Current Conditions in Global Credit Markets

Implications for the Private Equity Market

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EVCA Investors' Forum
Geneva, Switzerland
March 13, 2009

Default and Recovery Forecasting Models

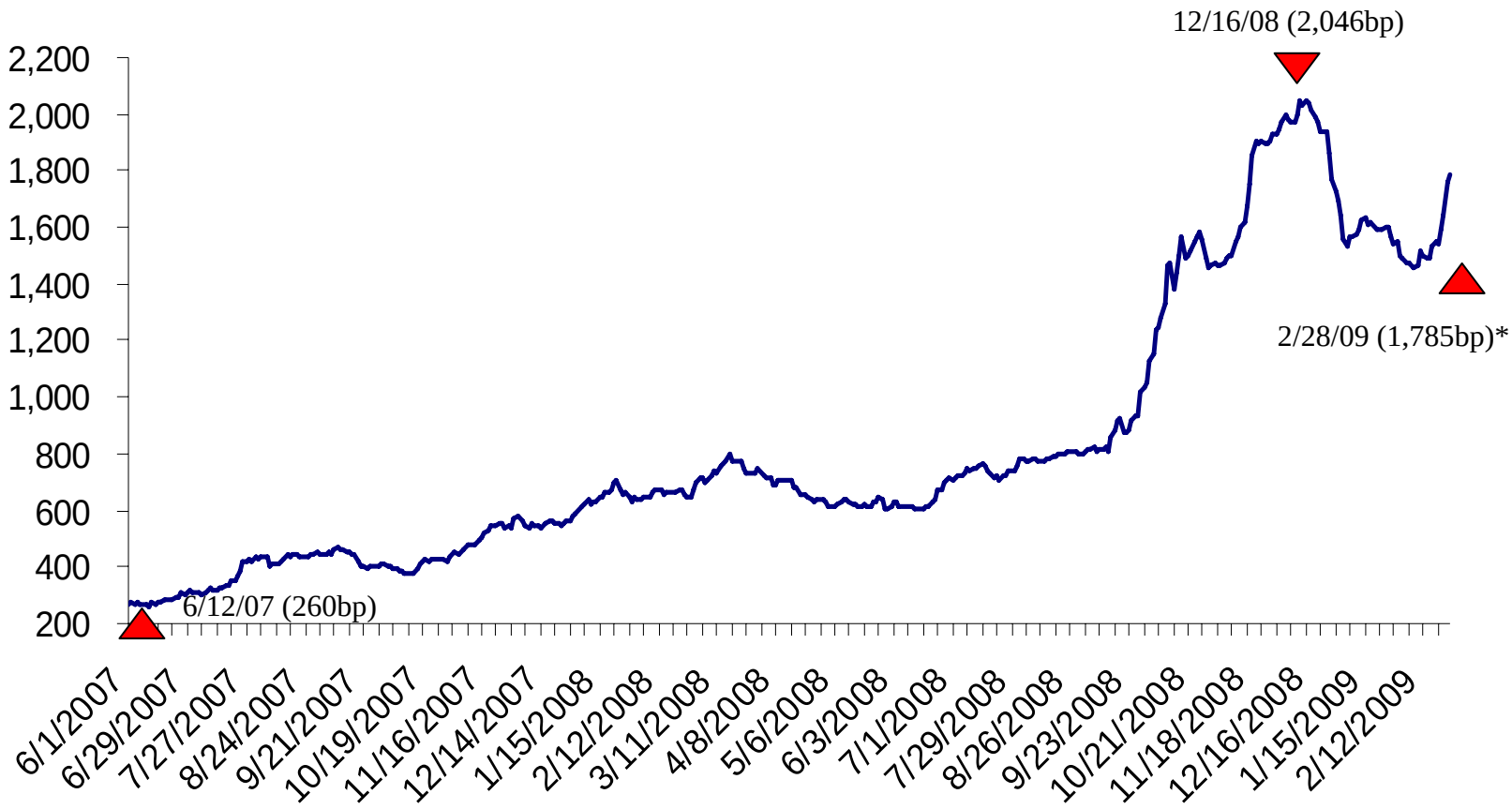
- Macro-Economic Models: Default Probabilities
- Mortality Rate Models: Default Probabilities
- Market Based Models: Default Probabilities
- Recovery Rate Models: Loss-Given-Default
- Distressed Debt Market Size Estimate

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

YTM Spread Between High Yield Markets & 10 Year Treasury Notes

June 01, 2007 – February 28, 2009



*Estimate

Source: Citigroup Yieldbook Index Data

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

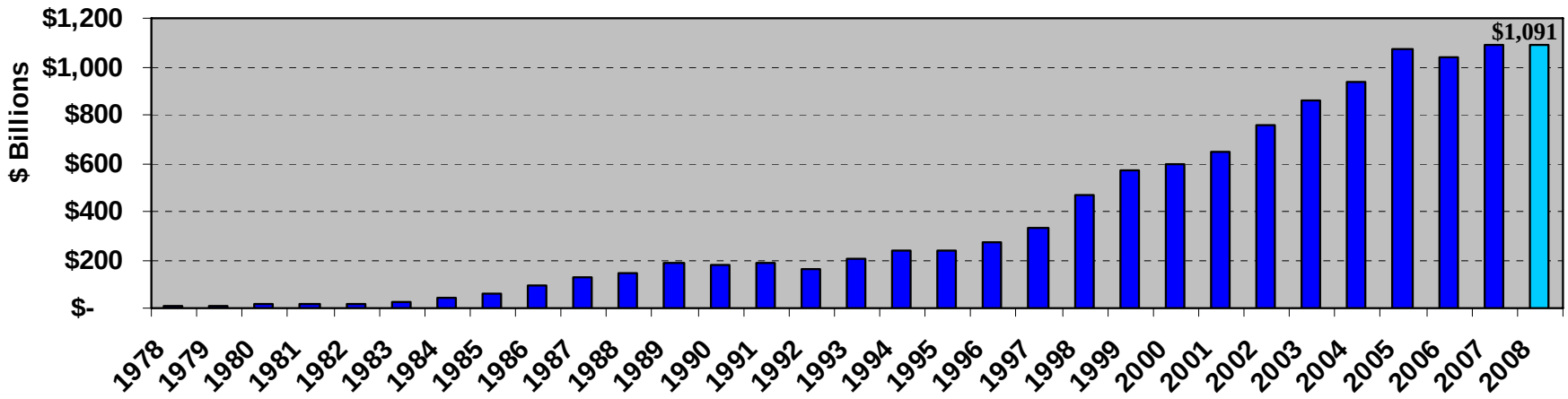
Major Agencies Bond Rating Categories

Moody's		S&P/Fitch
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 (2/28) *(US$ millions)*

Year	Par Value Outstanding*	Par Value Defaults	Default Rates *(%)*
2009 (2/28)	**$1,083,600**	**$15,171**	**1.400%**
2008	$1,091,000	$50,169	4.598%
2007	$1,075,400	$5,473	0.509
2006	$993,600	$7,559	0.761
2005	$1,073,000	$36,181	3.372
2004	$933,100	$11,657	1.249
2003	$825,000	$38,451	4.661
2002	$757,000	$96,855	12.795
2001	$649,000	$63,609	9.801
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

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

Year	Par Value Outstanding[a]	Par Value Defaults	Default Rates *(%)*
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

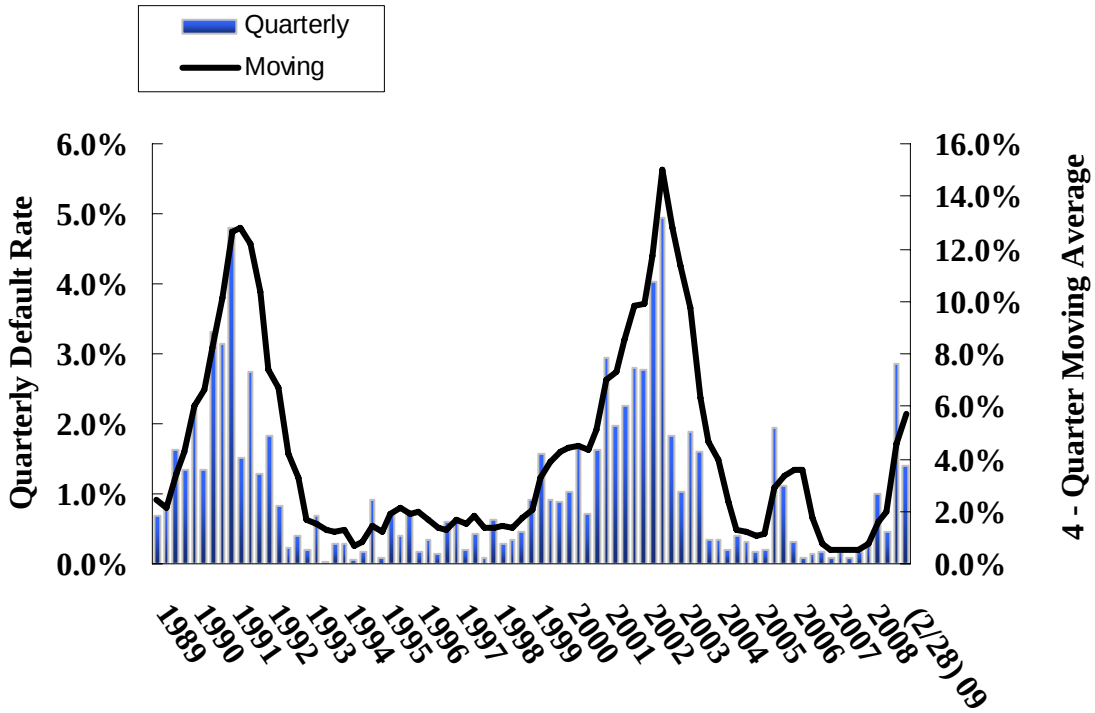
		Standard Deviation (%)
Arithmetic Average Default Rate		
1971 to 2008	3.135%	3.030%
1978 to 2008	3.405%	3.226%
1985 to 2008	4.052%	3.365%
Weighted Average Default Rate*		
1971 to 2008	3.932%	
1978 to 2008	3.942%	
1985 to 2008	3.975%	
Median Annual Default Rate		
1971 to 2008	1.802%	

