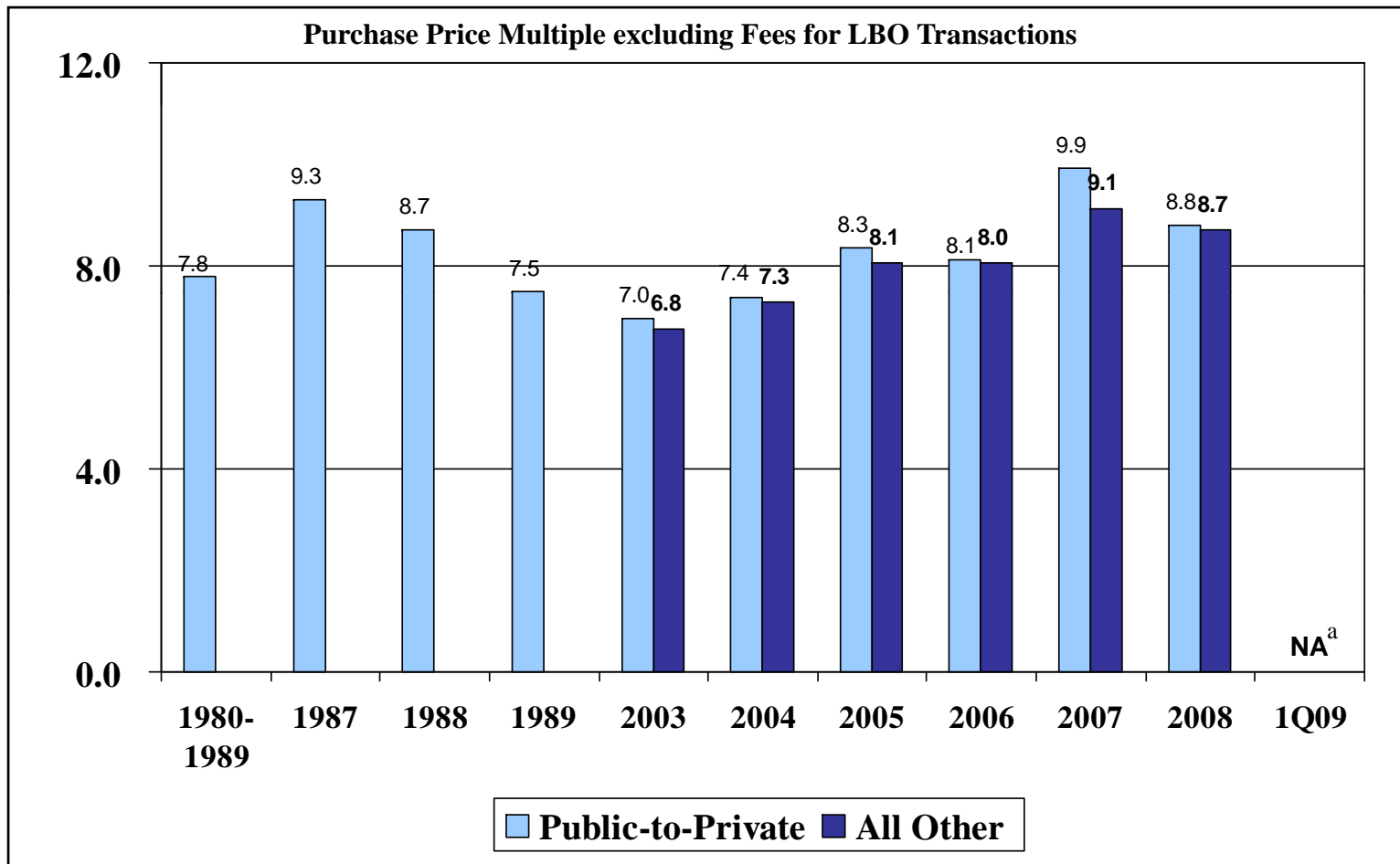


•Includes Term Loans, Revolvers, and Other Loans; Assumes Revolvers are Fully Drawn.

Source: DealLogic, Fitch Ratings.

A Credit Default Analysis of LBOs

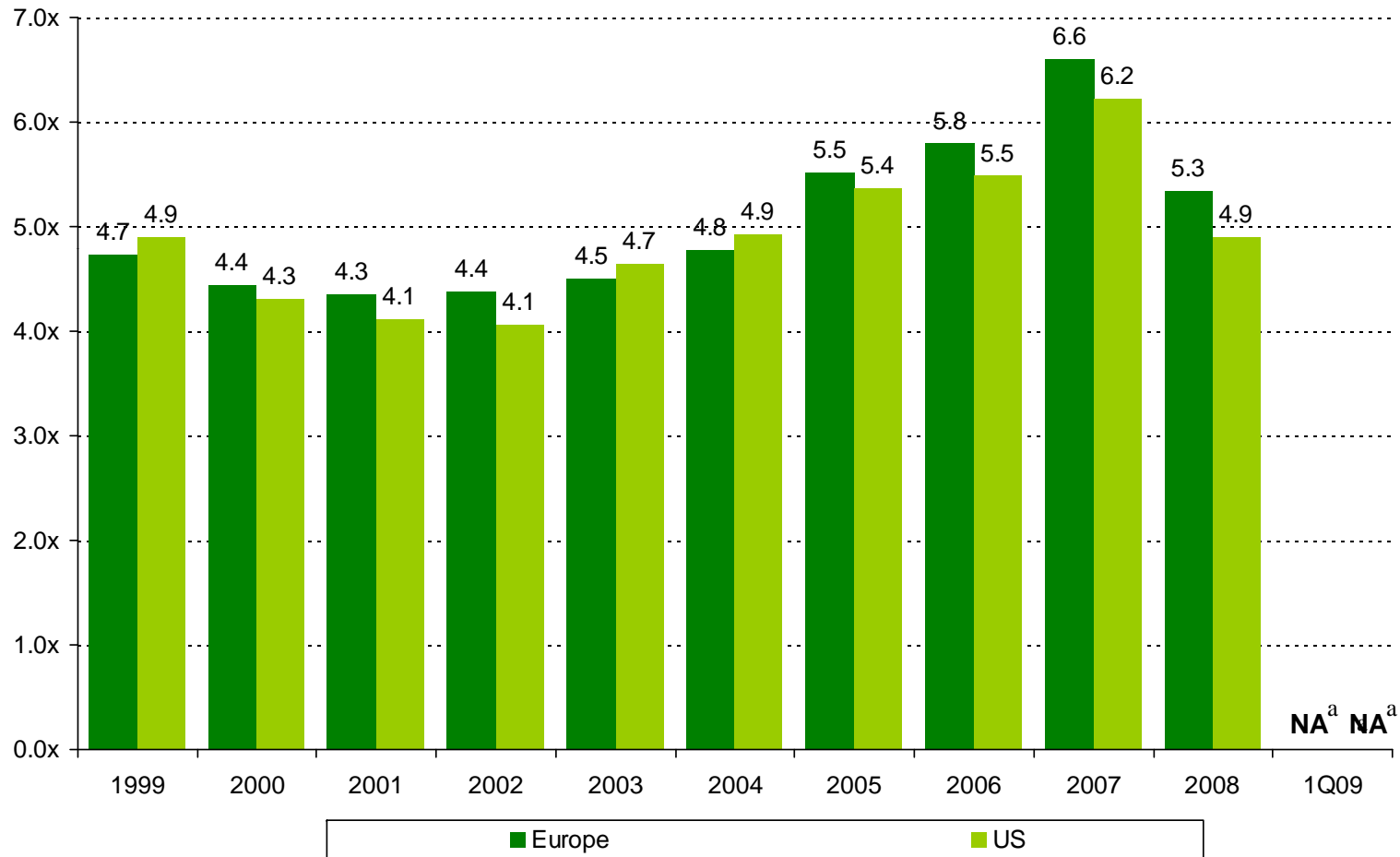
Purchase Price Multiples



^a NA indicates that there were not enough observations to form a meaningful sample.

