Current Conditions & Outlook for Corporate & Sovereign Credit Markets

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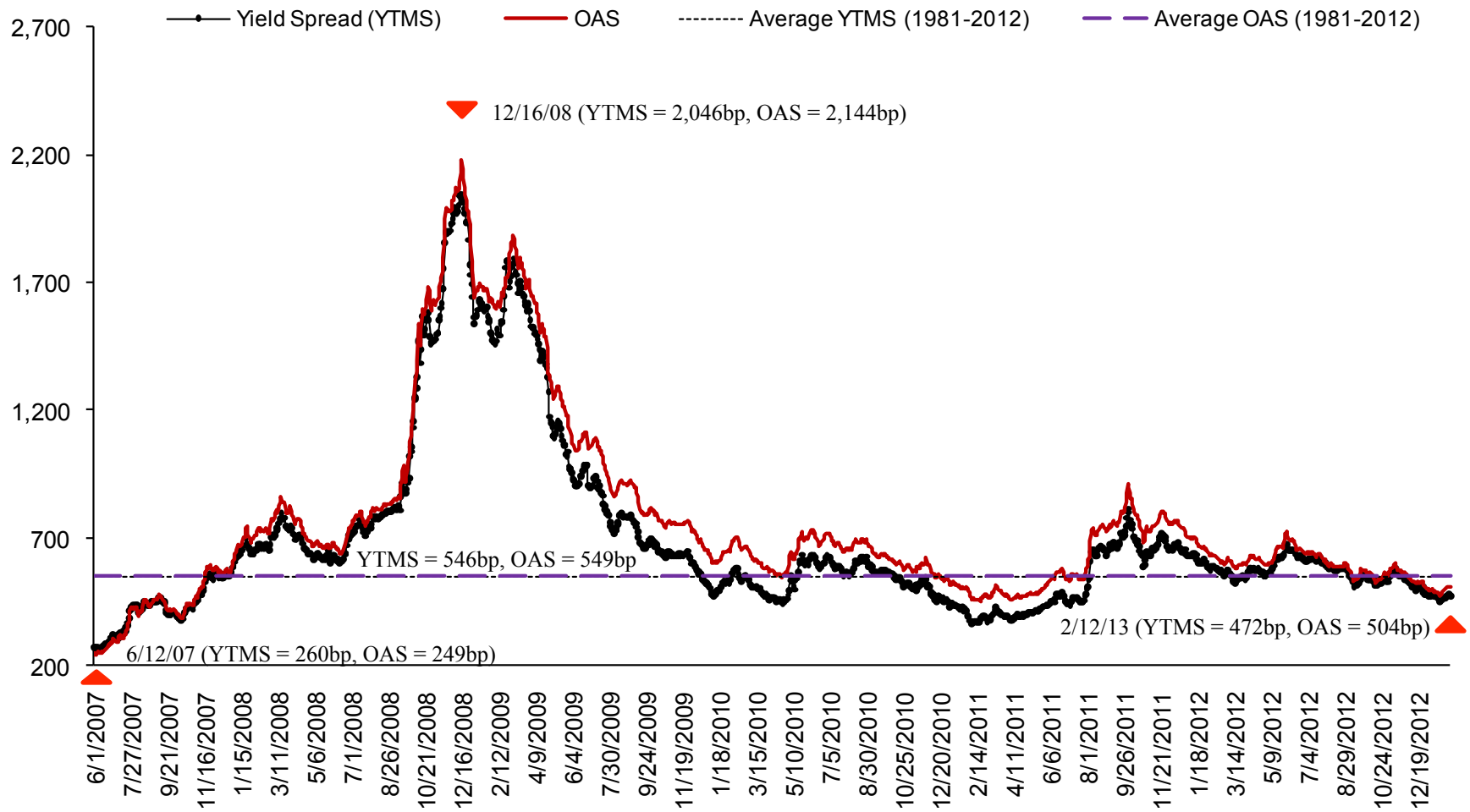
YTM & Option-Adjusted Spreads Between High Yield Markets & U.S. Treasury Notes

June 01, 2007 – February 12, 2013



Sources: Citigroup Yieldbook Index Data and Bank of America Merrill Lynch.

High Yield Bonds - Yield to Maturity

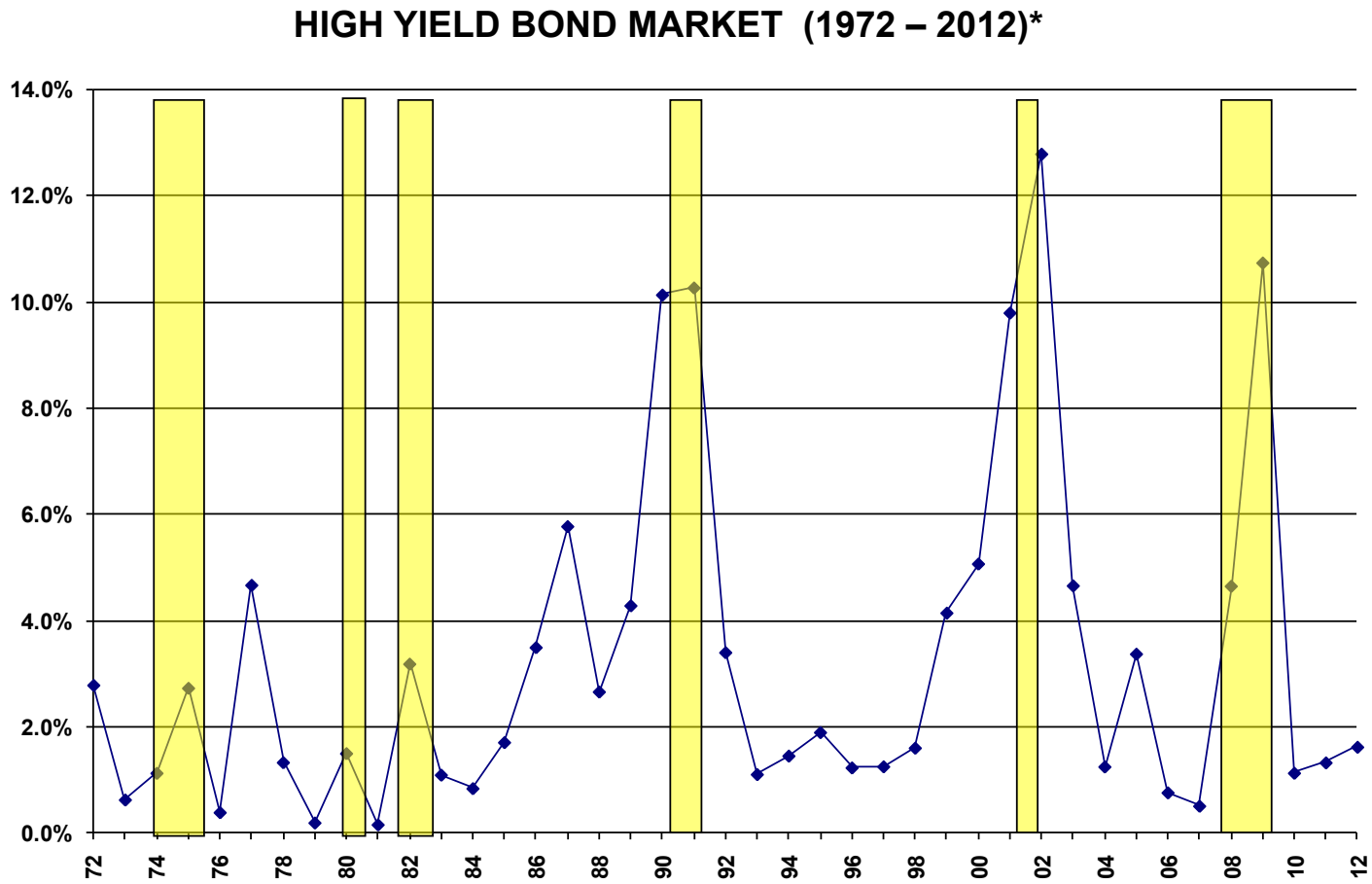
June 01, 2007 – February 12, 2013

Sources: Citigroup Yieldbook Index Data

Major Risks Going Forward (For 2013)

- Global Economy Slowdown – Primarily U.S. (Double-Dip?): Impact on Default & Recovery Rates, Credit Availability & Credit Quality
  - China
  - Europe
- Sovereign Debt Crisis – Europe
  - Renewed Concern
  - Looming Corporate Defaults?
  - Survival of the Euro?
- Contagion Between Markets – Debt and Equity
- LBO and Covenant-Lite Risk
- Financial Institutions Systemic Risk
- Political Paralysis – Deficit/Debt Crises
- U.S. Municipal Bond & Federal Government Default Risk
- Uncertainties (non-quantifiable)

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



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 - 6/09

***All rates annual**

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

Historical Default Rates

Straight Bonds Only Excluding Defaulted Issues From Par Value Outstanding, (*US$ millions)*
1971 – 2013 (2/08)

Year	Par Value Outstanding[a] ($)	Par Value Defaults ($)	Default Rates (%)
2013 (2/08) *	**1,316,108**	**1,892**	**0.144**
2012	1,212,362	19,647	1.621
2011	1,354,649	17,963	1.326
2010	1,221,569	13,809	1.130
2009	1,152,952	123,878	10.744
2008	1,091,000	50,763	4.653
2007	1,075,400	5,473	0.509
2006	993,600	7,559	0.761
2005	1,073,000	36,209	3.375
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

Year	Par Value Outstanding* ($)	Par Value Defaults ($)	Default Rates (%)
1985	58,088	992	1.708
1984	40,939	0.840	0.840
1983	27,492	1.095	1.095
1982	18,109	3.186	3.186
1981	17,115	0.158	0.158
1980	14,935	1.500	1.500
1979	10,356	0.193	0.193
1978	8,946	1.330	1.330
1977	8,157	4.671	4.671
1976	7,735	0.388	0.388
1975	7,471	2.731	2.731
1974	10,894	1.129	1.129
1973	7,824	0.626	0.626
1972	6,928	2.786	2.786
1971	6,602	1.242	1.242

		Standard Deviation (%)
Arithmetic Average Default Rate (%)		
1971 to 2012	3.191	3.149
1978 to 2012	3.441	3.335
1985 to 2012	4.005	3.477
Weighted Average Default Rate (%)*		
1971 to 2012	3.821	
1978 to 2012	3.828	
1985 to 2012	3.850	
Median Annual Default Rate (%)		
1971 to 2012	1.664	

[a] Weighted by par value of amount outstanding for each year.

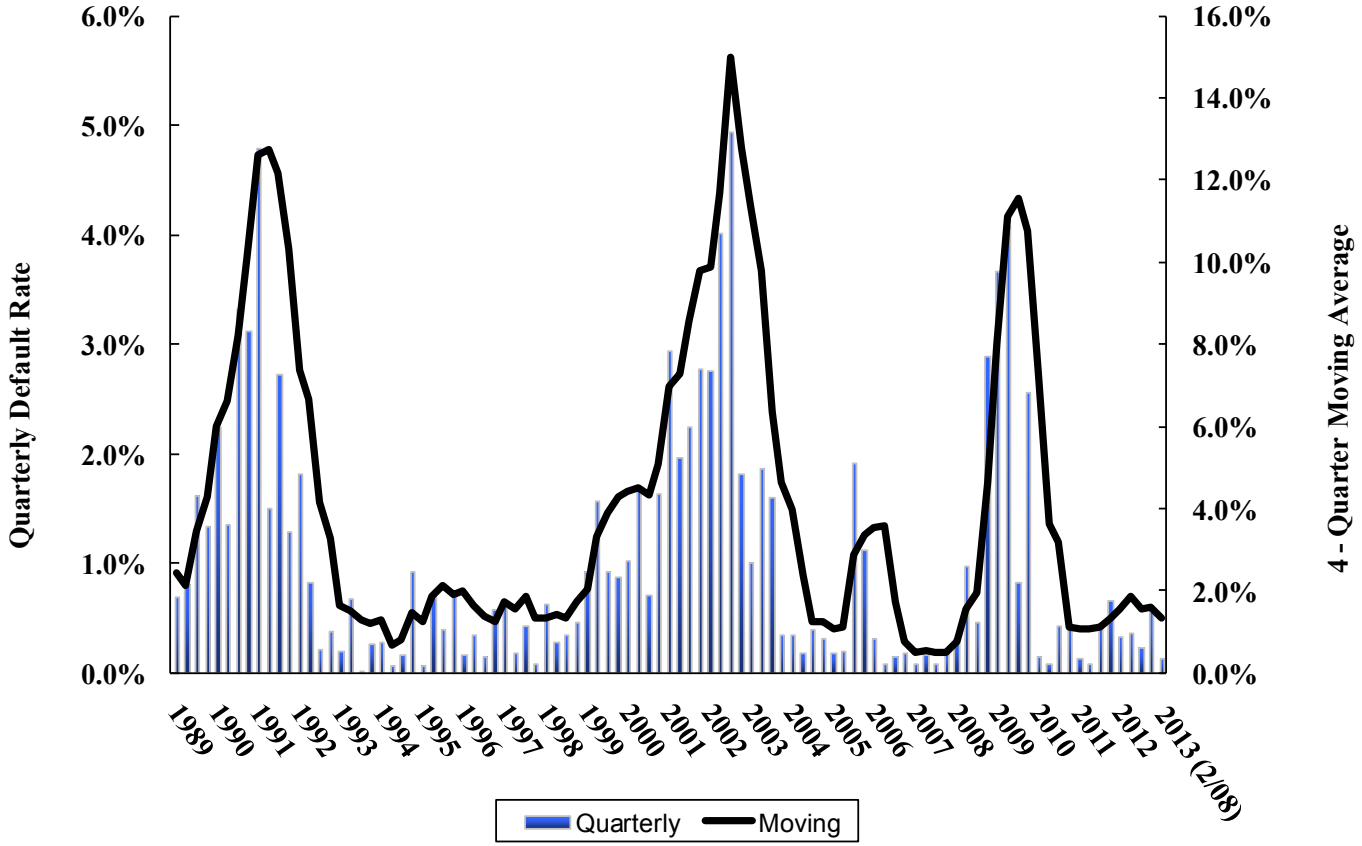
*We are still debating the inclusion of the Energy Future Holdings exchange completed 1/28 in these #'s ($1.37B in total) due to the fact that many of the bonds were and are selling above par, and the bondholders do not appear to be disadvantaged.

Source: Author's compilation and Citigroup/Credit Suisse estimates

Default Rates on High-Yield Bonds

QUARTERLY DEFAULT RATE AND FOUR QUARTER MOVING AVERAGE

1989 – 2013 (2/08)



Source: Author's Compilations

New Issuance: U.S. High Yield Bond Market ($ millions)

2001 – 2013 (1/31)

Annual	Total	Ratings BB	B	CCC	(% H.Y.)	NR
2001	73,328.0	29,391.0	40,764.7	1,797.2	(2.4%)	1,375.0
2002	55,345.2	14,502.6	38,584.7	1,970.0	(3.6%)	288.0
2003	121,164.0	24,818.0	82,056.5	9,957.0	(8.2%)	4,332.4
2004	119,872.7	25,711.0	64,694.8	26,069.9	(21.7%)	3,397.0
2005	81,541.8	18,615.0	45,941.2	15,750.9	(19.3%)	1,234.7
2006	131,915.9	37,761.2	67,377.3	25,319.2	(19.2%)	1,458.2
2007	132,689.1	23,713.2	55,830.8	49,627.6	(37.4%)	3,517.5
2008	50,747.2	12,165.0	25,093.1	11,034.4	(21.7%)	2,454.6
2009	127,419.3	54,273.5	62,277.4	10,248.4	(8.0%)	620.0
2010	229,307.4	74,189.9	116,854.7	35,046.8	(15.3%)	3,216.1
2011 (1Q)	68,600.3	10,266.0	45,342.5	10,145.0	(14.8%)	2,846.8
(2Q)	62,846.7	16,492.7	38,849.0	7,505.0	(11.9%)	0.0
(3Q)	22,853.9	10,650.0	9,568.9	2,460.0	(10.8%)	175.0
(4Q)	30,270.0	17,125.0	11,880.0	1,265.0	(4.2%)	0.0
2011 Totals	184,571.0	54,533.8	105,640.4	21,375.0	(11.6%)	3,021.8
2012 (1Q)	**75,462.0**	**26,071.1**	**36,003.0**	**11,362.9**	**(15.1%)**	**2,025.0**
(2Q)	**40,748.9**	**9,589.2**	**21,724.5**	**6,583.1**	**(16.2%)**	**2,852.0**
(3Q)	**86,806.5**	**23,529.1**	**46,640.0**	**16,092.4**	**(18.5%)**	**545.0**
(4Q)	**77,432.9**	**12,662.7**	**49,243.5**	**14,651.7**	**(18.9%)**	**875.0**
2012 Totals	**280,450.3**	**71,852.1**	**153,611.1**	**48,690.2**	**(17.4%)**	**6,297.0**
2013 (1/1-1/31)	**24,370.6**	**10,788.0**	**7,767.6**	**5,415.0**	**(22.2%)**	**400.0**

Source: Bank of America Merrill Lynch

New Issuance: European High Yield Bond Market

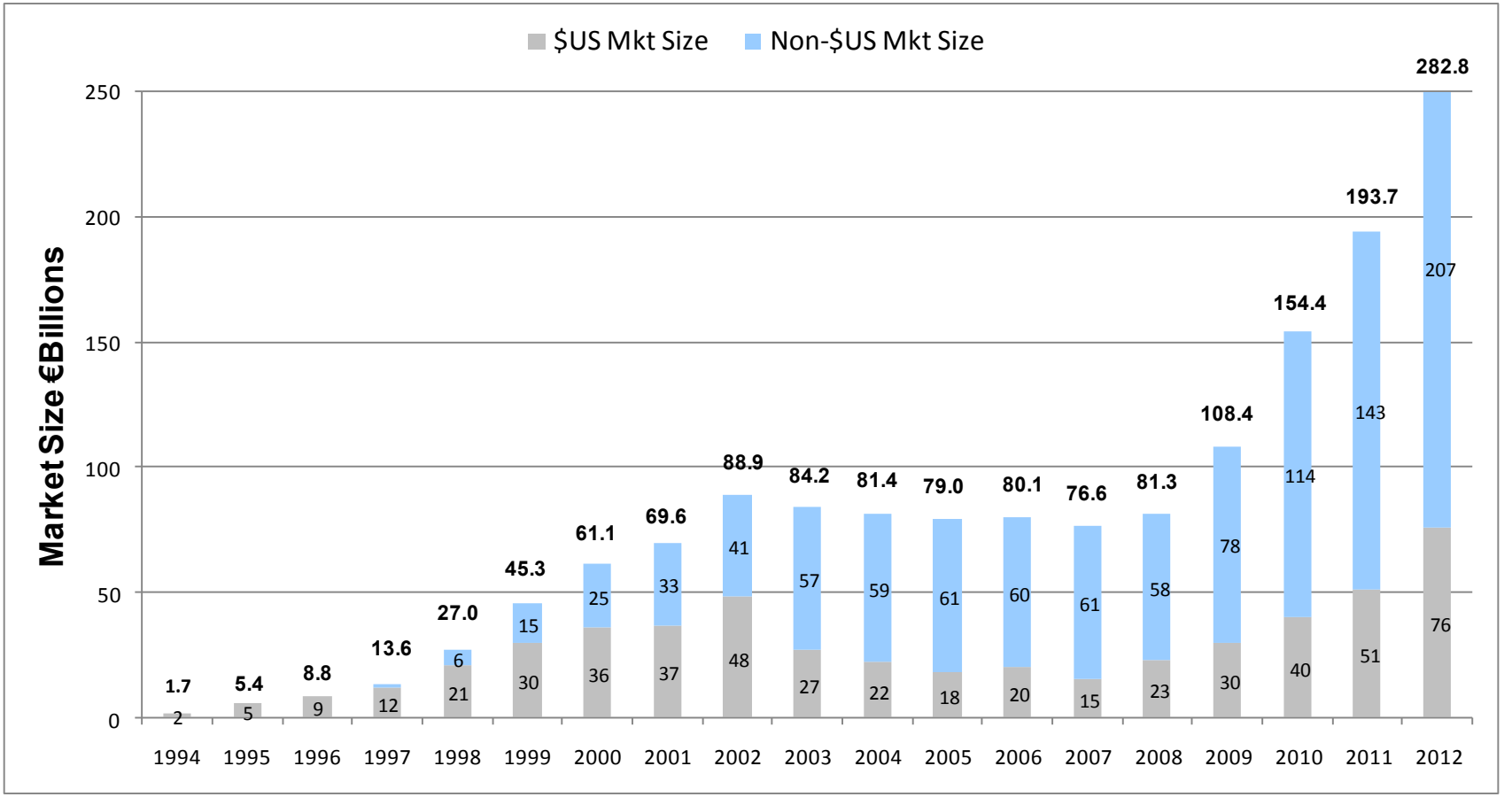
Face Values (US$)

2001 – 2013 (1/31)