Source: Author's compilation and Citigroup estimates

Historical Default Rates

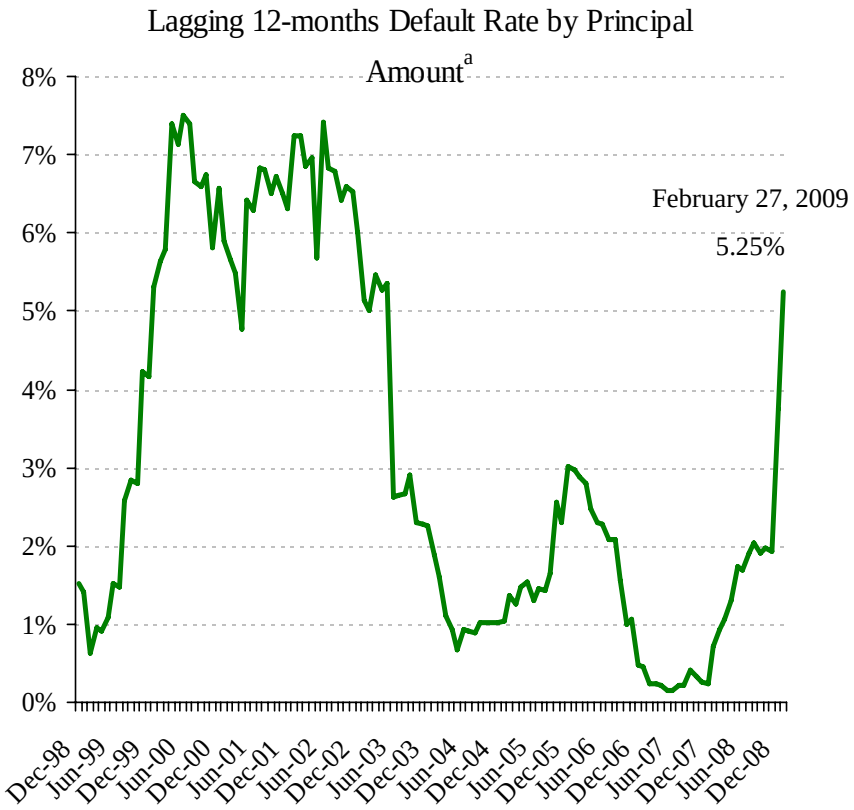
QUARTERLY DEFAULT RATE AND FOUR QUARTER MOVING AVERAGE

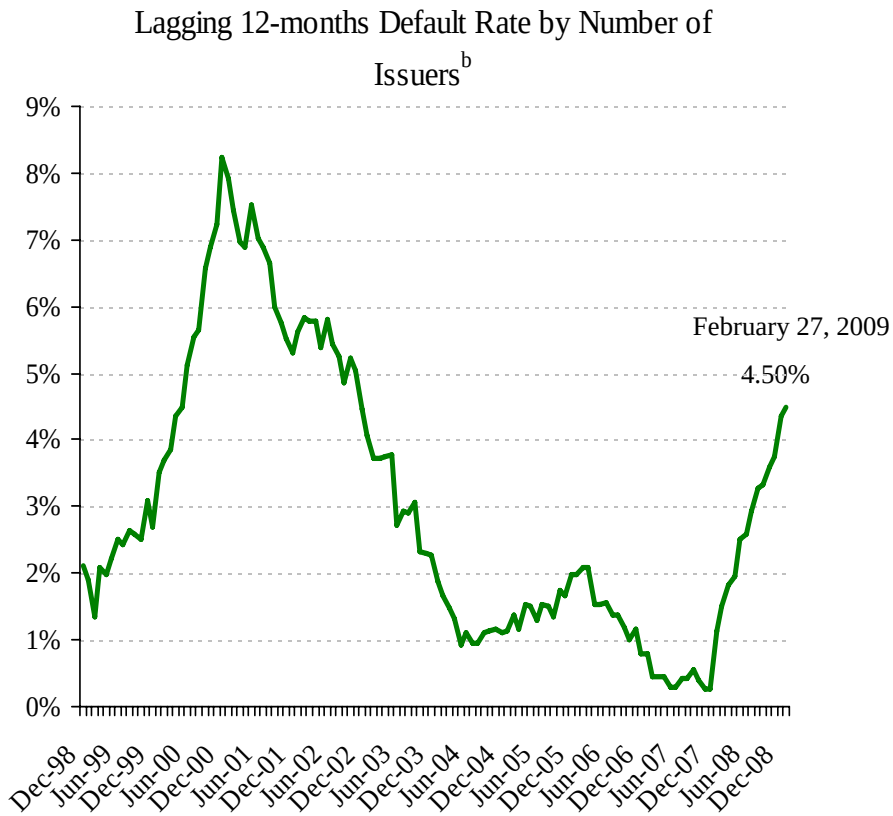
1991 – 2009 (2/28)



Source: Author's Compilations

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



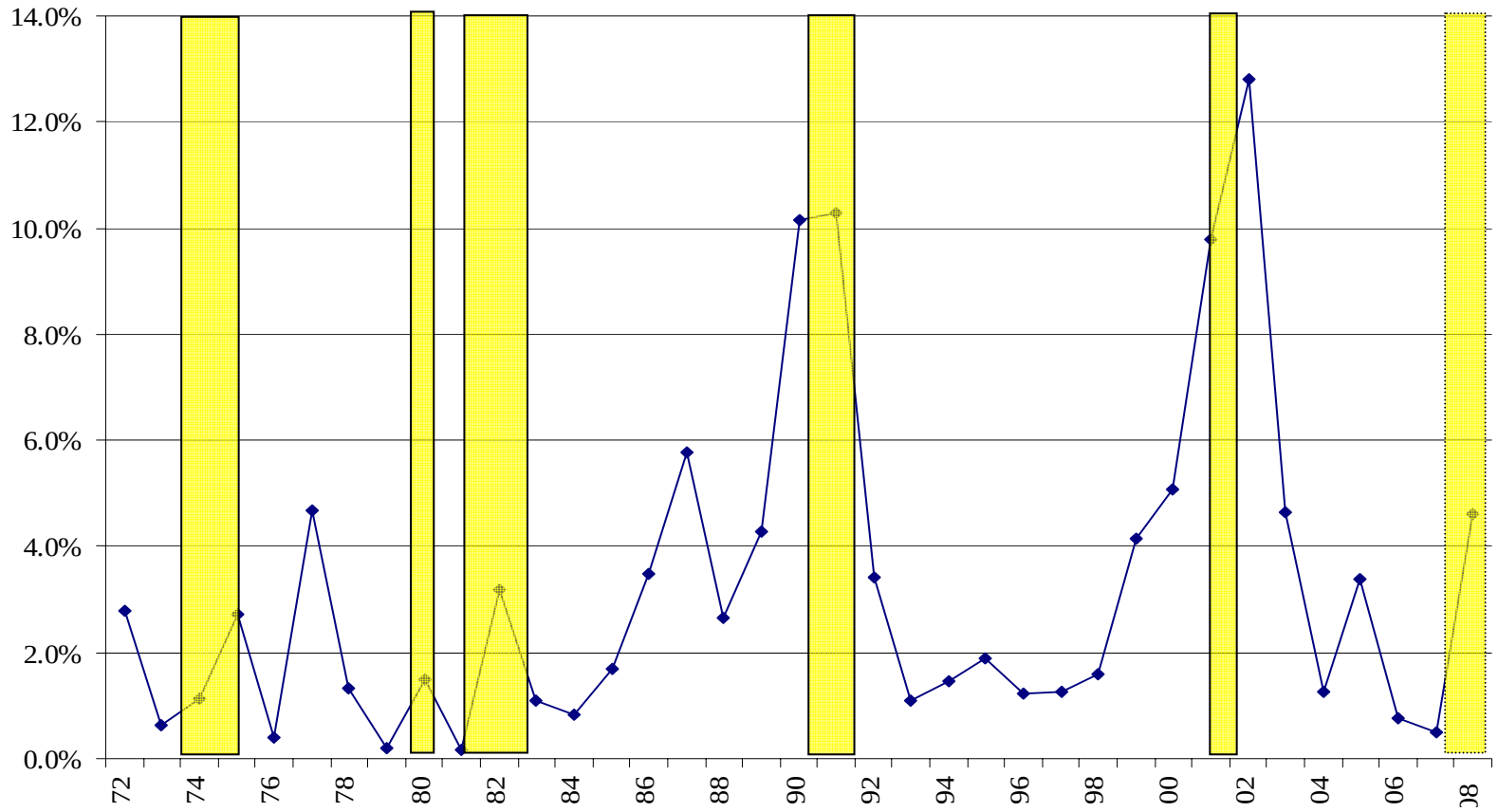


[a]**Default rate** is calculated as the amount defaulted over the last twelve months divided by the amount outstanding at the beginning of the twelve-month period. [b]**Default rate** is calculated as the number of defaults over the last twelve months divided by the number of issuers in the Index at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

Source: S&P LCD

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

Rating Distributions Prior To Recessions

(Percent of Issuers)

	1990	2000	2007	2008[1]
Ba	54%	32%	29%	43%
B	44%	54%	57%	35%
Caa	2%	14%	14%	22%

Subsequent Default Rates By Rating Category

	1991	2001	2009 Forecasts* 1991/2001 Scenarios
Ba	4%	2%	1.7% / .09%
B	6%	11%	5.6% / 3.9%
Caa	37%	34%	8.1% / 7.5%
H.Y. Default Rate	11.0%	10.6%	15.4% / 12.3%

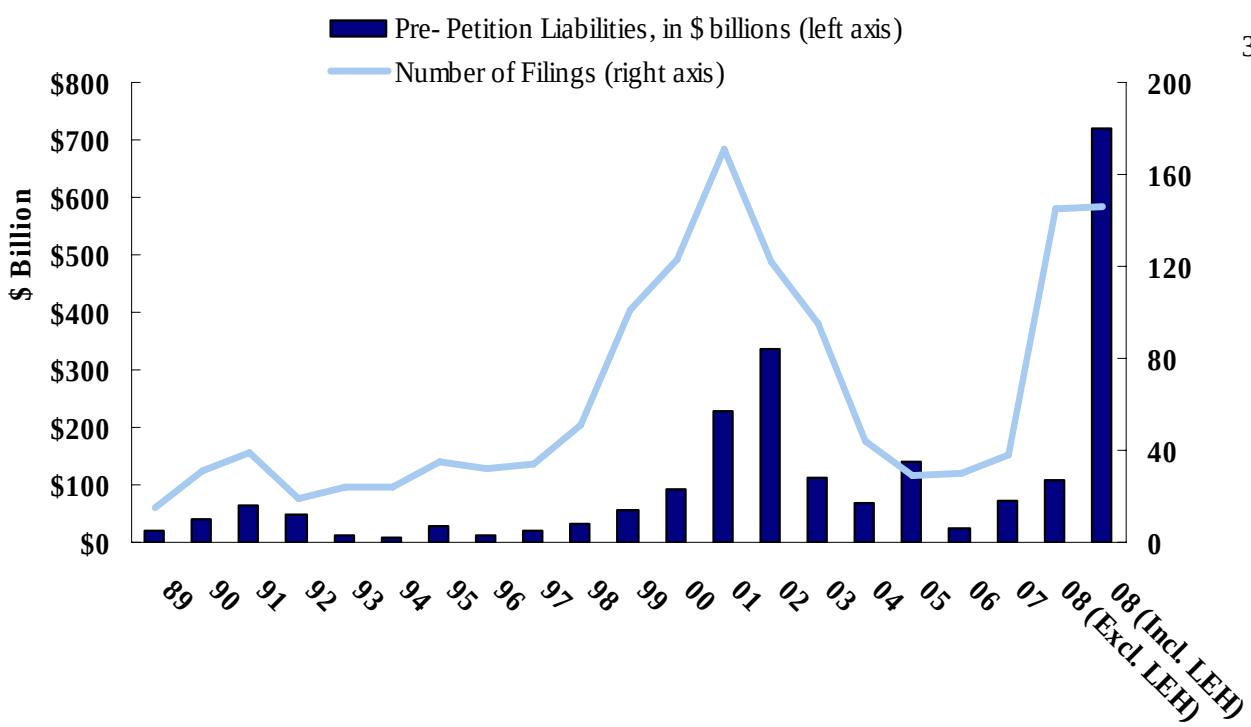
[1]Year-end based on Moody's, S&P, and Fitch ratings in 2008 (based on dollar amounts), Moody's only in prior years