Source: Standard and Poor's LCD

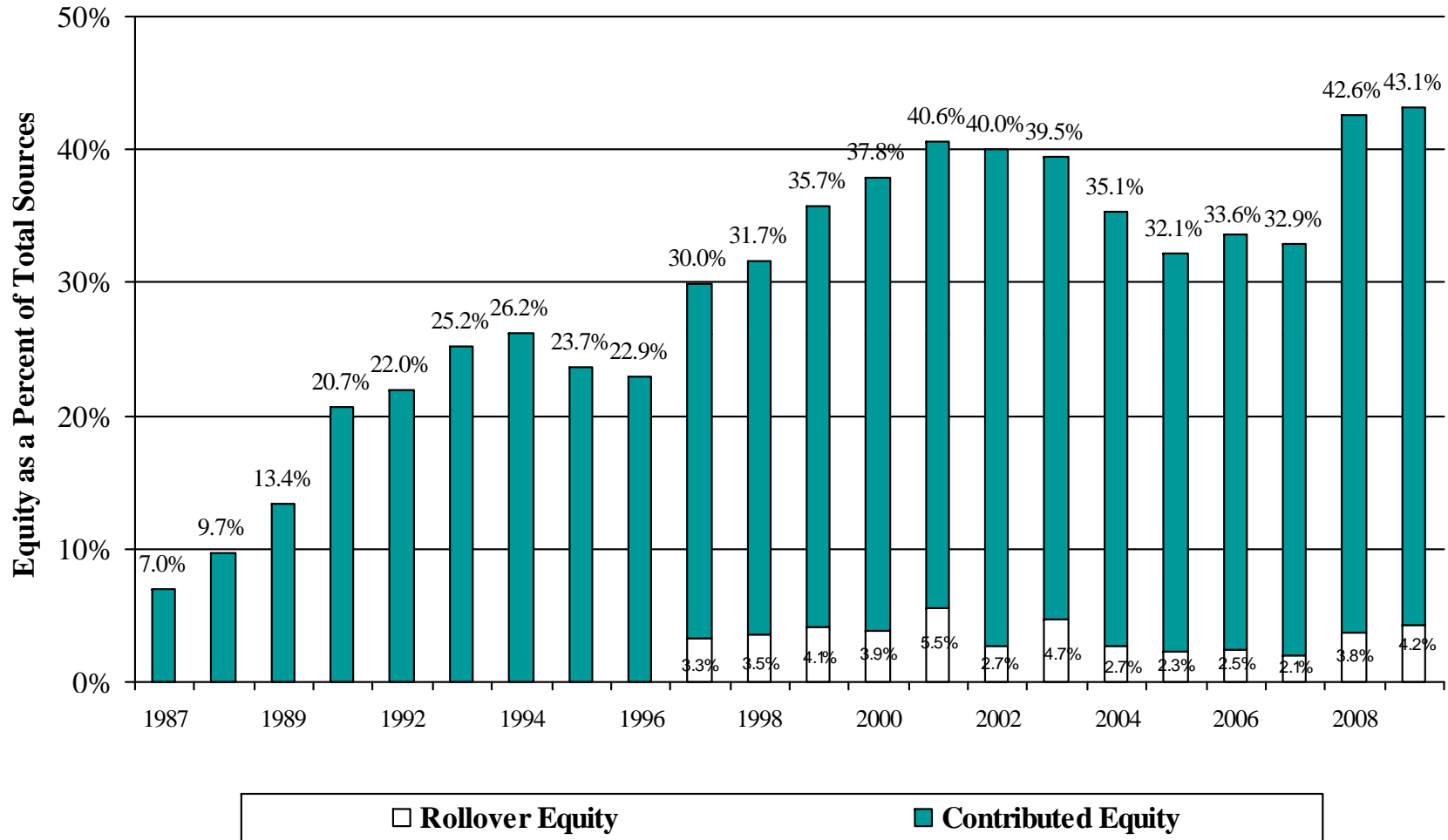
Average Total Debt Leverage Ratio for LBO's: Europe and US with EBITDA of €/\$50M or More



^a NA indicates that there were not enough observations to form a meaningful sample.

Source: Standard and Poor's LCD

Average Equity Contribution to Leveraged Buyouts 1987 – LTM 3/31/09



Equity includes common equity and preferred stock as well as holding company debt and seller note proceeds downstreamed to the operating company as common equity; Rollover Equity prior to 1996 is not available; There were too few deals in 1991 to form a meaningful sample.

Recovery Rate Analysis

Default Rates and Losses^a

1978 – 2009 (6/01)

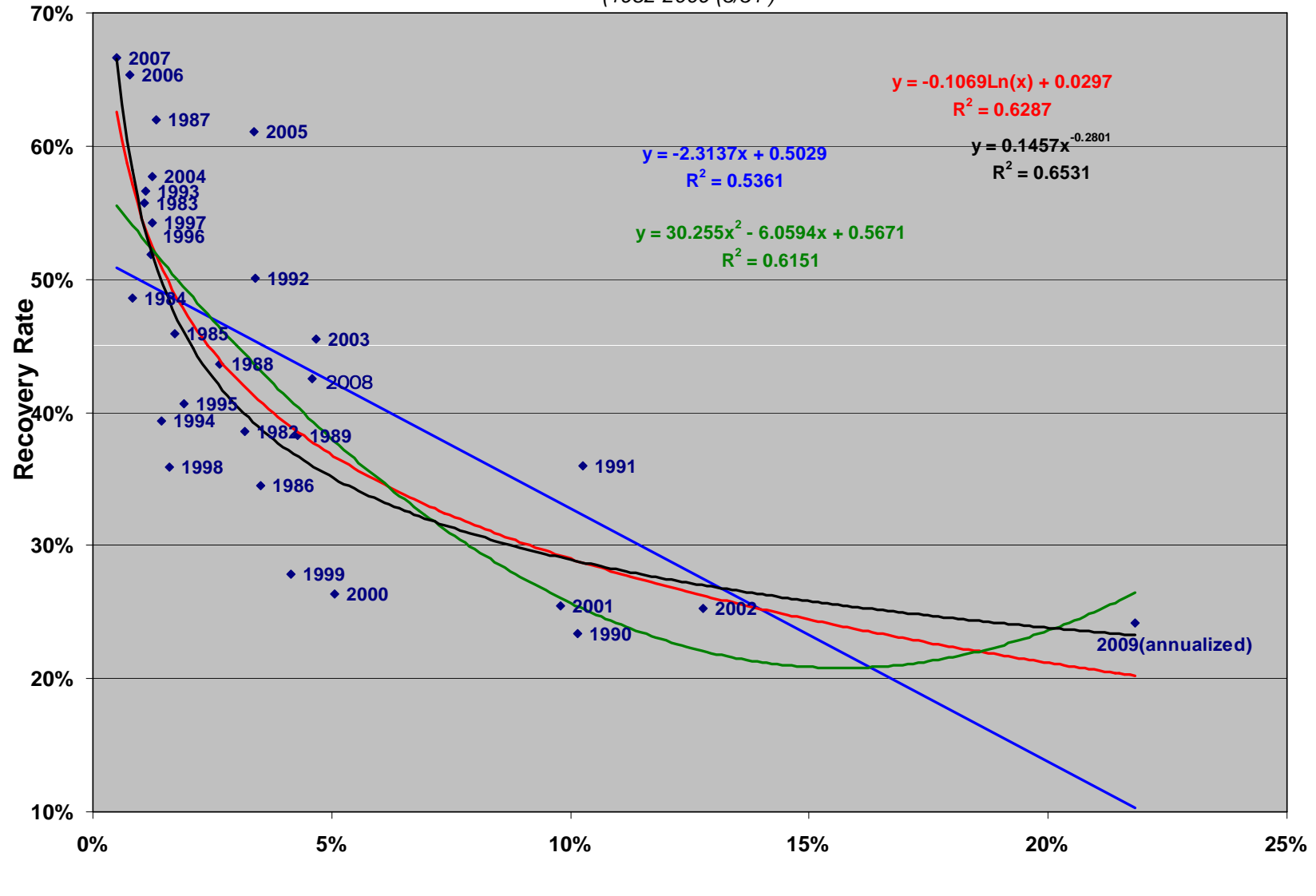
Year	Par Value Outstanding ^a (\$MM)	Par Value Of Default (\$MMs)	Default Rate (%)	Weighted Price After Default	Weighted Coupon (%)	Default Loss (%)
2009 (6/01)	\$1,083,600	\$78,904	7.28	\$22.6	9.06	N/A^b
2008	\$1,091,000	\$50,169	4.60	\$42.5	8.23	2.83
2007	\$1,075,400	\$5,473	0.51	\$66.6	9.64	0.19
2006	\$993,600	\$7,559	0.76	\$65.3	9.33	0.30
2005	\$1,073,000	\$36,181	3.37	\$61.1	8.61	1.46
2004	\$933,100	\$11,657	1.25	\$57.7	10.30	0.61
2003	\$825,000	\$38,451	4.66	\$45.5	9.55	2.76
2002	\$757,000	\$96,858	12.79	\$25.3	9.37	10.15
2001	\$649,000	\$63,609	9.80	\$25.5	9.18	7.76
2000	\$597,200	\$30,248	5.06	\$26.4	8.54	3.94
1999	\$567,400	\$23,532	4.15	\$27.9	10.55	3.21
1998	\$465,500	\$7,464	1.60	\$35.9	9.46	1.10
1997	\$335,400	\$4,200	1.25	\$54.2	11.87	0.65
1996	\$271,000	\$3,336	1.23	\$51.9	8.92	0.65
1995	\$240,000	\$4,551	1.90	\$40.6	11.83	1.24
1994	\$235,000	\$3,418	1.45	\$39.4	10.25	0.96
1993	\$206,907	\$2,287	1.11	\$56.6	12.98	0.56
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	\$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
1984	\$40,939	\$344	0.84	\$48.6	12.23	0.48
1983	\$27,492	\$301	1.09	\$55.7	10.11	0.54
1982	\$18,109	\$577	3.19	\$38.6	9.61	2.11
1981	\$17,115	\$27	0.16	\$12.0	15.75	0.15
1980	\$14,935	\$224	1.50	\$21.1	8.43	1.25
1979	\$10,356	\$20	0.19	\$31.0	10.63	0.14
1978	\$8,946	\$119	1.33	\$60.0	8.38	0.59
Arithmetic Average 1978-2008:			3.40	\$45.07	10.72	2.29
Weighted Average 1978-2008:			3.94			2.67

^a Excludes defaulted issues. ^b Calculation not performed as of June 01, 2009.

