



Opportunistic Fixed Income Overview

4/19/2016



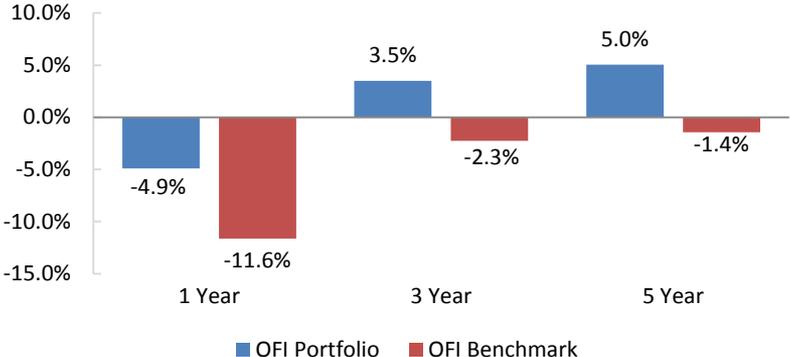
North Carolina Department of State Treasurer
Investment Management

Learn. Invest. Grow. Prosper.

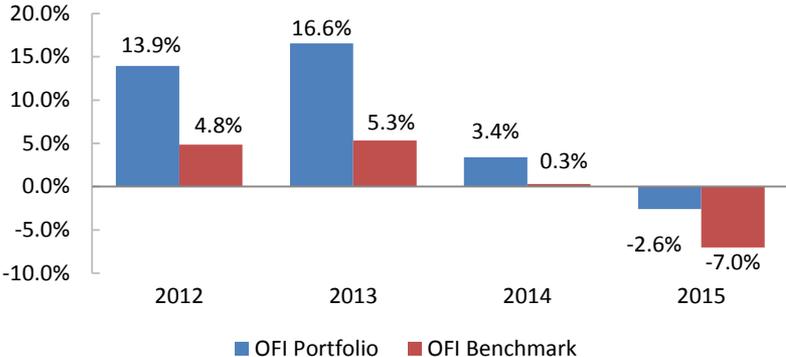
Portfolio Performance

* Data as of Feb 2016 (quarterly)

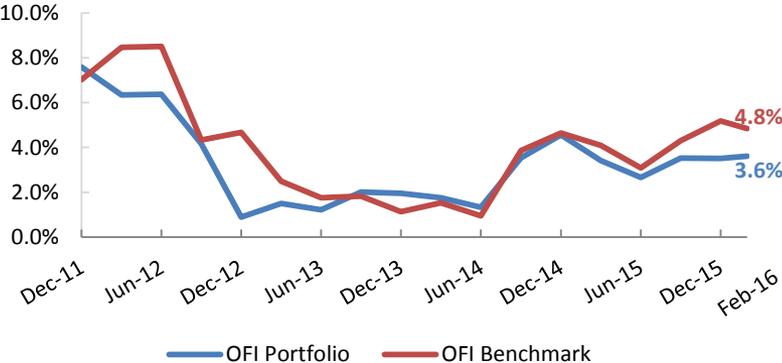
Annualized Performance



Calendar Year Performance



Rolling 1-Year Volatility



Historical 5-Year Correlation

	OFI	Total Fund	Public Equity	Fixed Income	Core Real Estate	Private Equity	Inflation	Non-Core Real Estate	Multi-Strategy
OFI	1.00								
Total Fund	0.65	1.00							
Public Equity	0.62	0.97	1.00						
Fixed Income	-0.05	0.18	-0.02	1.00					
Core Real Estate	0.66	0.67	0.63	0.08	1.00				
Private Equity	0.34	0.03	-0.09	0.12	0.17	1.00			
Inflation	0.45	0.52	0.43	0.27	0.54	0.21	1.00		
Non-Core Real Estate	0.21	-0.04	-0.14	0.05	0.26	0.86	0.21	1.00	
Multi-Strategy	0.47	0.90	0.92	0.03	0.48	-0.12	0.38	-0.20	1.00

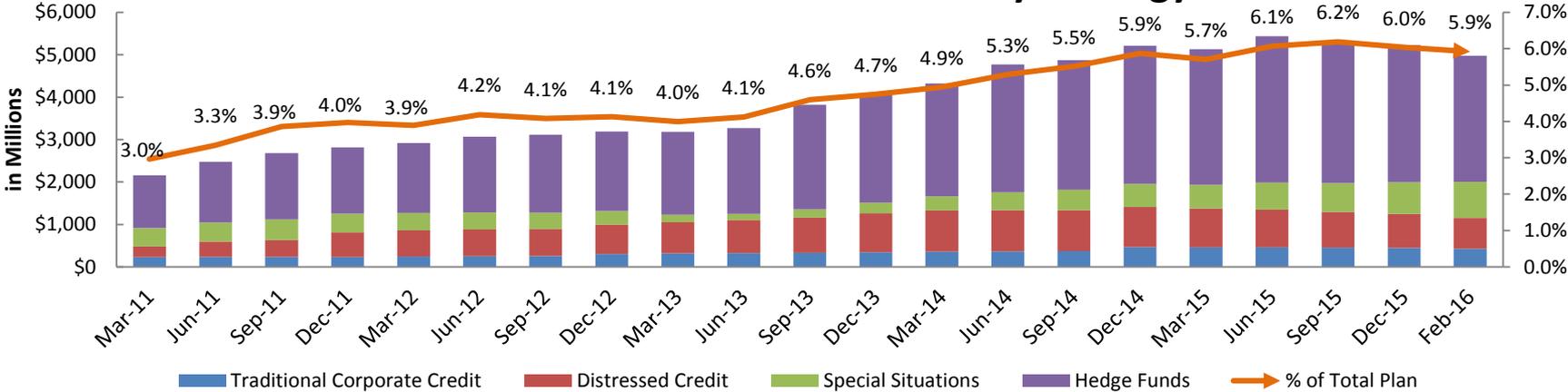
Note: The Opportunistic Fixed Income Benchmark is a comprised of 50% HFRX Distressed Securities Index, 20% HFRX Relative Value Index, 15% Credit Suisse Leveraged Loan Index, and 15% BOAML US High Yield Index. The BOAML US High Yield Index is from BofA Merrill Lynch and is used with permission. See disclaimer on last page.



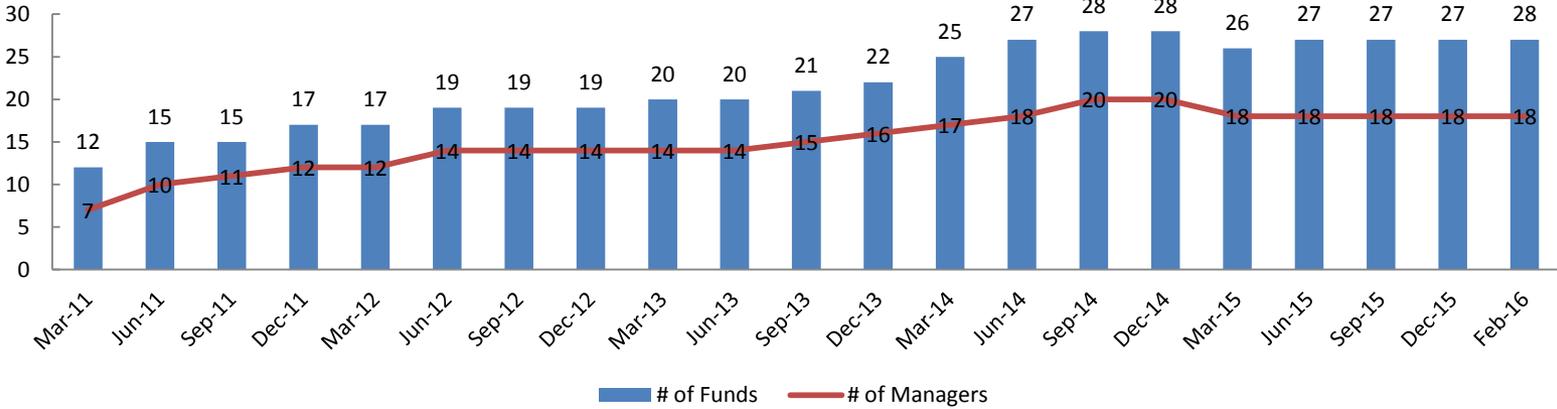
Portfolio History

* Data as of Feb 2016 (quarterly)