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 – 2008



2007
38 filings and liabilities of $72.7 billion

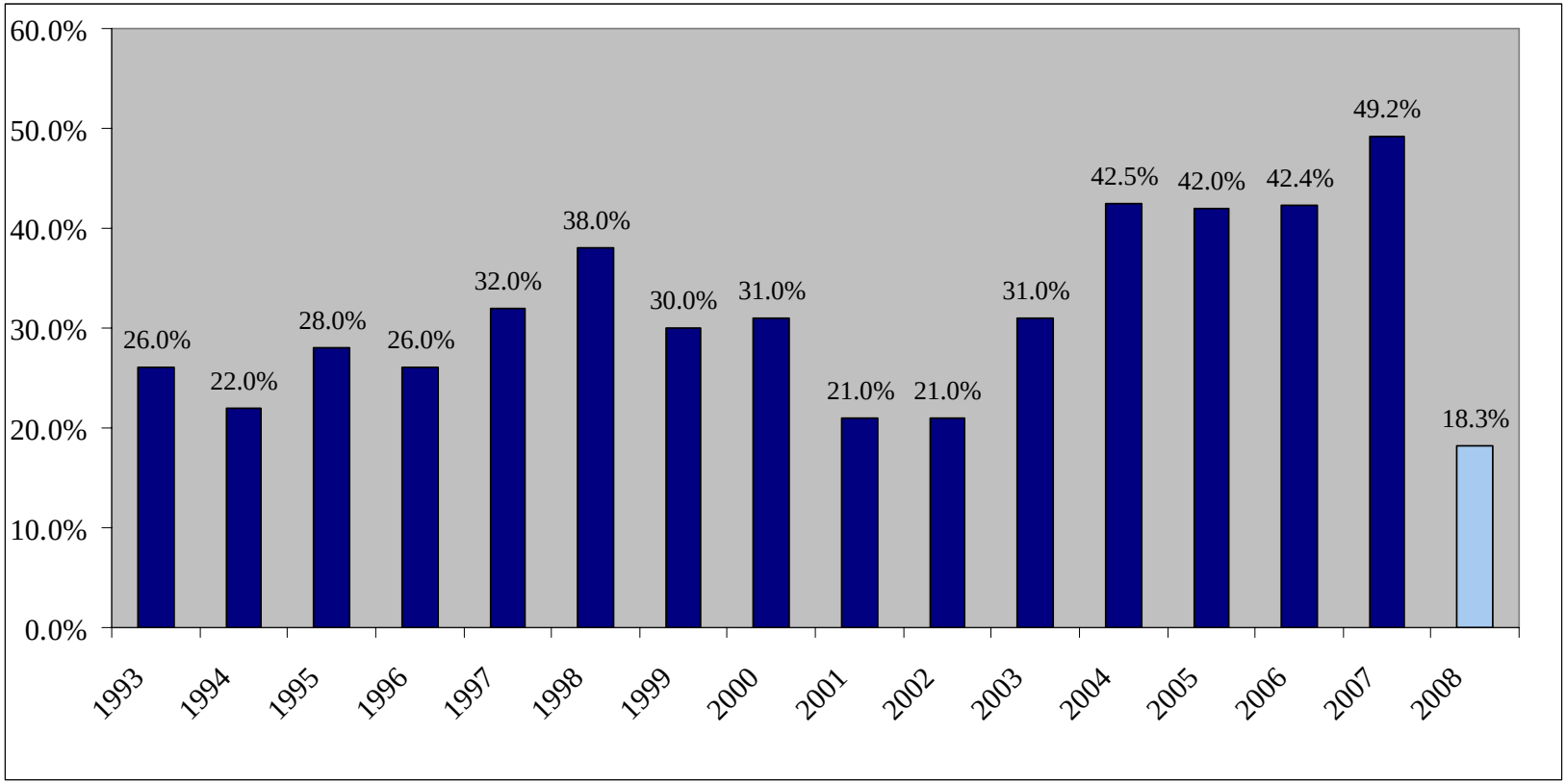
2008
Excluding Lehman Brothers
145 filings and liabilities of $107.8 billion

Including Lehman Brothers
146 filings and liabilities of $720.8 billion

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

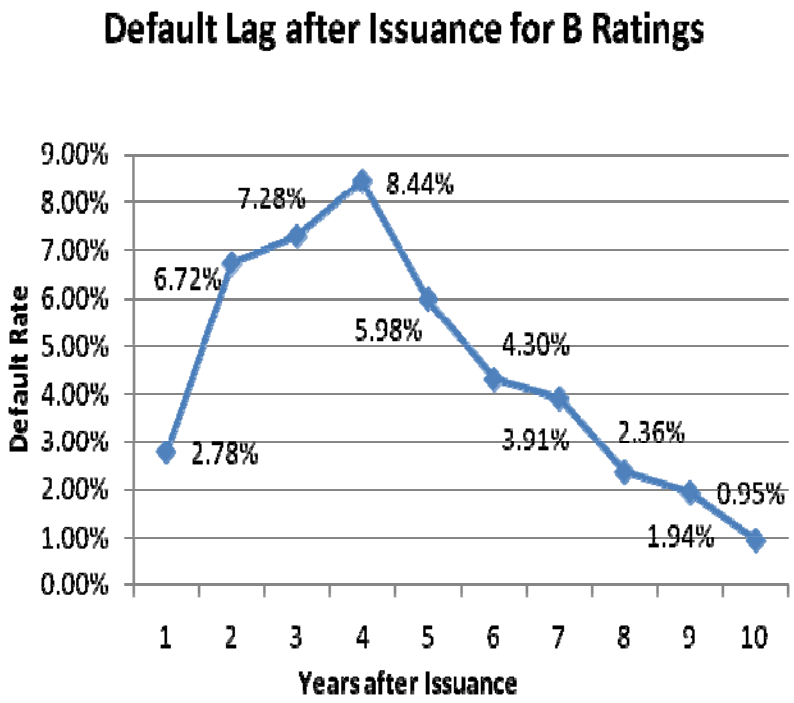
Credit Statistics Trends and Leveraged Market Activity

New Issues Rated B- or Below as Percentage of all New Issues (1993 – 2008)