Source: Authors' compilations and various dealer price quotes.

Recovery Rate/Default Rate Association

Dollar Weighted Average Recovery Rates to Dollar Weighted Average Default Rates
(1982-2009 (3/31))



Annual Returns

Yields and Spreads on 10-Year Treasury (Treas) and High Yield (HY) Bonds 1978 – 2009 (6/01)

Year	Return (%)			Promised Yield (%) ^a		
	HY	Treas	Spread	HY	Treas	Spread
2009 (6/01)	25.41	(10.59)	36.00	13.49	3.71	9.78
2008	(25.91)	20.30	(46.21)	19.53	2.22	17.31
2007	1.83	9.77	(7.95)	9.69	4.03	5.66
2006	11.85	1.37	10.47	7.82	4.70	3.11
2005	2.08	2.04	0.04	8.44	4.39	4.05
2004	10.79	4.87	5.92	7.35	4.21	3.14
2003	30.62	1.25	29.37	8.00	4.26	3.74
2002	(1.53)	14.66	(16.19)	12.38	3.82	8.56
2001	5.44	4.01	1.43	12.31	5.04	7.27
2000	(5.68)	14.45	(20.13)	14.56	5.12	9.44
1999	1.73	(8.41)	10.14	11.41	6.44	4.97
1998	4.04	12.77	(8.73)	10.04	4.65	5.39
1997	14.27	11.16	3.11	9.20	5.75	3.45
1996	11.24	0.04	11.20	9.58	6.42	3.16
1995	22.40	23.58	(1.18)	9.76	5.58	4.18
1994	(2.55)	(8.29)	5.74	11.50	7.83	3.67
1993	18.33	12.08	6.25	9.08	5.80	3.28
1992	18.29	6.50	11.79	10.44	6.69	3.75
1991	43.23	17.18	26.05	12.56	6.70	5.86
1990	(8.46)	6.88	(15.34)	18.57	8.07	10.50
1989	1.98	16.72	(14.74)	15.17	7.93	7.24
1988	15.25	6.34	8.91	13.70	9.15	4.55
1987	4.57	(2.67)	7.24	13.89	8.83	5.06
1986	16.50	24.08	(7.58)	12.67	7.21	5.46
1985	26.08	31.54	(5.46)	13.50	8.99	4.51
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 Annual Average 1978-2008	9.58	8.93	0.65	12.33	7.09	5.24
Compound Annual Average 1978-2008	8.76	8.38	0.38			

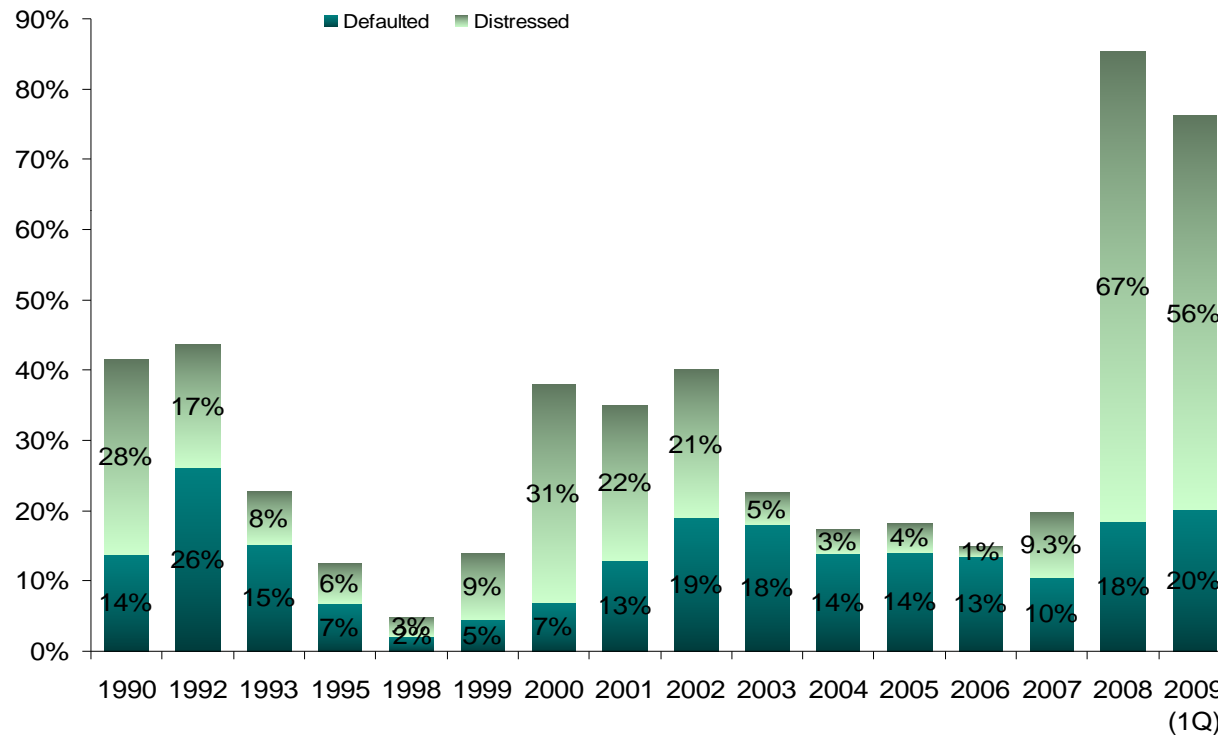
^a End-of-year yields.

Source: Citigroup's High Yield Composite Index

Size of Distressed Debt Market

Distressed^a And Defaulted Debt as a Percentage of High Yield And Defaulted Debt Markets^b

1990 - 2009 (1Q)



(a) Defined as yield-to-maturity spread greater than or equal to 1000bp over comparable Treasuries. (b) \$1.351 trillion as of 3/31/2009. (c) Some years not available as no survey results available.

Source: NYU Salomon Center

Estimated Face And Market Values Of Defaulted And Distressed Debt (\$ Billions)

2006 – 2009 (1Q)

	<u>Face Value</u>			<u>Market Value</u>			Market/Face Ratio
	12/31/2007	12/31/2008	3/31/2009	12/31/2007	12/31/2008	3/31/2009	
<u>Public Debt</u>							
Defaulted	\$ 127.3	\$ 234.4	\$ 268.8 ⁽¹⁾	\$ 76.4	\$ 40.7	\$ 67.2	0.25
Distressed	\$ 113.6	\$ 888.5	\$ 761.1 ⁽²⁾	\$ 85.2	\$ 488.7	\$ 418.6	0.55
Total Public	\$ 240.9	\$ 1,122.9	\$ 1,029.8	\$ 161.6	\$ 529.4	\$ 485.8	
<u>Private Debt</u>							
Defaulted	\$ 331.0	\$ 515.6	\$ 591.3 ⁽³⁾	\$ 281.4	\$ 299.1	\$ 354.8	0.60
Distressed	\$ 295.3	\$ 1,954.8	\$ 1,674.3 ⁽³⁾	\$ 265.7	\$ 1,368.3	\$ 1,172.0	0.70
Total Private	\$ 626.3	\$ 2,470.4	\$ 2,265.6	\$ 547.1	\$ 1,667.4	\$ 1,526.8	
Total Public and Private	\$ 867.2	\$ 3,593.2	\$ 3,295.5	\$ 708.7	\$ 2,196.8	\$ 2,012.6	

(1) Calculated using: (2008 defaulted population) + (2009 defaults) - (2009 Emergences)- (2009 Distressed Restructurings)