Portfolio Market Value Timeline by Strategy



Growth of Managers and Funds Capacity ¹



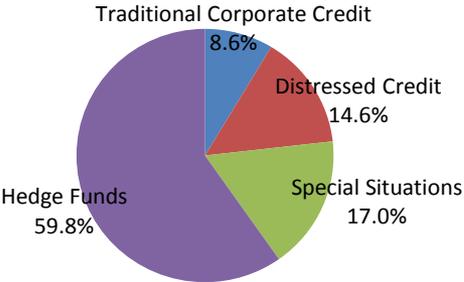
(1) Note: numbers are based on active managers and funds only



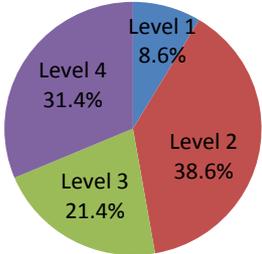
Portfolio Characteristics

* Data as of Feb 2016, except for capital structure and geographic exposure

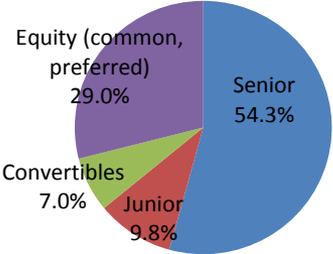
Allocation by Strategy



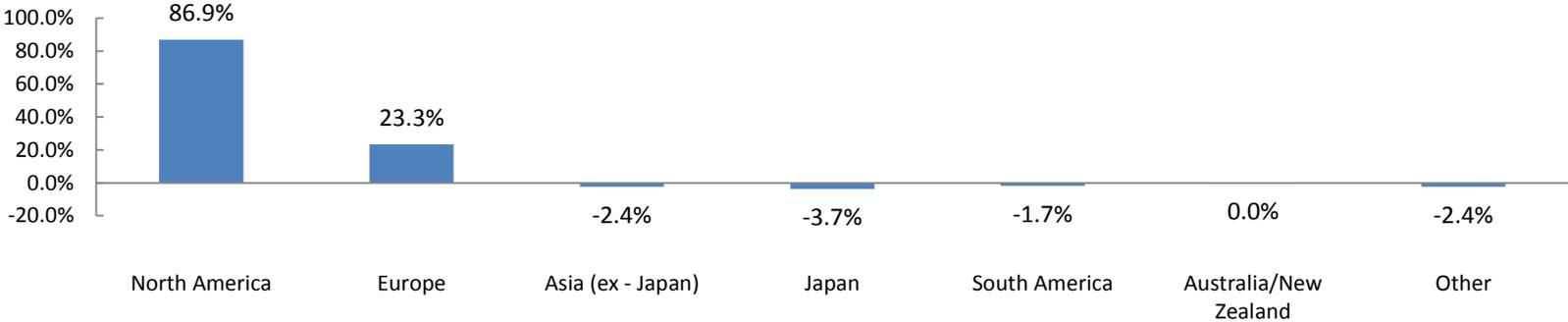
Liquidity Level ¹



Capital Structure



Geographic Allocation



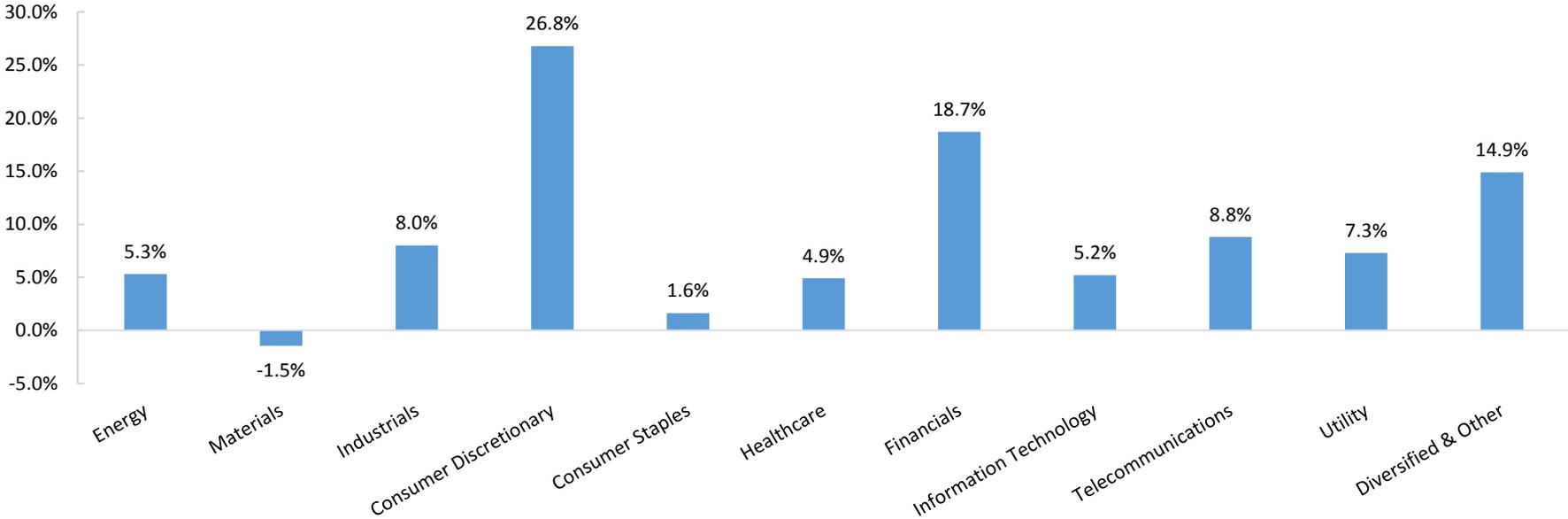
(1) Liquidity levels : level 1 is for highly liquid assets (T+3); level 2 for T+3 to 12 months; level 3 for 12 to 24 months; level 4 for assets expected to take more than 24 months to liquidate.



Portfolio Characteristics

* Data as of Dec 2015

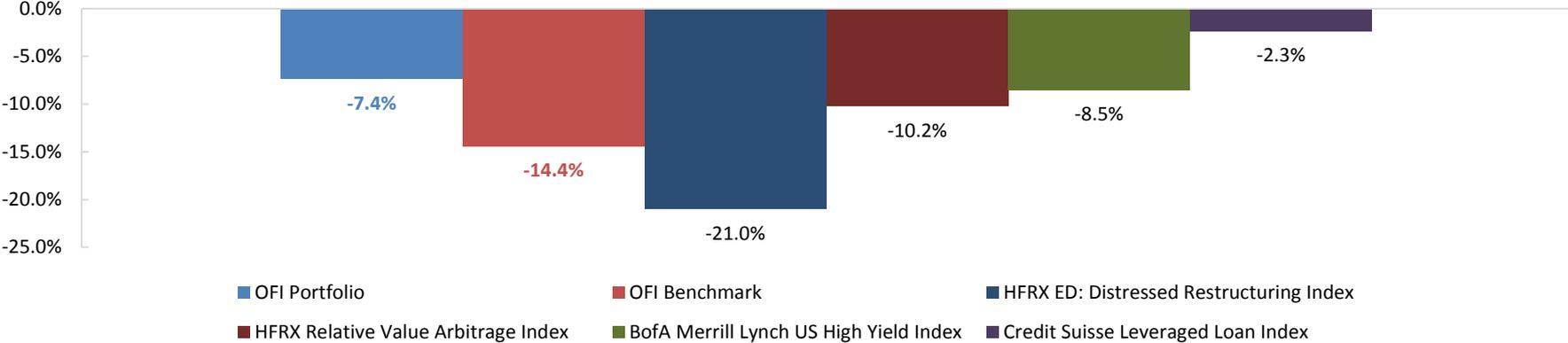
OFI Portfolio Holdings by GICS Classification



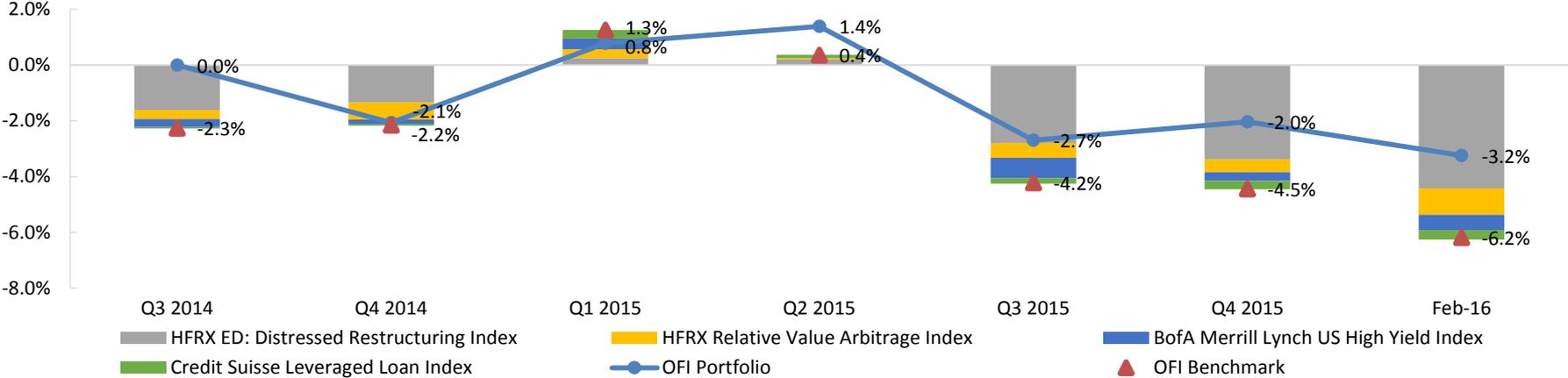
Outperformance vs. Benchmark

* Data as of Feb 2016 (quarterly)