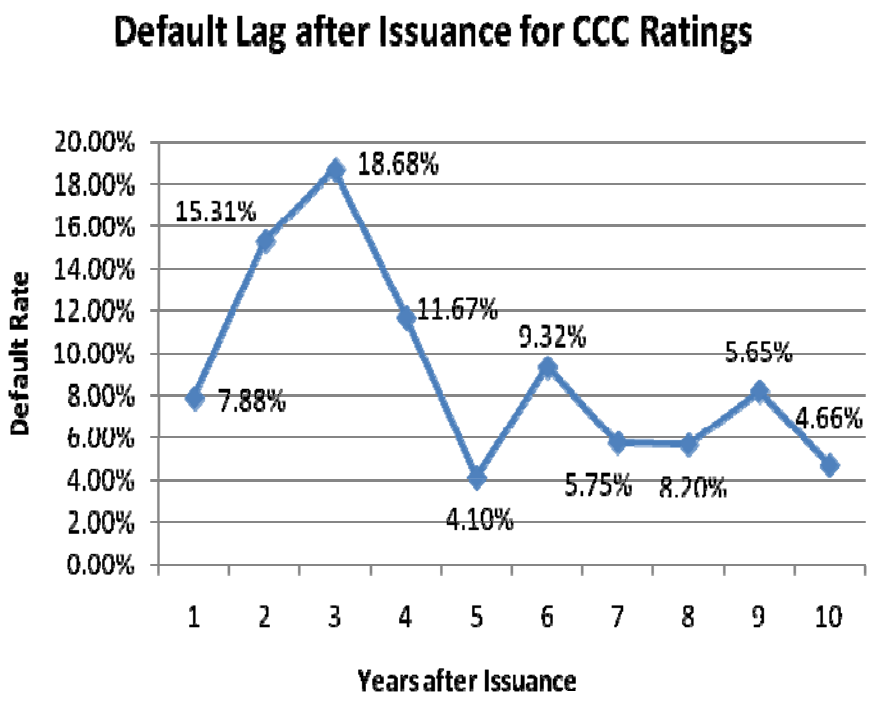


Source: Standard & Poor's Global Fixed Income Research

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

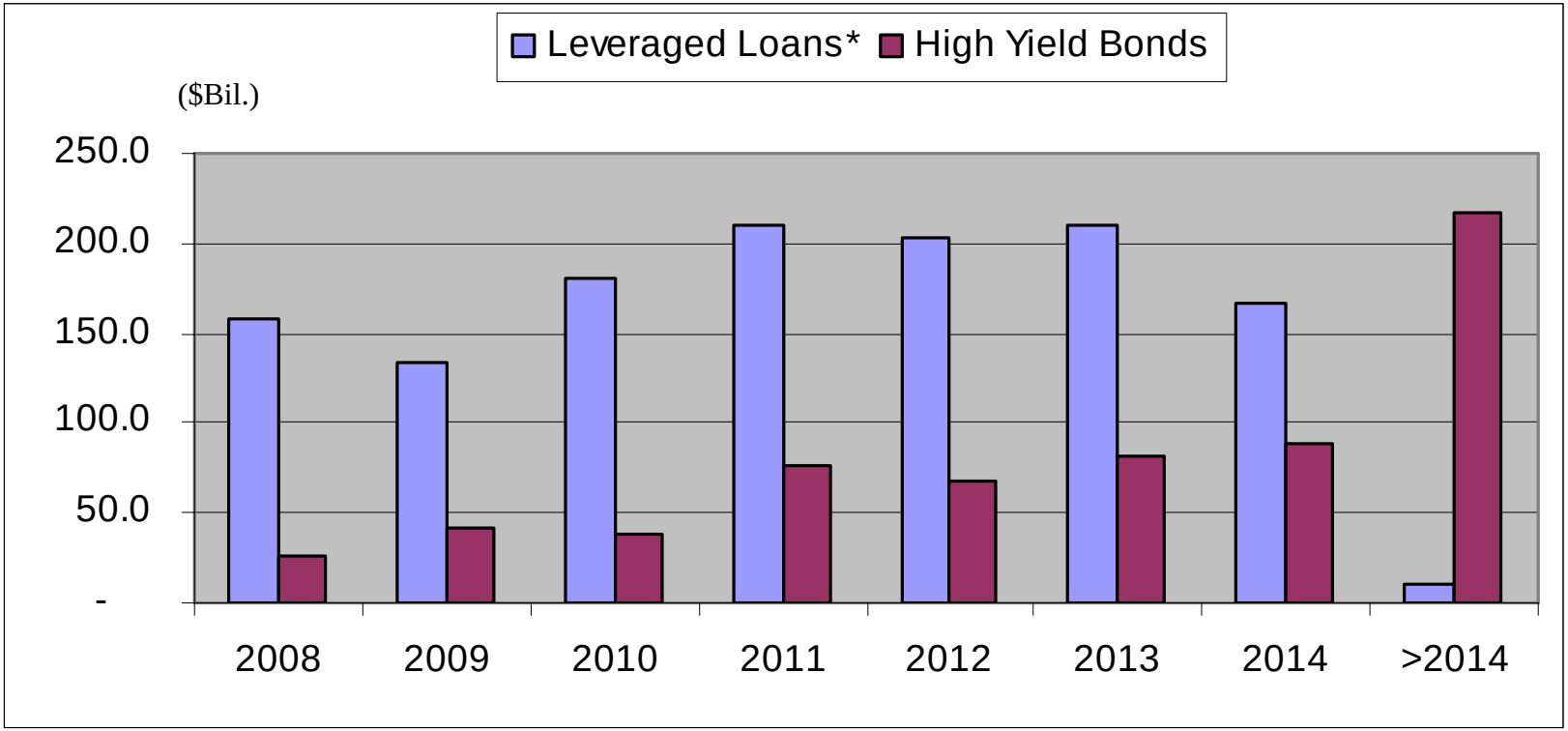


Source: Altman Mortality Tables (1971-2007)



Source: Altman Mortality Tables (1971-2007)

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



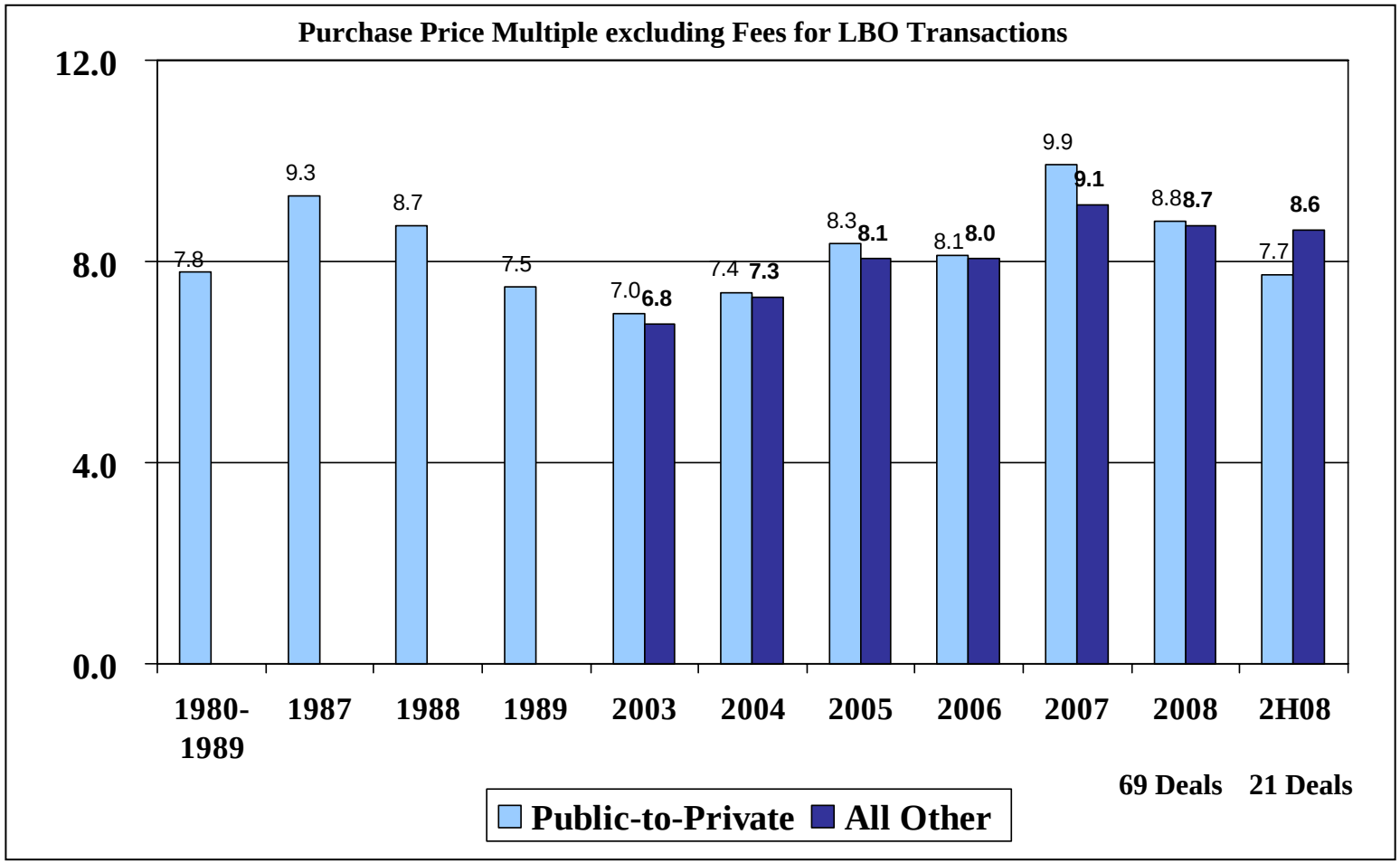
•Includes Term Loans, Revolvers, and Other Loans; Assumes Revolvers are Fully Drawn.

Source: DealLogic, Fitch Ratings.

A Credit Default Analysis of LBOs

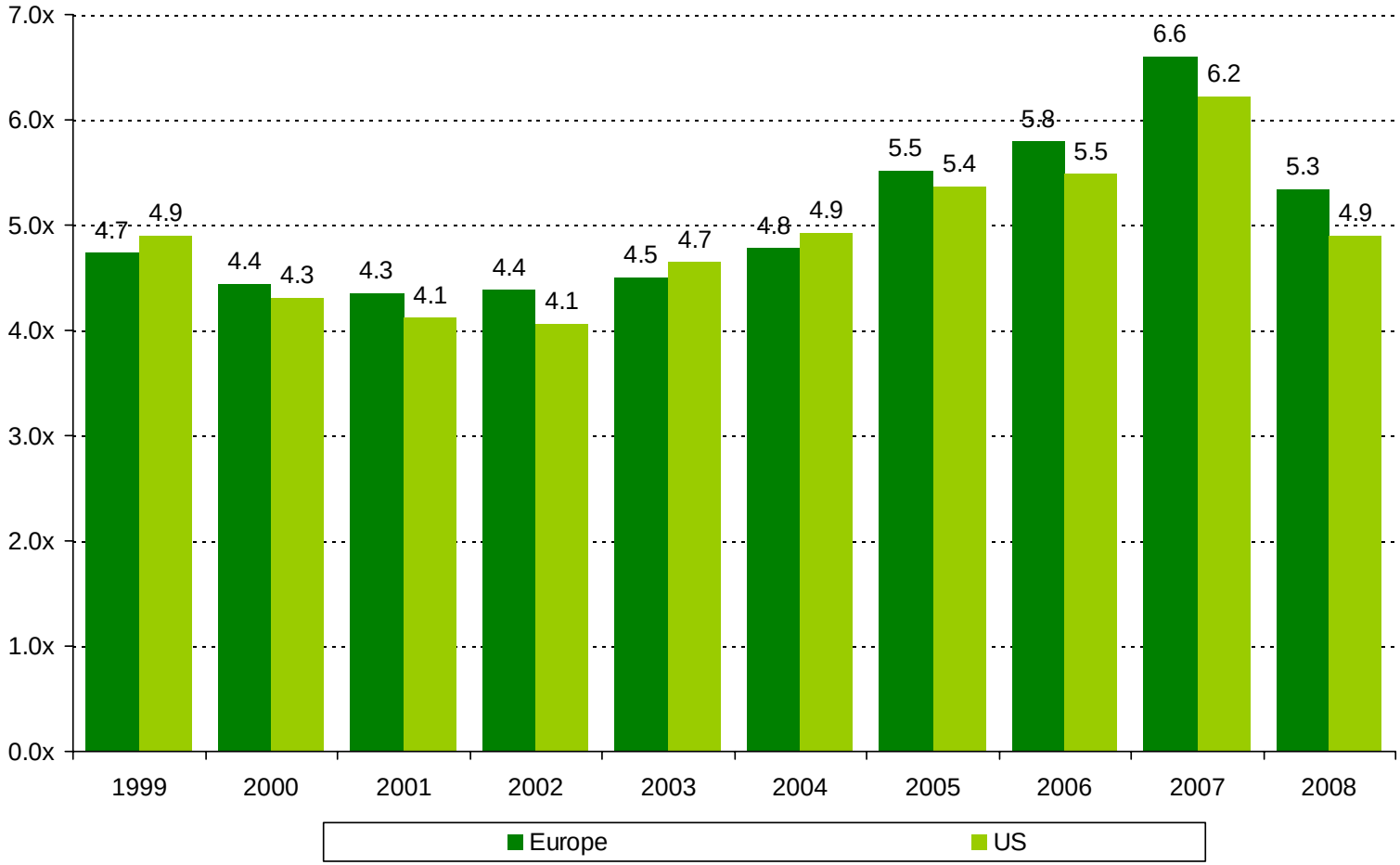
(2004 – 2007)