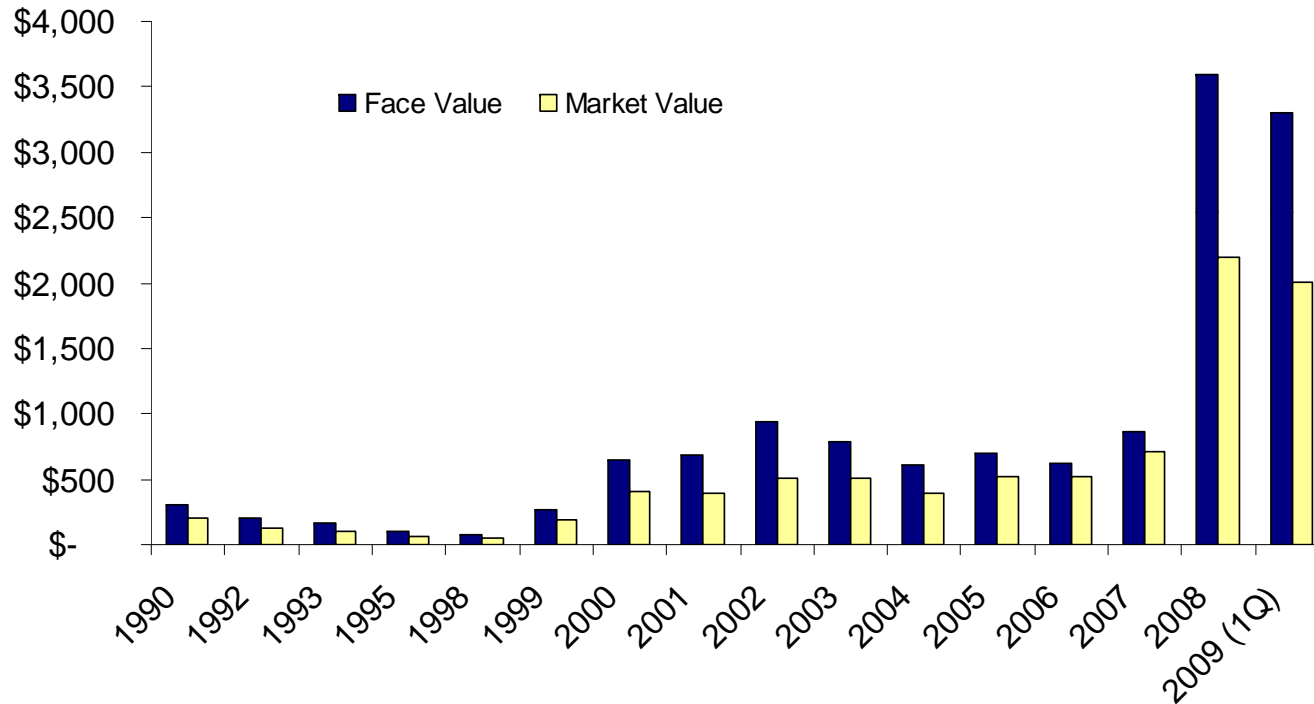
(2) Based on 70.3% of the high yield bond market (\$1082.1 billion) as of 3/31/09

(3) Based on a private/public ratio of 2.2

Sources: Estimated by Professor Edward Altman, NYU Stern School of Business from NYU Salomon Center's Defaulted Bond and Bank Loan Databases

Size Of The US Defaulted And Distressed Debt Market (\$ Billions)

1990 - 2009 (1Q)

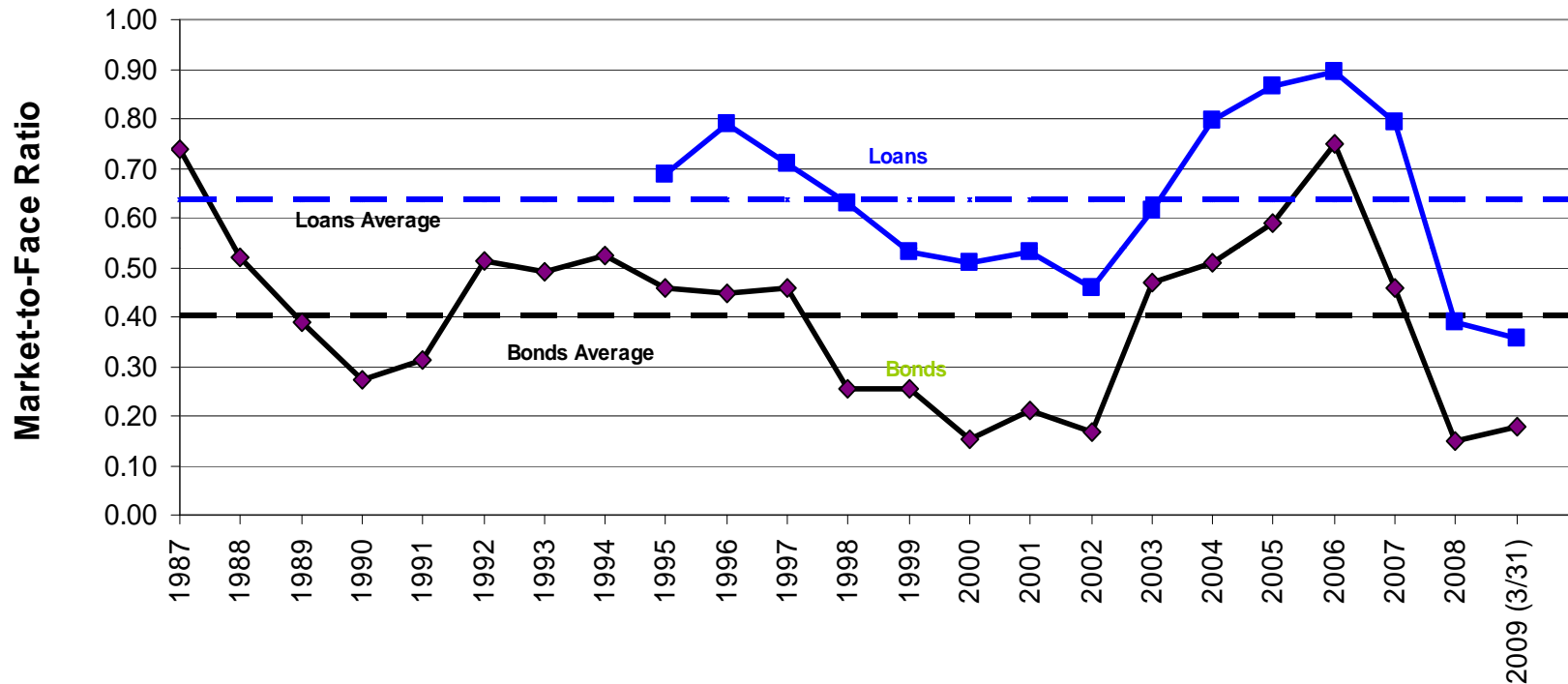


Source: Author's Compilations

Returns and Correlations of the Defaulted Debt Markets

Defaulted Debt Indexes: Market-to-Face Value Ratios

(1987 - 2009 (3/31))



Loans Median Market-to-Face value is 0.63 and Average Market-to-Face value is 0.64

Bonds Median Market-to-Face value is 0.45 and Average Market-to-Face value is 0.40

**ALTMAN-NYU SALOMON CENTER
DEFAULTED BOND INDEX
COMPARISON OF RETURNS
(1987 - 2009 (3/31))**

Year	Altman-NYU Salomon Center Defaulted Bond Index	S&P 500 Stock Index	Citigroup High Yield Bond Index
1987	37.85%	5.26%	6.07%
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%
2001	17.47%	-11.87%	5.44%
2002	-5.98%	-22.08%	-1.53%
2003	84.87%	28.70%	30.62%
2004	18.93%	10.88%	10.79%
2005	-1.78%	4.92%	2.08%
2006	35.62%	15.80%	11.85%
2007	-11.53%	5.50%	1.83%
2008	-55.09%	-37.00%	-25.91%
2009 (3/31)	0.07%	-11.01%	4.97%
1987 - 2008 Arithmetic Average (Annual) Rate	7.45%	9.53%	7.53%
Standard Deviation	29.47%	19.24%	13.24%
1987 - 2008 Compounded Average (Annual) Rate	3.48%	8.68%	6.81%
1987 - 2008 Arithmetic Average (Monthly) Rate	0.40%	0.80%	0.59%
Standard Deviation	4.68%	4.44%	2.44%
1987 - 2008 Compounded Average (Monthly) Rate	0.30%	0.73%	0.58%

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

COMPARISON OF RETURNS

(1996 - 2009 (3/31))

Year	Altman-NYU Salomon Center Defaulted Bank Loan Index	S&P 500 Stock Index	Citigroup High Yield Bond Index
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%
2001	13.94%	-11.87%	5.44%
2002	3.03%	-22.08%	-1.53%
2003	27.48%	28.70%	30.62%
2004	11.70%	10.88%	10.79%
2005	7.19%	4.92%	2.08%
2006	4.35%	15.80%	11.85%
2007	2.27%	5.50%	1.83%
2008	-43.11%	-37.00%	-25.91%
2009 (3/31)	-7.63%	-11.01%	4.97%
<hr/>			
1996 - 2008 Arithmetic Average (Annual) Rate	2.46%	7.12%	4.56%
Standard Deviation	17.04%	21.66%	12.86%
1996 - 2008 Compounded Average (Annual) Rate	0.85%	4.84%	3.79%
<hr/>			
1996 - 2008 Arithmetic Average (Monthly) Rate	0.14%	0.50%	0.35%
Standard Deviation	3.16%	4.51%	2.76%
1996 - 2008 Compounded Average (Monthly) Rate	0.09%	0.40%	0.31%

**COMBINED ALTMAN-NYU SALOMON CENTER
DEFAULTED PUBLIC BOND AND BANK LOAN INDEX**

**COMPARISON OF RETURNS
(1996 - 2009 (3/31))**

Year	Altman-NYU Salomon Center Combined Index	S&P 500 Stock Index	Citigroup High Yield Bond Index
1996	15.62%	22.96%	11.29%
1997	0.42%	34.36%	13.18%
1998	-17.55%	28.58%	3.60%
1999	4.45%	20.98%	1.74%
2000	-15.84%	-9.11%	-5.68%
2001	15.56%	-11.87%	5.44%
2002	-0.53%	-22.08%	-1.53%
2003	49.30%	28.70%	30.62%
2004	15.14%	10.88%	10.79%
2005	1.73%	4.92%	2.08%
2006	23.38%	15.80%	11.85%
2007	-3.30%	5.58%	1.83%
2008	-47.52%	-37.00%	-25.91%
2009 (3/31)	-3.85%	-11.01%	4.97%
<hr/>			
1996 - 2008 Arithmetic Average (Annual) Rate	2.64%	5.84%	4.59%
Standard Deviation	22.29%	21.37%	12.36%
1996 - 2008 Compounded Average (Annual) Rate	0.44%	4.85%	3.79%
<hr/>			
1996 - 2008 Arithmetic Average (Monthly) Rate	0.31%	0.35%	0.24%
Standard Deviation	3.45%	4.66%	2.85%
1996 - 2008 Compounded Average (Monthly) Rate	0.25%	0.24%	0.20%