OFI Portfolio Cumulative Returns Since Oil Slump (Jun 2014 – Feb 2016)



OFI Indices Quarterly Returns Since Oil Slump (Jun 2014 – Feb 2016)



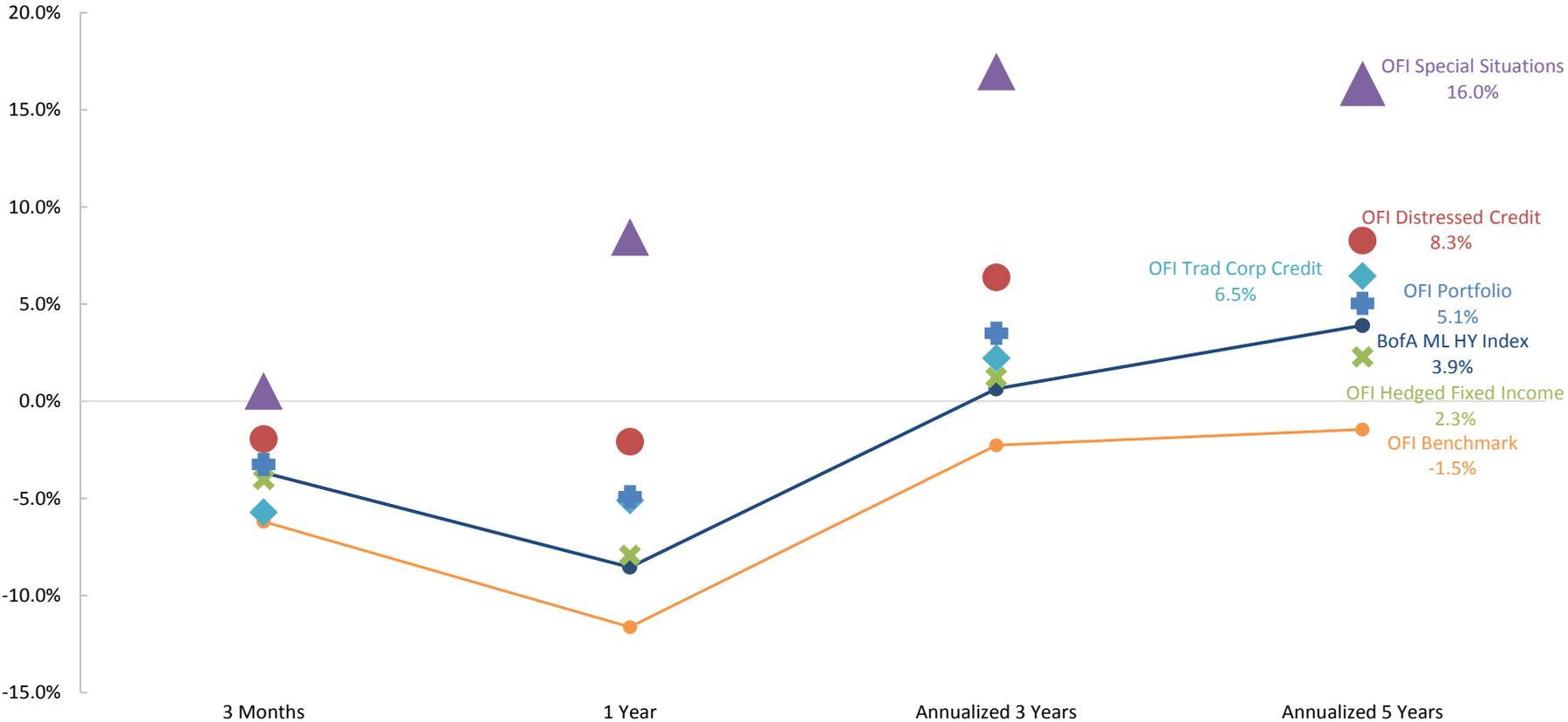
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Outperformance vs. Benchmark (contd.)

* Data as of Feb 2016 (quarterly)

OFI Portfolio Sub-sector Short-term and Long-term Performance



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Annual Portfolio Review

Discussion Points & Findings

- The portfolio could benefit from additional diversification and increased exposure to the following:
 - Credit Multi-Strategy
 - Global & European Distressed
 - Structured Credit
- Structural Enhancements
 - Long Biased Strategies
 - Closed-end Vehicles
 - Separate Accounts & Opportunistic Mandates



Forward Looking Opportunity Set

More Attractive

- Direct Lending
- Stressed / Distressed
 - European NPLs
- Long-only Structured Credit (CMBS, CLOs, RMBS)
- Long-only High Yield
- Senior Debt
- High Rated Debt
- Energy Dislocation

Less Attractive

- US Whole Loans
 - Residential
 - Commercial
- European Credit



Strategic Considerations for Discussion

1. What is the optimal structure for the portfolio?
 - Number of managers and funds
 - Open-end funds vs. closed end funds
 - SMAs vs. commingled structures
 - Large diversified platforms vs. smaller specialists

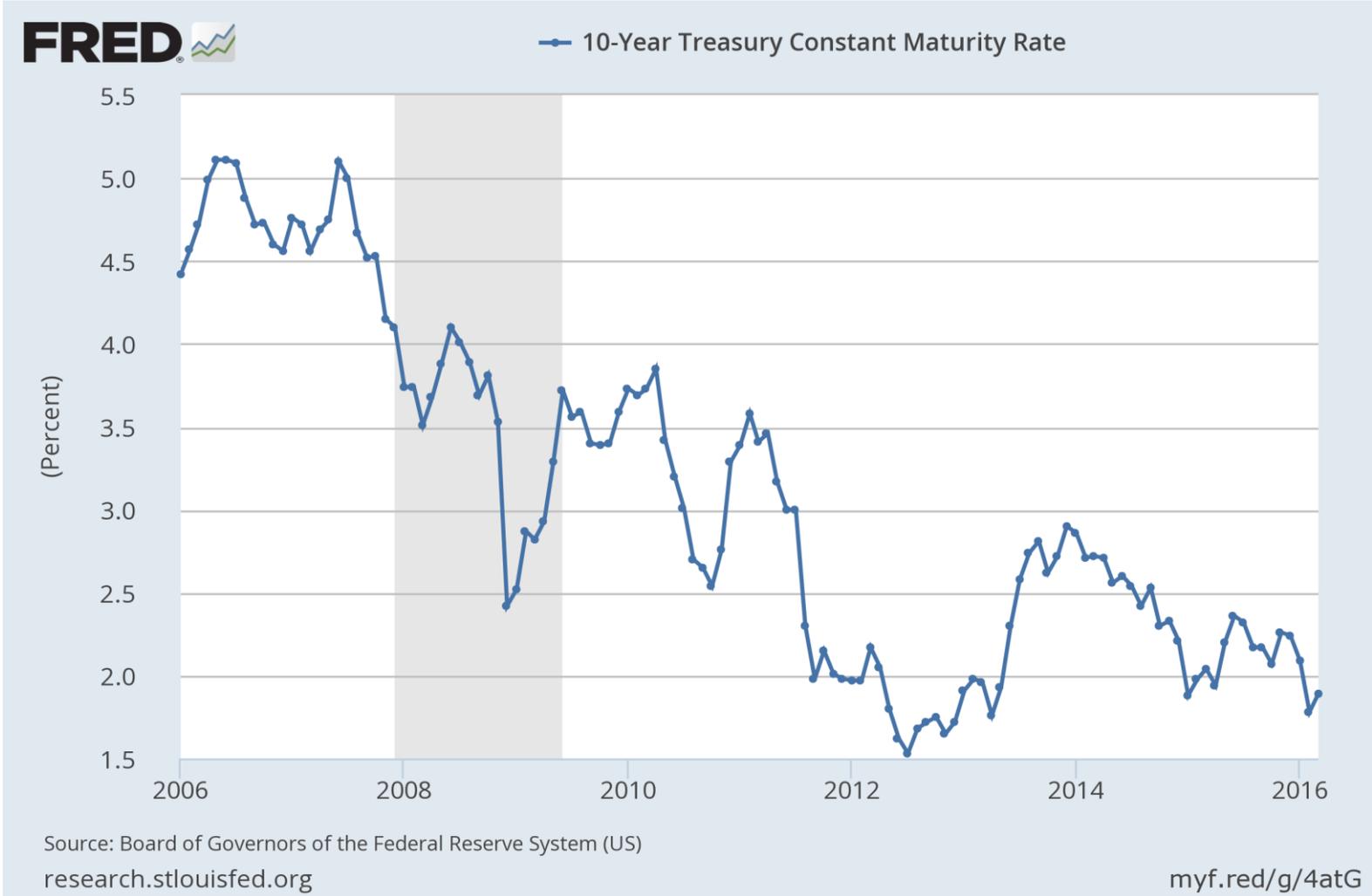
2. Where are we in the credit cycle?
 - What is our risk tolerance in the current environment?
 - Maintain current underweight vs. target weight
 - Opportunistic vs. desired level of diversification