Annual	Total	Ratings BB	B	CCC	NR	USD	EUR	GBP
2001	4,727.3	856.4	3,415.7	340.5	114.8	913.3	2,963.2	850.8
2002	4,073.4	1,158.0	2,915.4			1,960.0	1,750.2	363.3
2003	13,679.8	4,409.1	8,814.7	305.0	151.1	4,815.0	8,699.9	164.9
2004	25,653.6	1,488.0	18,402.4	4,376.5	1,386.7	7,873.0	15,212.8	2,567.8
2005	19,935.6	1,563.3	11,901.0	5,936.6	534.8	2,861.0	15,080.3	1,668.3
2006	27,714.6	5,696.2	16,292.1	5,020.5	705.9	7,657.8	19,935.7	121.1
2007	18,796.7	5,935.3	11,378.5	562.0	920.9	4,785.5	12,120.9	1,890.3
2008	1,250.0	1,250.0	25,093.1			1,250.0		
2009	41,510.3	18,489.4	16,697.4	4,771.3	1,552.2	12,315.0	28,696.9	498.3
2010	57,636.5	22,751.3	29,050.5	2,170.7	3,663.9	12,775.0	43,147.7	1,403.3
2011 (1Q)	25,750.6	9,272.6	14,610.6	1,867.5		7,775.0	14,215.0	3,191.3
(2Q)	27,636.1	9,682.6	14,516.6	1,845.3	1,591.5	7,645.0	14,045.7	5,651.1
(3Q)	4,211.2	3,418.7	792.5				4,211.2	
(4Q)	2,838.0	2,355.0		395.9	87.0	1,300.0	1,286.1	
2011 Totals	60,435.8	24,728.9	29,919.7	4,108.7	1,678.6	16,720.0	33,758.0	8,842.4
2012 (1Q)	**21,788.3**	**8,904.1**	**11,003.0**	**1,734.6**	**146.6**	**8,945.0**	**10,783.0**	**1,108.2**
(2Q)	**9,075.8**	**2,086.4**	**6,296.0**	**693.4**		**4,080.0**	**4,179.3**	**816.5**
(3Q)	**17,733.2**	**9,138.4**	**4,122.4**	**2,652.5**	**1,820.0**	**6,350.0**	**10,399.2**	**241.2**
(4Q)	**16,918.8**	**6,872.9**	**7,591.7**	**2,106.2**	**348.0**	**8,823.0**	**6,908.8**	**763.5**
2012 Totals	**65,516.1**	**27,001.7**	**29,013.0**	**7,186.7**	**2,314.6**	**28,198.0**	**32,270.4**	**2,929.3**
2013 (1/1-1/31)	**11,497.3**	**2,032.8**	**6,802.3**	**1,660.6**	**1,001.7**	**4,020.0**	**6,693.9**	**783.4**

Source: BoAML

Size of Western European HY Market

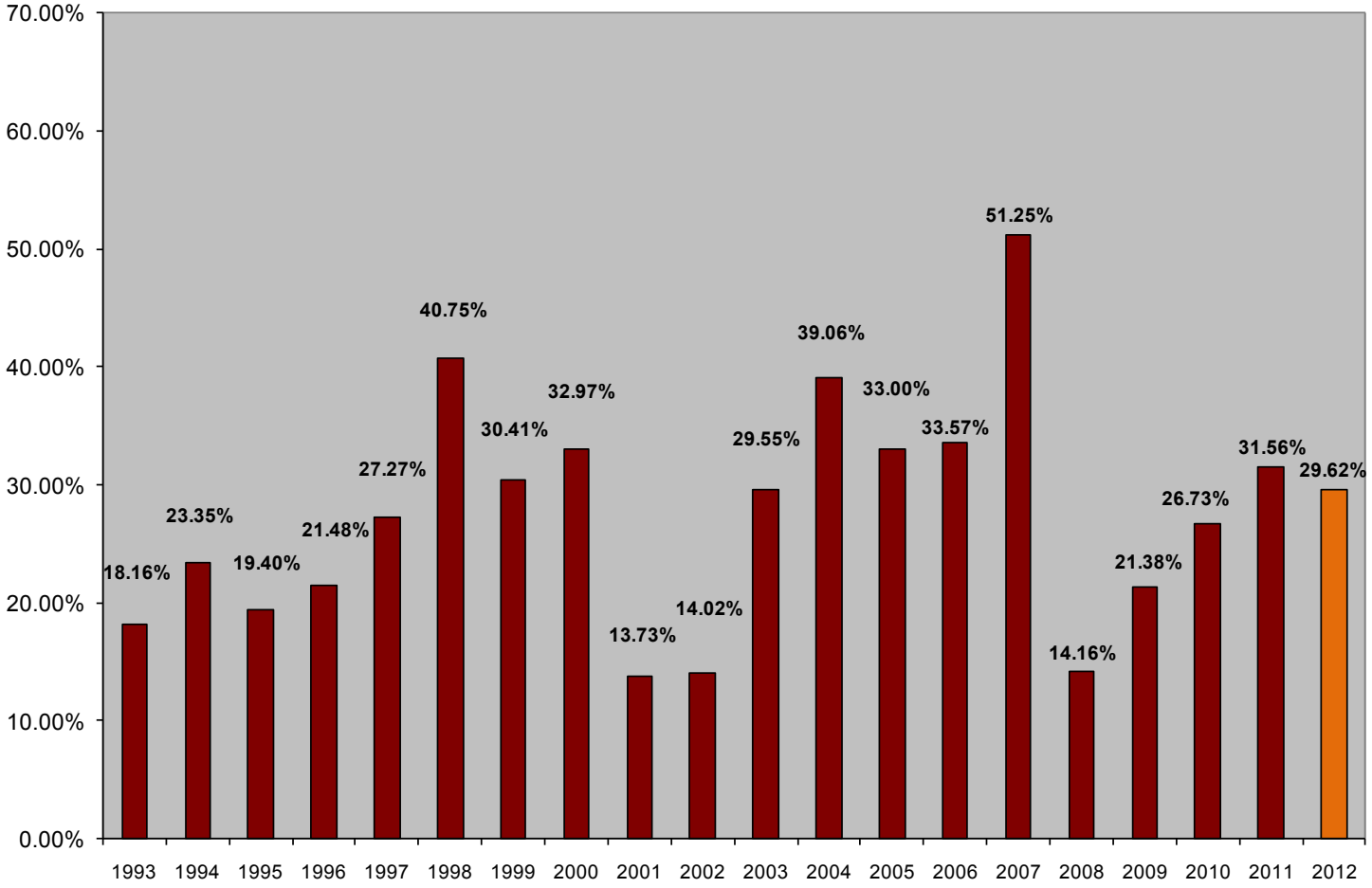


Includes non-investment grade straight corporate debt of issuers with assets located in or revenues derived from Western Europe, or the bond is denominated in a Western European currency. Floating-rate and convertible bonds and preferred stock are not included.

Source: Credit Suisse

New Issues Rated B- or Below, Based on the Dollar Amount of Issuance

(1993 – 2012)



Source: Standard & Poor's Global Fixed Income Research

Major Risks Going Forward (For 2013)

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- Sovereign Debt Crisis – Europe
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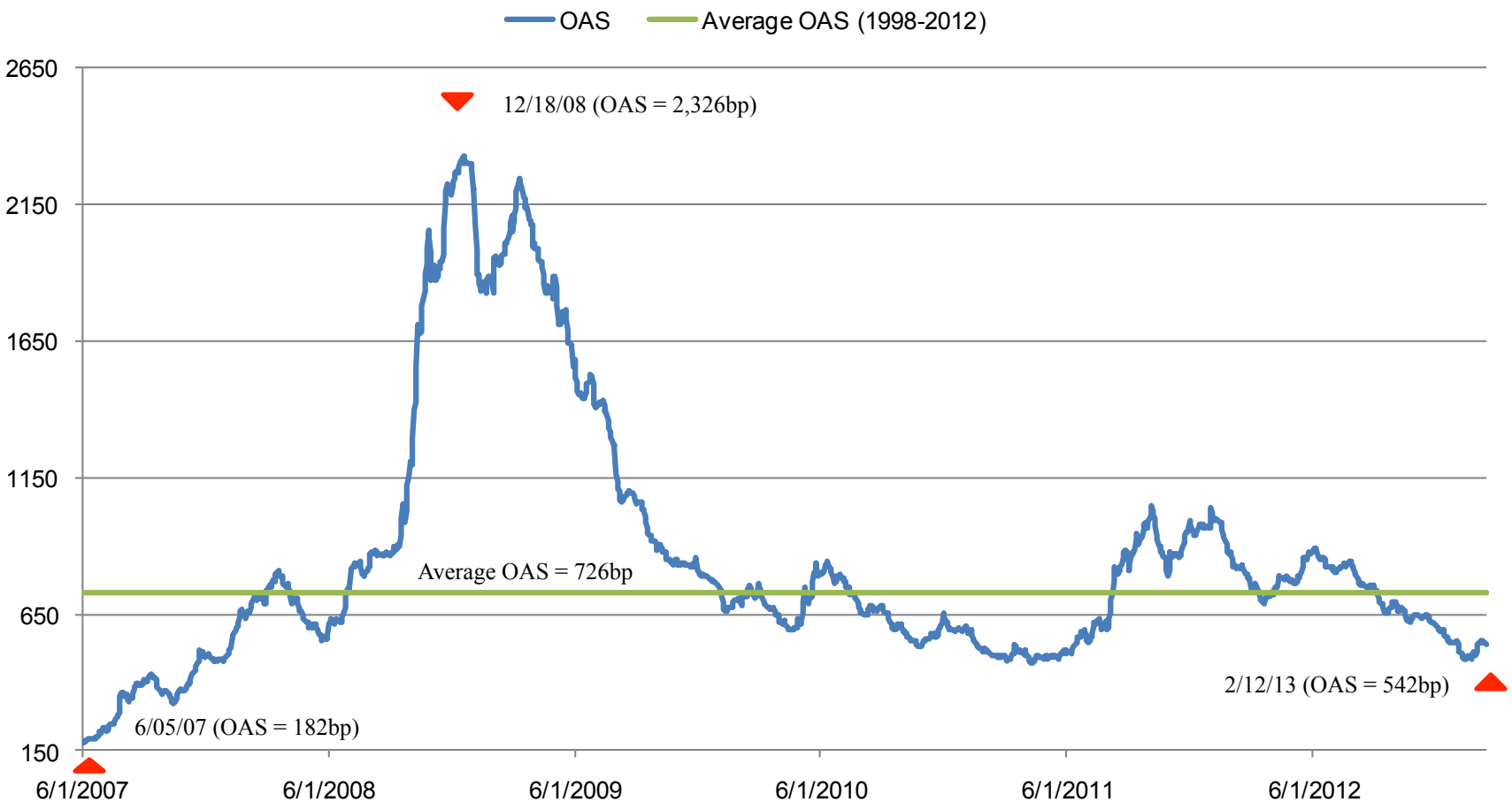
A Novel Approach to Assessing Sovereign Debt Risk

Euro High-Yield Option-Adjusted Spreads

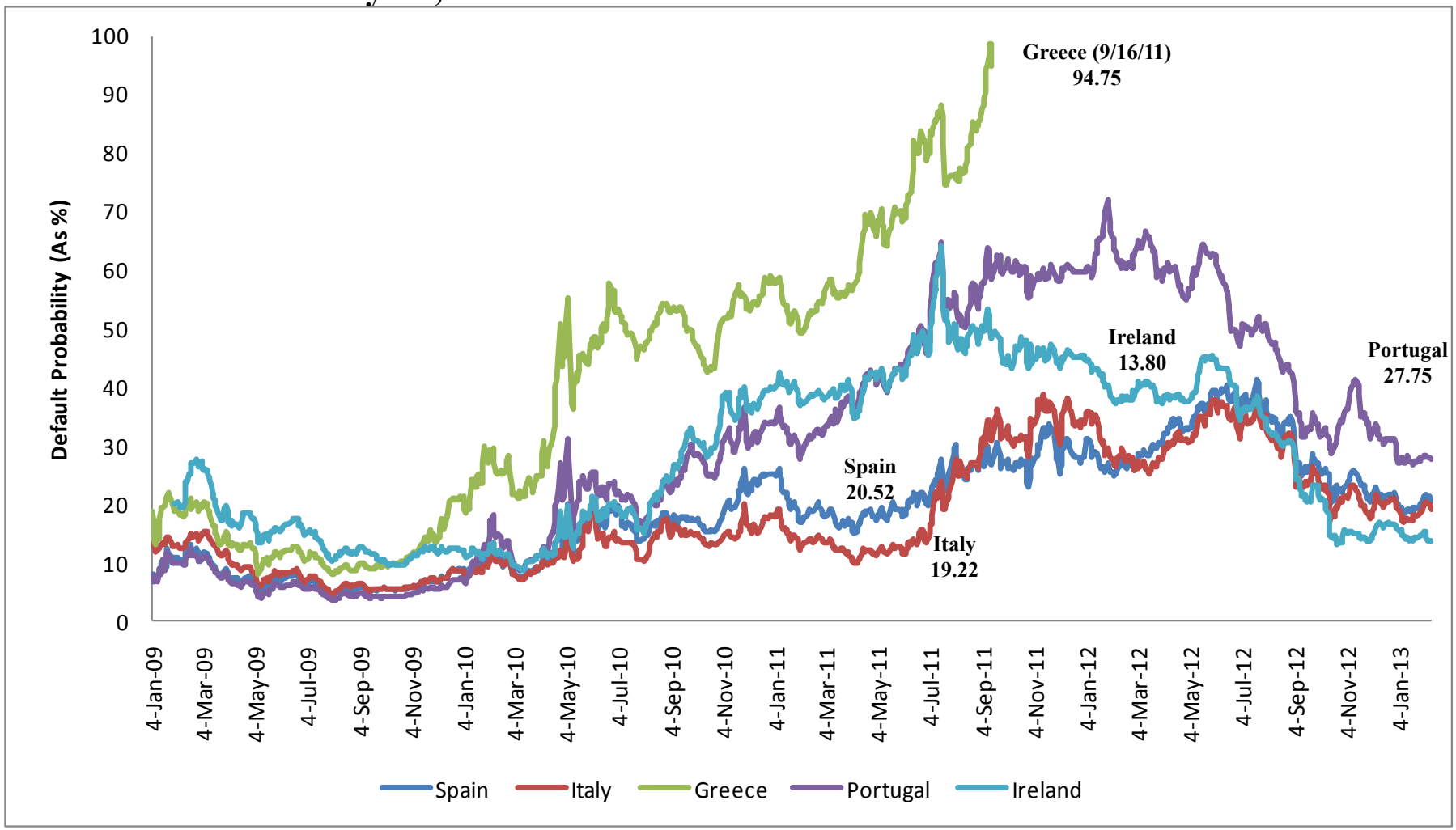
June 01, 2007 – February 12, 2013



Sources: Bank of America Merrill Lynch Index Data.

Five Year Implied Probabilities of Default (PD) From Capital Market CDS Spreads*

Jan. 2009 – February 12, 2013



*Assuming a 40% recovery rate (R); based on the median CDS spread (s). PD Computed as $1\text{-}e^{(-5*s/(1-R))}$.

Source: Bloomberg

European (PIIGS) Government Benchmark Yields and Spreads

February 12, 2013

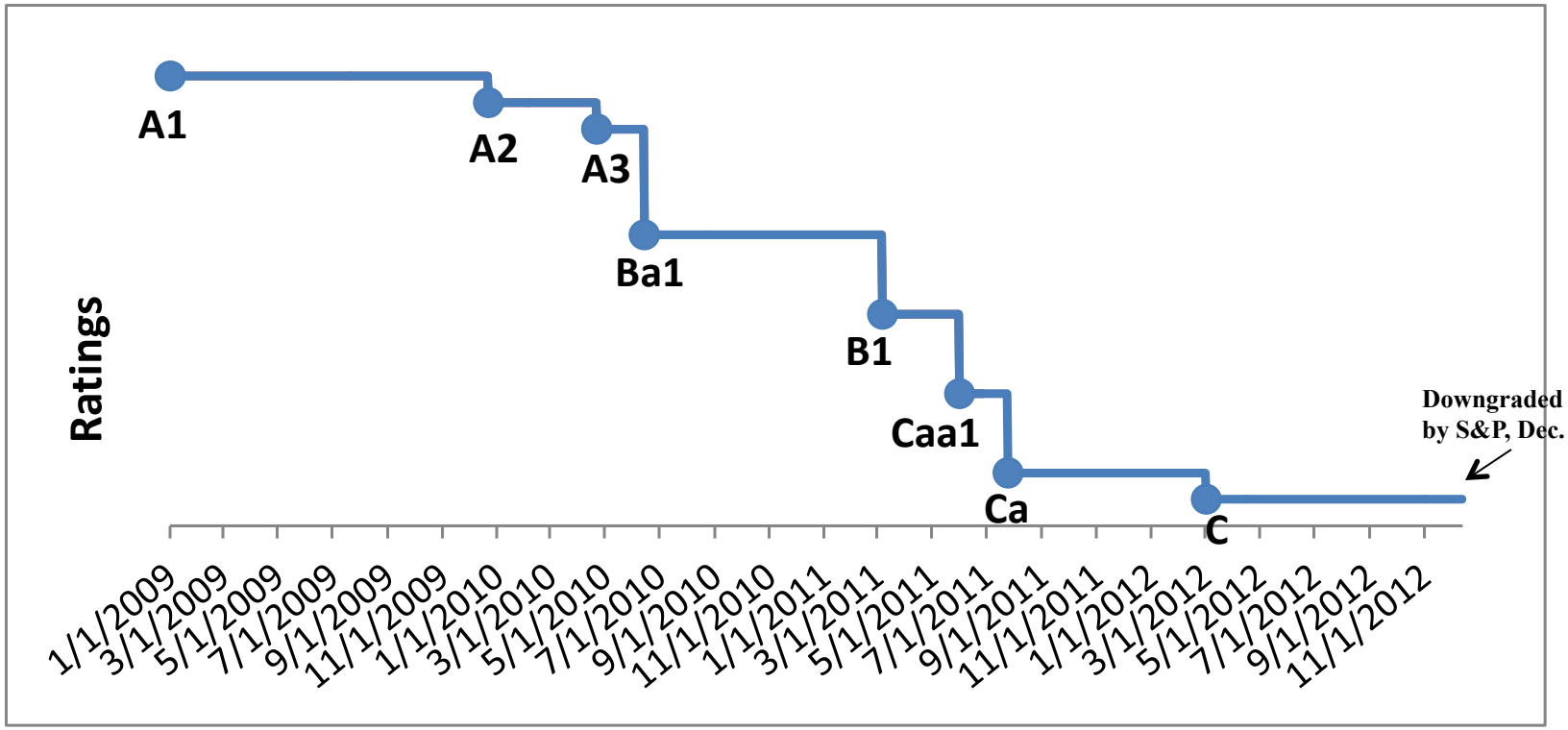
Country	5-Year Price	5-Year Yield %	5-Year Spread to Germany	10-Year Price	10-Year Yield %	10-Year Spread to Germany
Germany	99.23	0.66	n/a	98.82	1.63	n/a
Greece	n/a	n/a	n/a	51.81	11.13	9.50
Ireland	112.20	2.68	2.02	n/a	n/a	n/a
Italy	101.12	3.27	2.61	108.17	4.50 *	2.87
Portugal	96.51	5.21	4.55	88.67	6.44	4.81
Spain	102.39	3.96	3.30	100.68	5.31*	3.68

*10-Year Yield as of July 16, 2012 was 6.10% for Italy and 6.77% for Spain.