CORRELATION OF ALTMAN NYU-SALOMON CENTER INDEXES OF DEFAULTED BONDS WITH OTHER SECURITIES INDEXES 1987 – 2008

Correlation of Altman Bond Index Monthly Returns

	Altman Bond Index	S&P 500	Citi HY Index	10yr T-Bond
Altman Bond Index	100.00%	38.73%	65.46%	-25.61%
S&P 500		100.00%	56.60%	-1.61%
Citi HY Index			100.00%	3.54%
10-yr T-Bond				100.00%

CORRELATION OF ALTMAN NYU-SALOMON CENTER INDEXES OF DEFAULTED LOANS WITH OTHER SECURITIES INDEXES 1996 – 2008

Correlation of Altman Indices Monthly Returns

	Altman Bond Index	Altman Loan Index	Altman Combined Index	S&P 500	Citi HY Index	10yr T- Bond
Altman Bond Index	100.00%	66.62%	92.41%	39.88%	67.53%	-33.34%
Altman Loan Index		100.00%	89.00%	22.20%	57.98%	-32.99%
Altman Combined Index			100.00%	34.31%	67.73%	-36.60%
S&P 500				100.00%	60.84%	-19.71%
Citi HY Index					100.00%	-8.23%
10-yr T-Bond						100.00%

U.S. Distressed Debt Managers

Abrams Capital	Blackstone Group	Citadel Investments
ADM Maculus	Blue Mountain Cap Mgmt	Cohanzick Mgmt
AEG	Blue Wolf Capital	Columbus Hill Cap.
Angelo, Gordon & Co.	Bluebay Asset Mgmt	Commonwealth
Apex Fndmntl Partners	Bluecrest Cap. Mgmt	Concordia Advisors
Apollo Management	Bond Street Capital	Contrarian Cap. Mgmt
Appaloosa Mgmt	Boone Capital Mgmt	Corsair
Ares Corp. Opp. Fund	Brencourt Advisors	Cypress Mgmt
Ashmore Asian Recov.	Brigade Capital	Cyrus Capital Partners
Atalaya Cap. Mgmt	The Broe Companies	D.E. Shaw
Aurelius Capital Mgmt	Buckeye Cap. Partners	Davidson / Kempner
Avenue Capital Group	Canyon Capital	DDJ Capital Mgmt
Babson Capital	Camulos Capital	Deephaven Cap. Mgmt
Balpost Capital	Candlewood Partners	Delaware Street Capital
Basso Asset Mgmt	Cardinal Capital	Deltec Recovery Fund
Bay Harbour Mgmt	Carl Marks	DKR Wolfpoint Mgmt
Bayside Capital	Carlyle Strategic	Drake Mgmt
Beltway Capital	Cargill Value Invstmt	Dreman Value Mgmt
Bennett Mgmt Co.	Carvall Investors	Drucker Capital Mgmt
Black Diamond	Catlock Capital	Dune Capital Mgmt
Blackport Capital Fund,	Centerbridge Capital	Durham Asset Mgmt
Black River Asset Mgmt	Cerberus Partners	Eagle Rock Capital

U.S. Distressed Debt Managers

Elliott Advisors	Gradient Partners	Industria Partners
Endurance Capital	Gramercy Capital	Insight Equity
EOS Partners	Greywolf Capital	Jana Partners
Epic Asset Mgmt	Gruss Asset Mgmt	JLL Partners
Everest Capital Ltd	GSC Group	JMB Capital
Fairfield Greenwich	GSO Capital Prtnrs	K Capital Partners
Farallon Partners	Guggenheim Inv. Mgmt	KD Distressed Capital
Fintech Advisory	H.I.G.	Kilimanjaro Advisors
Fir Tree Partners	Hain Capital	King Street Advisors
Forest Invstmnt Mgmt	Halbis Cap. Mgmt (US)	KPS Spec. Sittns Fd
Franklin Mutual Rec.	Halcyon/Slika Mgmt.	KS Distressed Debt
Fortress Capital Corp.	Harbert Fund Advisors	Lampe Conway
Fulcrum Capital Mgmt	Harbinger Capital	Laurel Ridge Ast Mgmt.
GE Finance	Harvest Capital	Leucadia Nat'l Corp.
Glenview Capital Mgmt	Helios Advisors	Levco Debt Opps
GLG Partners, NA	HIG Brightpoint Cap.	Litespeed Partners
Global Credit Advisors	Highbridge Cap. Mgmt	Littlejohn & Co.
Golden Capital	Highland Capital	Loeb Partners
GoldenTree Asset Mgmt	Highland Rest. Cap.	Lonestar Partners
Goldman Spec Situations	Huizenga Capital Mgmt	LongAcre Cap. Partners
Gracie Capital	Ichan Capital Corp.	Longroad Asset Mgmt

U.S. Distressed Debt Managers

Marathon Capital	Pacific Altern. Ast Mgmt.	Resolution Partners
Mariner Invest. Group	Paige Capital	Restoration Capital Mgmt
MatlinPatterson Global	Pardus Capital	Resurgence Corp. Fund
Mellon HBV Cap. Mgmt	Patriarch	Robeco/Weiss Peck & Greer
MHR	Paulson & Co.	Salisbury
Millennium	Pegasus Investors	Sandell Asset Mgmt
MJ Whitman Mgmt Co.	Pequot Capital	Sandelman Partners
Monarch Alternative Cap.	Perella Weinberg Ptnrs Cap.	Satellite Asset Mgmt
Monomoy Capital	Perry Partners	Scoggin Capital
Moore Asian Recov. Fd	P. Schoenfeld Ast Mgmt	Scott's Cove Cap. Mgmt.
Mount Kellett Cap. Mgmt	Pine Creek	Seneca Cap. Inv. Ptnshp
MSD Capital	Pinewood Cap. Partners	Signature Cap. Partners
MW Post	Plainfield Asset Mgmt	Silvergang
New Generation Advisers	PMI	Silverpoint Capital
Normandy Hill Capital	Post Advisory Group	Soros NY
Oakhill	Proprietary Trdg of Mkt Mkrs	Spring Street
Oaktree Capital	Quadrangle Group	Stanfield Capital Mgmt
Och Ziff Friedheim	Questor Management	Stairway Capital Advisors
Octavian Advisors	Radius Equity Partners	Stark Investments
Onex Credit Partners	Ramius	Stone Harbor Inv. Ptnrs
Owl Creek Capital	Redwood Capital	Stonehill Capital
Pacholder Assoc., Inc.	Republic	Stony Lane Partners

U.S. Distressed Debt Managers

Strategic Value Partners

Summit

Sun Capital Partners, Inc.

Sunrise Capital Partners

TA Mckay & Co.

Taconic Capital Partners

Tennenbaum Capital

The Baupost Group

Third Avenue Value Fund

TPG Credit Management

Treadstone Group

Tricadia Capital

Triage Capital

Trilogy Capital

Trust Co. of the West

Tuckerbrook

Tudor Investment Corp.

Turnberry Capital

Tyndall Partners

Van Kampe

Varde Partners, Inc.

Venor Capital Mgmt

Versa Capital Mgmt

Viking Global

W.L. Ross & Co.

Washington Corner Cap.

Wayland Fund

Wayzata Invest. Partners

Wellspring Cap. Partners

Wexford Capital

William E. Simon & Sons

Woodside Management

Whippoorwill Assoc., Inc.