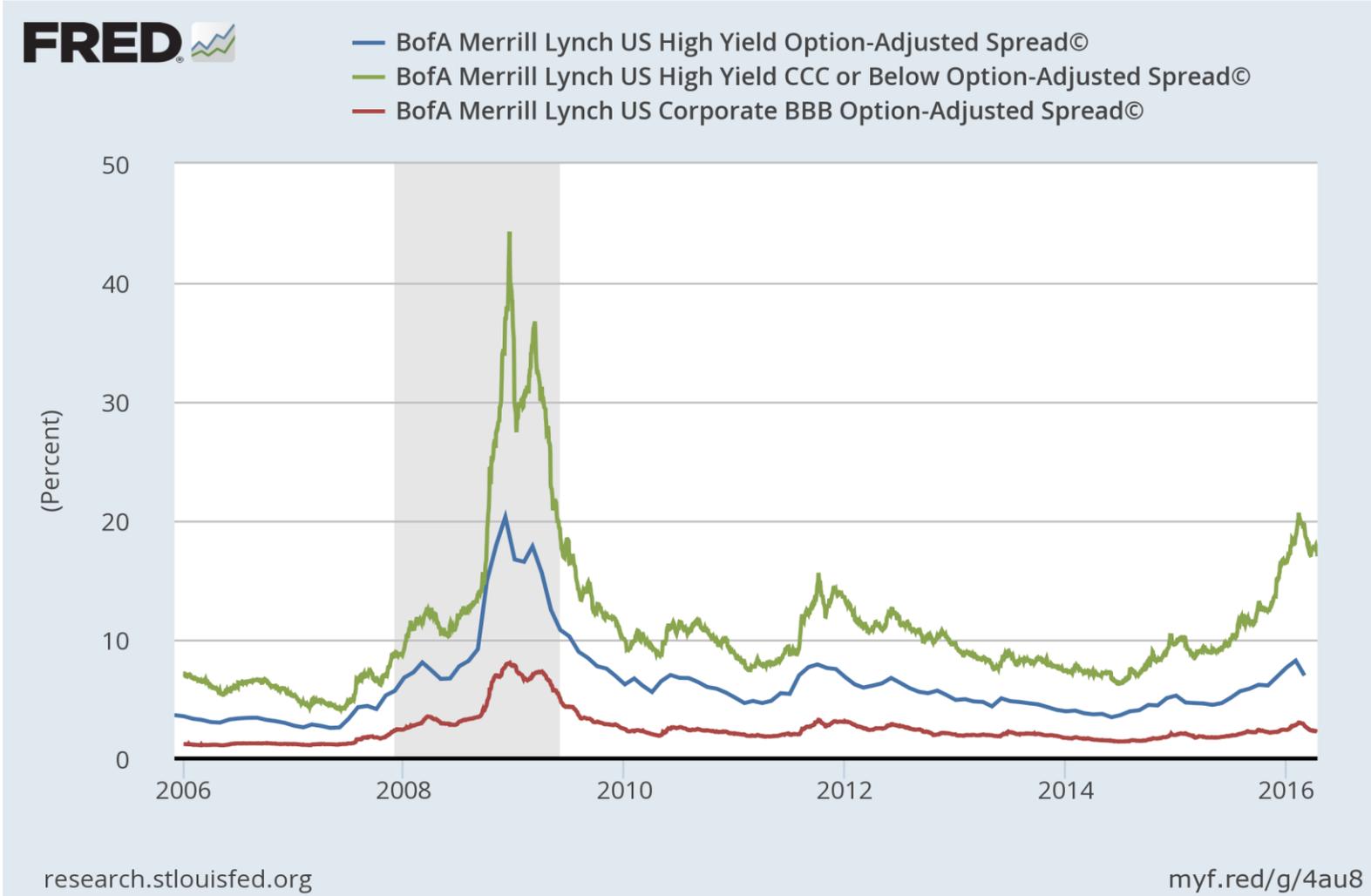
Supplemental Information for Discussion



10-Year Treasury Yield



BofA Merrill Lynch Credit Spreads



Source: BofA Merrill Lynch (accessed via Federal Reserve Bank of St. Louis). Used with permission. See disclaimer on last page.



High Yield Spreads: Market is Changed

BofA Merrill Lynch High Yield Spreads by Rating

Rating	Dec-13	Dec-14	Dec-15	Mar-16	Trend
BB1	1.49	2.31	3.48	3.43	— — ■ ■
BB2	1.68	2.78	4.09	4.1	— — ■ ■
BB3	1.87	3.39	4.49	3.9	— — ■ ■
B1	2.17	3.76	4.83	4.53	— — ■ ■
B2	2.48	4.74	7.13	7.44	— — ■ ■
B3	3.37	6.16	8.1	7.9	— — ■ ■
CCC1	4.22	7.2	12.42	11.1	— — ■ ■
CCC2	5.61	9.7	16.49	16.93	— — ■ ■
CCC3	11.96	16.96	33.18	31.98	— — ■ ■
CC	19.94	17.36	53.45	65.95	— — ■ ■
C	168.83	88.11	52.79	72.49	■ — — —
D	N/A	N/A	13.51	95.59	— ■

Source: BofA Merrill Lynch (accessed via Bloomberg). Used with permission. See disclaimer on last page.



Energy Dislocation - High Yield Debt

Date	Valuation Weight	A Rating	B # of Energy Issues	C Weight	D Weighted Avg Price	E Yield to Worst	F OAS vs Govt	G Effective Yield	H 0~50	I 50~70	J 70~80	K > 80
9/30/2014	15.20%	BB1	28	6.84%	103.83	4.8	272	4.8	0%	0%	0%	8%
		BB2	74	27.15%	104.92	4.78	280	4.83	0%	0%	0%	20%
		BB3	47	13.00%	101.80	5.59	366	5.66	0%	0%	0%	13%
		B1	44	12.03%	99.20	6.6	475	6.66	0%	0%	0%	12%
		B2	44	10.57%	101.79	6.41	461	6.54	0%	0%	0%	12%
		B3	72	16.51%	100.52	7.35	551	7.42	0%	0%	0%	19%
		CCC1	35	9.98%	98.12	8.57	670	8.61	0%	0%	0%	9%
		CCC2	15	2.67%	99.03	9.95	844	10.02	0%	0%	0%	4%
		CCC3	5	0.53%	65.24	29.18	2768	29.03	0%	1%	0%	0%
		CC	1	0.02%	25.00	75.06	7158	72.7	0%	0%	0%	0%
		C	1	0.16%	72.00	11.37	1242	11.37	0%	0%	0%	0%
		Total	366		101.34	6.38	449	6.44	1%	1%	1%	98%
2/12/2016	9.60%	BB1	54	17.69%	67.07	13.77	1235	13.74	2%	2%	2%	2%
		BB2	59	27.98%	75.75	11.25	989	11.25	2%	4%	3%	7%
		BB3	28	10.64%	70.37	13.54	1226	13.53	2%	1%	2%	4%
		B1	22	7.08%	56.30	18.28	1700	18.28	1%	2%	1%	2%
		B2	44	11.36%	50.22	22.24	2098	22.24	4%	5%	1%	1%
		B3	39	11.69%	54.01	21.66	2043	21.68	3%	2%	3%	2%
		CCC1	47	6.59%	28.41	46.11	4518	46.23	11%	2%	0%	0%
		CCC2	27	2.92%	20.29	66.36	6572	66.36	6%	1%	1%	0%
		CCC3	23	2.82%	31.28	44.47	4396	44.87	5%	0%	0%	1%
		CC	11	0.74%	14.78	82.51	8198	82.85	3%	0%	0%	0%
		C	12	0.49%	8.82	113.14	11240	113	3%	0%	0%	0%
		D	1	0.00%	0.50	151.41	15065	151.41	0%	0%	0%	0%
		Total	367		52.64	20.78	1953	20.79	42%	24%	14%	20%
3/31/2016	12.29%	BB1	52	15.88%	86.77	7.76	619	7.75	0%	0%	3%	10%
		BB2	69	27.23%	85.88	8.57	706	8.5	0%	3%	3%	11%
		BB3	36	12.05%	92.74	7.32	601	7.3	0%	0%	0%	8%
		B1	26	6.50%	78.58	11.26	995	11.25	0%	1%	2%	3%
		B2	42	9.48%	76.42	12.79	1144	12.77	0%	2%	4%	3%
		B3	36	10.12%	71.34	14.63	1334	14.64	1%	1%	1%	6%
		CCC1	31	6.57%	51.63	26.64	2556	26.72	4%	2%	1%	0%
		CCC2	38	5.69%	38.75	34.61	3350	34.61	6%	3%	0%	0%
		CCC3	29	3.77%	41.54	31.83	3084	31.91	5%	1%	0%	1%
		CC	18	1.25%	17.73	70.13	6894	69.95	4%	0%	0%	0%
		C	22	0.48%	8.59	118.27	11803	118.94	5%	0%	0%	0%
		D	2	0.00%	0.08	538.18	57433	582.15	0%	0%	0%	0%
		Total	401		67.72	14.38	1302	14.37	27%	15%	14%	43%