Source: Bloomberg

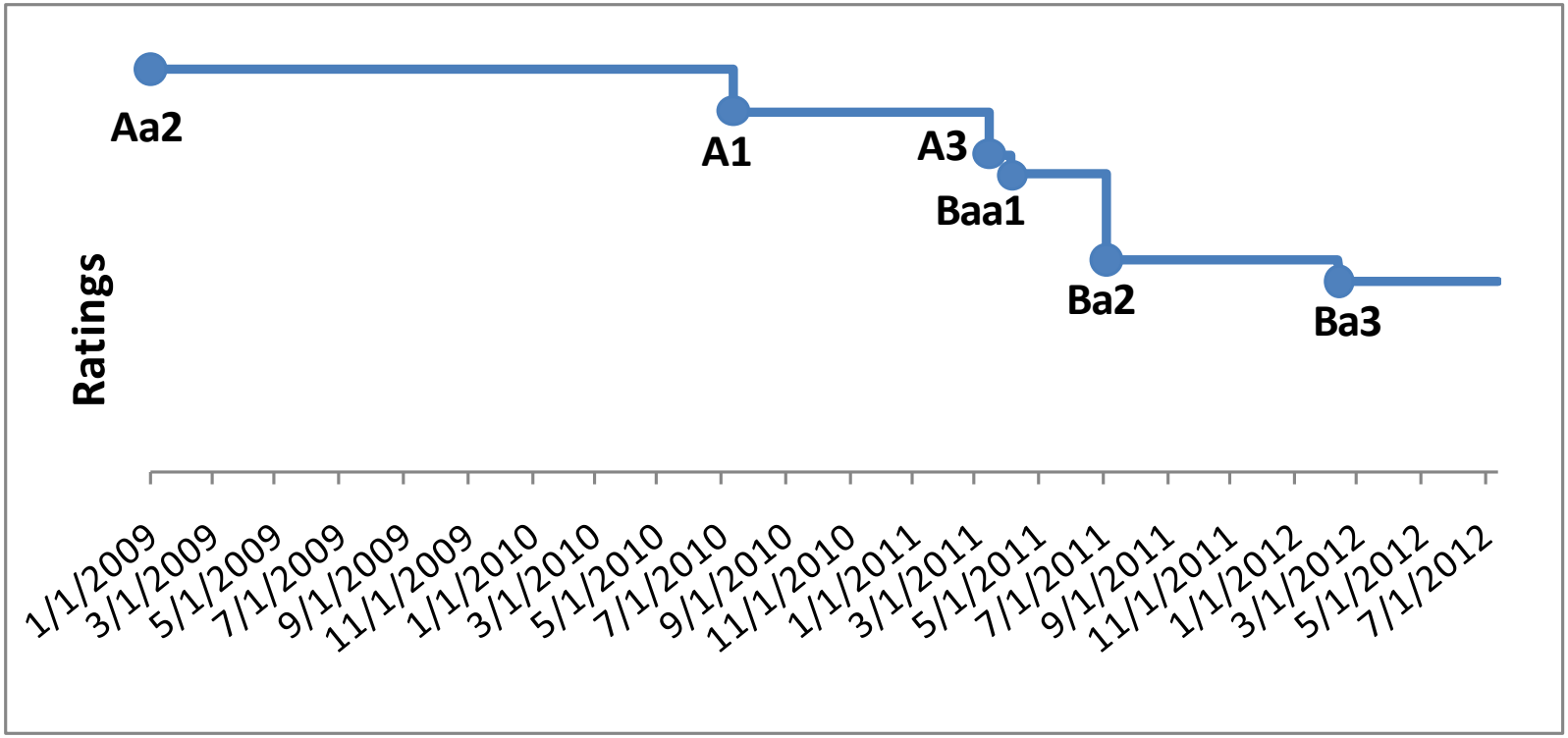
Sovereign Ratings Actions (Moody's)
2009 - Present

Greece



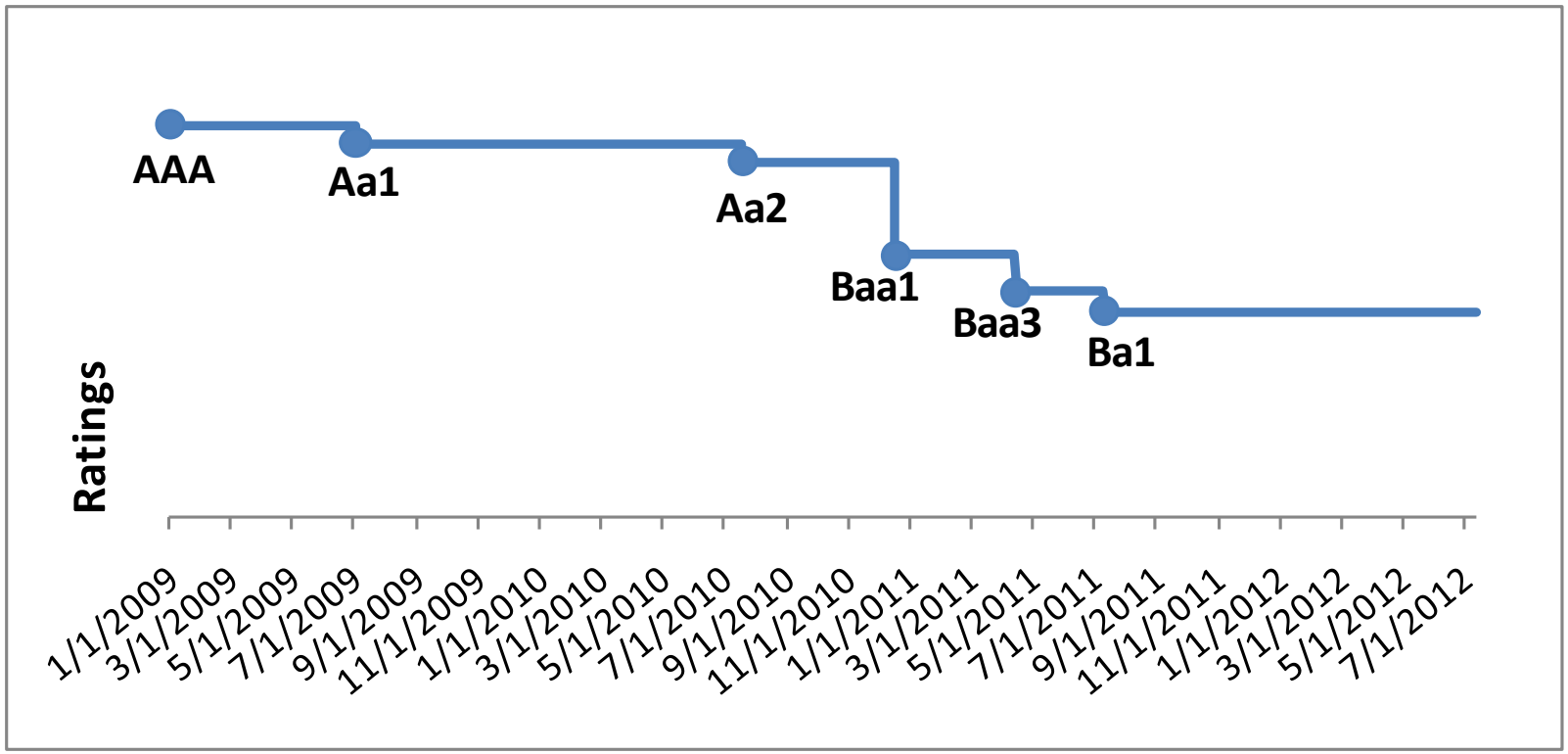
Sovereign Ratings Actions (Moody's)
2009 - Present

Portugal



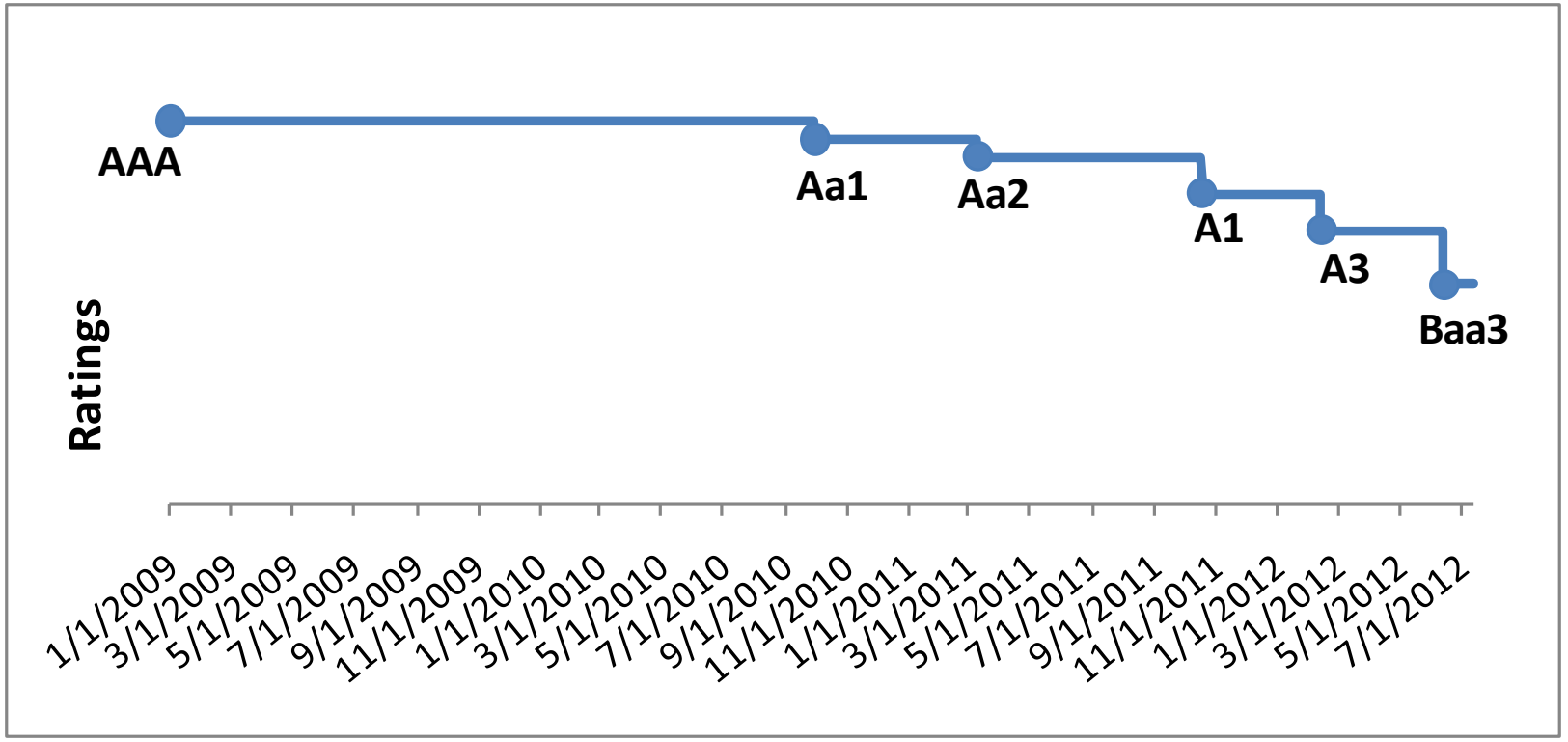
Sovereign Ratings Actions (Moody's)
2009 - Present

Ireland



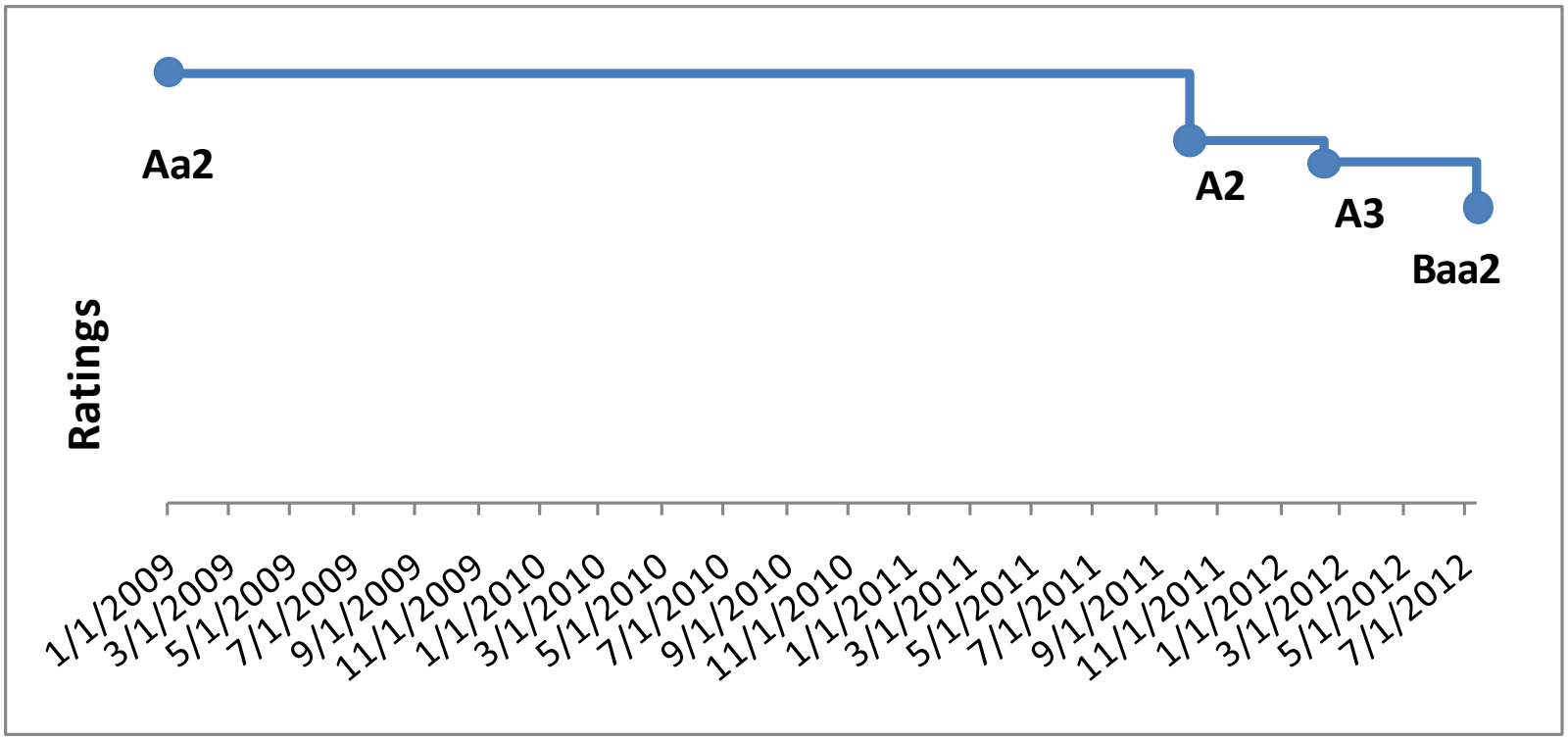
Sovereign Ratings Actions (Moody's)
2009 - Present

Spain



Sovereign Ratings Actions (Moody's)
2009 - Present

Italy



Financial Health of the Corporate, Non-Financial Sector: Selected European Countries and U.S.A. in 2008-2012 (6/30)

(Z-Metrics PD Estimates - *Median*)

Z-Metrics PD Estimates*: Five-Year Public Model						
Country	Listed Companies (2011)	Median PD				
		6/30/12	Y/E 2011	Y/E 2010	Y/E 2009	Y/E 2008
Sweden	167	2.7%	2.7%	2.6%	3.1%	6.7%
U.K.	553	2.8%	4.6%	3.7%	4.5%	7.3%
Ireland	28	3.1%	3.0%	1.8%	3.0%	7.9%
Netherlands	85	3.5%	3.1%	2.5%	2.7%	5.0%
U.S.A.	2235	3.6%	4.8%	3.8%	3.3%	4.5%
Germany	398	3.8%	4.6%	3.9%	4.5%	7.6%
France	377	5.3%	6.6%	4.0%	4.6%	7.2%
Spain	91	8.5%	10.6%	7.1%	5.9%	8.6%
Italy	178	11.6%	11.9%	7.7%	7.7%	11.3%
Portugal	36	12.5%	15.1%	9.9%	8.2%	16.6%
Greece	112	28.3%	26.7%	18.7%	11.9%	16.7%

*Since the Z-Metrics Model is not practically available for most analysts, we could substitute the Z"-Score method (available from <altmanZscoreplus.com>).

Sources: RiskMetrics Group (MSCI), Markit, Compustat.

Financial Health of the Corporate, Non-Financial Sector: Selected European Countries and U.S.A. in 2008-2012 (6/30)

(Z-Metrics PD Estimates – *75th Percentile*)

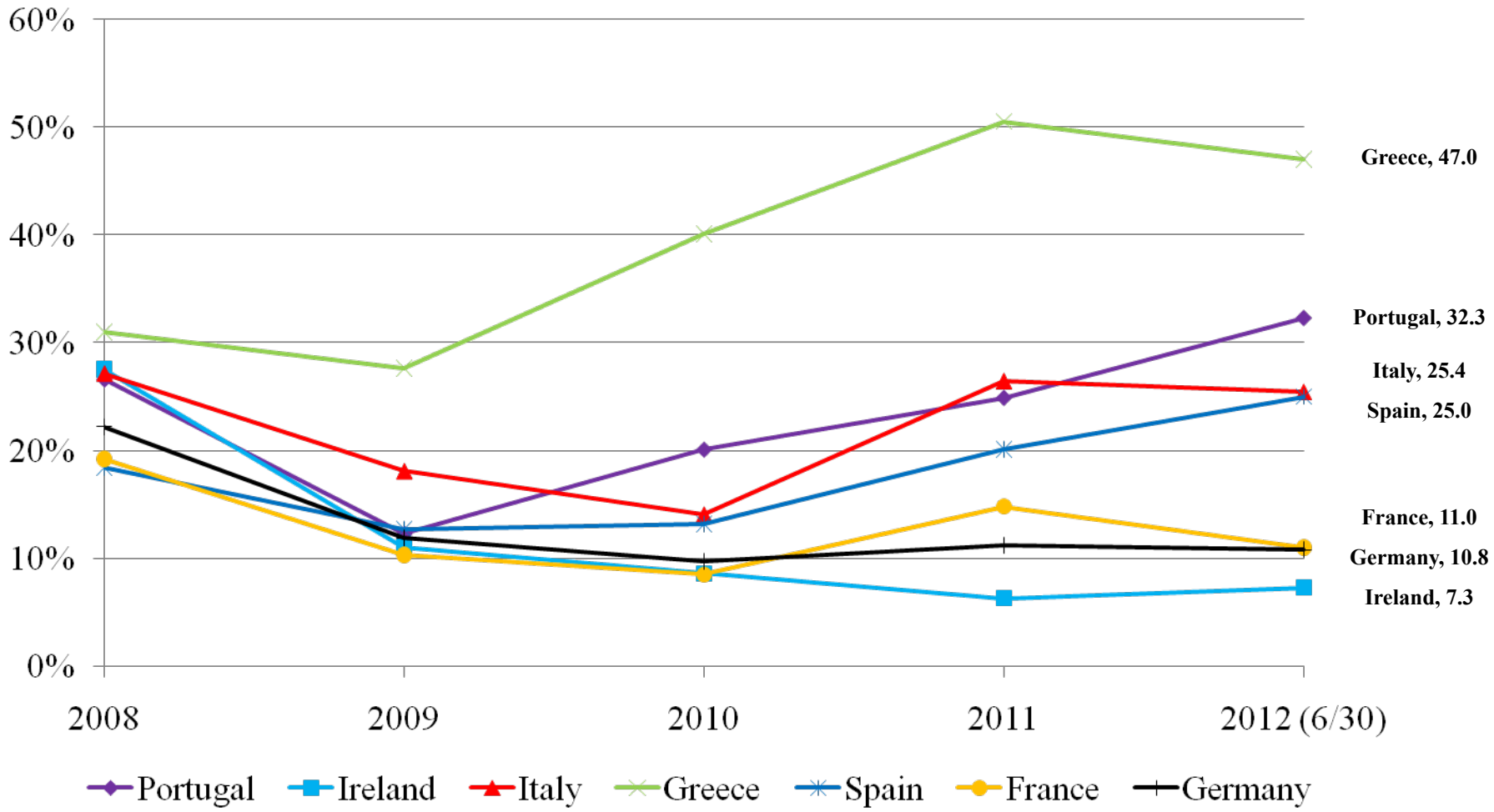
Z-Metrics PD Estimates*: Five-Year Public Model						
Country	Listed Companies (2011)	75th Percentile PD				
		6/30/12	Y/E 2011	Y/E 2010	Y/E 2009	Y/E 2008
Sweden	167	6.3%	9.6%	6.8%	8.0%	13.5%
U.K.	553	6.3%	9.7%	5.7%	9.3%	16.6%
Netherlands	85	7.0%	8.7%	5.7%	6.7%	15.7%
Ireland	28	7.3%	6.3%	8.6%	11.0%	27.5%
Germany	398	10.8%	11.2%	9.7%	11.9%	22.2%
France	377	11.0%	14.8%	8.5%	10.3%	19.2%
U.S.A.	2235	11.2%	11.7%	8.0%	11.5%	19.5%
Spain	91	25.0%	20.1%	13.2%	12.7%	18.4%
Italy	178	25.4%	26.4%	14.1%	18.1%	27.1%
Portugal	36	32.3%	24.9%	20.1%	12.3%	26.6%
Greece	112	47.0%	50.5%	40.1%	27.6%	31.0%

*Since the Z-Metrics Model is not practically available for most analysts, we could substitute the Z"-Score method (available from <altmanZscoreplus.com>).

Sources: RiskMetrics Group (MSCI), Markit, Compustat.