Xerion Partners

York Capital

Z Capital Partners

U.S. Distressed Funds with European Offices

Aladdin Capital Management	Och Ziff Capital Management
Apollo Management	Peter Schoenfeld Asset Mgmt.
Avenue Capital Group	Silverpoint Capital
Camulos Capital	Strategic Value Partners
Cargill Investors	TPG Credit Management
Cerberus Partners	Värde Partners
Citadel Investments	
Davidson Kempner	
D.E. Shaw	
Elliott Advisors	
EOS Partners	
Fortress Capital Corp	
HBK Investments	
Highbridge Capital Management	
Kelso Place Asset Management	
Lonestar Partners	
Marathon Capital	
Matlin Patterson Global Advisors	
Millennium Capital	
Oaktree Capital	

European Distressed Debt Managers (Home Grown)

Alchemy Partners	Sisu Capital
Argo Capital	Thames River
Bluebay Asset Management	Tisbury Capital
Butler Capital Management	Trafalgar Asset Managers
Centaurus Capital	
Cheyne Capital	
Cognis Capital	
Cyrus Capital	
Equinox	
EQT Opportunities	
Fortelus Capital management	
H2 Equity Partners	
Ilex	
Klesch Capital Partners	
LNG Capital	
Omnis Capital	
Orn Capital	
Picus Capital Management	
RAB Capital	
Rutland Fund	

Distressed Active/Control Investors

American Securities	Highland Rest. Capital Partners	Ramius Capital Group
Angelo, Gordon & Co.	Industria Partners	Relativity Fund
Apollo Management	Insight Equity I	Remedial Capital
Appaloosa Management	Levine Liechtman	Resurgence Asset Management
Audax Credit Opportunities	Littlejohn & Co.	Sandell Asset Management Corp.
Aurelius Capital Management	Lone Star Partners	Saybrook Capital
Aurora Resurgence Mgt Partners	Longroad Asset Management	Silver Point Capital
Avenue Capital Partners	KPS Special Situations Fund	Stark Investments
Bay Harbour Management	Marathon Capital	Stony Lane Partners
Black Diamond	MatlinPatterson Global Advisors	Strategic Value Partners
BlackEagle Partners	Mellon HBV	Sun Capital Partners
Carlyle Strategic Partners	MHR Institutional Partners	Sunrise Capital
Catalyst Partners	Millroad Partners	TCW Crescent Mezzanine
Centerbridge Capital Partners	Monomoy Capital Partners	TPG Credit Management
Cerberus Partners	Newport Global Advisors	Tuckerbrook
Citadel Limited Partnership	Oakhill	Tudor Investment Corp et al
DDJ Capital Management	Oaktree Capital	Versa Capital Management
D.E. Shaw	Panagaen Capital Management	Wayzata Investment Partners
Elliott Associates	P. Schoenfeld Asset Management	W.L. Ross & Co
Ewing Management	Paulson & Co.	Whippoorwill Associates
Farallon Capital	Pequot Investors	Wingate Partners
GSC Group	Perry Capital	York Capital
Harbinger Capital Partners	Plainfield Asset Mgt	Z Capital Partners
H.I.G. Capital	Prophet Equity	

Investment Styles and Target Returns in Distressed Debt Investing

<u>Active/Control</u>	<u>Active/Non-Control</u>	<u>Passive</u>
Requires 1/3 minimum to block and ½ to control; may require partner(s)	Senior secured, senior unsecured	Invest in undervalued securities trading at distressed levels
Take Control of company through debt/equity swap	Active participation in restructuring process; Influence process	Sub-strategies: trading/buy-hold/senior or senior secured/sub debt/“busted converts”/capital structure arbitrage/long-short, value
Restructure or even purchase related businesses; roll-up	Exit via debt or equity (post-chapter 11) markets	Trading oriented; Sometimes get restricted
Equity infusion; run Company	Generally do not control	Holding period of 6 months to 1 year generally; Longer sometimes
Exit 2-3 years	Holding period of 1-2 years	Target return: 12-20%
Large or Mid-Small Cap focus	Large or Mid-Small Cap focus	
Target return: 20-25%	Target return: 15-20%	

Forecasting Default and Recovery Rates

Forecasting Defaults and the Default Rate

MODEL DRIVERS

- Mortality Rate Estimates: 1971 - 2007
= f {bond rating, age, redemptions, defaults}
- Historical New Issuance over last 10 years by credit quality
 - Bond-ratings
 - Z-score Bond-equivalent ratings



New Defaults and Default Rate in 2007

- Estimate high yield market growth in 2008



New Defaults and Default Rate in 2008, 2009

Marginal and Cumulative Mortality Rate Equation

$$\text{MMR}_{(t)} = \frac{\text{Total value of defaulting debt in year } (t)}{\text{total value of the population at the start of the year } (t)}$$

MMR = Marginal Mortality Rate

One can measure the cumulative mortality rate (CMR) over a specific time period (1,2,..., T years) by subtracting the product of the surviving populations of each of the previous years from one (1.0), that is,

$$\text{CMR}_{(t)} = 1 - \prod_{t=1} \text{SR}_{(t)},$$

here $\text{CMR}_{(t)}$ = Cumulative Mortality Rate in (t) ,
 $\text{SR}_{(t)}$ = Survival Rate in (t) , $1 - \text{MMR}_{(t)}$

Mortality Rate Concept (Illustrative Calculation)

For BB Rated Issues

Security No.	Issued Amount	Year 1 Default	Call	SF	Year 2 Default	Call	SF
1	50	--	--	5	--	--	5
2	50	50	--	--	NE	NE	NE
3	100	--	100	--	NE	NE	NE
4	100	--	--	--	100	--	--
5	150	--	--	--	--	--	15
6	150	--	--	--	--	--	--
7	200	--	--	20	--	--	20
8	200	--	--	--	--	200	--
9	250	--	--	--	--	--	--
10	250	--	--	--	--	--	--
Total	1,500	50	100	25	100	200	40
Amount Start of Period	1,500	-	175	-	1,325	- 340	= 985
		Year 1			Year 2		
Marginal Mortality Rate		50/1,500 = 3.3%			100/1,325 = 7.5%		
Cumulative Rate		3.3%			1 - (SR1 x SR2) = CMR2 1 - (96.7% x 92.5%) = 10.55%		

NE = No longer in existence
SF = Sinking fund

Mortality Rates by Original Rating

All Rated Corporate Bonds*
1971-2008

		1	2	3	4	5	6	7	8	9	10
AAA	Marginal	0.00%	0.00%	0.00%	0.00%	0.03%	0.02%	0.01%	0.00%	0.00%	0.00%
	Cumulative	0.00%	0.00%	0.00%	0.00%	0.03%	0.05%	0.06%	0.06%	0.06%	0.06%
AA	Marginal	0.00%	0.00%	0.28%	0.13%	0.02%	0.01%	0.00%	0.00%	0.03%	0.01%
	Cumulative	0.00%	0.00%	0.28%	0.41%	0.43%	0.44%	0.44%	0.44%	0.47%	0.48%
A	Marginal	0.01%	0.06%	0.02%	0.07%	0.05%	0.08%	0.04%	0.25%	0.10%	0.03%
	Cumulative	0.01%	0.07%	0.09%	0.16%	0.21%	0.29%	0.33%	0.58%	0.68%	0.71%
BBB	Marginal	0.38%	3.07%	1.43%	1.20%	0.70%	0.28%	0.32%	0.17%	0.13%	0.37%
	Cumulative	0.38%	3.44%	4.82%	5.96%	6.62%	6.88%	7.18%	7.34%	7.46%	7.80%
BB	Marginal	1.12%	2.41%	4.32%	2.20%	2.46%	1.23%	1.60%	1.07%	1.68%	3.38%
	Cumulative	1.12%	3.50%	7.67%	9.70%	11.92%	13.01%	14.40%	15.32%	16.74%	19.55%
B	Marginal	2.77%	6.72%	7.26%	8.42%	5.96%	4.28%	3.90%	2.35%	1.97%	0.93%
	Cumulative	2.77%	9.30%	15.89%	22.97%	27.56%	30.66%	33.37%	34.93%	36.21%	36.81%
CCC	Marginal	7.86%	15.30%	18.66%	11.66%	4.08%	9.55%	5.70%	5.62%	0.80%	4.60%
	Cumulative	7.86%	21.96%	36.52%	43.92%	46.21%	51.35%	54.12%	56.70%	57.04%	59.02%

*Rated by S&P at Issuance
Based on 2,137 issues
Source: Standard & Poor's (New York) and Author's Compilation

Mortality Losses by Original Rating

All Rated Corporate Bonds*
1971-2008

		1	2	3	4	5	6	7	8	9	10
AAA	Marginal	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%
	Cumulative	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.03%	0.03%	0.03%	0.03%
AA	Marginal	0.00%	0.00%	0.04%	0.04%	0.02%	0.01%	0.00%	0.00%	0.02%	0.00%
	Cumulative	0.00%	0.00%	0.04%	0.08%	0.10%	0.10%	0.10%	0.10%	0.12%	0.12%
A	Marginal	0.00%	0.03%	0.01%	0.06%	0.03%	0.03%	0.02%	0.06%	0.07%	0.00%
	Cumulative	0.00%	0.03%	0.04%	0.10%	0.13%	0.16%	0.17%	0.23%	0.30%	0.30%
BBB	Marginal	0.30%	2.06%	1.22%	0.48%	0.45%	0.19%	0.13%	0.10%	0.08%	0.21%
	Cumulative	0.30%	2.35%	3.55%	4.01%	4.44%	4.62%	4.74%	4.84%	4.91%	5.12%
BB	Marginal	0.65%	1.39%	2.55%	1.28%	1.47%	0.65%	0.88%	0.46%	0.87%	1.21%
	Cumulative	0.65%	2.04%	4.53%	5.76%	7.14%	7.74%	8.56%	8.98%	9.77%	10.86%
B	Marginal	1.85%	4.70%	4.92%	5.62%	3.93%	2.35%	2.50%	1.32%	1.02%	0.67%
	Cumulative	1.85%	6.46%	11.07%	16.06%	19.36%	21.26%	23.23%	24.24%	25.01%	25.51%
CCC	Marginal	5.18%	10.86%	13.25%	8.50%	2.86%	7.16%	4.27%	4.33%	0.48%	2.94%
	Cumulative	5.18%	15.48%	26.68%	32.91%	34.83%	39.49%	42.08%	44.59%	44.85%	46.47%

*Rated by S&P at Issuance
Based on 1,805 issues
Source: Standard & Poor's (New York) and Author's Compilation

Mortality Rate Based Method Forecasts of Default and Recovery Rates in the High-Yield Bond Market

2007 - 2009

<u>Year</u>	<u>Default Rate</u>	<u>Default Amount (\$ billion)</u>	<u>Recovery Rate*</u>
2007 (Forecast)	2.50%	\$27.5	59.4%
2007 (Actual)	0.51%	\$5.5	66.6%
2008 (Forecast)	4.64%	\$53.1	35.8% / 39.6%
2008 (Actual)	4.60%	\$50.2	42.5% / 21.7%**
2009 (Forecast)	7.98%	\$86.4	30.0% / 31.8%

*Based on the log-linear default rate/recovery rate regression (Slide 29). **Without / With distressed exchanges

Source: Mortality Rates (Slide 53), All Corporate Bond Issuance and Authors' Estimates of Market Size in 2009.