Source: BofA Merrill Lynch (accessed via Bloomberg). Used with permission. See disclaimer on last page.

Slide updated 4/15/2016



Energy Dislocation - Investment Grade Fixed Income

Date	Valuation Weight	A Rating	B # of Energy Issues	C Weight	D Weighted Avg Price	E Yield to Worst	F OAS vs Govt	G Effective Yield	H 0~50	I 50~70	J 70~80	K > 80
9/30/2014	14.13%	AAA	7	0.86%	105.53	1.89	28	1.89	0%	0%	0%	1%
		AA2	43	7.23%	103.70	2.32	55	2.32	0%	0%	0%	5%
		AA3	56	6.40%	105.96	3.23	102	3.23	0%	0%	0%	6%
		A1	42	4.93%	103.93	3.11	122	3.11	0%	0%	0%	5%
		A2	75	10.40%	109.99	2.88	87	2.88	0%	0%	0%	9%
		A3	62	6.23%	109.66	3.51	119	3.5	0%	0%	0%	7%
		BBB1	151	16.99%	111.59	3.68	144	3.68	0%	0%	0%	17%
		BBB2	246	27.99%	107.42	4.22	218	4.24	0%	0%	0%	28%
		BBB3	193	18.44%	107.03	4.19	206	4.2	0%	0%	0%	22%
		Total	875		107.863	3.66	157	3.67	0%	0%	0%	100%

Date	Valuation Weight	A Rating	B # of Energy Issues	C Weight	D Weighted Avg Price	E Yield to Worst	F OAS vs Govt	G Effective Yield	H 0~50	I 50~70	J 70~80	K > 80
2/12/2016	11.55%	AAA	12	2.06%	101.15	2.08	86	2.08	0%	0%	0%	1%
		AA2	50	10.21%	99.05	2.97	168	2.97	0%	0%	0%	5%
		AA3	54	5.69%	103.01	3.11	169	3.1	0%	0%	0%	6%
		A1	56	8.86%	102.61	3.59	210	3.59	0%	0%	0%	6%
		A2	90	12.95%	98.23	4.2	271	4.2	0%	0%	0%	10%
		A3	69	6.82%	100.46	4.62	302	4.62	0%	0%	0%	8%
		BBB1	142	16.43%	89.83	6.07	443	6.07	0%	1%	3%	12%
		BBB2	184	15.83%	85.85	7.19	561	7.18	0%	4%	3%	13%
		BBB3	254	21.11%	82.90	8.05	658	8.03	1%	5%	5%	17%
		Total	911		92.013	5.53	404	5.53	1%	9%	11%	79%

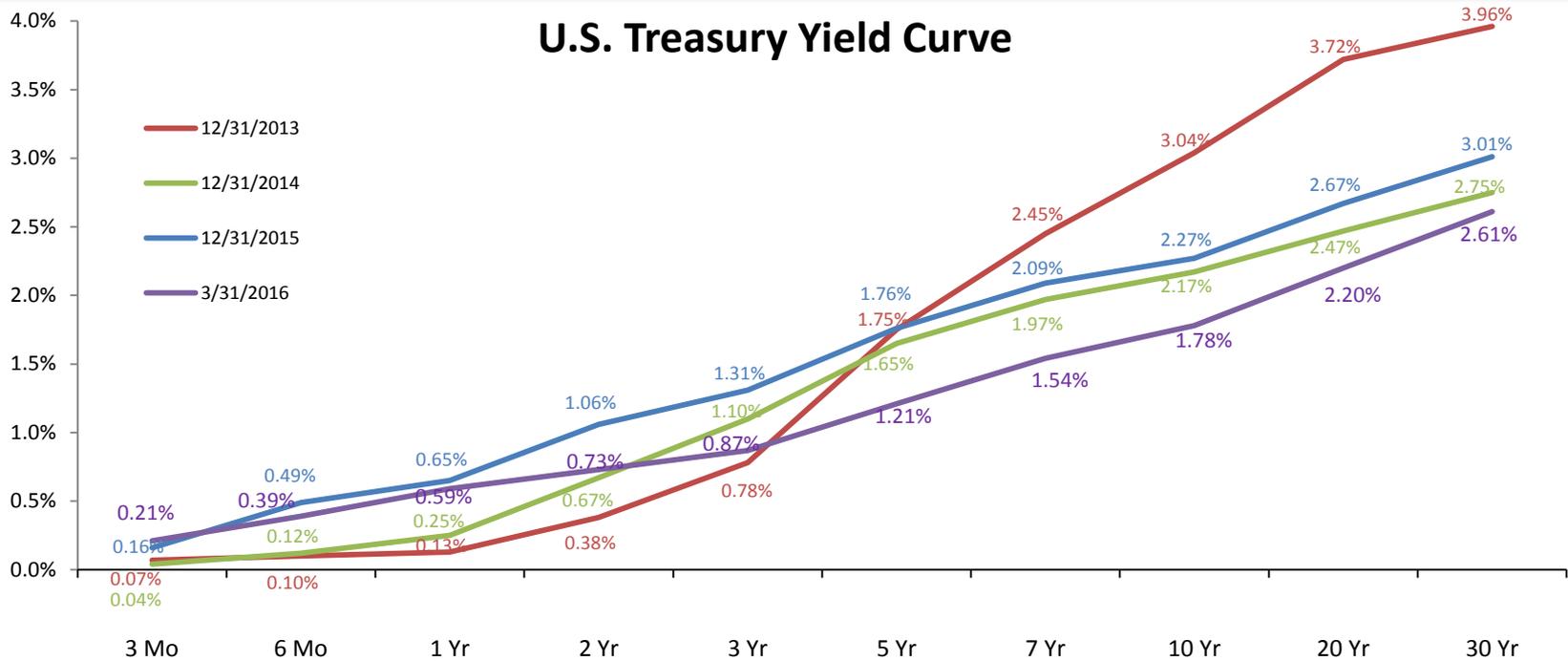
Date	Valuation Weight	A Rating	B # of Energy Issues	C Weight	D Weighted Avg Price	E Yield to Worst	F OAS vs Govt	G Effective Yield	H 0~50	I 50~70	J 70~80	K > 80
3/31/2016	11.73%	AAA	12	1.98%	102.48	1.86	64	1.86	0%	0%	0%	1%
		AA2	15	3.25%	101.86	1.7	65	1.69	0%	0%	0%	2%
		AA3	88	12.34%	104.68	2.67	123	2.67	0%	0%	0%	10%
		A1	59	9.08%	104.09	3.31	180	3.31	0%	0%	0%	7%
		A2	85	12.13%	103.72	3.49	193	3.49	0%	0%	0%	10%
		A3	46	4.64%	104.22	3.82	225	3.81	0%	0%	0%	5%
		BBB1	163	19.74%	99.42	4.77	309	4.77	0%	0%	0%	18%
		BBB2	145	12.48%	94.11	5.62	402	5.62	0%	1%	1%	14%
		BBB3	259	23.85%	94.23	5.91	437	5.89	0%	1%	2%	26%
		Total	872		99.289	4.4	286	4.39	0%	2%	4%	94%

Source: BofA Merrill Lynch (accessed via Bloomberg). Used with permission. See disclaimer on last page.