Purchase Price Multiples



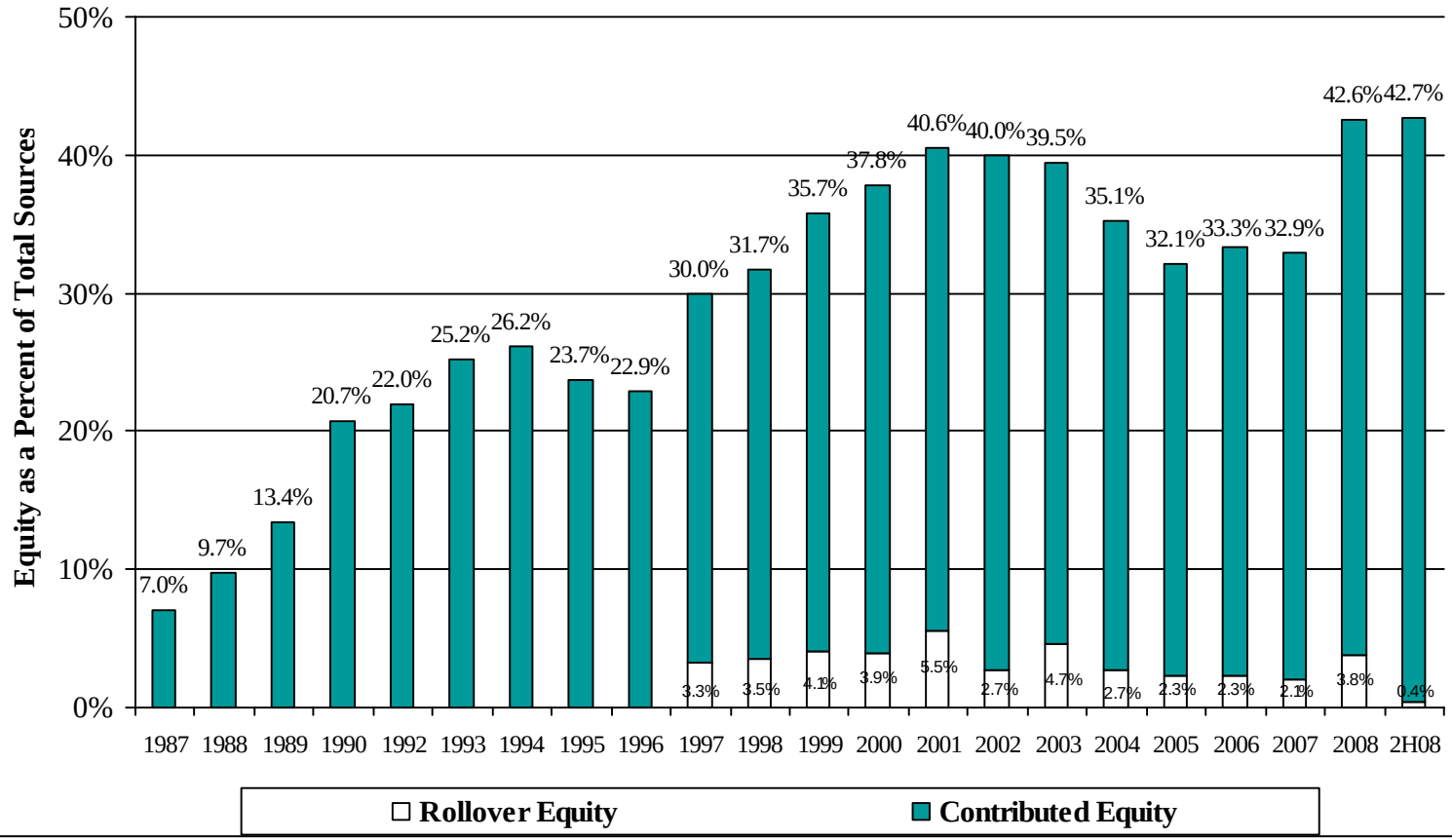
Source: Standard and Poor's LCD

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



Source: Standard & Poor's LCD

Average Equity Contribution to Leveraged Buyouts
1987 – 2008

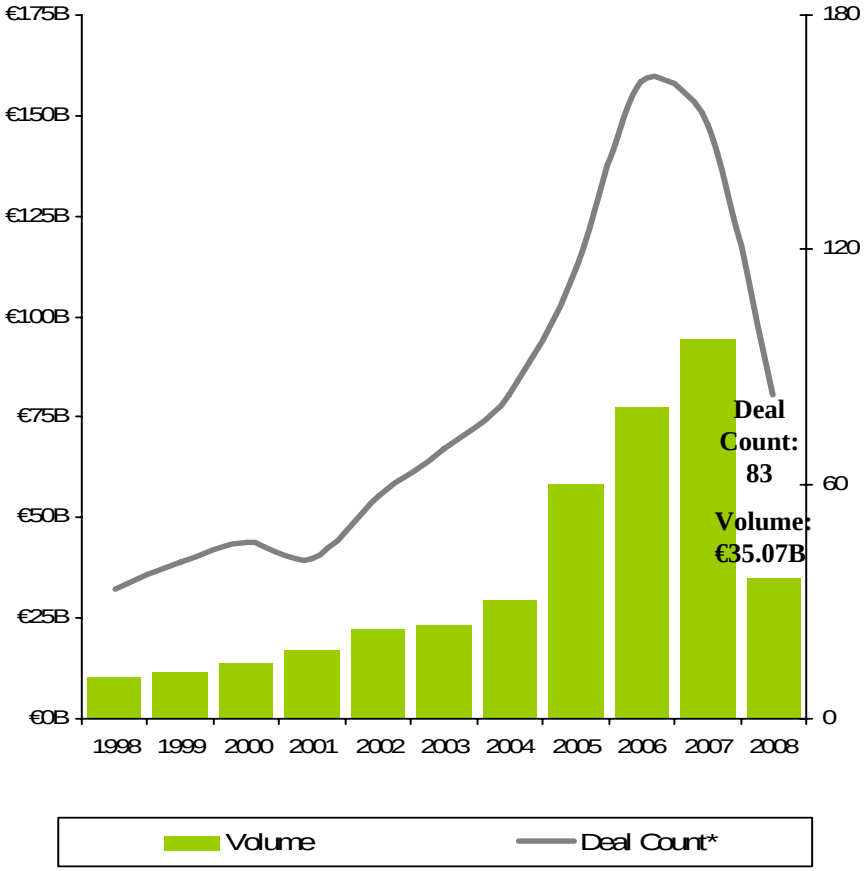


Equity includes common equity and preferred stock as well as holding company debt and seller note proceeds downstreamed to the operating company as common equity; Rollover Equity prior to 1996 is not available; There were too few deals in 1991 to form a meaningful sample.

Source: Standard & Poor's LCD

European Initial/Secondary Buyouts: Volume

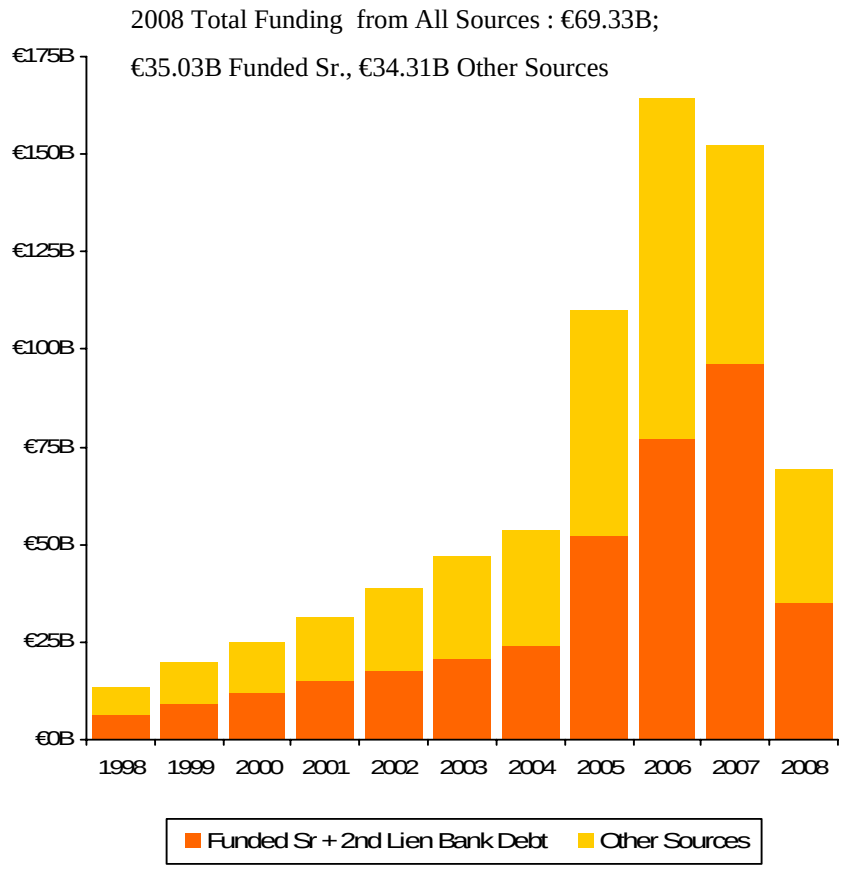
Annual Senior Loan Volume



* Deal Count counts First and Second Lien portions of a single transaction as one event; Deal Count also excludes any amendments.

Source: Standard & Poor's LCD

LBO Transaction Volume



Reflects total sources of funding of initial or secondary buyout by a private equity firm (**excludes** recaps, refinancings, etc)

Recovery Rate Analysis

Default Rates and Losses[a]

1978 – 2009 (2/28)

Year	Par Value Outstanding[a] ($MM)	Par Value Of Default ($MMs)	Default Rate (%)	Weighted Price After Default	Weighted Coupon (%)	Default Loss (%)
2009 (2/28)	$1,083,600	$15,171	1.40	$15.5	8.49	1.23
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