Default and Recovery Forecasts: Summary of Forecast Models

<u>Model</u>	2009 Default Rate Forecast as of 1/31/2009	2010 (Q1) Default Rate Forecast as of Q1 2009	2010 (Q1) Default Amount (\$ billion)	2010 (Q1) Recovery Rate Forecast*
Mortality Rate	7.98%	7.98%	\$86.5	30.00%
Scenario (2001)	12.30%	14.78%	\$160.2	23.22%
Scenario (1991)	15.40%	18.43%	\$199.7	20.35%
Yield-Spread	18.32%	11.89%**	\$128.8	26.20%
Distress Ratio	14.16%	14.33%	\$155.3	23.74%
Average of Models	13.63%	13.48%	\$146.1	24.10%

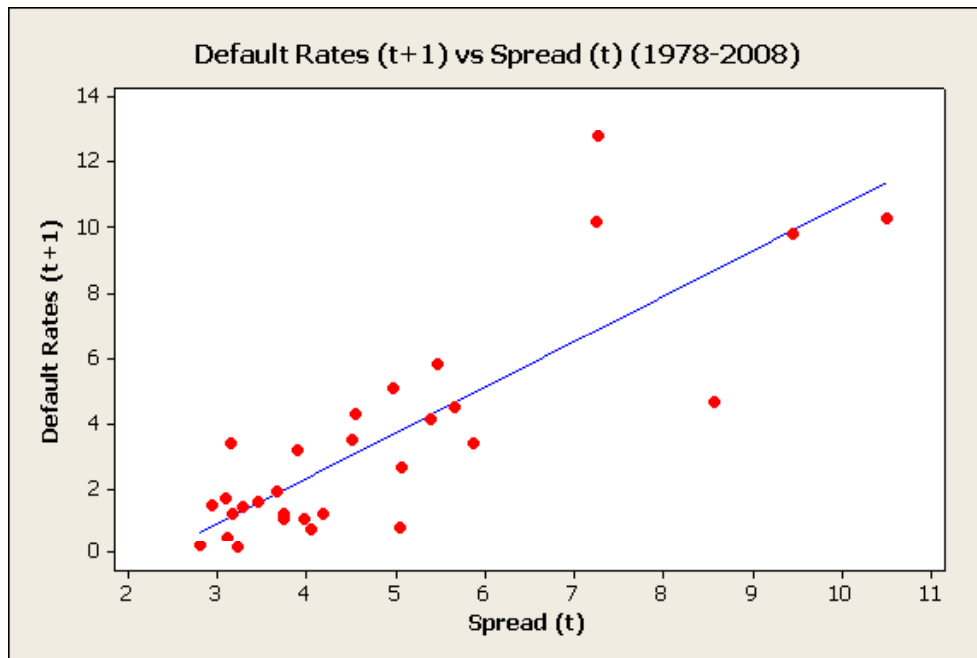
*Based on the log-linear default rate/recovery rate regression (Slide 25). **Based on May 08, 2009 yield-spread. 52
 Source: Mortality Rates (Slide 48), All Corporate Bond Issuance and Authors' Estimates of Market Size in 2009.

Predicting Default Rates

Market Based Measures

Dollar Denominated (Altman) Default Rate Predictions

Case 1: Default Rate[t+1] Versus Yield Spread[t]



The regression equation is

$$\text{Default Rate} = -3.25 + 1.39 * \text{Spread}$$

Predictor	Coef	SE Coef	T	P
Constant	-3.2490	0.9072	-3.58	0.001
Spread	1.3904	0.1741	7.99	0.000

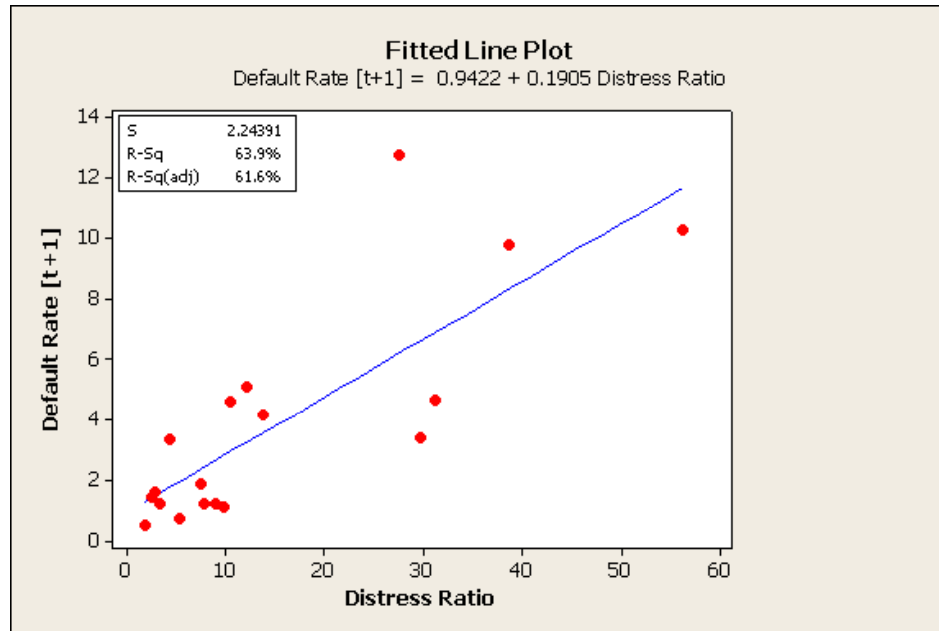
S = 1.86079 R-Sq = 69.5% R-Sq(adj) = 68.4%

Compare with
Prediction
based on
Mortality Rate
Approach
(7.98%)

Application

Applying Yield spread (06/12/2007) of 260 bps, $P_D = -3.25 + 1.39 * 2.60 = 0.364\%$
 Applying Yield spread (12/31/2007) of 566 bps, $P_D = -3.25 + 1.39 * 5.66 = 4.617\%$
 Applying Yield spread (3/31/2009) of 1,618 bps, $P_D = -3.25 + 1.39 * 16.18 = 19.248\%$

Case 2: Default Rate[t+1] Versus Distress Ratio[t]



The regression equation is

$$\text{Default Rate} = 0.942 + 0.190 * \text{Distress Ratio}$$

Predictor	Coef	SE Coef	T	P
Constant	0.9422	0.7596	1.24	0.233
Distress Ratio	0.19045	0.03579	5.32	0.000

$$S = 2.24391 \quad R\text{-Sq} = 63.9\% \quad R\text{-Sq}(\text{adj}) = 61.6\%$$

Compare with
 Prediction
 based on
 Mortality Rate
 Approach
 (7.98%)

Application

Applying Distress Ratio (06/30/2007) of 1.20%, $P_D = 0.935 + 0.193 * 1.20 = 1.031\%$
 Applying Distress Ratio (12/31/2007) of 10.42%, $P_D = 0.810 + 0.193 * 10.42 = 2.820\%$
 Applying Distress Ratio (3/31/2009) of 70.30%, $P_D = 0.942 + 0.190 * 70.30 = 14.331\%$

Case 3: Default Rate[t+1] Versus Yield Spread[t] and Distress Ratio[t]

The regression equation is

$$\text{Default Rate} = -3.17 + 1.39 * \text{Spread} - 0.013 * \text{Distress Ratio}$$

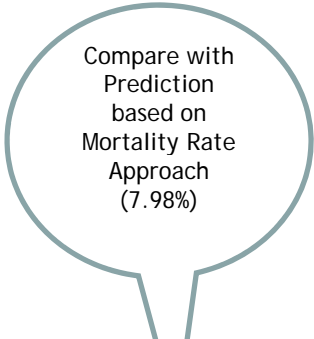
Predictor	Coef	SE Coef	T	P
Constant	-3.171	2.450	-1.29	0.215
Spread [t]	1.3928	0.7937	1.75	0.100
Distress Ratio [t]	-0.0129	0.1207	-0.11	0.917

$$S = 2.11094 \quad R\text{-Sq} = 70.0\% \quad R\text{-Sq}(\text{adj}) = 66.1\%$$

Correlation Between Yield Spread and Distress Ratio:

$$R\text{-Sq} = 93.8\%$$

$$\text{Correlation} = 96.0\%$$



Compare with
Prediction
based on
Mortality Rate
Approach
(7.98%)