Slide updated 4/15/2016



Interest Rate Environment



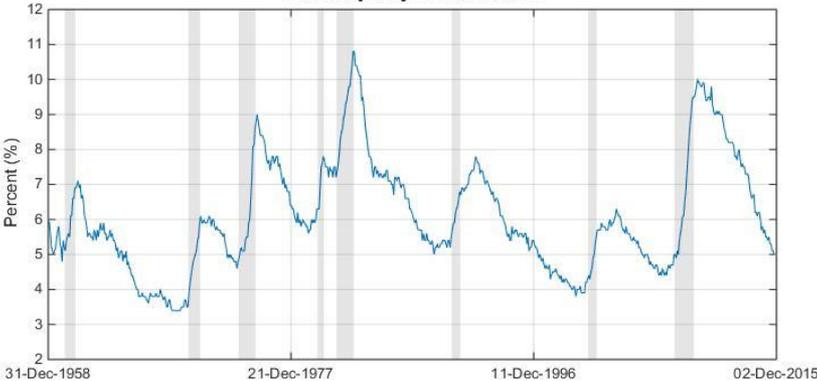
12-Month Ending	US 10-year Treasury Yields	US Treasuries	Investment Grade	High Yield	Bank Loans	Distressed Securities	Relative Value	S&P 500
Oct-94	+241bps	-4.67%	-4.77%	0.82%	N/A	8.62%	7.44%	3.72%
Jan-00	+194bps	-2.95%	-3.20%	1.34%	N/A	13.89%	12.17%	9.38%
May-04	+115bps	-2.71%	-0.16%	11.53%	7.65%	17.98%	5.66%	15.49%
Jun-15	+111bps	-1.71%	-2.00%	5.36%	6.26%	12.46%	10.51%	7.94%

Source: U.S. Department of the Treasury , St. Louis Fed

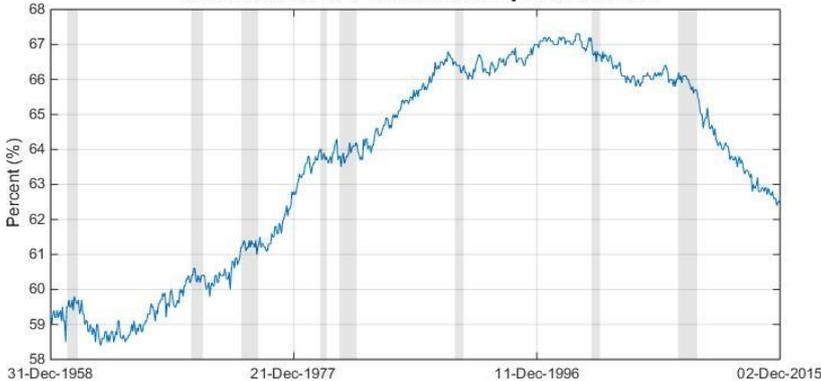


Economic Environment

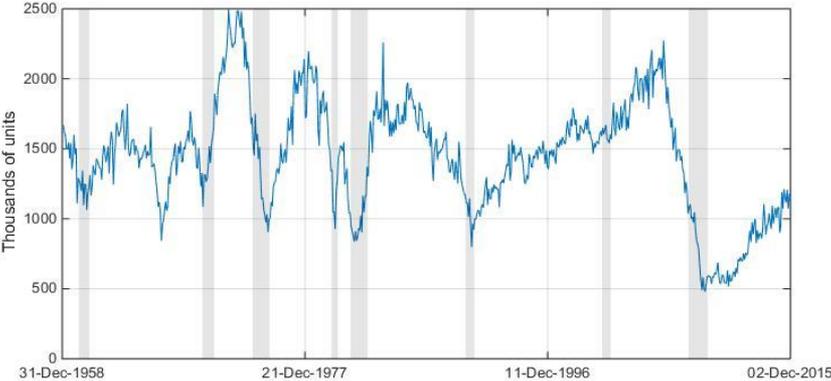
Unemployment Rate



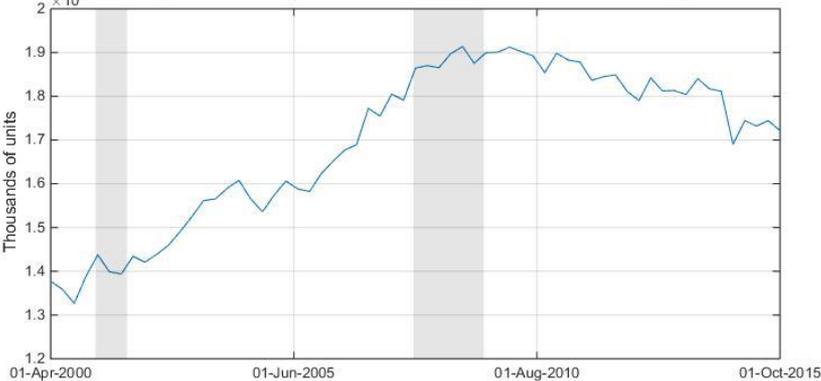
Civilian Labor Force Participation Rate



Housing Starts: New Privately Owned Housing Units Started



Housing Inventory Estimate: U.S. Vacant Housing Units

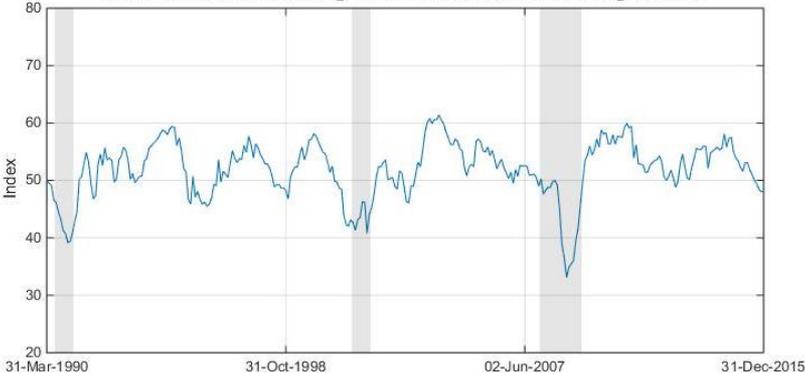


Source: Federal Reserve Bank of St. Louis

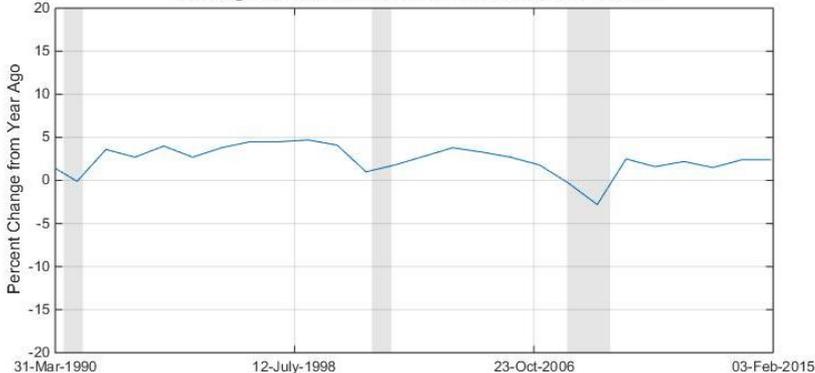


Economic Environment (continued)

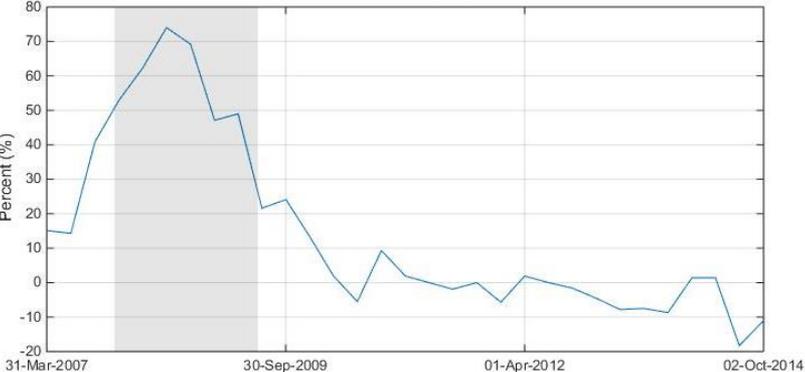
ISM Manufacturing & Non-manufacturing Index