Five Year Implied Probabilities of Default (PD) From 75th Percentile Non-Financial Corporate PD*

2008 – 2012 (6/30)



*Based on Z-Metrics Model Calculation

Weighted Average Median 5-Year PD for Listed Non-Financial[1] and Banking Firms[2] (Europe & US): 2010

	Non-Financial Firms		Banking Firms					
Country	PD (%)	Weight	PD (%)	Weight	Weighted Average (%)	Rank	CDS Spread PD (%)	Rank
Netherlands	2.5	0.977	11.1	0.023	2.70	1	2.03	1
Sweden	2.6	0.984	17.3	0.016	2.84	2	2.25	2
U.K.	3.7	0.977	15.5	0.023	3.97	3	4.73	6
Germany	3.9	0.983	13.1	0.017	4.06	4	2.50	3
France	4.0	0.986	14.0	0.014	4.14	5	4.51	5
U.S.A.	3.8	0.837	13.8	0.163	5.43	6	3.79	4
Spain	7.1	0.948	10.9	0.052	7.30	7	25.27	8
Italy	7.7	0.906	20.0	0.094	8.86	8	18.02	7
Portugal	9.9	0.971	12.1	0.029	9.96	9	34.05	9
Greece	18.7	0.921	30.1	0.079	19.60	10	59.14	10

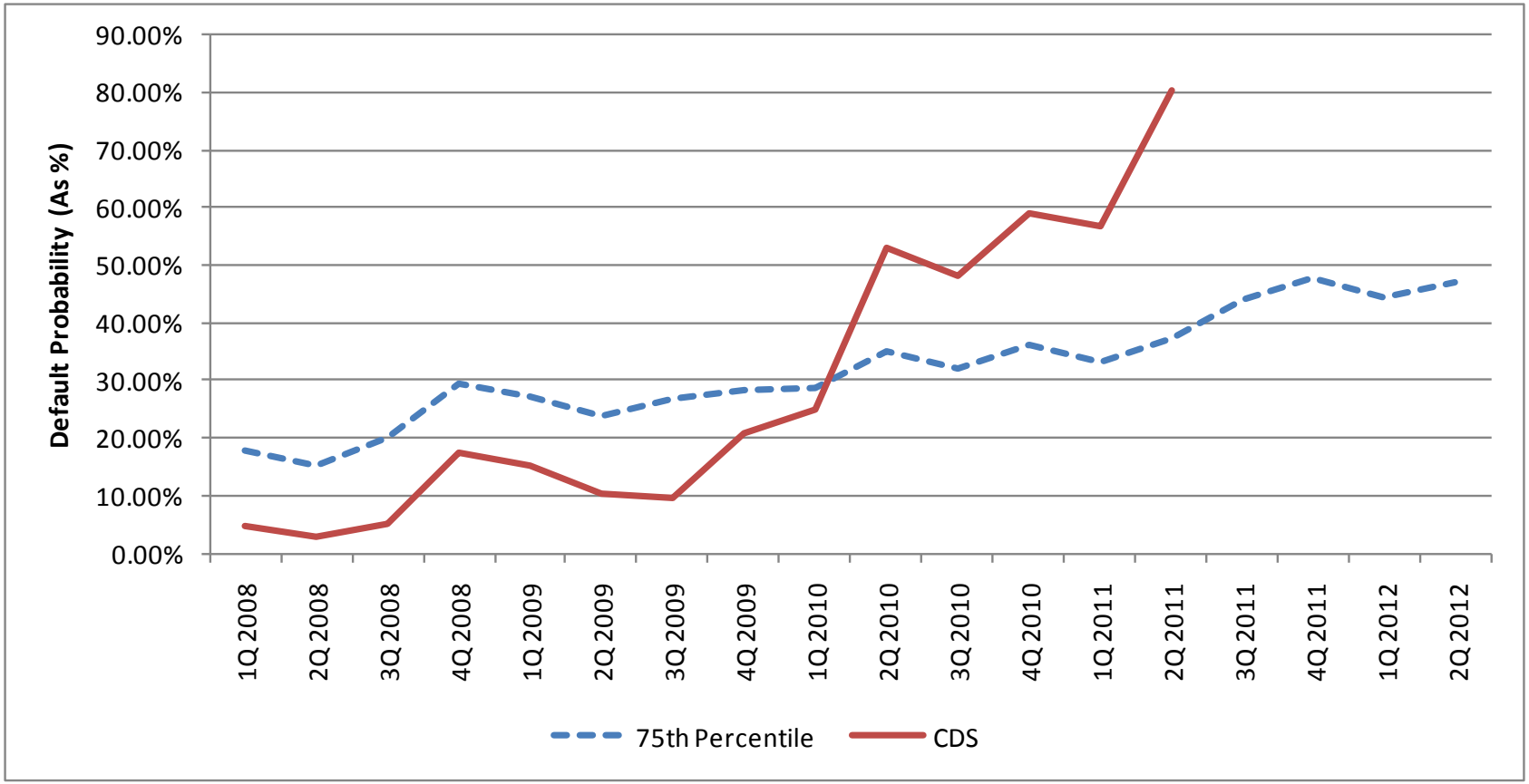
[1] Based on Z-Metrics Default Probability Model.
2 Based on Altman-Rijken Model (Preliminary)

European & U.S. Stock Market Performance

Country	Index	Index Name	% Change 2009 vs 2010	% Change 2010 vs 2011	% Change YTD 9/10/12
France	CAC 40	CAC 40	-3.34%	-16.95%	10.96%
	MXFR	MSCI FRANCE	-0.26%	-16.61%	11.91%
Germany	DAX	DEUTSCHER AKTIEN	16.06%	-14.69%	22.30%
	MXDE	MSCI GERMANY	13.39%	-17.38%	18.17%
Greece	ASE	ASE	-35.62%	-51.88%	6.71%
	MXGR	MSCI GREECE	-42.64%	-62.38%	-14.12%
Ireland	ISEQ	ISEQ 20	-3.02%	0.58%	12.46%
	MXIE	MSCI IRELAND	-14.14%	15.12%	0.74%
Italy	FTSEMIB	FTSE MILANO ITALIA BORSA	-13.23%	-25.20%	6.64%
	MXIT	MSCI ITALY	-11.90%	-23.28%	6.90%
Netherlands	AEX	AEX	5.74%	-11.87%	7.37%
	MXNL	MSCI NETHERLANDS	6.27%	-11.50%	12.28%
Portugal	PSI20	PORTUGESE STOCK INDEX 20	-10.34%	-27.60%	-3.70%
	MXPT	MSCI PORTUGAL	-8.69%	-23.25%	-6.09%
Spain	IBEX35	IBEX 35	-17.43%	-13.11%	-8.27%
	MXES	MSCI SPAIN	-20.20%	-14.13%	-7.30%
UK	FTSE100	FTSE 100	9.00%	-5.55%	3.96%
	MXGB	MSCI UK	8.47%	-5.42%	4.12%
US	S&P500	S&P 500	12.78%	0.00%	14.00%
	S&P 500 TR	S&P 500 TR	15.06%	2.11%	16.09%
	MXUS	MSCI US	13.18%	-0.11%	-0.11%

Five Year Implied Probabilities of Default (PD) From Sovereign CDS* Spreads vs 75th Percentile Corporate PD

Greece, 2008 – 2012

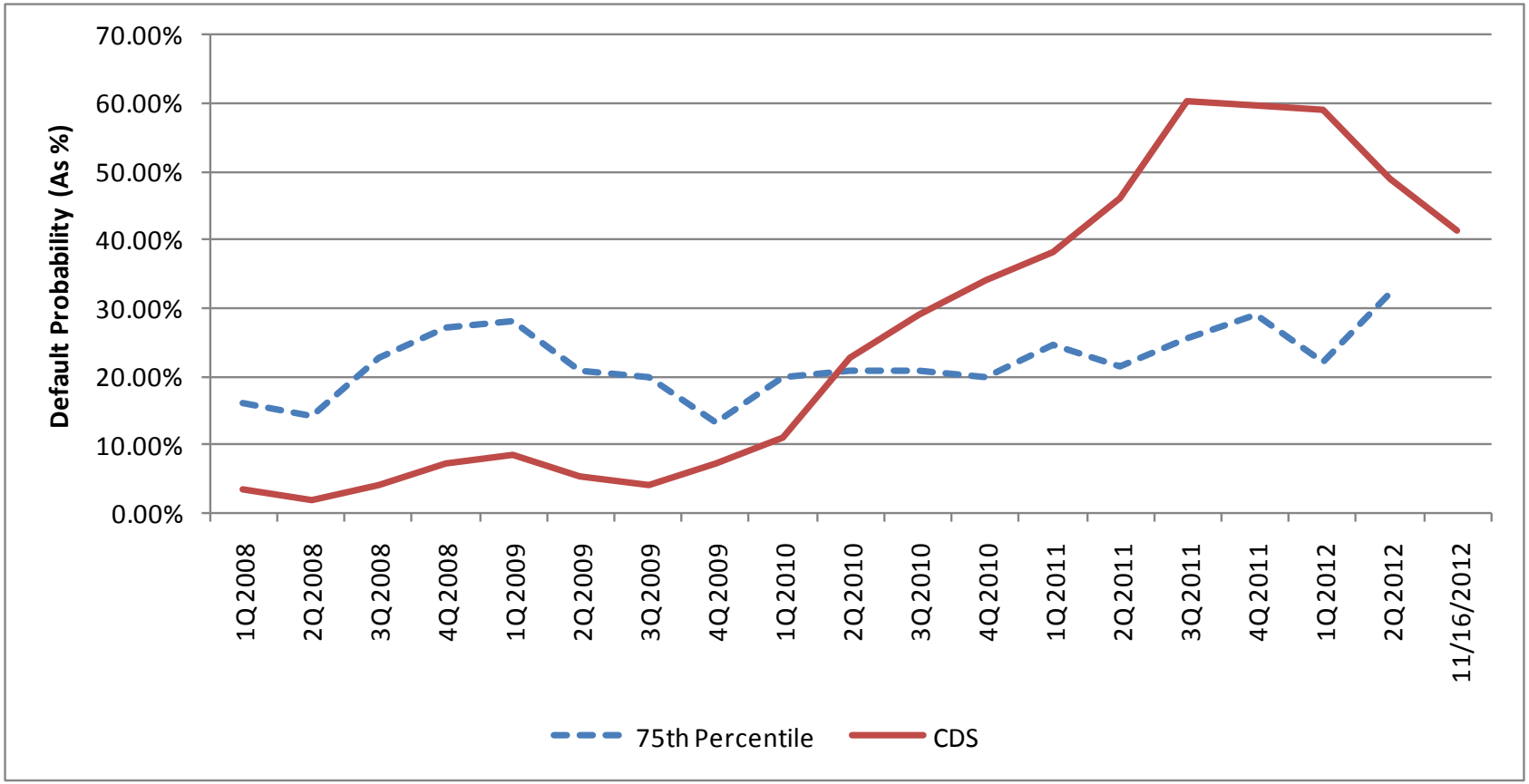


*Assuming a 40% recovery rate (R); based on the median CDS spread (s). PD Computed as $1\text{-}e^{(-5*s/(1-R))}$.

Source: Bloomberg

Five Year Implied Probabilities of Default (PD) From Sovereign CDS* Spreads vs 75th Percentile Corporate PD

Portugal, 2008 – 2012

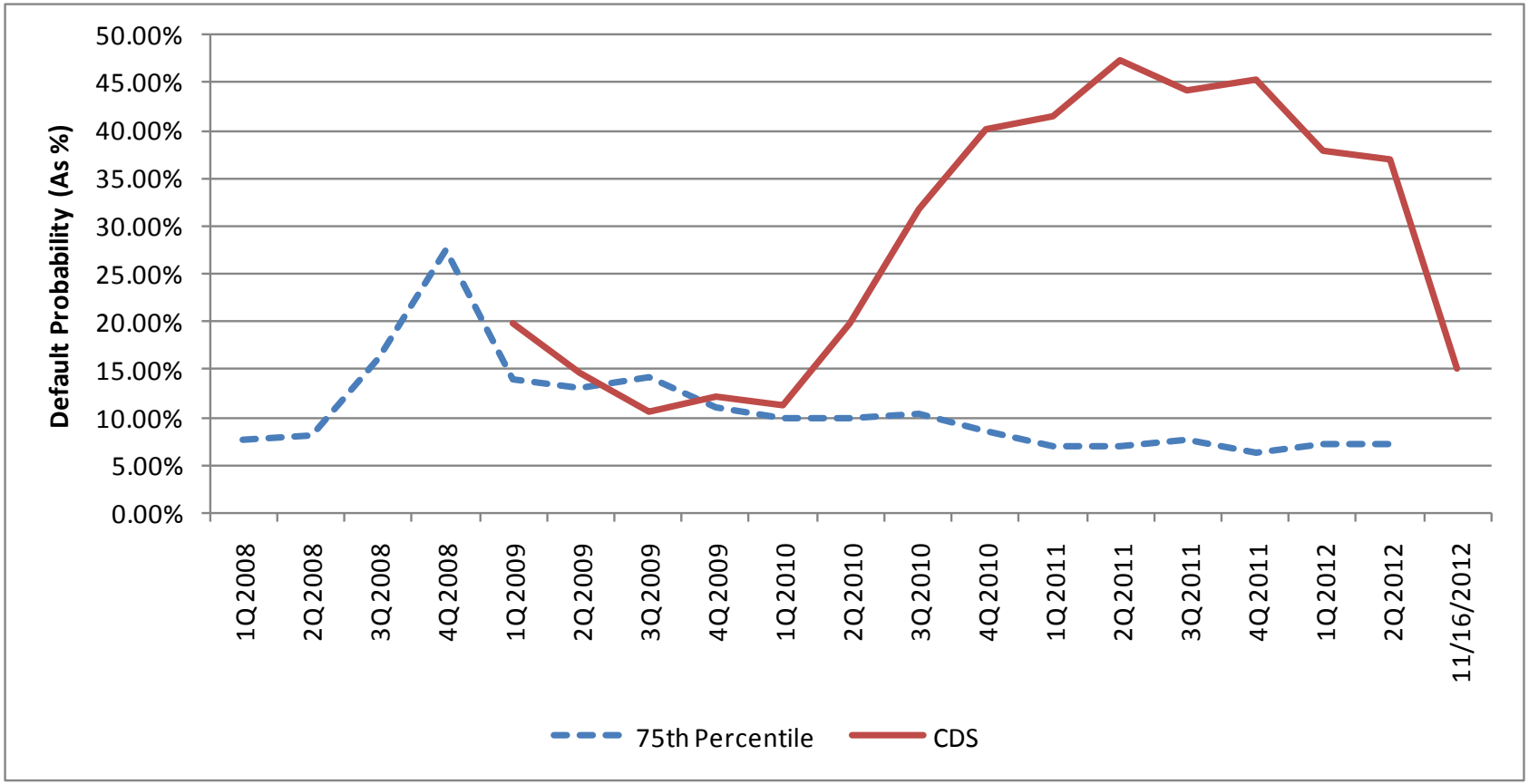


*Assuming a 40% recovery rate (R); based on the median CDS spread (s). PD Computed as $1\text{-}e^{(-5*s/(1-R))}$.

Source: Bloomberg

Five Year Implied Probabilities of Default (PD) From Sovereign CDS* Spreads vs 75th Percentile Corporate PD

Ireland, 2008 – 2012

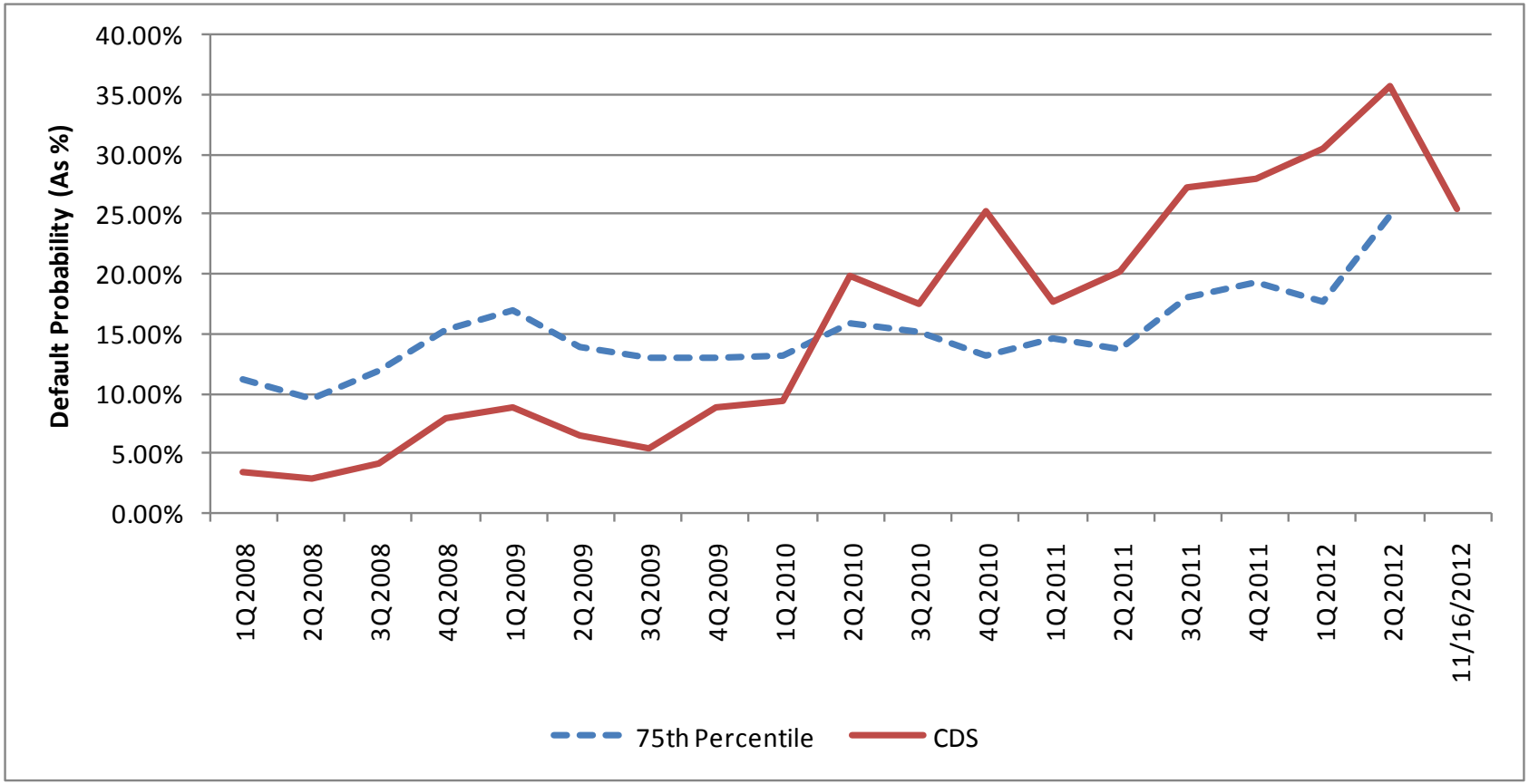


*Assuming a 40% recovery rate (R); based on the median CDS spread (s). PD Computed as $1\text{-}e^{(-5*s/(1-R))}$.

Source: Bloomberg

Five Year Implied Probabilities of Default (PD) From Sovereign CDS* Spreads vs 75th Percentile Corporate PD

Spain, 2008 – 2012

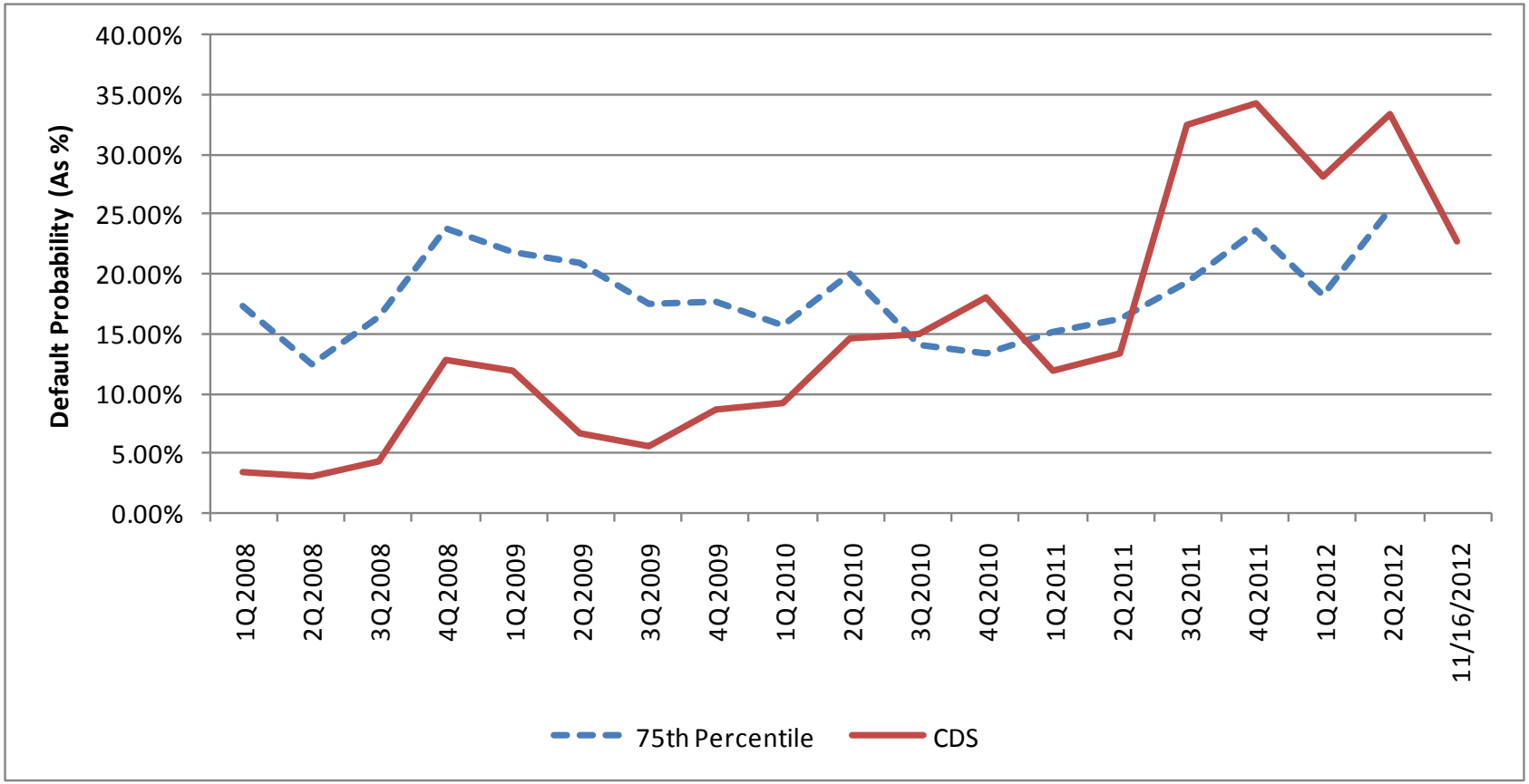


*Assuming a 40% recovery rate (R); based on the median CDS spread (s). PD Computed as $1\text{-}e^{(-5*s/(1-R))}$.