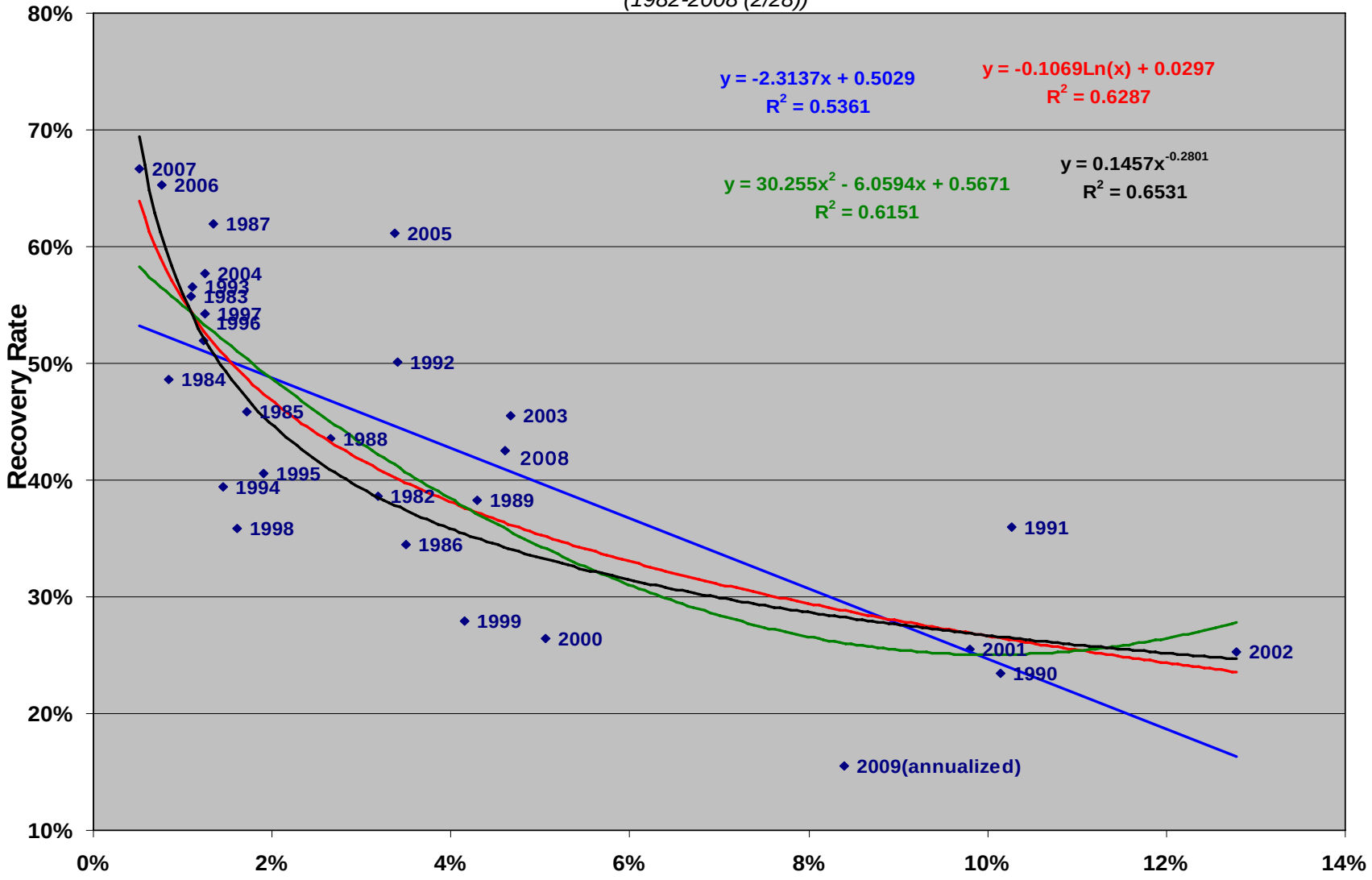
[a] Excludes defaulted issues.

Source: Authors' compilations and various dealer price quotes.

Recovery Rate/Default Rate Association

Dollar Weighted Average Recovery Rates to Dollar Weighted Average Default Rates

(1982-2008 (2/28))



Source: E. Altman, et. al., "The Link Between Default and Recovery Rates", NYU Salomon Center, S-03-4.

Annual Returns

Yields and Spreads on 10-Year Treasury (Treas) and High Yield (HY) Bonds

1978 – 2009 (2/28)

	Return (%)			Promised Yield (%)[a]		
Year	**HY**	**Treas**	**Spread**	**HY**	**Treas**	**Spread**
2009 (2/28)	1.42	(5.96)	7.38	20.78	2.93	17.85*
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**			

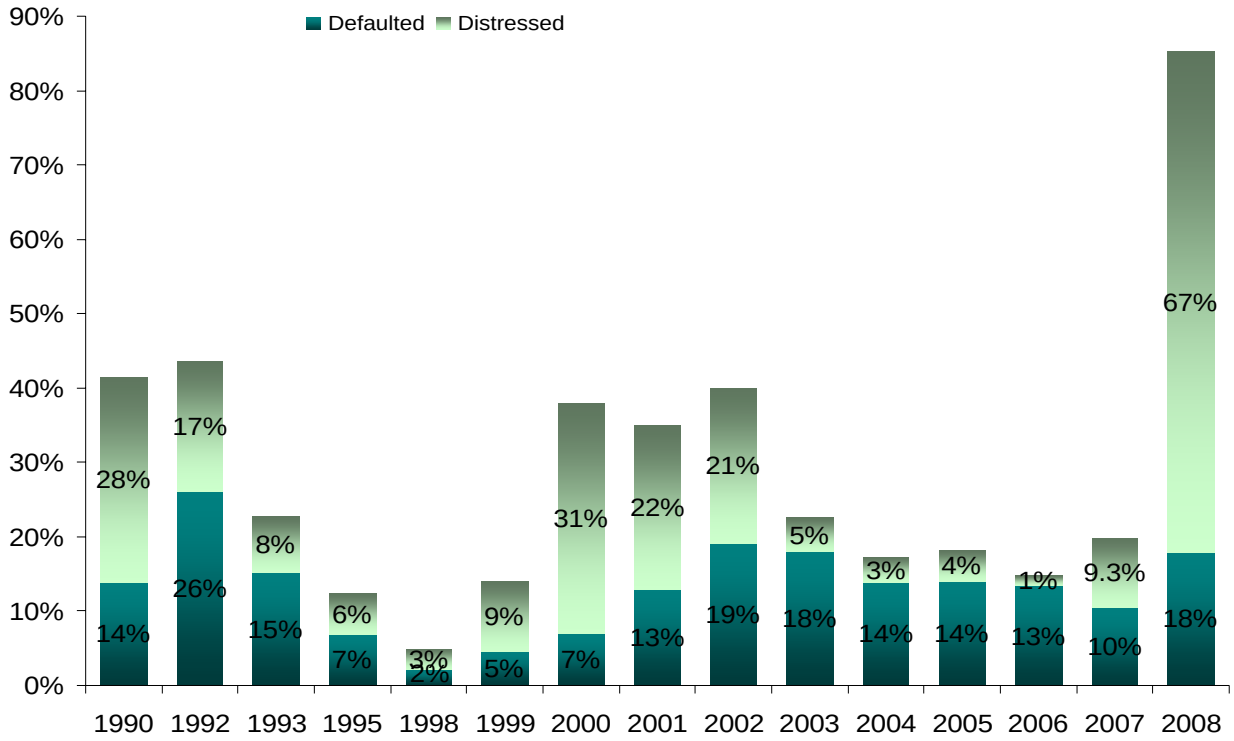
[a] End-of-year yields. *Estimate

Source: Citigroup's High Yield Composite Index

Size of Distressed Debt Market

Distressed[a] And Defaulted Debt[b] as a Percentage of High Yield And Defaulted Debt[c] Markets[d]

(1990 – 2008)



(a) Defined as yield-to-maturity spread greater than or equal to 1000bp over comparable Treasuries. (b) 2008 defaulted debt includes $149.2 billion defaulted bonds by Lehman Brothers and also includes a one-time adjustment for prior year defaulted bonds no longer trading. (c) $1.318 trillion as of 12/31/2008. (d) 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 - 2008

	Face Value			Market Value			
	12/31/2006	12/31/2007	12/31/2008	12/31/2006	12/31/2007	12/31/2008	Market/Face Ratio
Public Debt							
Defaulted	$ 156.2	$ 127.3	$ 234.4 (1)	$ 101.5	$ 76.4	$ 40.7	*0.25*
Distressed	$ 17.9	$ 113.6	$ 888.5 (2)	$ 13.4	$ 85.2	$ 488.7	*0.55*
Total Public	**$ 174.1**	**$ 240.9**	**$ 1,122.9**	**$ 115.0**	**$ 161.6**	**$ 529.4**	
Private Debt							
Defaulted	$ 406.1	$ 331.0	$ 515.6 (3)	$ 365.5	$ 281.4	$ 299.1	*0.60*
Distressed	$ 46.6	$ 295.3	$ 1,954.8 (3)	$ 44.3	$ 265.7	$ 1,368.3	*0.70*
Total Private	**$ 452.7**	**$ 626.3**	**$ 2,470.4**	**$ 409.7**	**$ 547.1**	**$ 1,667.4**	
Total Public and Private	**$ 626.8**	**$ 867.2**	**$ 3,593.2**	**$ 524.7**	**$ 708.7**	**$ 2,196.8**	

(1) Calculated using: (2007 defaulted population) + (2008 defaults) - (2008 Emergences)- (2008 Distressed Restructurings)
(2) Based on 82.0% of the high yield bond market ($1083.6 billion)" as of 12/31/08
(3) Based on a private/public ratio of 2.2; potentially inflated in 2008 because not all of Lehman Brothers' liabilities may be tradeable.

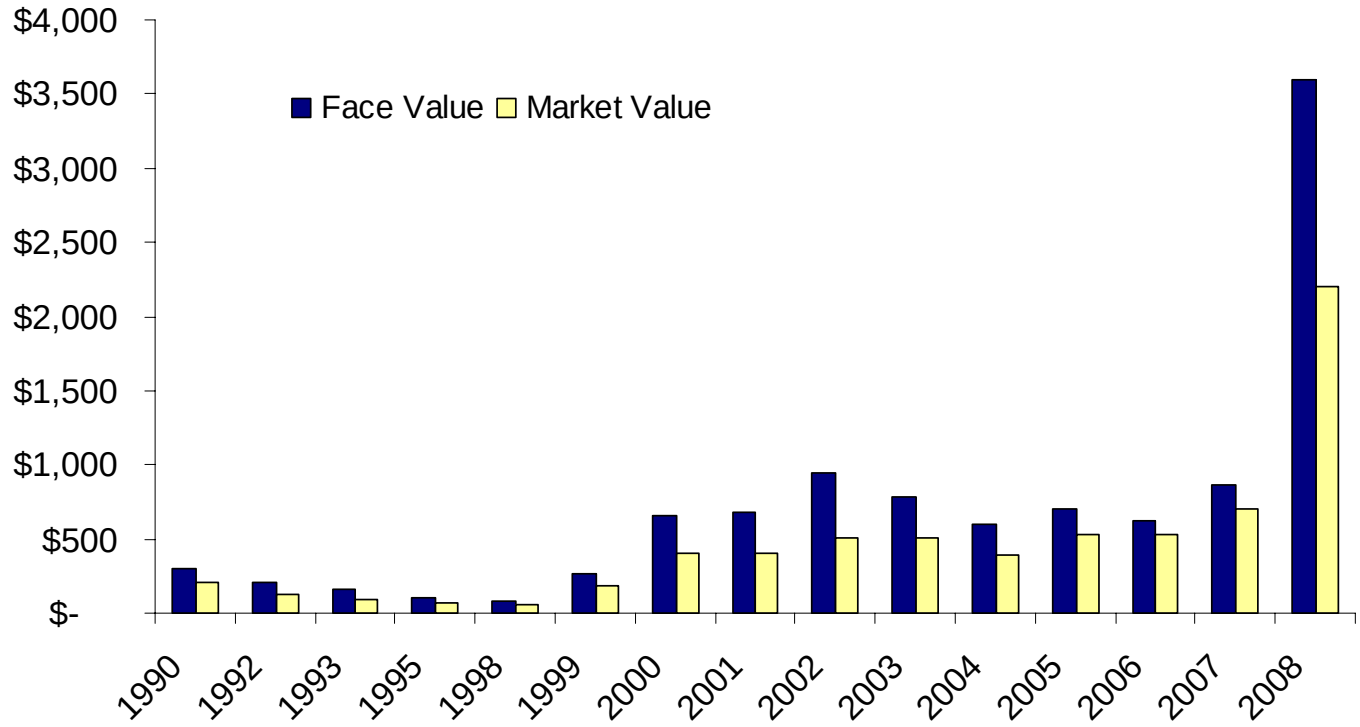
Note: 2008 Defaulted Debt includes $149.2B defaulted bonds by Lehman Brothers