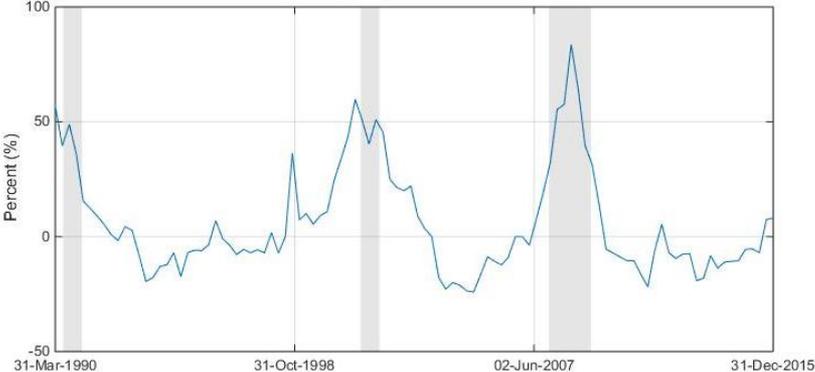
Change in Real Gross Domestic Product



Net Percentage of Domestic Banks Tightening Standards for Prime Mortgage Loans



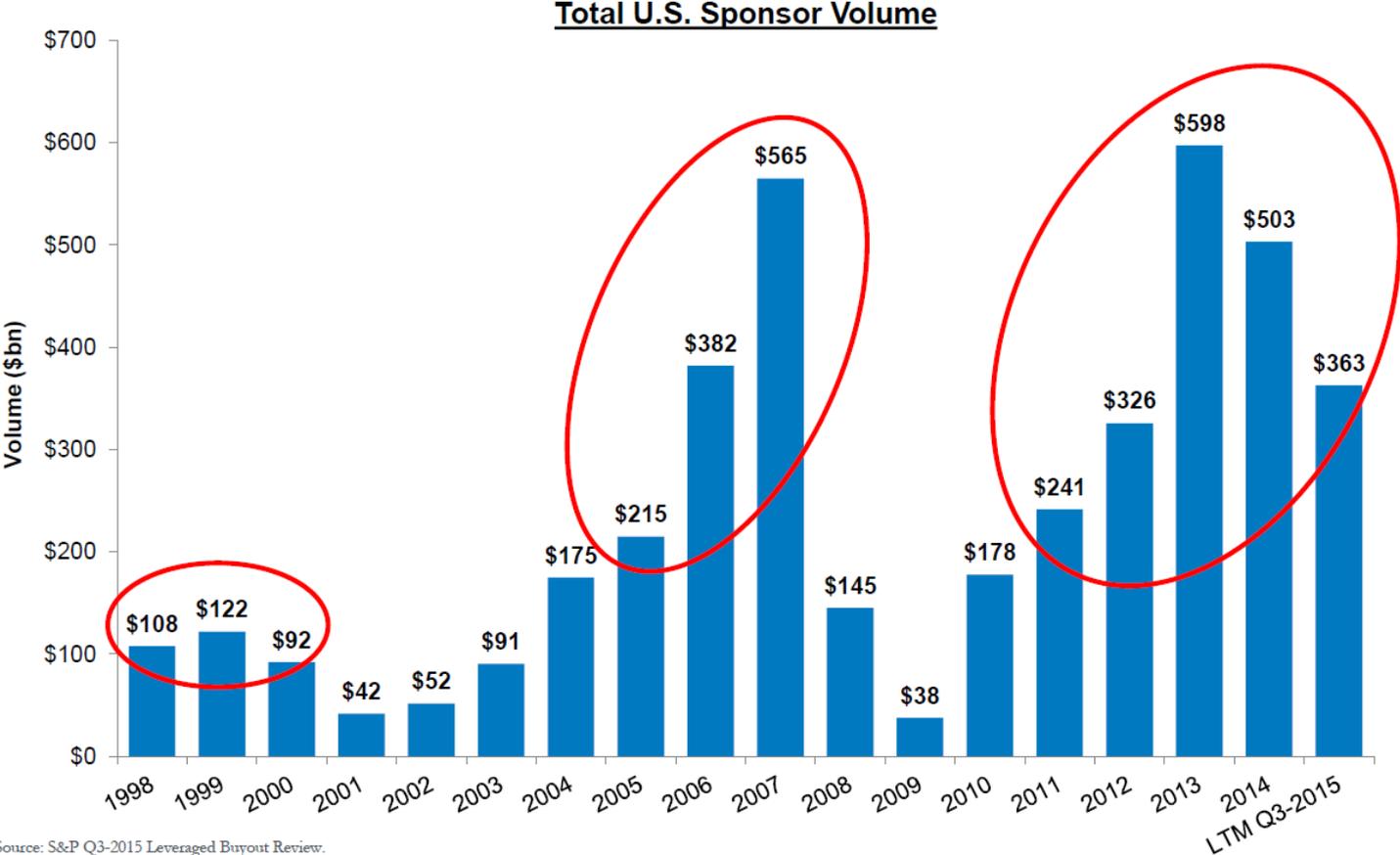
Net Percentage of Domestic Banks Tightening Standards for Loans to Large and Middle-Market Firms



Source: Federal Reserve Bank of St. Louis



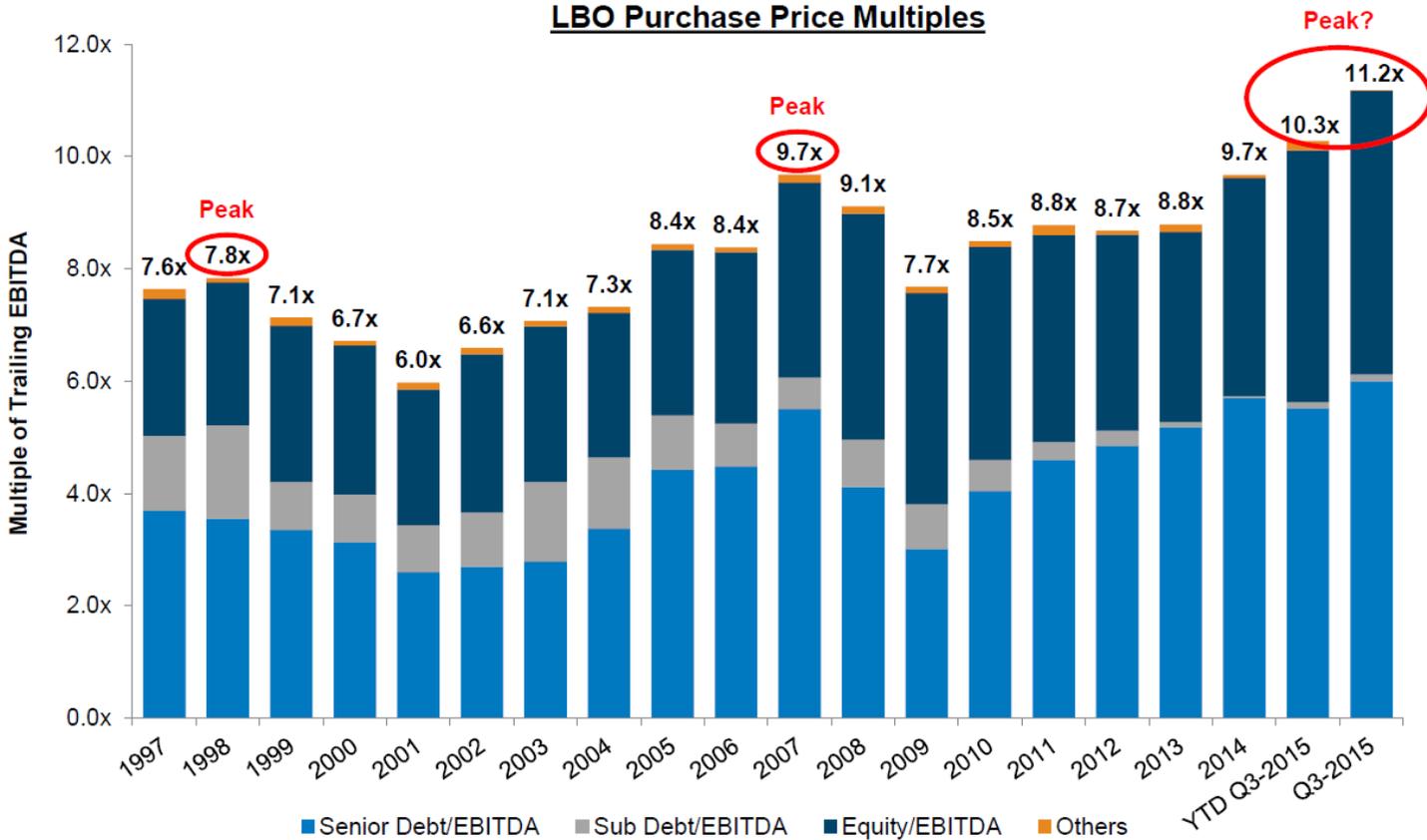
Credit Market Landscape: Sponsor Volumes



Source: Centerbridge. Used with permission.