Source: Bloomberg

Five Year Implied Probabilities of Default (PD) From Sovereign CDS* Spreads vs 75th Percentile Corporate PD

Italy, 2008 – 2012

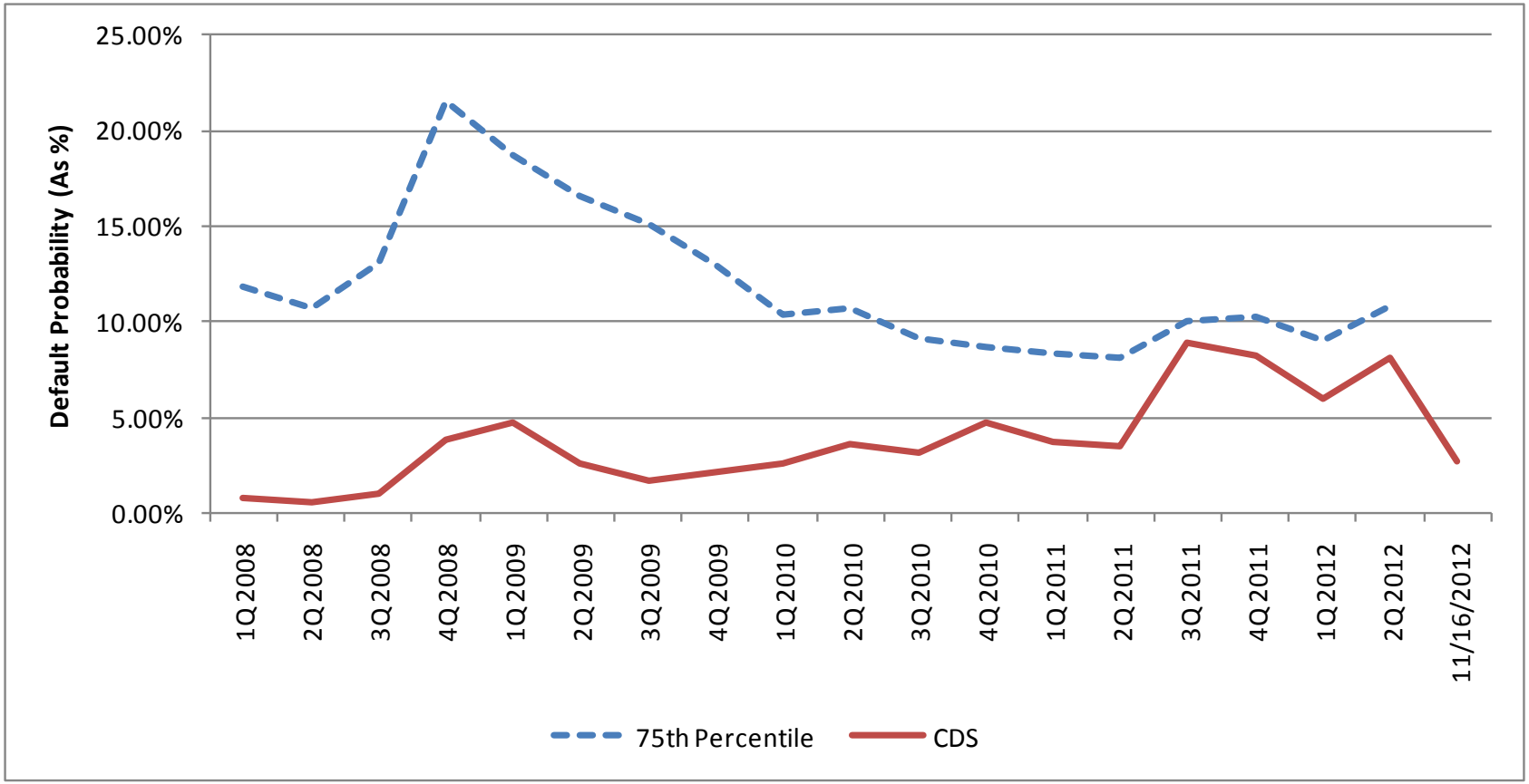


*Assuming a 40% recovery rate (R); based on the median CDS spread (s). PD Computed as $1\text{-}e^{(-5*s/(1-R))}$.

Source: Bloomberg

Five Year Implied Probabilities of Default (PD) From Sovereign CDS* Spreads vs 75th Percentile Corporate PD

Germany, 2008 – 2012

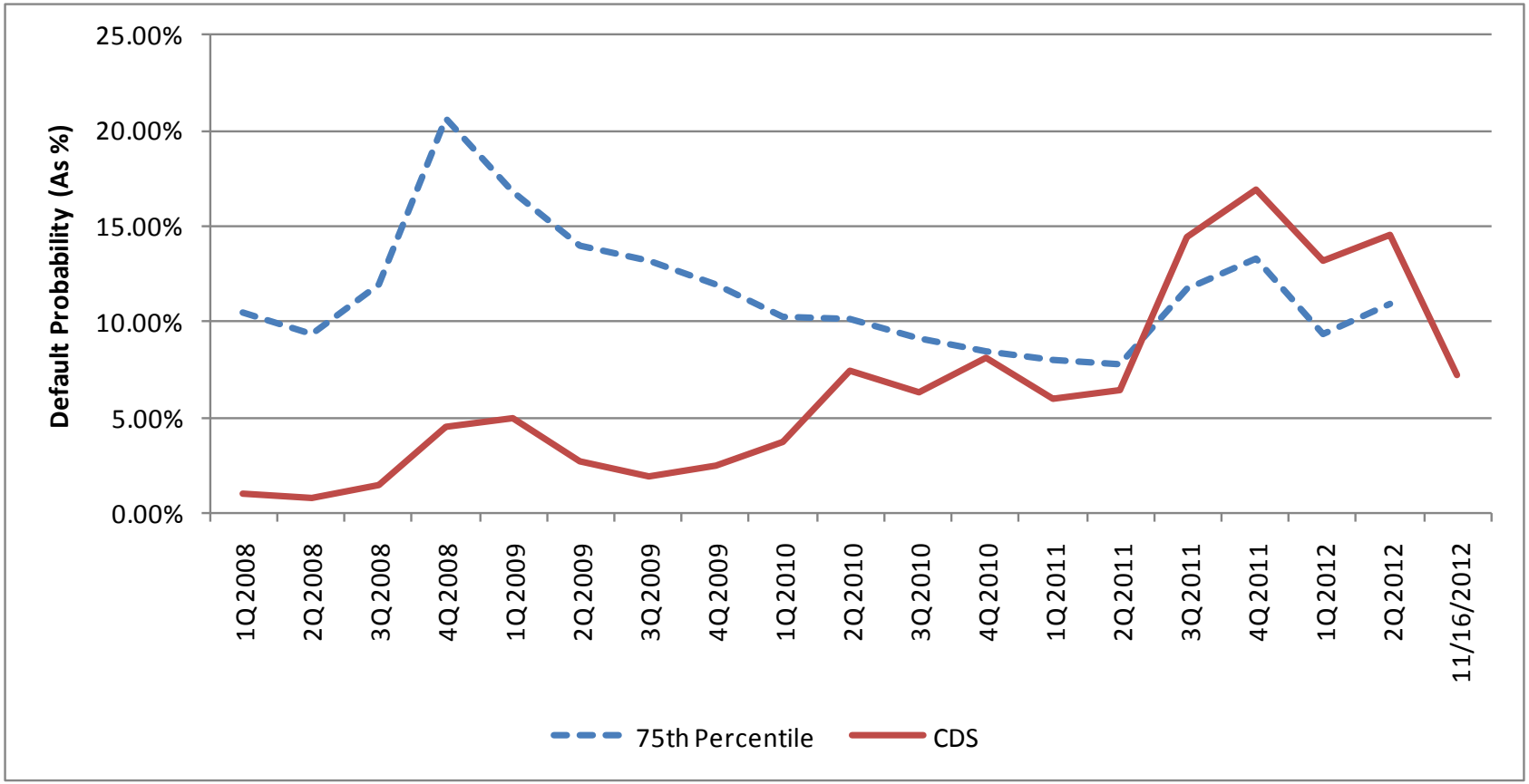


*Assuming a 40% recovery rate (R); based on the median CDS spread (s). PD Computed as $1\text{-}e^{(-5*s/(1-R))}$.

Source: Bloomberg

Five Year Implied Probabilities of Default (PD) From Sovereign CDS* Spreads vs 75th Percentile Corporate PD

France, 2008 – 2012



*Assuming a 40% recovery rate (R); based on the median CDS spread (s). PD Computed as $1\text{-}e^{(-5*s/(1-R))}$.

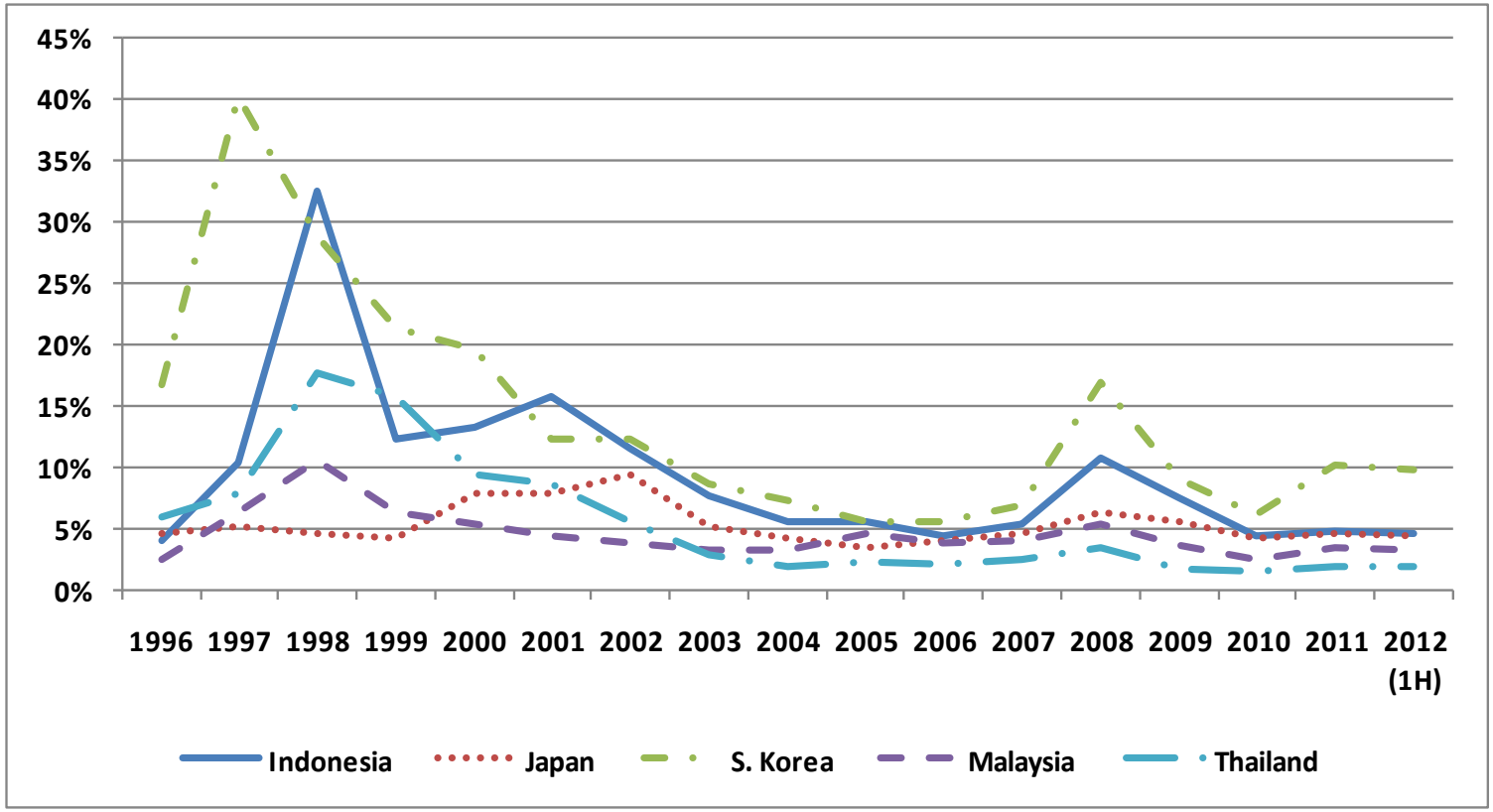
Source: Bloomberg

Greek CDS Default (March 2012)

- Greece invokes collective action clause triggering default designation from I.S.D.A.
- Net exposure for CDS insurers = €3.5 Billion
- Auction determined recovery rate = 21.5%
- Net loss = 78.5% - premium earned

Measures of Sovereign Financial Health: Selected Asian Countries Median 5-Year PD*

Financial Crisis of the late 1990's to 2012 (1H)

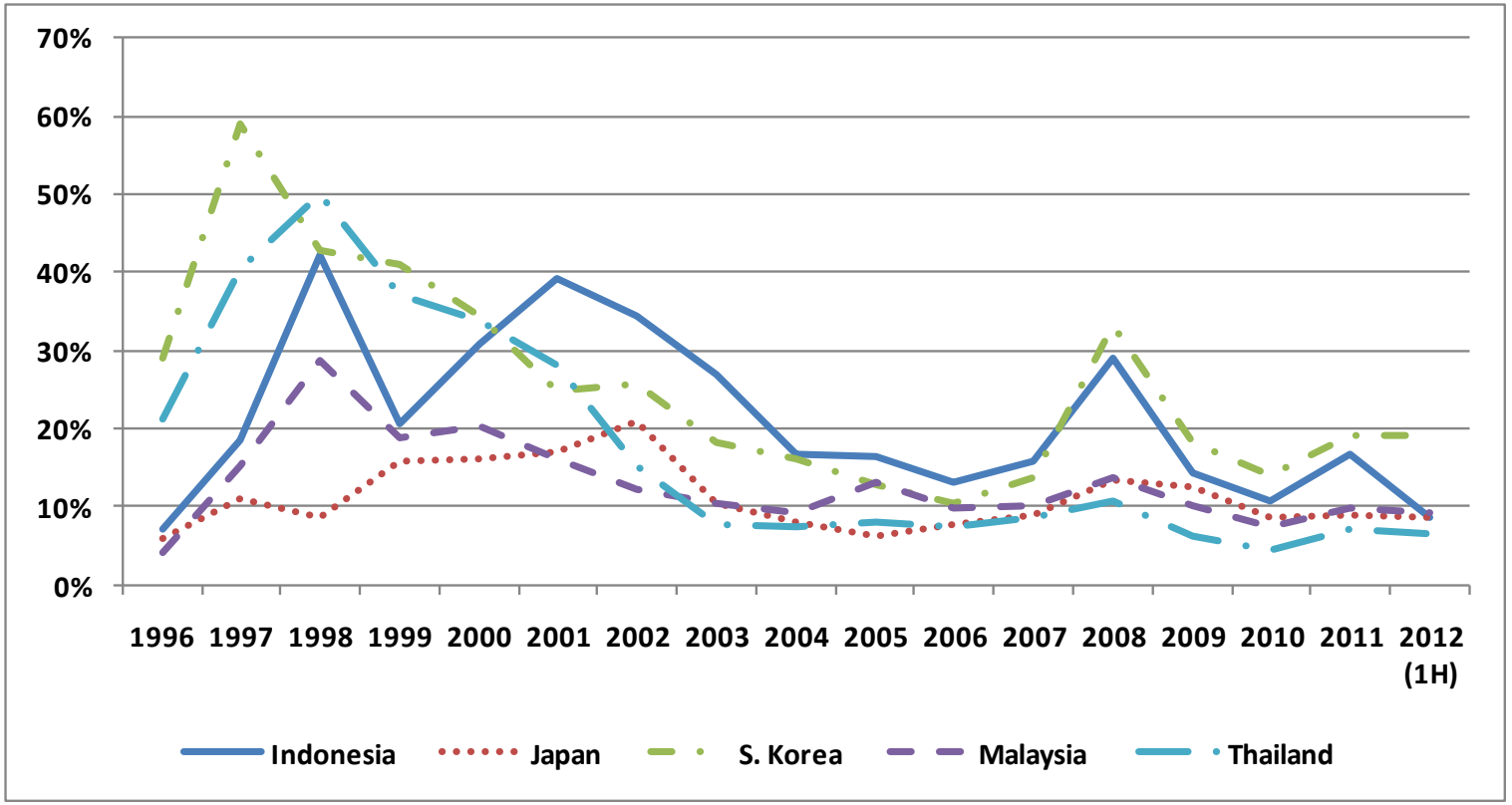


1996	
KOR	16.69
THA	5.86
JAP	4.51
IDN	4.08
MYS	2.38
2012 (1H)	
KOR	9.89
IDN	4.55
JAP	4.44
MYS	3.23
THA	1.88

*Based on Z-Metrics Model Calculation

Measures of Sovereign Financial Health: Selected Asian Countries 75th Percentile 5-Year PD*

Financial Crisis of the late 1990's to 2012 (1H)

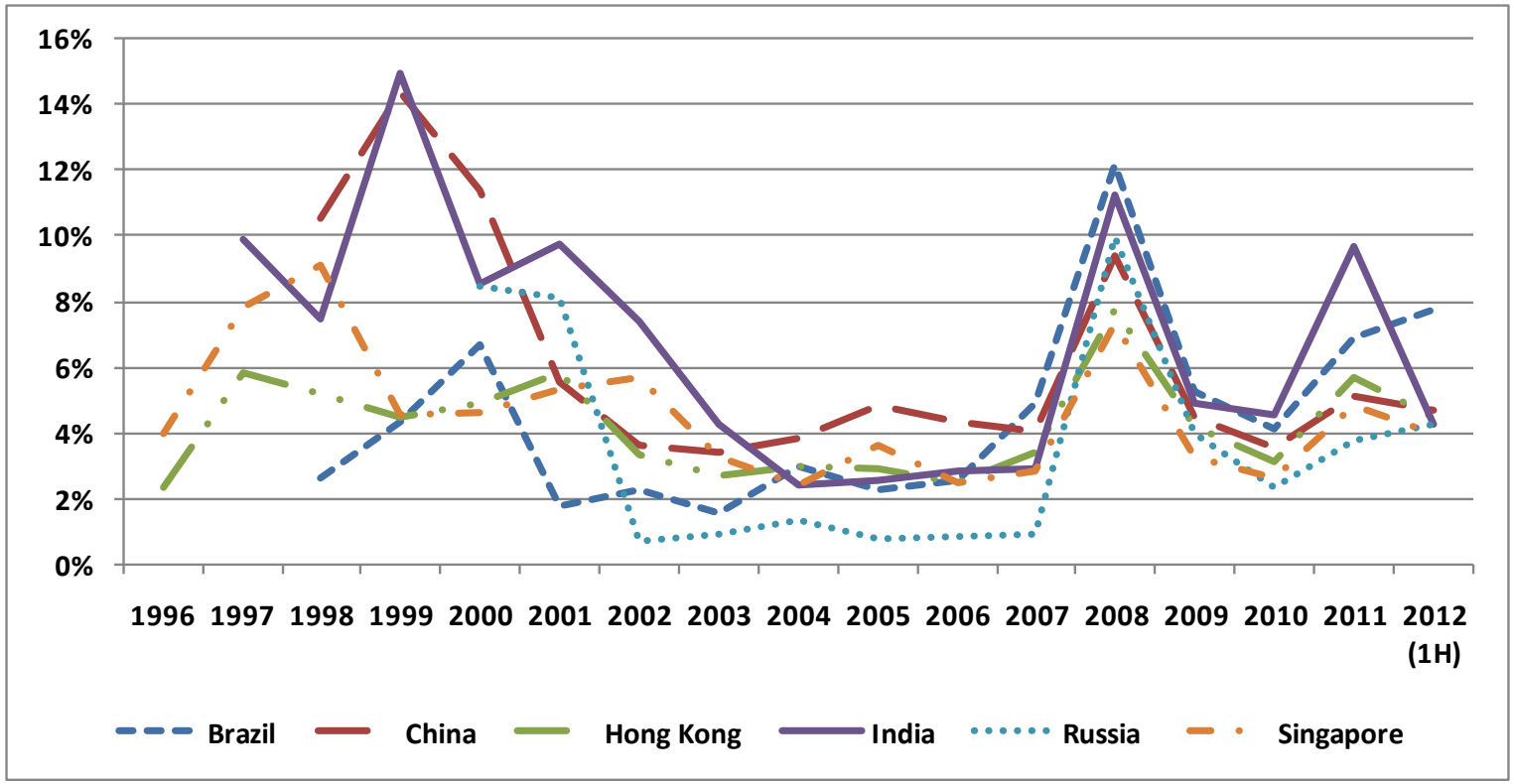


1996	
KOR	29.01
THA	21.28
IDN	7.09
JAP	5.81
MYS	4.03
2012 (1H)	
KOR	19.01
MYS	9.32
IDN	8.77
JAP	8.68
THA	6.51

*Based on Z-Metrics Model Calculation

Measures of Sovereign Financial Health: BRICHS Countries Median 5-Year PD*

Financial Crisis of the late 1990's to 2012 (1H)

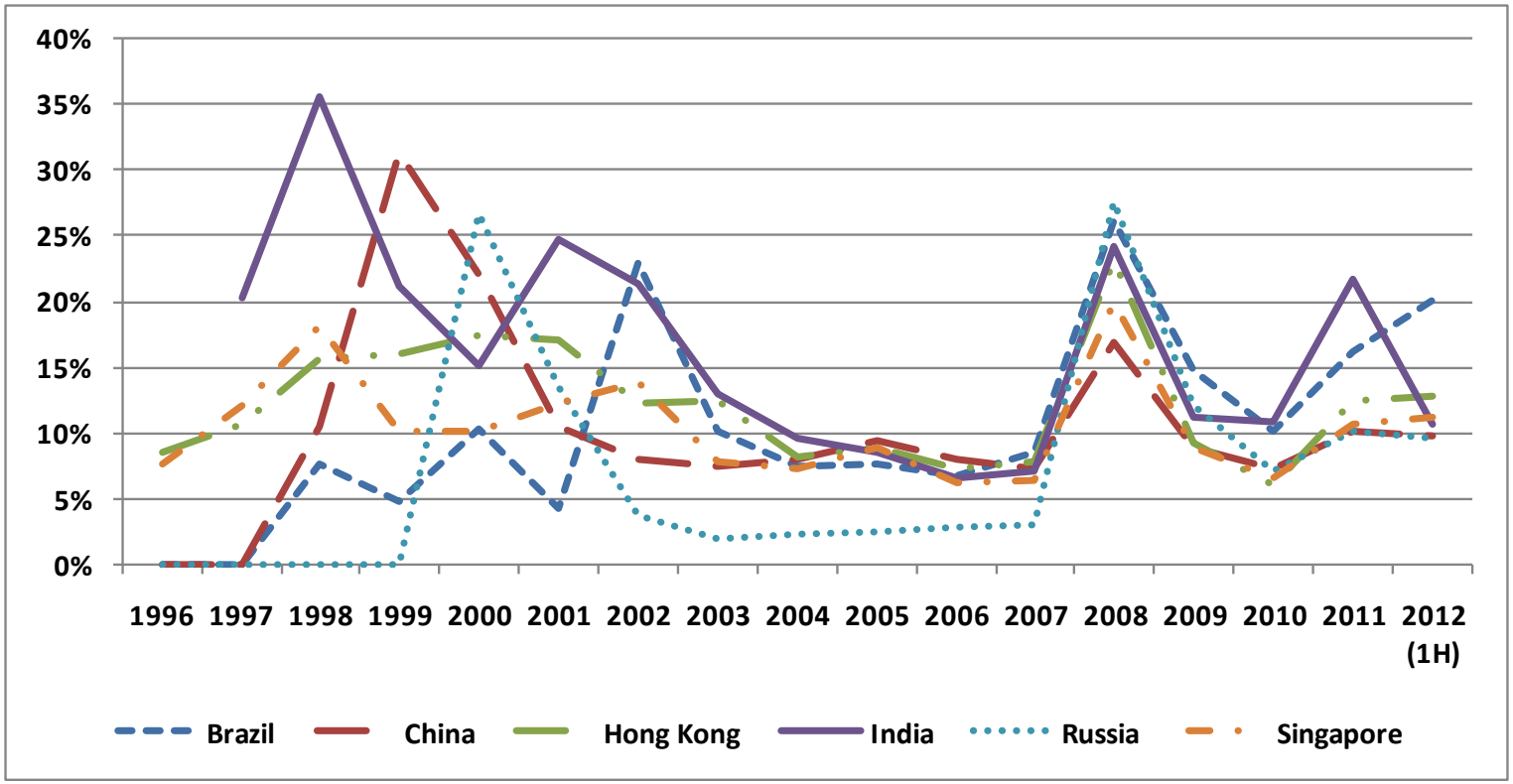


1996	
SGP	3.99
HKG	2.30
BRA	2.62 ('98)
CHN	10.56 ('98)
IND	9.93 ('97)
RUS	8.44 ('00)
2012 (1H)	
BRA	7.76
CHN	4.72
HKG	4.51
RUS	4.25
IND	4.24
SGP	3.95

*Based on Z-Metrics Model Calculation

Measures of Sovereign Financial Health: BRICHS Countries 75th Percentile 5-Year PD*

Financial Crisis of the late 1990's to 2012 (1H)



1996	
HKG	8.45
SGP	7.65
BRA	7.61 ('98)
CHN	10.56 ('98)
IND	20.28 ('97)
RUS	26.64 ('00)
2012 (1H)	
BRA	20.04
HKG	12.82
SGP	11.24
IND	10.64
CHN	9.70
RUS	9.52

*Based on Z-Metrics Model Calculation


Altman Z-Score+
Objective corporate credit risk analysis delivered on the spot!
Z+
Developed and enhanced in collaboration with Professor Altman to:
• Make informed corporate lending decisions
• Manage accounts receivables more effectively
• Select corporate equity and debt securities
• Identify and manage corporate defaults or turnarounds

What is Altman Z-Score+ ?