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)

(Including LEH Bond Defaults)

1990 – 2008

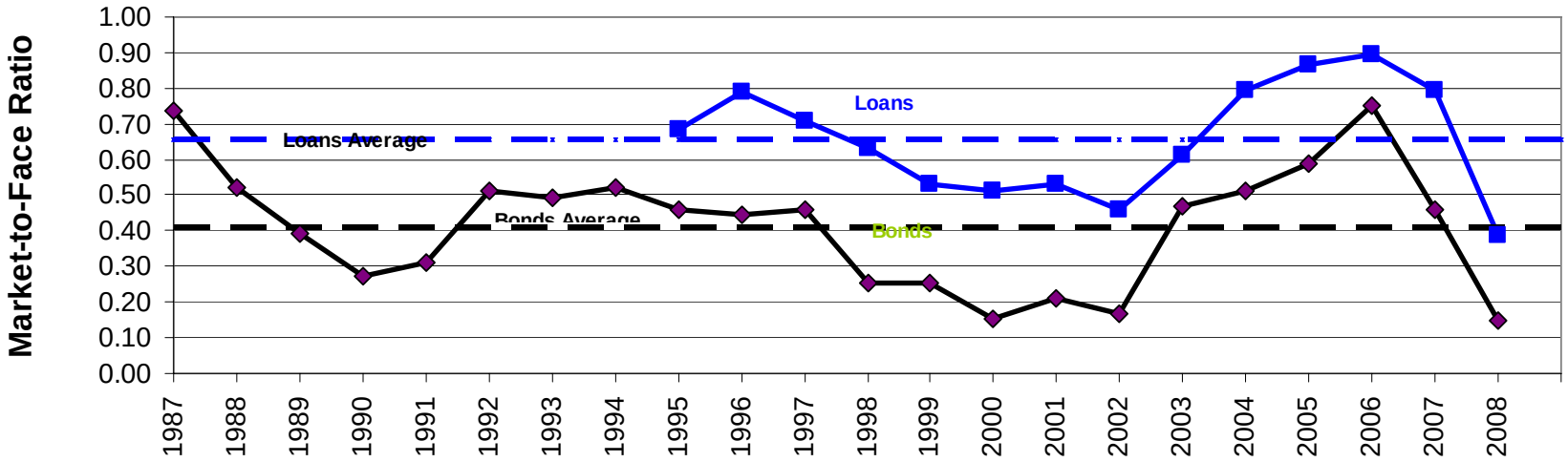


Source: Author's Compilations

Returns and Correlations of the Defaulted Debt Markets

Defaulted Debt Indexes: Market-to-Face Value Ratios

(1987 – 2008)



Loans Median Market-to-Face value is 0.66 and Average Market-to-Face value is 0.66

Bonds Median Market-to-Face value is 0.46 and Average Market-to-Face value is 0.41

Source: Altman-NYU Salomon Center Defaulted Debt Indexes

ALTMAN-NYU SALOMON CENTER
DEFAULTED BOND INDEX
COMPARISON OF RETURNS
(1987 - 2008)

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%
1987 - 2008 Arithmetic Average (Annual) Rate	7.79%	10.46%	7.64%
Standard Deviation	30.12%	19.15%	13.54%
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 - 2008)

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%
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%
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 - 2008)

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%
1996 - 2008 Arithmetic Average (Annual) Rate	3.14%	7.13%	4.56%
Standard Deviation	23.12%	21.66%	12.86%
1996 - 2008 Compounded Average (Annual) Rate	0.44%	4.85%	3.79%
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 (September 2008)

Abrams Capital
ADM Maculus
AEG
Angelo, Gordon & Company
Apex Fundamental Partners
Apollo Management
Appaloosa Management
Ares Corporate Opp. Fund
Ashmore Asian Recovery
Aurelius Capital Management
Avenue Capital Group
Babson Capital
Basso Asset Management
Bay Harbour Management
Bayside Capital
Beltway Capital
Bennett Management Co.
Black Diamond
Blackport Capital Fund, LTD
Blackstone Group
Blue Wolf Capital
Bond Street Capital
Boone Capital Management
Brigade Capital
The Broe Companies
Buckeye Capital Partners
Canyon Capital
Camulos Capital
Candlewood Partners
Cardinal Capital
Carl Marks
Carlyle Strategic Partners
Cargill Value Investment
Catlock Capital
Centerbridge Capital
Cerberus Partners
Citadel Investments
Cohanzick Management
Columbus Hill Capital Management
Commonwealth
Concordia Advisors
Contrarian Capital Management
Corsair
Cypress Management
Cyrus Capital Partners
D.E. Shaw
Davidson / Kempner
DDJ Capital Management
Deephaven Capital Management
Delaware Street Capital
Deltec Recovery Fund
Drucker Capital Management
Durham Asset Management
Eagle Rock Capital
Elliott Advisors
Endurance Capital
EOS Partners
Epic Asset Management
Fairfield Greenwich
Farallon Partners
Fir Tree Partners
Forest Investment Management
Franklin Mutual Recovery
Fortress Capital Corp.
Fulcrum Capital Management
GE Finance

U.S. Distressed Debt Managers (September 2008)

Glenview Capital Management
Golden Capital
Golden Tree
Gracie Capital
Gradient Partners
Gramercy Capital
Greenwich Capital
Greywolf Capital
Gruss Asset Management
GSC Group
H.I.G.
Halbis Capital Management (US), Inc.
Halcyon/Slika (Alan B.) Mgmt.
Harbinger Capital
Harvest Capital
Helios Advisors
Highbridge Capital Management
Highland Capital
Highland Rest. Capital Partners
Huizenga Capital Management
Industria Partners
Insight Equity
Ivory Investment Management
JLL Partners
JMB Capital
K Capital Partners
KD Distressed Capital
Kilimanjaro Advisors
King Street Advisors
KPS Special Situations Fund
KS Distressed Debt
Lampe Conway
Laurel Ridge Asset Mgmt.
Leucadia National Corporations
Levco Debt Opportunities
Litespeed Partners
Littlejohn & Co.
Loeb Partners
Lonestar Partners
LongAcre Capital Partners
Longroad Asset Management
Marathon Capital
Mariner Investment Group
Mason Capital Management
MatlinPatterson Global Advisors
Mellon HBV Capital Mgmt
MHR
Millennium
MJ Whitman Mgmt Co.
Monomoy Capital
Moore Asian Recovery Fund
Mount Kellett Capital Management
MSD Capital
MW Post
New Generation Advisers
Normandy Hill Capital
Oakhill
Oaktree Capital
Och Ziff Friedheim
Owl Creek Capital
Pacholder Associates, Inc.
Pacific Alternative Asset Mgmt.
Paige Capital
Pardus Capital
Patriarch
Paulson & Co.
Pegasus Investors
Pequot Capital
Perry Partners

U.S. Distressed Debt Managers (September 2008)

Peter Schoenfeld Asset Mgmt.
Pine Creek
Pinewood Capital Partners
Plainfield Asset Management
PMI
Post Advisory Group
Proprietary Trdg of Mkt Makers
Quadrangle Group
Questor Management
Radius Equity Partners
Redwood Capital
Republic
Resolution Partners
Restoration Capital Management
Resurgence Corporate Fund
Robeco/Weiss Peck & Greer
Salisbury
Sandell Asset Management
Sandelman Partners
Satellite Asset Management
Scoggin Capital
Scott's Cove Capital Mgmt.
Seneca Capital Invest. Partnership
Signature Capital Partners
Silvergang
Silverpoint Capital
Spring Street
Stanfield Capital Management
Stairway Capital Advisors
Stark Investments
Strategic Value Partners
Summit
Stonehill Capital
Stony Lane Partners
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
Triage Capital
Trilogy Capital
Trust Company of the West
Tuckerbrook
Turnberry Capital
Tyndall Partners
Van Kampe
Varde Partners, Inc.
Venor Capital Management
Versa Capital Management
W.L. Ross & Co.
Washington Corner Capital Mgmt
Wayland Fund
Wayzata Investment Partners
Wellspring Capital Partners
Wexford Capital
William E. Simon & Sons
Woodside Management
Whippoorwill Associates, Inc.
Xerion Partners
York Capital
Z Capital Partners

U.S. Distressed Funds with European Offices

Aladdin Capital Management
Apollo Management
Avenue Capital Group
Camulos Capital
Cargill Investors
Cerberus 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
Och Ziff Capital Management
Peter Schoenfeld Asset Mgmt.
Silverpoint Capital
Strategic Value Partners
TPG Credit Management

European Distressed Debt Managers (Home Grown)

Alchemy Partners
Argo Capital
Bluebay Asset Management
Butler Capital Management
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
Sisu Capital
Thames River
Tisbury Capital
Trafalgar Asset Managers

Distressed Active/Control Investors

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

Investment Styles and Target Returns in Distressed Debt Investing

Active/Control	Active/Non-Control	Passive
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

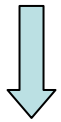
Forecasting Defaults and the Default Rate

MODEL DRIVERS

- Mortality Rate Estimates: 1971 - 2007

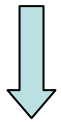
  = f {bond rating, age, redemptions, defaults}

- 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

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

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,

$$CMR_{(t)} = 1 - \prod_{t=1} SR_{(t)},$$

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

Mortality Rate Concept (Illustrative Calculation)

For BB Rated Issues

Security No.	Issued Amount	Year 1 Default	Year 1 Call	Year 1 SF	Year 2 Default	Year 2 Call	Year 2 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

Year	Default Rate	Default Amount ($ billion)	Recovery Rate*
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

2009

Model	2009 Default Rate Forecast	Default Amount ($ billion)	2009 Recovery Rate Forecast*
Mortality Rate	7.98%	$86.4	30.00%
Scenario (2001)	12.30%	$133.2	25.37%
Scenario (1991)	15.40%	$166.8	22.97%
Yield-Spread	18.32%	$198.4	21.11%
Distress Ratio	14.16%	$153.3	23.87%
Average of Models	13.63%	$147.6	24.27%

*Based on the log-linear default rate/recovery rate regression (Slide 29).