Application

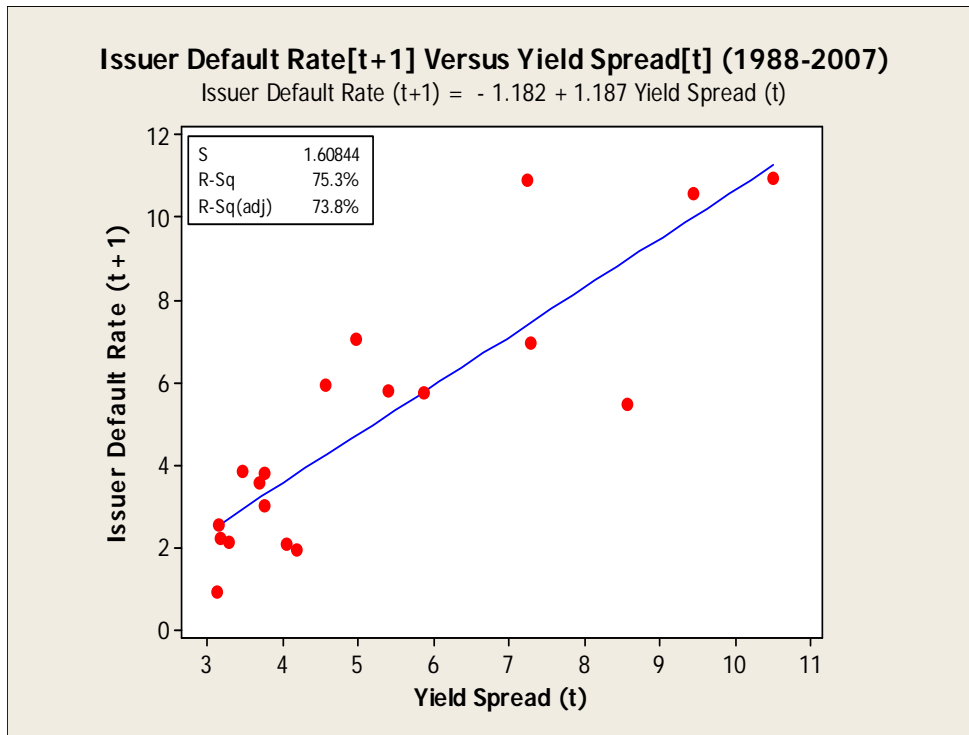
Applying Yield Spread and Distress Ratio (06/12/2007) of 260 bps and 1.20%, $P_D = -3.13 + 1.38*2.60 - 0.010* 1.20 = 0.460\%$

Applying Yield Spread and Distress Ratio (12/31/2007) of 566 bps and 10.42%, $P_D = -3.16 + 1.39*5.66 - 0.012*10.42 = 4.582\%$

Applying Yield Spread and Distress Ratio (3/31/2009) of 1,618 bps and 70.30%, $P_D = -3.17 + 1.39*16.18 - 0.013*70.30 = 18.458\%$

Issuer Denominated (Moody's) Default Rate Predictions

Case 1: Issuer Default Rate[t+1] Versus Yield Spread[t]



The regression equation is

$$\text{Issuer Default Rate (t+1)} = - 1.18 + 1.19 \text{ Yield Spread (t)}$$

Predictor	Coef	SE Coef	T	P
Constant	-1.1816	0.9373	-1.26	0.224
Yield Spread (t)	1.1866	0.1649	7.20	0.000

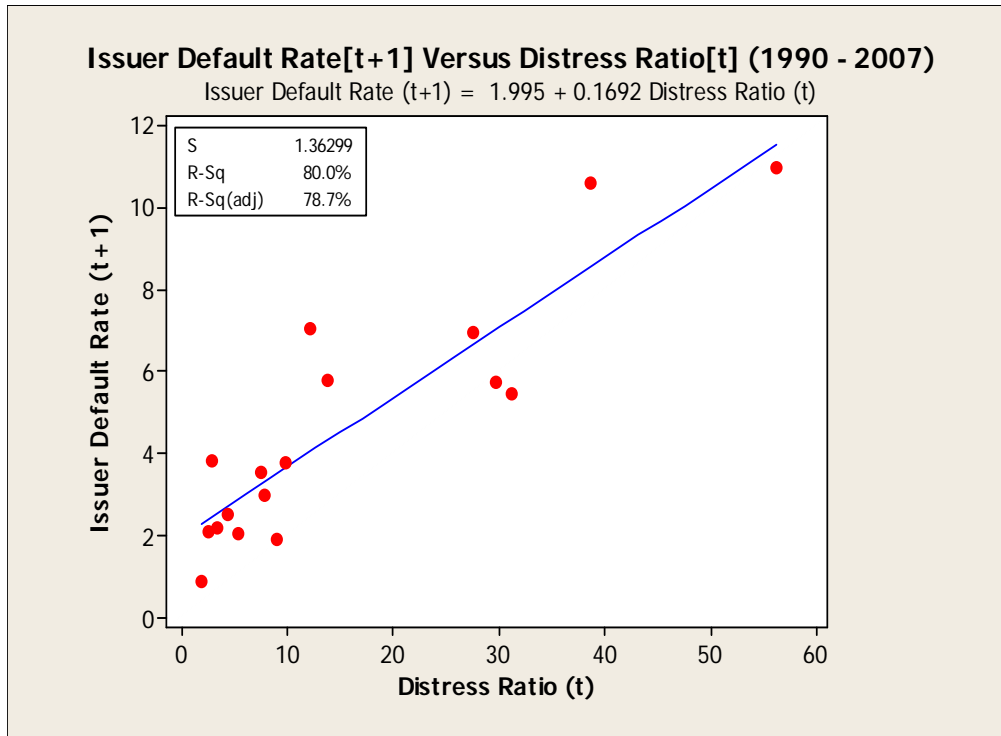
$$S = 1.60844 \quad R\text{-Sq} = 75.3\% \quad R\text{-Sq(adj)} = 73.8\%$$

Compare with
 Prediction
 based on
 Mortality Rate
 Approach (7.98)

Application

Applying Yield spread (06/12/2007) of 260 bps, $P_D = -1.18 + 1.19 \times 2.60 = 1.914\%$
 Applying Yield spread (12/31/2007) of 566 bps, $P_D = -1.18 + 1.19 \times 5.66 = 5.554\%$
 Applying Yield spread (3/31/2009) of 1,618 bps, $P_D = -1.18 + 1.19 \times 16.18 = 18.018\%$

Case 2: Issuer Default Rate[t+1] Versus Distress Ratio[t]



The regression equation is

$$\text{Issuer Default Rate (t+1)} = 1.99 + 0.169 \text{ Distress Ratio (t)}$$

Predictor	Coef	SE Coef	T	P
Constant	1.9949	0.4731	4.22	0.001
Distress Ratio (t)	0.16917	0.02181	7.76	0.000

S = 1.36299 R-Sq = 80.0% R-Sq(adj) = 78.7%

Compare with Prediction based on Mortality Rate Approach (7.98%)

Application

Applying Distress Ratio (06/30/2007) of 1.20%, $P_D = 1.99 + 0.169 * 1.20 = 2.193\%$
 Applying Distress Ratio (12/31/2007) of 10.42%, $P_D = 1.99 + 0.169 * 10.42 = 3.751\%$
 Applying Distress Ratio (3/31/2009) of 70.30%, $P_D = 1.99 + 0.169 * 70.30 = 13.888\%$

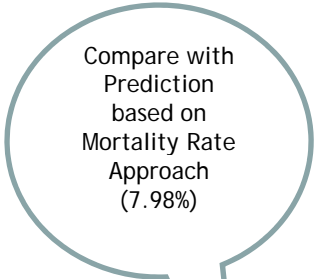
Case 3: Issuer Default Rate[t+1] Versus Yield Spread[t] and Distress Ratio[t]

The regression equation is

$$\text{Issuer Default Rate (t+1)} = 0.11 + 0.660 \text{ Yield Spread (t)} + 0.0718 \text{ Distress Ratio (t)}$$

Predictor	Coef	SE Coef	T	P
Constant	0.108	1.698	0.06	0.950
Yield Spread (t)	0.6600	0.5708	1.16	0.267
Distress Ratio (t)	0.07181	0.08692	0.83	0.423

$$S = 1.34794 \quad R\text{-Sq} = 81.8\% \quad R\text{-Sq}(\text{adj}) = 79.2\%$$



Compare with
Prediction
based on
Mortality Rate
Approach
(7.98%)

Application

Applying Yield Spread and Distress Ratio (06/12/2007) of 260 bps and 1.20%, $P_D = 0.11 + 0.66 \cdot 2.60 + 0.0718 \cdot 1.20 = 1.912\%$

Applying Yield Spread and Distress Ratio (12/31/2007) of 566 bps and 10.42%, $P_D = 0.11 + 0.66 \cdot 5.66 + 0.0718 \cdot 10.42 = 4.593\%$

Applying Yield Spread and Distress Ratio (3/31/2009) of 1,618 bps and 70.30%, $P_D = 0.11 + 0.66 \cdot 16.18 + 0.0718 \cdot 70.30 = 15.837\%$