Altman Z-Score+ is a Smartphone & Web app that provides

- Credit Risk assessment and
- Probability of Default

of companies globally utilizing well tested Altman Z-Score family of models

What are the Benefits of the App?

- Identify & manage corporate defaults and turn-arounds
- Make informed corporate lending decisions
- Manage accounts receivables more effectively
- Select corporate equity & debt securities

What are the Key Features of the App?

- Analyzes Z, Z' and Z'' scores
  - Public US Manufacturing firms
  - Private US Manufacturing firms
  - Non-Manufacturing & Foreign Firms
- Derives Bond Rating Equivalent (BRE) from Z scores
- Presents Percentile ranking
  - Within and across all industries for manufacturing & non-manufacturing segments
- Estimates probability of default 1-10 years into the future
  - For new issues & loans and existing issues & loans

App Platforms

- Four Mobile & Web Platforms
  - Three mobile Operating Systems
    - Google Android
    - Research In Motion (RIM) BlackBerry
    - Apple iOS
      - iPhone, iPad and iTouch
  - Web

Where to find more information

- Web Site – http://altmanzscoreplus.com
- E-Mail : zscore@businesscompassllc.com
- Telephone: +1 (973) 944-3989

Major Risks Going Forward (For 2013)

- Global Economy Slowdown – Primarily U.S. (Double-Dip?): Impact on Default & Recovery Rates, Credit Availability & Credit Quality
  - China
  - Europe
- Sovereign Debt Crisis – Europe
  - Renewed Concern
  - Looming Corporate Defaults?
  - Survival of the Euro?
- Contagion Between Markets – Debt and Equity
- LBO and Covenant-Lite Risk
- Financial Institutions Systemic Risk
- Political Paralysis – Deficit/Debt Crises
- U.S. Municipal Bond & Federal Government Default Risk
- Uncertainties (non-quantifiable)

Total Monthly Return Correlations on Various Asset Class Indexes During Stressed and Recovery Credit Cycles

		Citi HY Index	S&P 500 Stock Index
Stressed Cycle I[a] 01/1990 – 12/1991 (24 obs.)	Defaulted Bond Index	68%	12%
	S&P 500 Stock Index	48%	
Stressed Cycle II[b] 01/2001 – 12/2002 (24 obs.)	Defaulted Bond and Bank Loan Index	76%	23%
	S&P 500 Stock Index	54%	
Stressed Cycle III 01/2008 – 03/2009 (15 obs.)	Defaulted Bond and Bank Loan Index	80%	73%
	S&P 500 Stock Index	73%	
Recovery Cycle 04/2009 – 04/2011 (25 obs.)	Defaulted Bond and Bank Loan Index	71%	65%
	S&P 500 Stock Index	67%	
Full Sample Period 01/1987 – 1/2013 (313 obs.)	Defaulted Bond and Bank Loan Index[c]	65%	41%
	S&P 500 Stock Index	59%	
Most Recent Period 01/2010 – 1/2013 (37 obs.)	Defaulted Bond and Bank Loan Index	61%	59%
	S&P 500 Stock Index	79%	

[a]Correlation between Defaulted Bond Index and S&P 500 was -16% during recovery period. [b]Correlation between Defaulted Bond and Bank Loan Index and S&P 500 was 43% during recovery period. [c]Based on only the Defaulted Bond Index from 01/1987 – 12/1995. Source: E. Altman, NYU Salomon Center

Major Risks Going Forward (For 2013)

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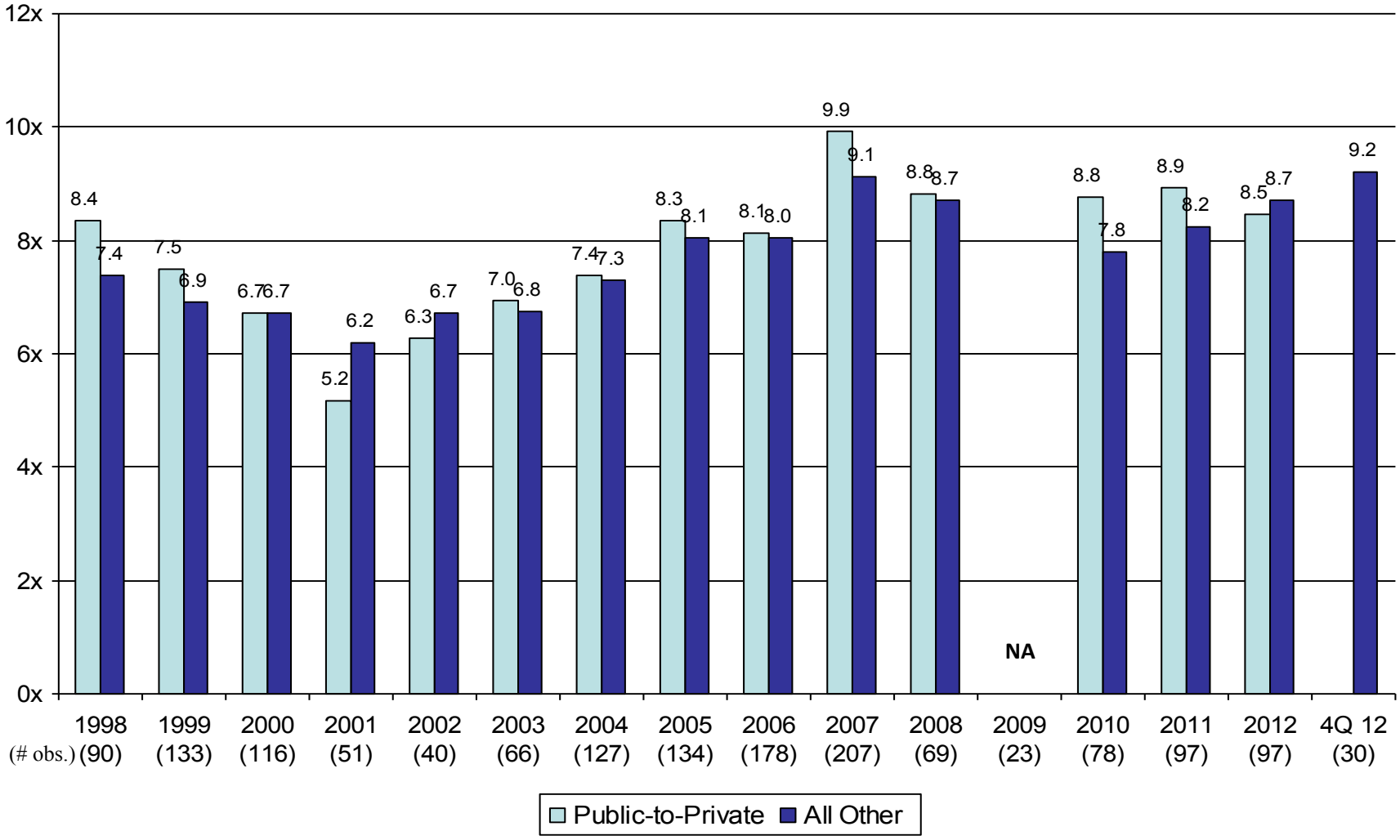
- U.S. Municipal Bond & Federal Government Default Risk
- Uncertainties (non-quantifiable)

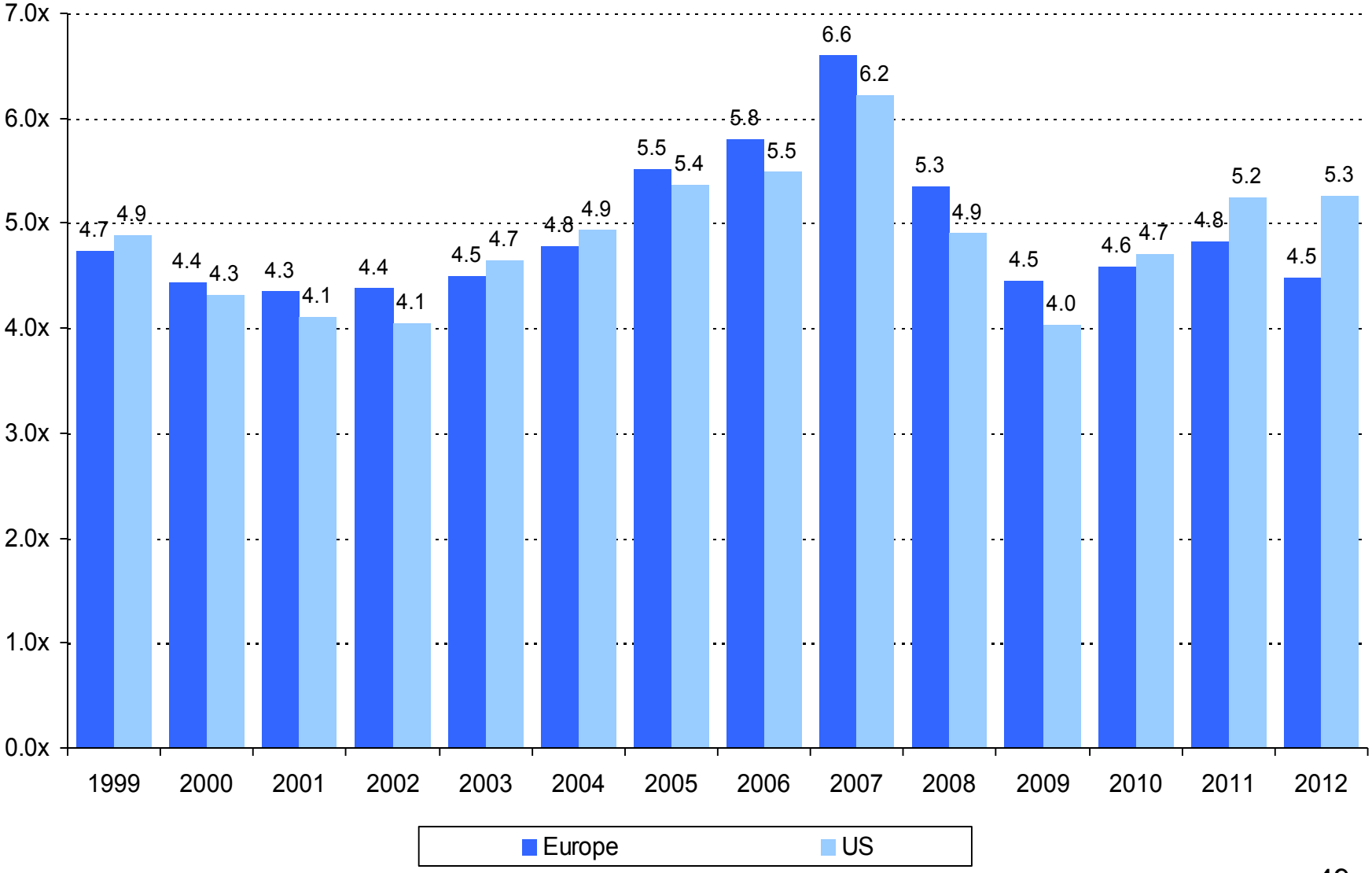
Purchase Price Multiples

Purchase Price Multiple excluding Fees for LBO Transactions



Source: S&P Capital IQ

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



Source: S&P Capital IQ

Major Risks Going Forward (For 2013)

- Global Economy Slowdown – Primarily U.S. (Double-Dip?): Impact on Default & Recovery Rates, Credit Availability & Credit Quality
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- U.S. Municipal Bond & Federal Government Default Risk
- Uncertainties (non-quantifiable)

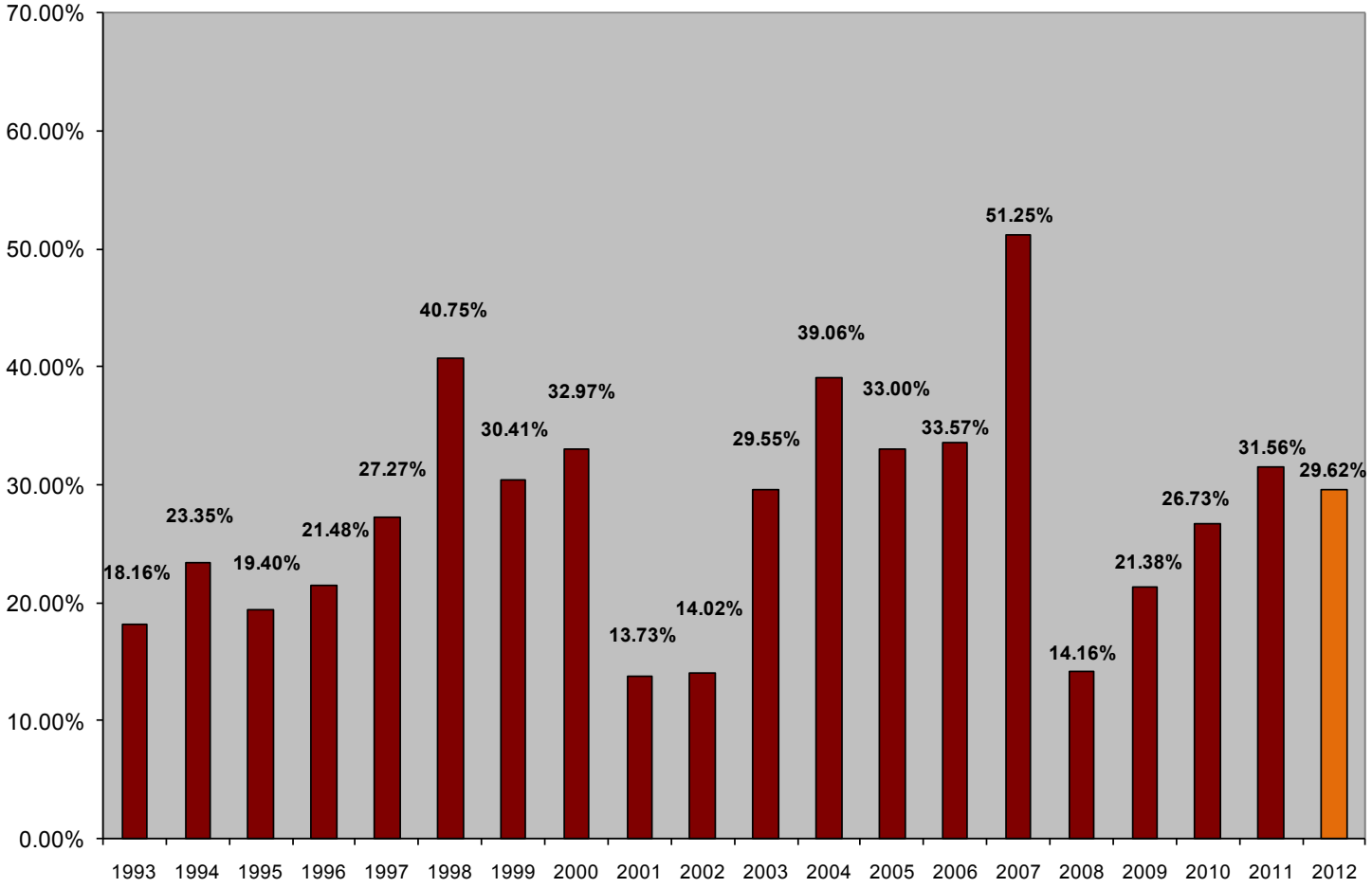
Default Rate Forecasting

Method 1:

Mortality Approach

New Issues Rated B- or Below, Based on the Dollar Amount of Issuance

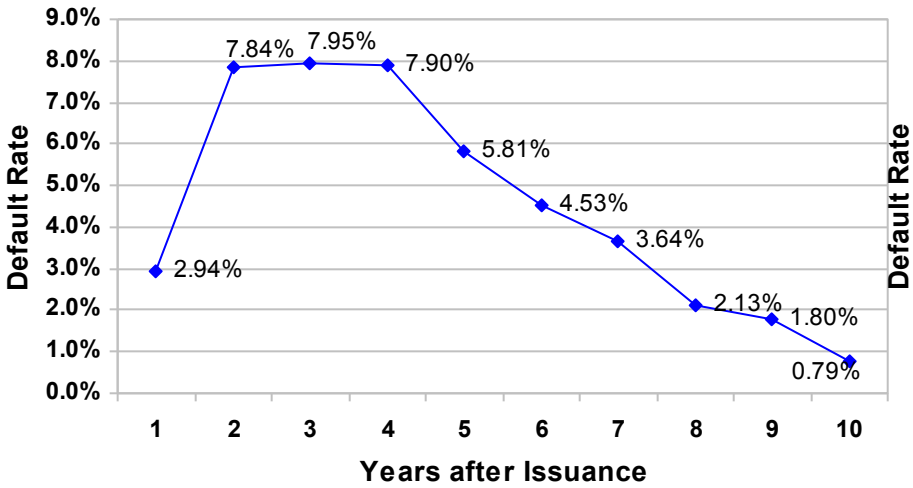
(1993 – 2012)



Source: Standard & Poor's Global Fixed Income Research

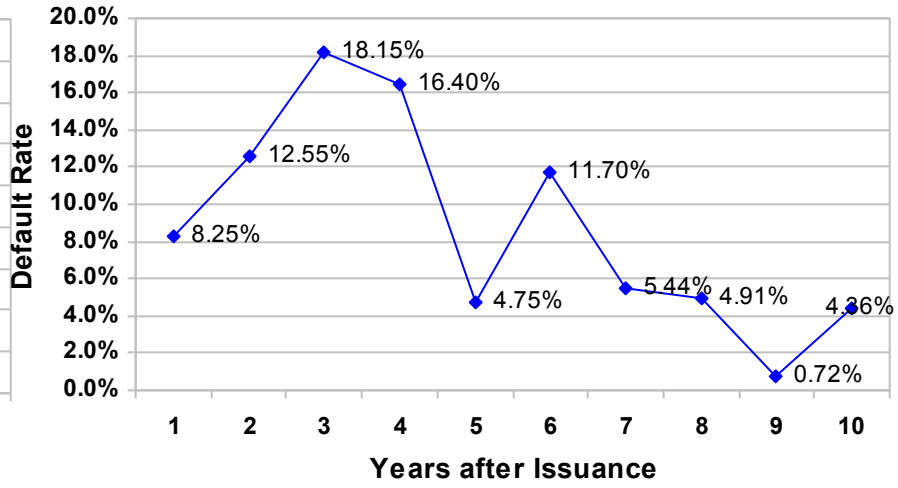
Default Lag After Issuance: 'B' & 'CCC' Rated Corporate Bonds

Default Lag after Issuance for 'B' Ratings



Source: Altman Mortality Tables (1971-2012)

Default Lag after Issuance for 'CCC' Ratings



Source: Altman Mortality Tables (1971-2012)