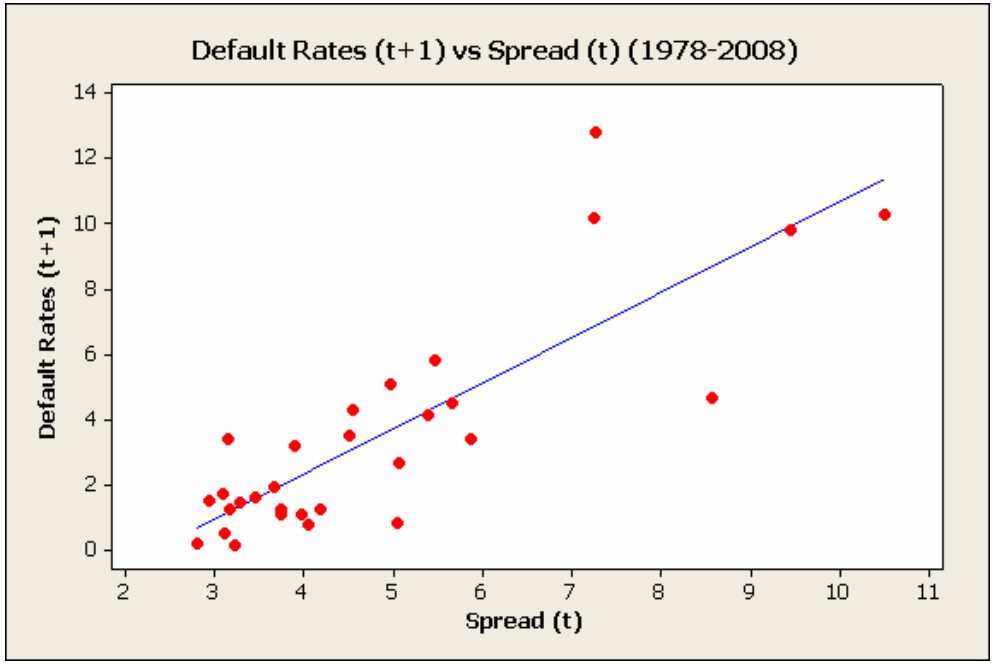
Source: Mortality Rates (Slide 53), All Corporate Bond Issuance and Authors' Estimates of Market Size in 2009.

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

Default Rate = - 3.25 + 1.39 * 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

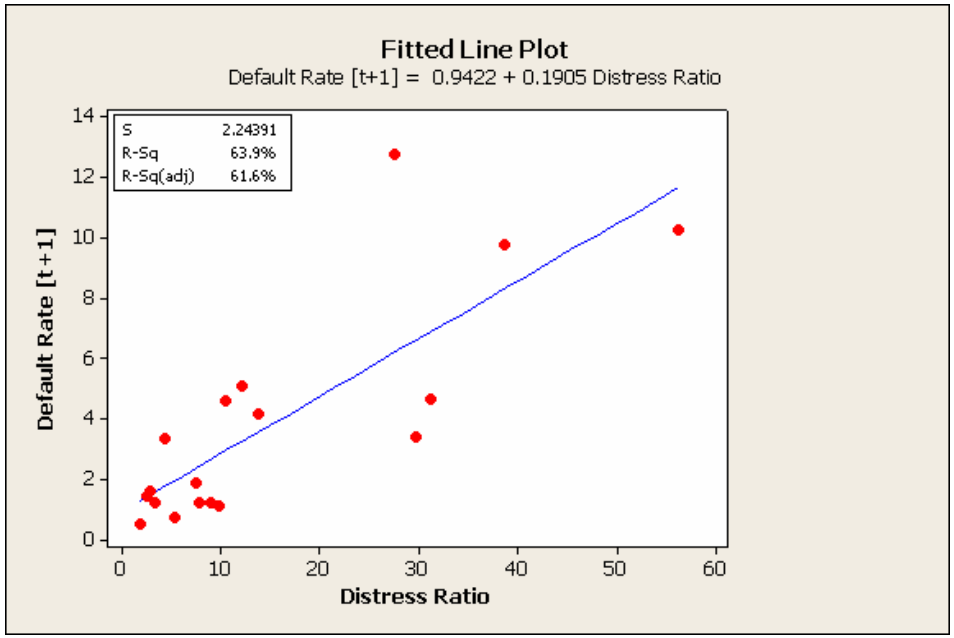
S = 1.86079 R-Sq = 69.5% R-Sq(adj) = 68.4%

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 (1/30/2009) of 1,551 bps, P_D = -3.25 + 1.39*15.51 = **18.316%**

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



The regression equation is

Default Rate = 0.942 + 0.190 * 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 R-Sq = 63.9% R-Sq(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 (1/30/2009) of 69.40%, P_D = 0.942 + 0.190 *69.40 = **14.159%**

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

The regression equation is

Default Rate = - 3.17 + 1.39 * Spread - 0.013 * 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 R-Sq = 70.0% R-Sq(adj) = 66.1%

Correlation Between Yield Spread and Distress Ratio:

R-Sq = 93.8%

Correlation = 96.0%

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

Application

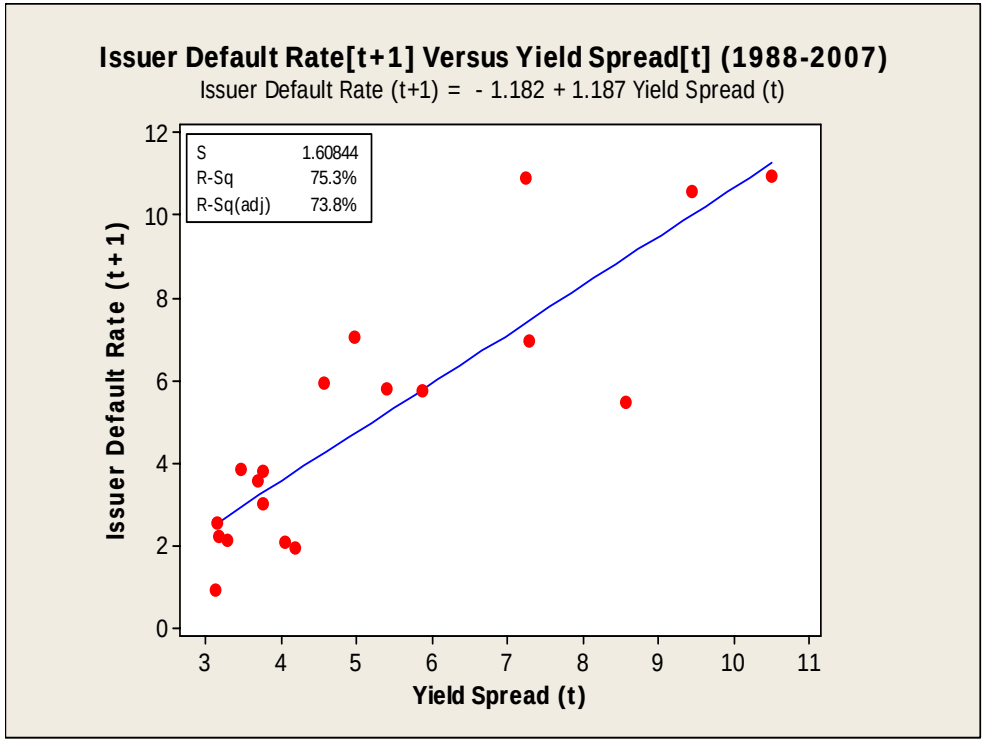
Applying Yield Spread and Distress Ratio (06/12/2007) of 260 bps and 1.20%, P_D = -3.13 + 1.38*2.60 – 0.010* 1.20 = **0.460%**

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 (1/30/2009) of 1,551 bps and 69.40%, P_D = -3.17 + 1.39*15.51 – 0.013*69.40 = **17.487%**

Issuer Denominated (Moody's) Default Rate Predictions

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



The regression equation is

Issuer Default Rate (t+1) = - 1.18 + 1.19 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

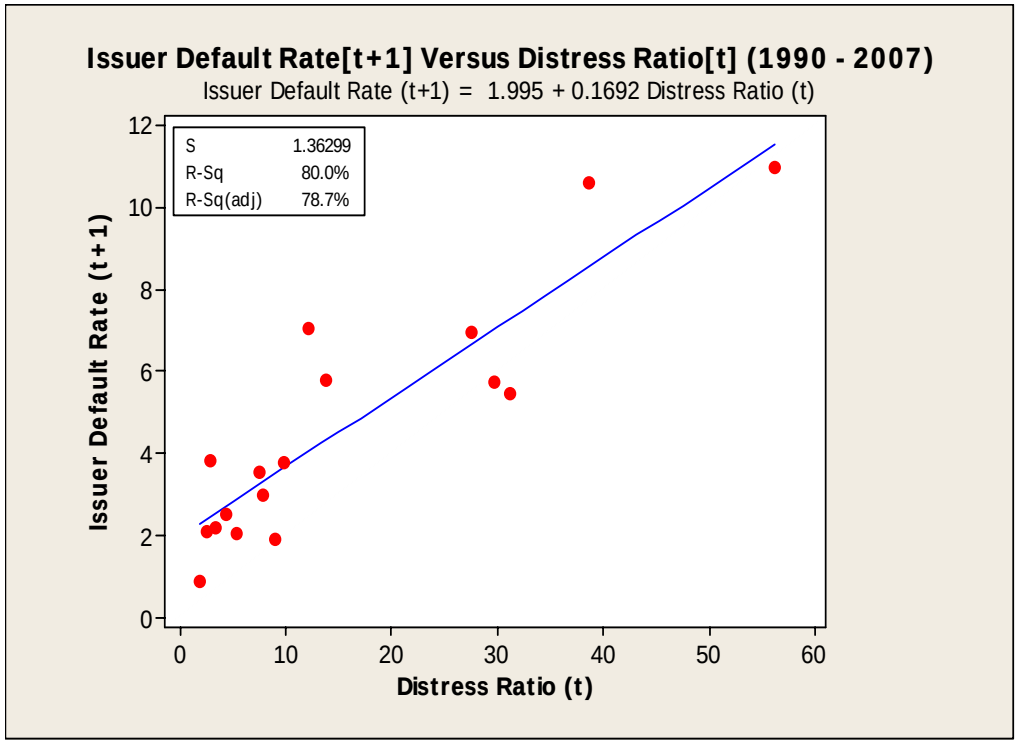
S = 1.60844 R-Sq = 75.3% R-Sq(adj) = 73.8%

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*2.60 = **1.914%**
Applying Yield spread (12/31/2007) of 566 bps, P_D = - 1.18 + 1.19*5.66 = **5.554%**
Applying Yield spread (12/31/2008) of 1,731 bps, P_D = - 1.18 + 1.19*17.31 = **19.419%**

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



The regression equation is

Issuer Default Rate (t+1) = 1.99 + 0.169 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 (12/31/2008) of 82.00%, P_D = 1.99 + 0.169*82.00 = **15.848%**

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

The regression equation is

Issuer Default Rate (t+1) = 0.11 + 0.660 Yield Spread (t) + 0.0718 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 R-Sq = 81.8% R-Sq(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*2.60 + 0.0718* 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*5.66 + 0.0718*10.42 = **4.593%**
Applying Yield Spread and Distress Ratio (12/31/2008) of 1,731 bps and 82.00%, P_D = 0.11 + 0.66*17.31 + 0.0718*82.00 = **17.422%**