Mortality Rates by Original Rating

All Rated Corporate Bonds*
1971-2012

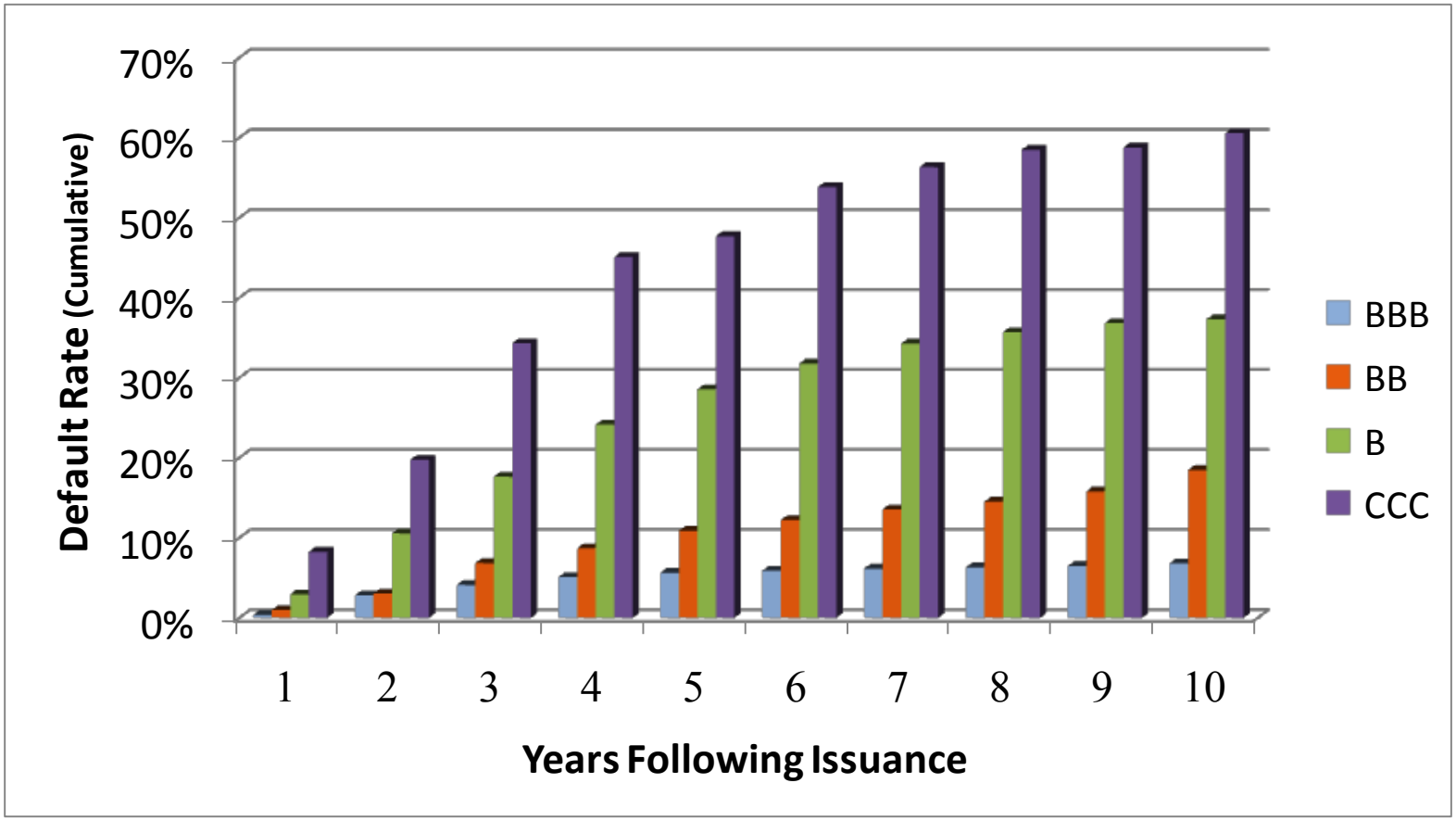
Years After Issuance

		1	2	3	4	5	6	7	8	9	10
AAA	Marginal	0.00%	0.00%	0.00%	0.00%	0.01%	0.02%	0.01%	0.00%	0.00%	0.00%
	Cumulative	0.00%	0.00%	0.00%	0.00%	0.01%	0.03%	0.04%	0.04%	0.04%	0.04%
AA	Marginal	0.00%	0.00%	0.24%	0.10%	0.02%	0.01%	0.01%	0.01%	0.02%	0.01%
	Cumulative	0.00%	0.00%	0.24%	0.34%	0.36%	0.37%	0.38%	0.39%	0.41%	0.42%
A	Marginal	0.01%	0.05%	0.15%	0.16%	0.13%	0.09%	0.03%	0.28%	0.10%	0.06%
	Cumulative	0.01%	0.06%	0.21%	0.37%	0.50%	0.59%	0.62%	0.90%	1.00%	1.06%
BBB	Marginal	0.36%	2.45%	1.35%	1.04%	0.56%	0.26%	0.29%	0.17%	0.17%	0.35%
	Cumulative	0.36%	2.80%	4.11%	5.11%	5.64%	5.89%	6.16%	6.32%	6.48%	6.81%
BB	Marginal	0.98%	2.07%	3.94%	1.97%	2.40%	1.52%	1.50%	1.14%	1.49%	3.18%
	Cumulative	0.98%	3.03%	6.85%	8.69%	10.88%	12.23%	13.55%	14.53%	15.81%	18.48%
B	Marginal	2.94%	7.85%	7.92%	7.90%	5.81%	4.53%	3.64%	2.13%	1.80%	0.79%
	Cumulative	2.94%	10.56%	17.64%	24.15%	28.56%	31.79%	34.28%	35.68%	36.83%	37.33%
CCC	Marginal	8.25%	12.56%	18.15%	16.40%	4.75%	11.70%	5.44%	4.91%	0.72%	4.36%
	Cumulative	8.25%	19.77%	34.33%	45.10%	47.71%	53.83%	56.34%	58.48%	58.78%	60.58%

*Rated by S&P at Issuance
Based on 2,712 issues

Source: Standard & Poor's (New York) and Author's Compilation

Cumulative Default Rates by Rating (S&P)
1971 - 2012



Source: Standard & Poor's (New York) and E. Altman's Mortality Rate Compilation

Mortality Losses by Original Rating

All Rated Corporate Bonds*
1971-2012

Years After Issuance

		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%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%
	Cumulative	0.00%	0.00%	0.04%	0.08%	0.09%	0.10%	0.10%	0.11%	0.12%	0.13%
A	Marginal	0.00%	0.02%	0.06%	0.12%	0.07%	0.05%	0.03%	0.04%	0.07%	0.03%
	Cumulative	0.00%	0.02%	0.08%	0.20%	0.27%	0.32%	0.35%	0.39%	0.46%	0.49%
BBB	Marginal	0.27%	1.59%	1.16%	0.42%	0.36%	0.17%	0.11%	0.10%	0.11%	0.20%
	Cumulative	0.27%	1.86%	2.99%	3.40%	3.75%	3.91%	4.02%	4.11%	4.22%	4.41%
BB	Marginal	0.57%	1.20%	2.34%	1.15%	1.43%	0.74%	0.82%	0.50%	0.78%	1.13%
	Cumulative	0.57%	1.76%	4.06%	5.17%	6.52%	7.21%	7.97%	8.43%	9.15%	10.17%
B	Marginal	1.97%	5.50%	5.38%	5.27%	3.88%	2.50%	2.37%	1.19%	0.93%	0.55%
	Cumulative	1.97%	7.36%	12.35%	16.96%	20.19%	22.18%	24.03%	24.93%	25.63%	26.04%
CCC	Marginal	5.45%	8.98%	12.82%	11.95%	3.37%	8.85%	4.08%	3.82%	0.44%	2.81%
	Cumulative	5.45%	13.94%	24.97%	33.94%	36.17%	41.81%	44.19%	46.32%	46.56%	48.06%

*Rated by S&P at Issuance
Based on 2,237 issues

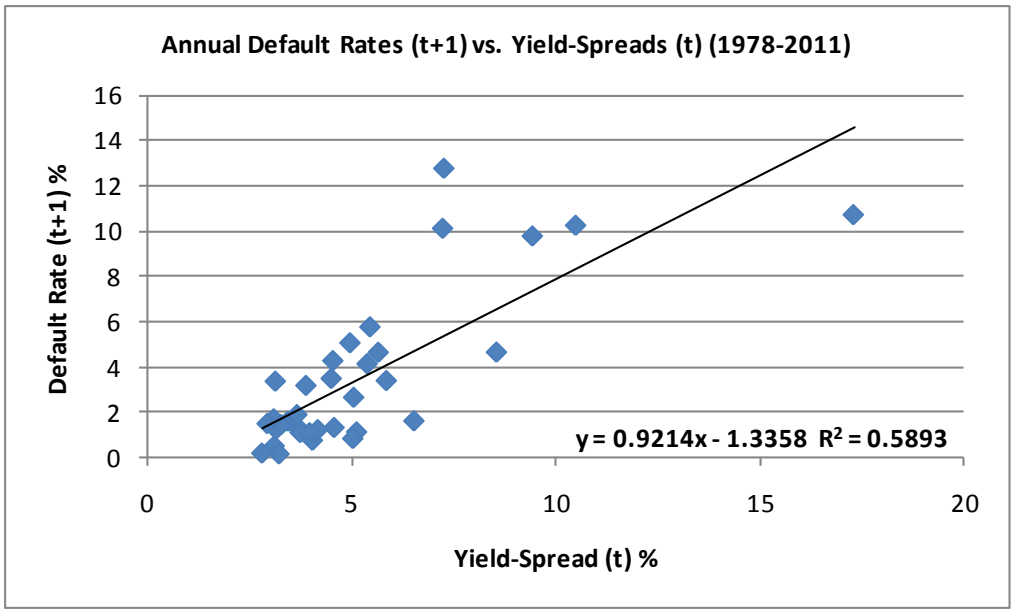
Source: Standard & Poor's (New York) and Author's Compilation

Methods 2 & 3:

Market-Based Measures

Updated Market-Based Annual Default Rate Forecast

Annual Default Rate (t+1) versus High-Yield Spreads (t)



The regression equation is

Default Rate = - 1.34 + 0.92 * Spread

Predictor	Coef	SE Coef	T	P
Constant	-1.3358	0.8094	-1.6503	0.1087
Spread	0.9214	0.1360	6.7759	0.0000

S = 2.2218 R-Sq = 58.9% R-Sq(adj) = 57.6%

Application

Yield spread (12/31/2010) of 458bp, forecast P_D for 2011 = **3.10%** vs. actual of 1.33%

Yield spread (12/30/2011) of 654bp, forecast P_D for 2012 = **4.80%** vs. actual of 1.62%

Yield spread (12/31/2012) of 506bp, forecast P_D for 12/31/2013 = **3.32%**

Yield spread (2/12/2013) of 472bp, forecast P_D for 2/12/2014 = **3.01%**

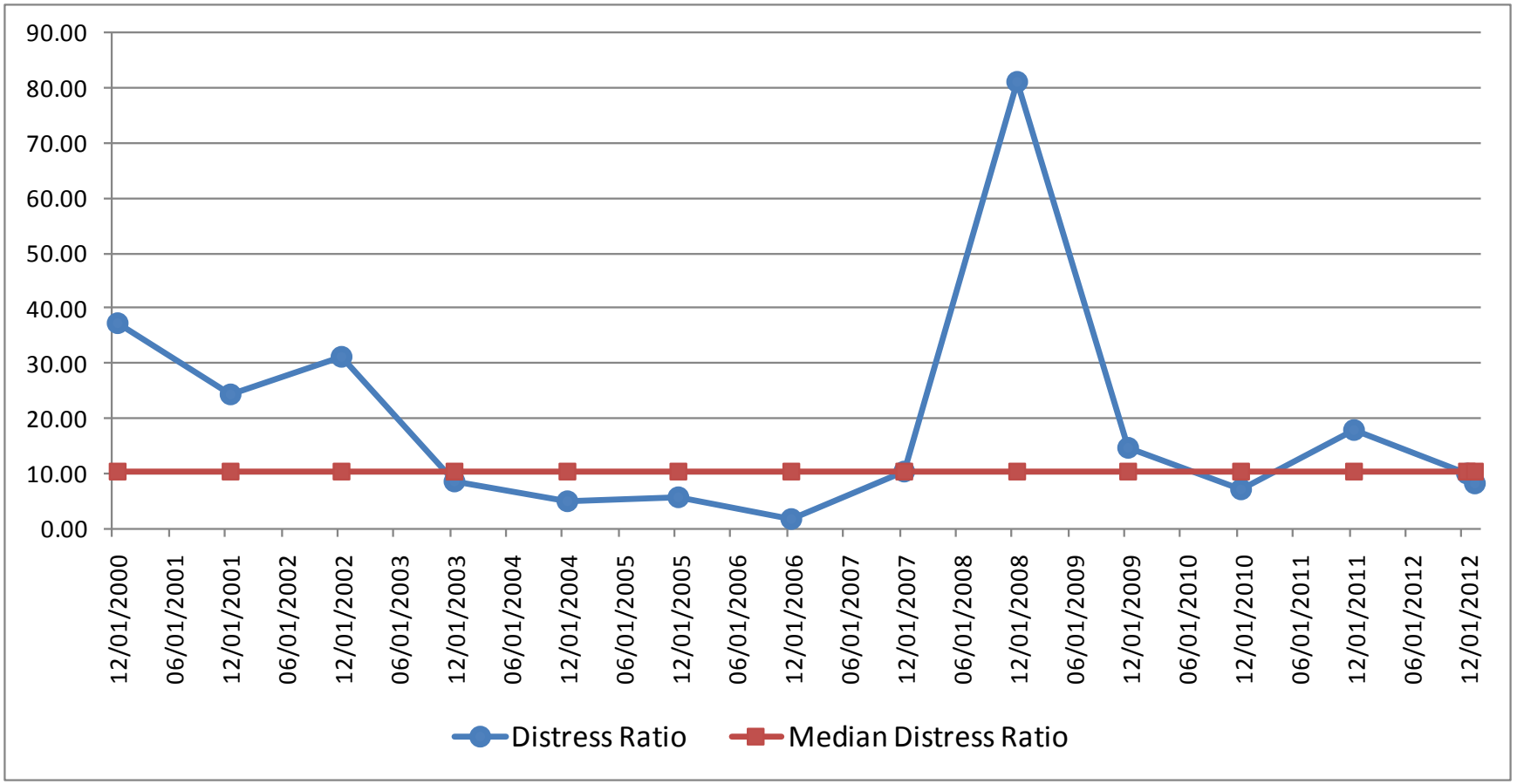
Sources: Slides 2 & 6 and authors' compilations

Distress Ratio History
2000 – 2012

Date	Distress Ratio	Annual Default Rate (t+1)	Default Rate$_{(t+1)}$ / Distress Ratio$_{(t)}$ (%)
12/31/2000	37.33	9.80	26.25
12/31/2001	24.36	12.79	52.52
12/31/2002	31.21	4.66	14.93
12/31/2003	8.40	1.25	14.86
12/31/2004	4.96	3.37	68.05
12/31/2005	5.47	0.76	13.92
12/31/2006	1.62	0.51	31.44
12/31/2007	10.35	4.65	44.97
12/31/2008	81.29	10.74	13.22
12/31/2009	14.53	1.13	7.78
12/31/2010	7.19	1.33	18.43
12/31/2011	17.88	1.62	9.06
12/31/2012	9.88	n/a	n/a
2000 – 2011 Average	20.38	4.39	21.52
2000 – 2011 Median	12.44	2.50	16.68

Sources: Bank of America Merrill Lynch & NYU Salomon Center

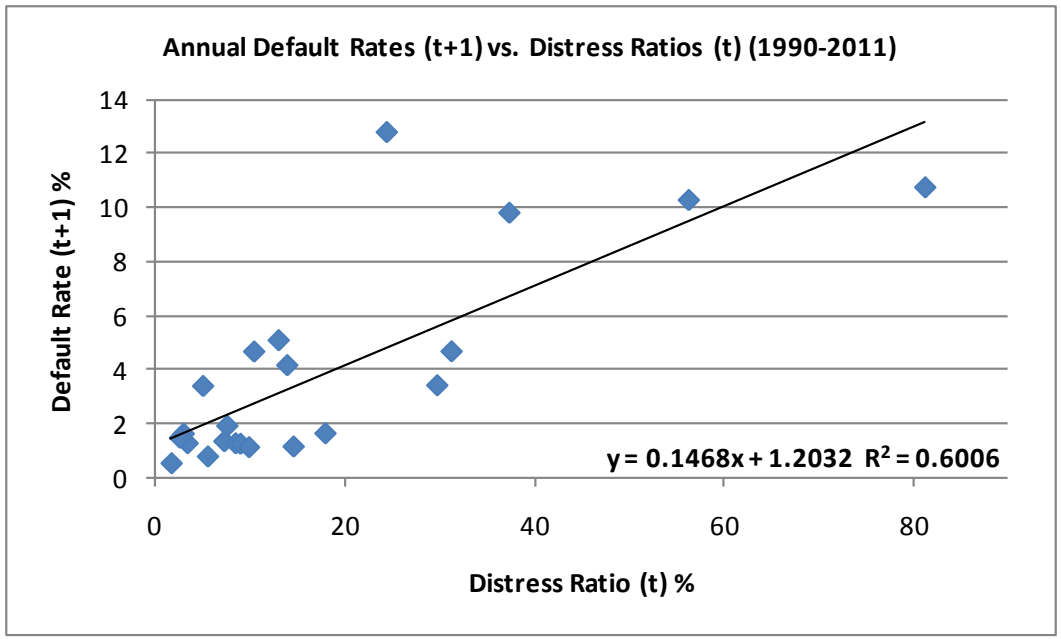
Distress Ratio History
2000 – 2013 (1/31)



Source: Bank of America Merrill Lynch

Updated Market-Based Annual Default Rate Forecast

Annual Default Rate (t+1) versus Annual Distressed Ratio (t)



The regression equation is

Default Rate = 1.20 + 0.15 * Distress Ratio

Predictor	Coef	SE Coef	T	P
Constant	1.2032	0.7004	1.7179	0.1013
Spread	0.1468	0.0268	5.4844	0.0000

S = 2.4042 R-Sq = 60.1% R-Sq(adj) = 58.1%

Application

Distress ratio (12/31/2010) of 7.62%, forecast P_D for 2011 = **2.59%** vs. actual of 1.33%

Distress ratio (12/30/2011) of 17.88%, forecast P_D for 2012 = **3.93%** vs. actual of 1.62%

Distress ratio (12/31/2012) of 9.88%, forecast P_D for 12/31/2013 = **2.65%**

Distress ratio (1/31/2013) of 8.19%, forecast P_D for 1/31/2014 = **2.41%**

Sources: Slide 6, Bank of America Securities and authors' compilations

Default and Recovery Forecasts: Summary of Forecast Models

Model	2012 Default Rate Forecast as of 12/30/2011	2013 (12/31) Default Rate Forecast as of 12/31/2012	2014 (2/12) Default Rate Forecast as of 2/12/2013
Mortality Rate	4.10%	3.73%	3.40%
Yield-Spread	4.80%[a]	3.32%[c]	3.01%[e]
Distress Ratio	3.93%[b]	2.65%[d]	2.41%[f]
Average of Models	4.28%	3.23%	2.94%
Recovery Rates*	36.7%	39.7%	40.7%

* Recovery rate based on the log Linear equation between default and recovery rates, see Altman, et al (2005) Journal of Business, November and Slide 80. [a] Based on Dec. 30, 2011 yield-spread of 653.8bp. [b] Based on Dec. 30, 2011 Distress Ratio of 17.88%. [c] Based on Dec.31, 2012 yield-spread of 505.8bp. [d] Based on Dec. 31, 2012 Distress Ratio of 9.88%. [e] Based on Feb.12, 2013 yield-spread of 471.6bp. [f] Based on Jan. 31, 2013 Distress Ratio of 8.19%.

Source: All Corporate Bond Issuance and Authors' Estimates of Market Size in 2012 & 2013.

Recovery Rate Analysis

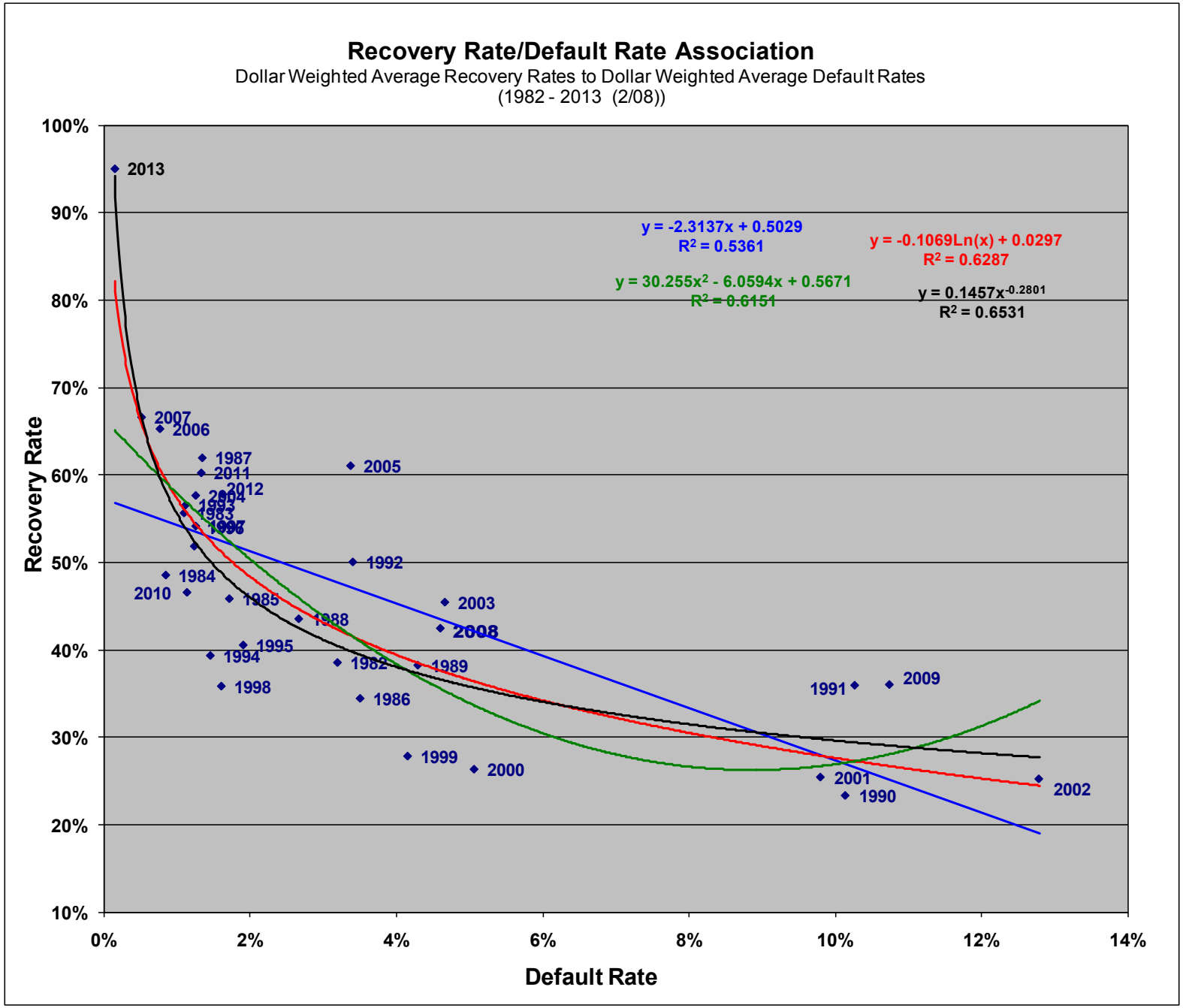
Default Rates and Losses[a]

1978 – 2013 (2/08)

Year	Par Value Outstanding *($MM)*	Par Value Defaults *($MM)*	Default Rate (%)	Weighted Price After Default ($)	Weighted Coupon (%)	Default Loss (%)
2013	**1,316,108**	**1,892**	**0.14**	**95.0**	**9.64**	**0.01**
2012	1,212,362	19,647	1.62	57.8	8.97	0.76
2011	1,354,649	17,963	1.33	60.3	9.10	0.59
2010	1,221,569	13,809	1.13	46.6	10.59	0.66
2009	1,152,952	123,878	10.74	36.1	8.16	7.30
2008	1,091,000	50,763	4.65	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	36,209	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 – 2012			3.44	45.65	10.55	2.29
Weighted Average 1978 - 2012			3.83			2.54

[a] Excludes defaulted issues.

Source: Authors' compilations and various dealer price quotes.



Note: 2012 Default Rate is Annualized

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

Annual Returns (1978 – 2013 (2/12))

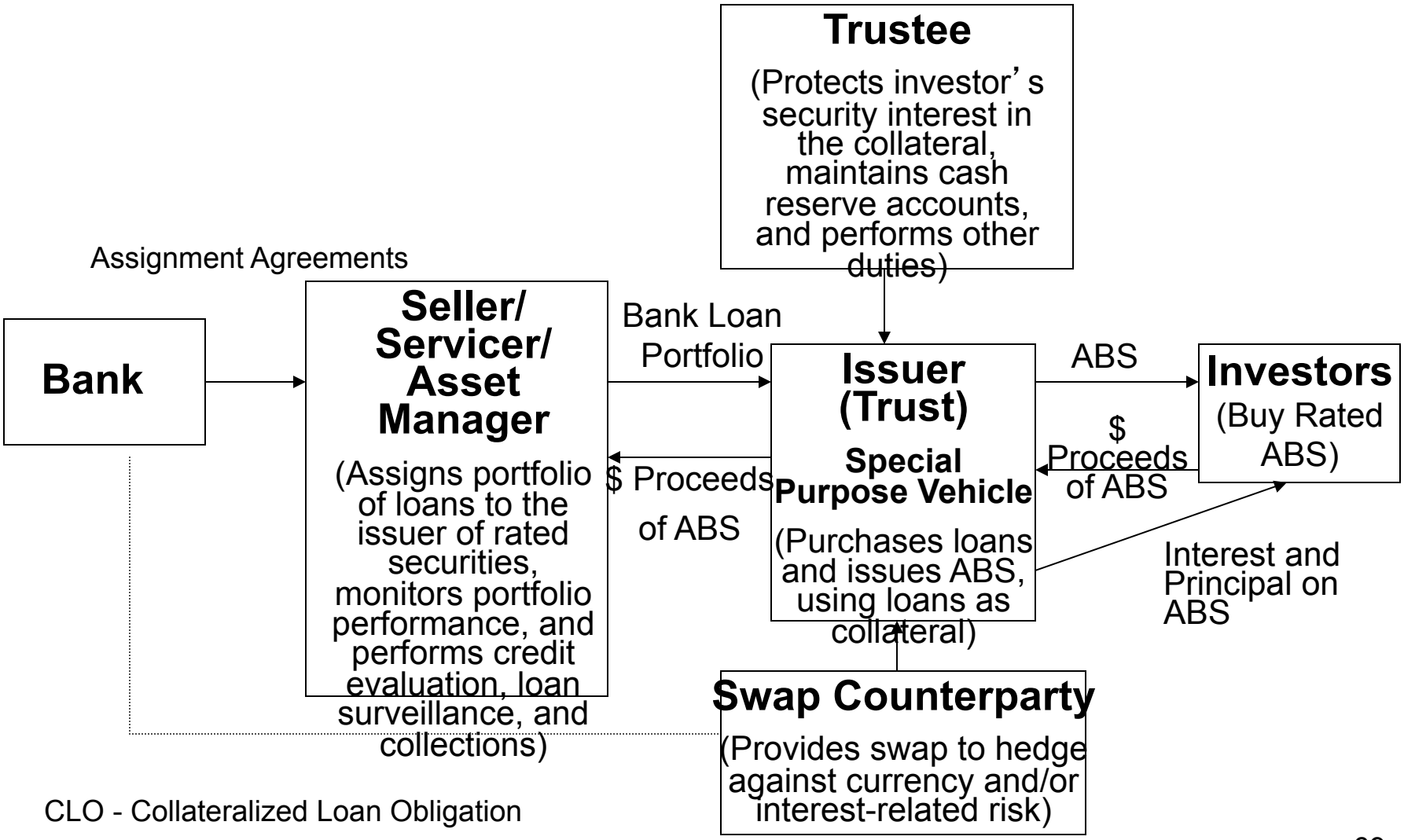
Yields and Spreads on 10-Year Treasury (Treas) and High Yield (HY) Bonds

	Return (%)			Promised Yield (%)		
Year	**HY**	**Treas**	**Spread**	**HY**	**Treas**	**Spread**
2013 (2/12)	0.97	(1.95)	2.92	6.70	1.98	4.72
2012	15.17	4.23	10.95	6.80	1.74	5.06
2011	5.52	16.99	(11.47)	8.41	1.88	6.54
2010	14.32	8.10	6.22	7.87	3.29	4.58
2009	55.19	(9.92)	65.11	8.97	3.84	5.14
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 1978-2012	**11.06**	**8.47**	**2.60**	**11.83**	**6.59**	**5.25**
Compound Annual Average 1978-2012	**10.11**	**7.91**	**2.19**			

[a] End-of-year yields. [b] Lowest yield in time series. Source: Citigroup's High Yield Composite Index

Sample CLO Transaction Structure

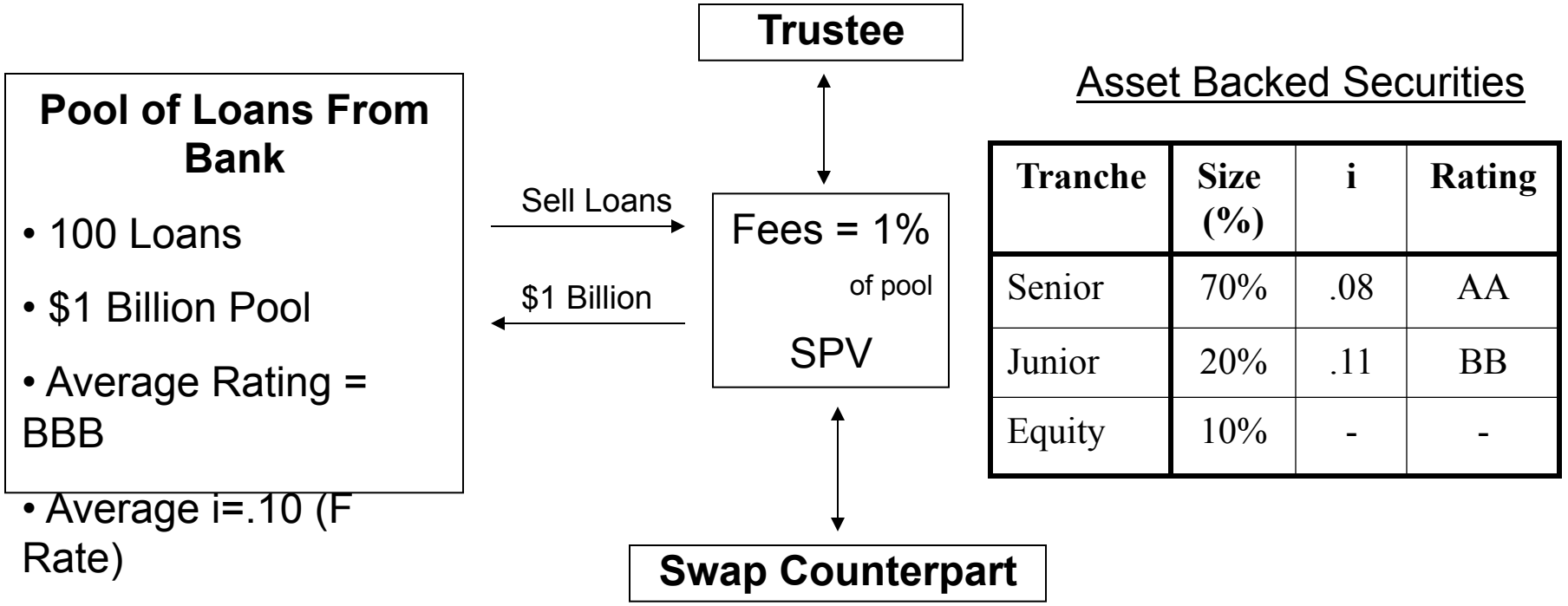
Sample CLO Transaction Structure



CLO - Collateralized Loan Obligation

ABS - Asset-backed Securities

CLO Example



Asset Backed Securities

Tranche	Size (%)	i	Rating
Senior	70%	.08	AA
Junior	20%	.11	BB
Equity	10%	-	-

CLO Example

Returns with No Defaults: Returns to ABS

		First Year	*Second Year*
Total Interest	=	$100 million	$100 million
Interest to Senior	=	$56 million	$56 million
Fees	=	$10 million	--------
Net From Jr.		$34 million	$44 million
Interest to Jr.	=	$22 million	$22 million
Net to Equity	=	$12 million	$22 million
ROE	=	???	???

New ETF on Defaulted and Distressed Bond Market

Based on the Altman Market Vectors Defaulted and Distressed Bond Index

Comparison of Returns

	Annual Total Return (%)				
Year	BofA ML Distressed Index	Altman-Kuehne Defaulted Bond Index	Altman-Kuehne Defaulted Combined Index	Citi High-Yield Bond Index	S&P 500 Index
2003	78.71	84.87	49.30	30.62	28.70
2004	24.78	18.93	15.14	10.79	10.88
2005	-15.95	-1.78	1.73	2.08	4.92
2006	42.80	35.62	23.38	11.85	15.80
2007	-12.07	-11.53	-3.30	1.83	5.50
2008	-44.91	-55.09	-47.52	-25.91	-37.00
2009	116.67	96.42	55.99	55.19	26.46
2010	25.41	25.76	17.70	14.32	15.06
2011	-6.61	-3.66	-0.41	5.52	2.11
2012	24.10	2.63	7.63	15.17	15.99
2003-2012 (10 year) Arithmetic Avg Return Geometric Avg Return	 23.29 15.11	 19.22 11.01	 11.96 7.98	 12.15 10.39	 8.84 7.10
2008-2012 (5 year) Arithmetic Avg Return Geometric Avg Return	 22.93 11.65	 13.21 1.87	 6.68 0.65	 12.86 9.82	 4.52 1.66
2010-2012 (3 year) Arithmetic Avg Return Geometric Avg Return	 14.30 13.28	 8.24 7.53	 8.30 8.05	 11.67 11.58	 11.05 10.87
Sharpe Ratio (10 year)	0.364	0.295	0.209	0.300	0.161

Target Portfolio Allocations

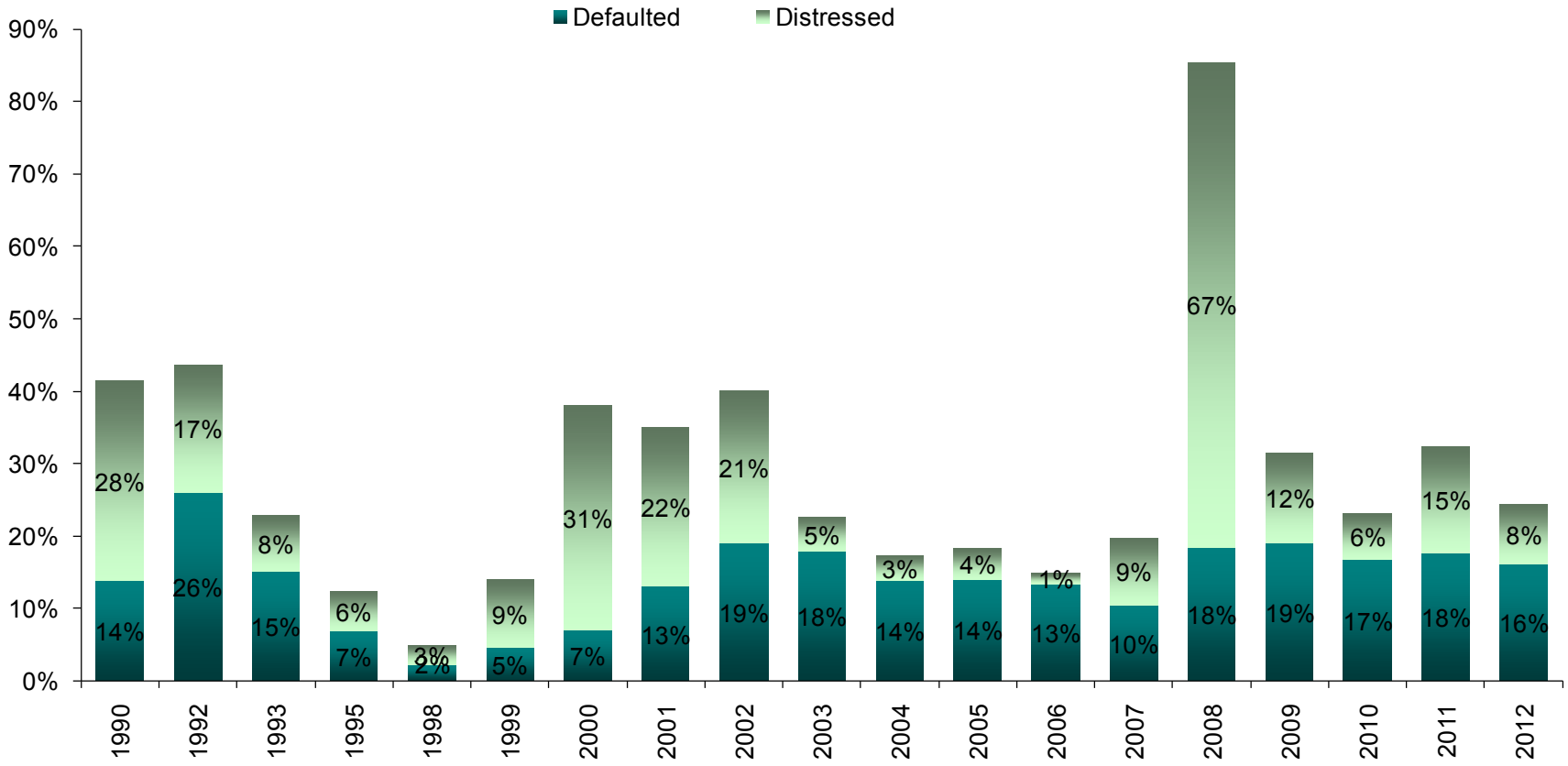
Given Various Default Rates, Allocation within the Defaulted and Distressed Bond ETF will be as Follows:

Default Rate	Allocation
<4%	50% Defaulted / 50% Distressed
4% - 7%	65% Defaulted / 35% Distressed
>7%	80% Defaulted / 20% Distressed

Size of Distressed Debt Market

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

1990 – 2012



(a) Defined as yield-to-maturity spread greater than or equal to 1000bp over comparable Treasuries. (b) $1.569 trillion as of 12/31/2012. (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)

2010 – 2012

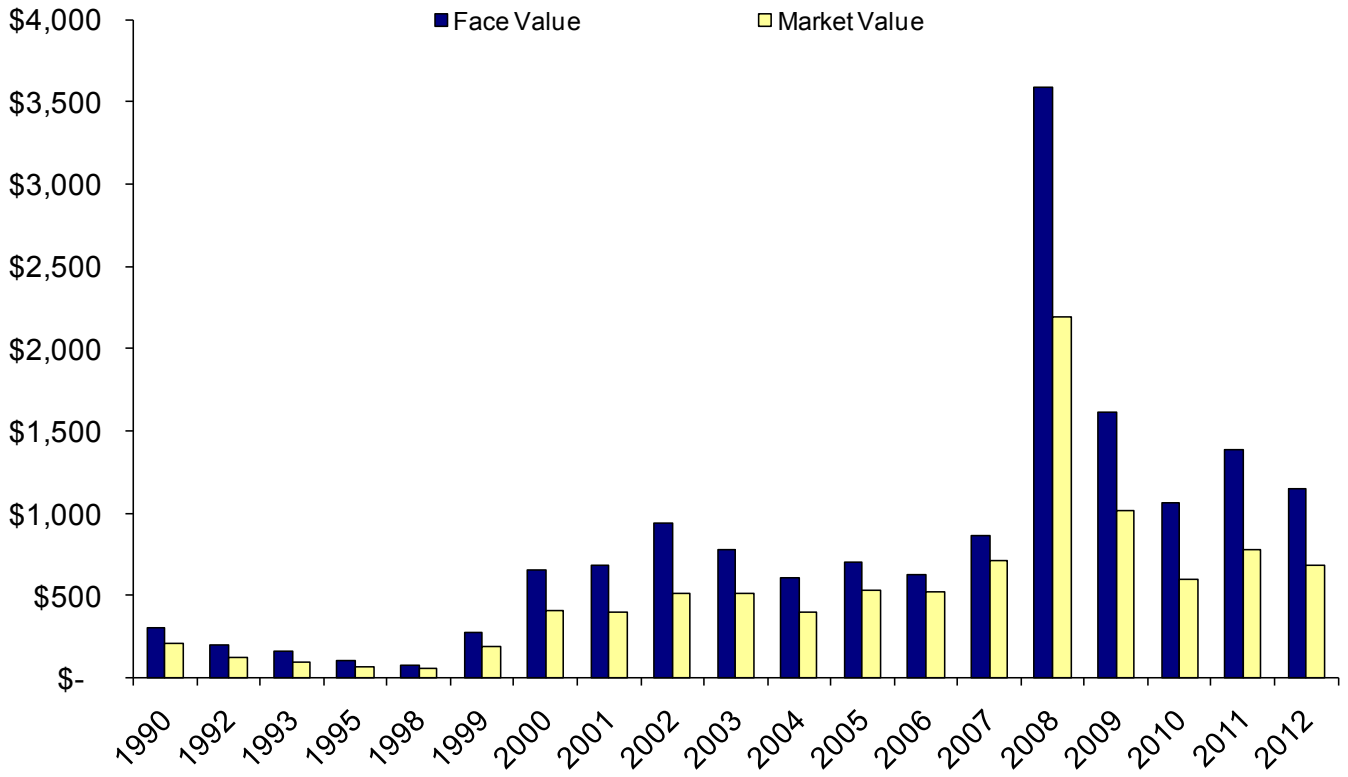
	Face Value			Market Value			
	12/31/2010	12/31/2011	12/31/2012	12/31/2010	12/31/2011	12/31/2012	Market/Face Ratio
Public Debt							
Defaulted	255.27	251.63	252.39 [1]	102.11	88.07	100.96	*0.40*
Distressed	97.32	209.79	130.06 [2]	68.12	146.86	91.04	*0.70*
Total Public	**352.59**	**461.43**	**382.45**	**170.23**	**234.93**	**191.99**	
Private Debt							
Defaulted	510.54	503.27	504.78 [3]	280.79	251.63	277.63	*0.55*
Distressed	194.64	419.59	260.11 [3]	145.98	293.71	208.09	*0.80*
Total Private	**705.17**	**922.85**	**764.89**	**426.77**	**545.34**	**485.72**	
Total Public and Private	**1,057.76**	**1,384.28**	**1,147.34**	**597.00**	**780.27**	**677.71**	

[1] Calculated using: (2011 defaulted population) + (2012 Defaults) - (2012 Emergences) - (2012 Distressed Exchanges).
[2] Based on 9.88% of the high-yield bond market ($1.316 trillion) as of 31 Dec. 12.
[3] Based on a private/public ratio of 2.0.

Source: NYU Salomon Center and estimates by Professor Edward I. Altman.

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

1990 – 2012



Source: Author's Compilations