Credit Market Landscape: Multiples



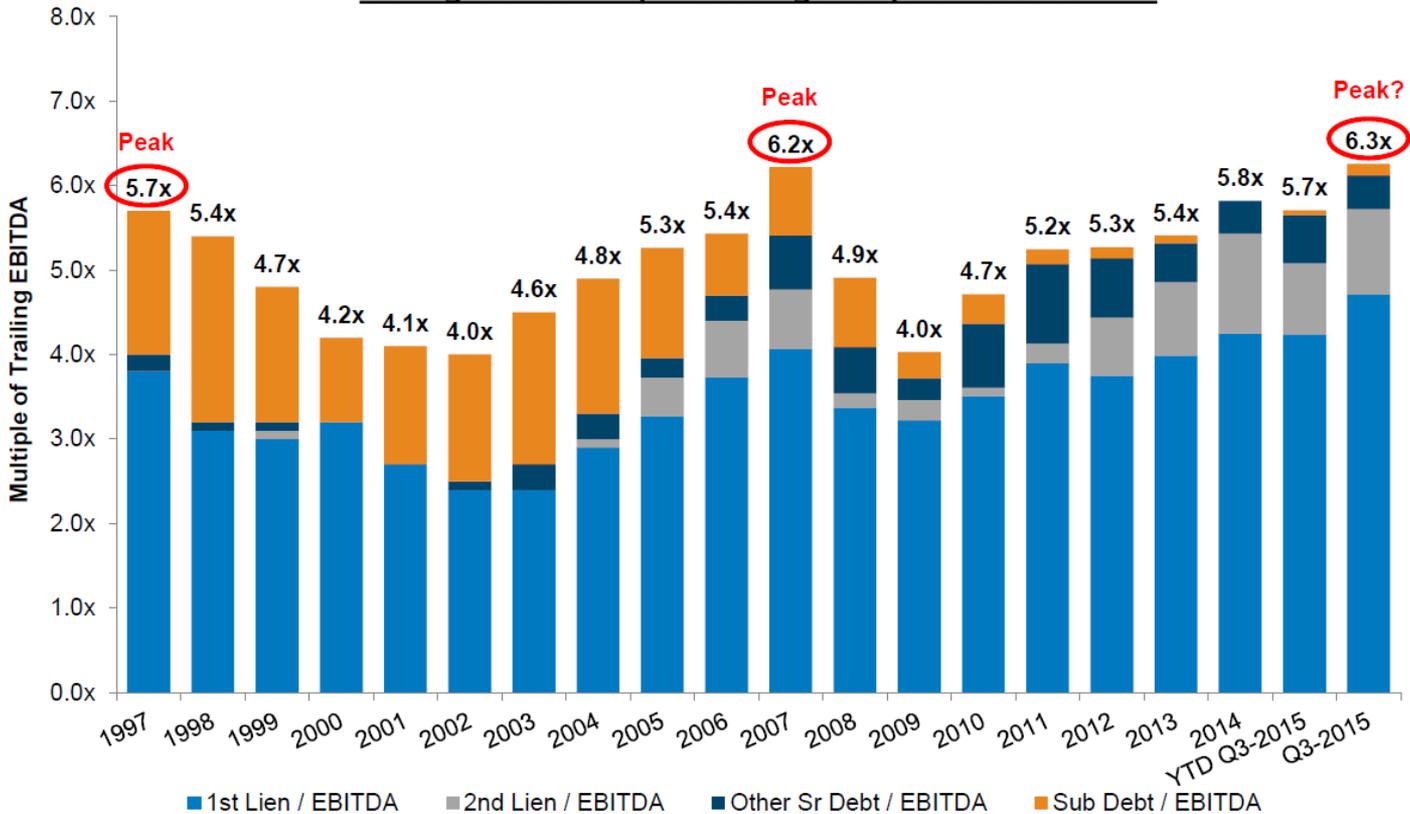
Source: S&P Q3-2015 Leveraged Buyout Review.
 Note: Represents total sources (including fees)/pro forma trailing EBITDA. Prior to 2003 media, telecom, energy and utility deals, were excluded. After 2003, all outliers, regardless of the industry, are excluded.

Source: Centerbridge. Used with permission.



Credit Market Landscape: Leverage

Average Debt Multiples of Large Corporate LBO Loans

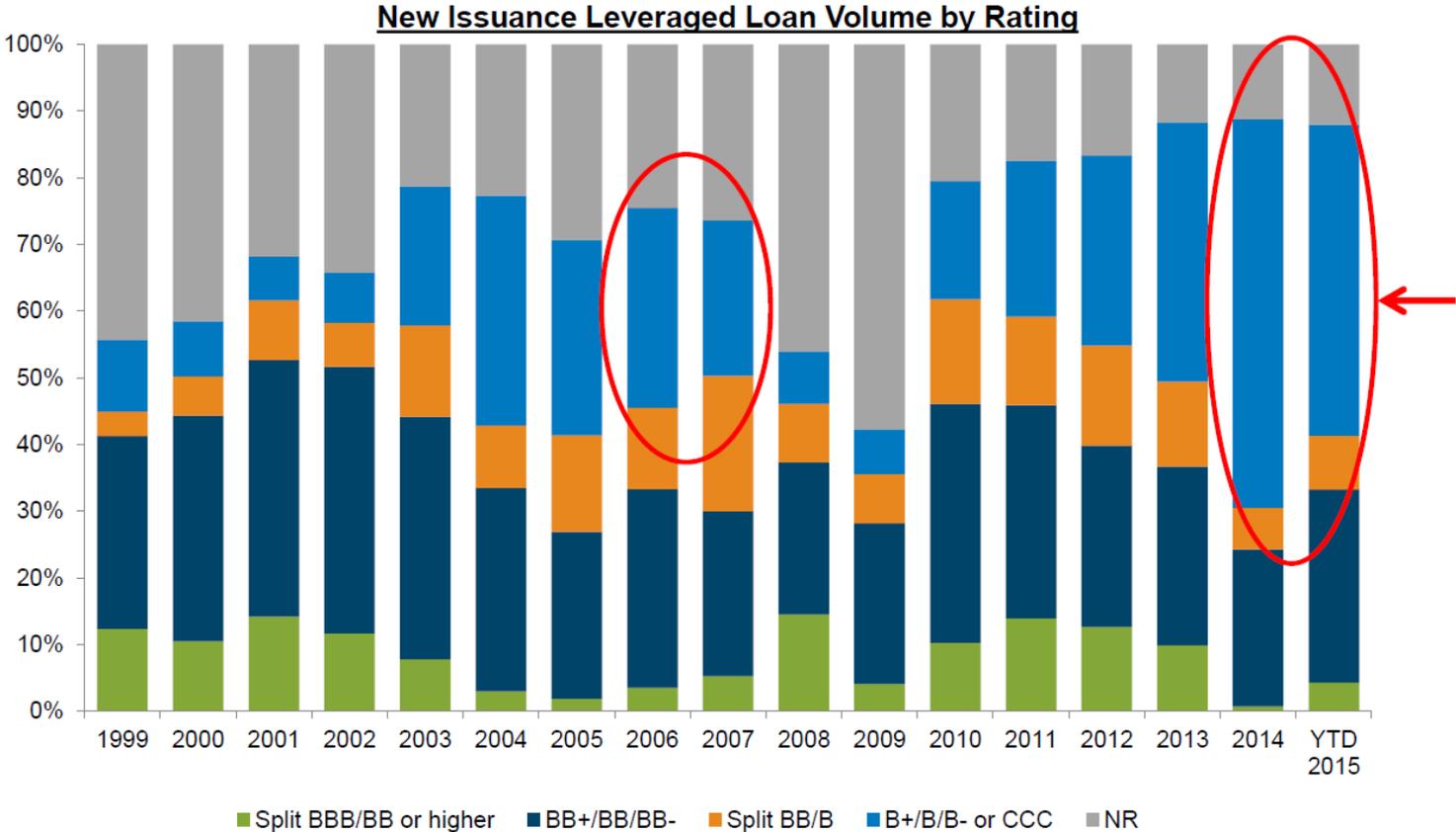


Source: S&P Q3-2015 Leveraged Buyout Review.
 Note: Defined as issuers with EBITDA of more than \$50 million. Excludes media and telecom loans. EBITDA adjusted for prospective cost savings or synergies.

Source: Centerbridge. Used with permission.



Credit Market Landscape: Loan Issuance

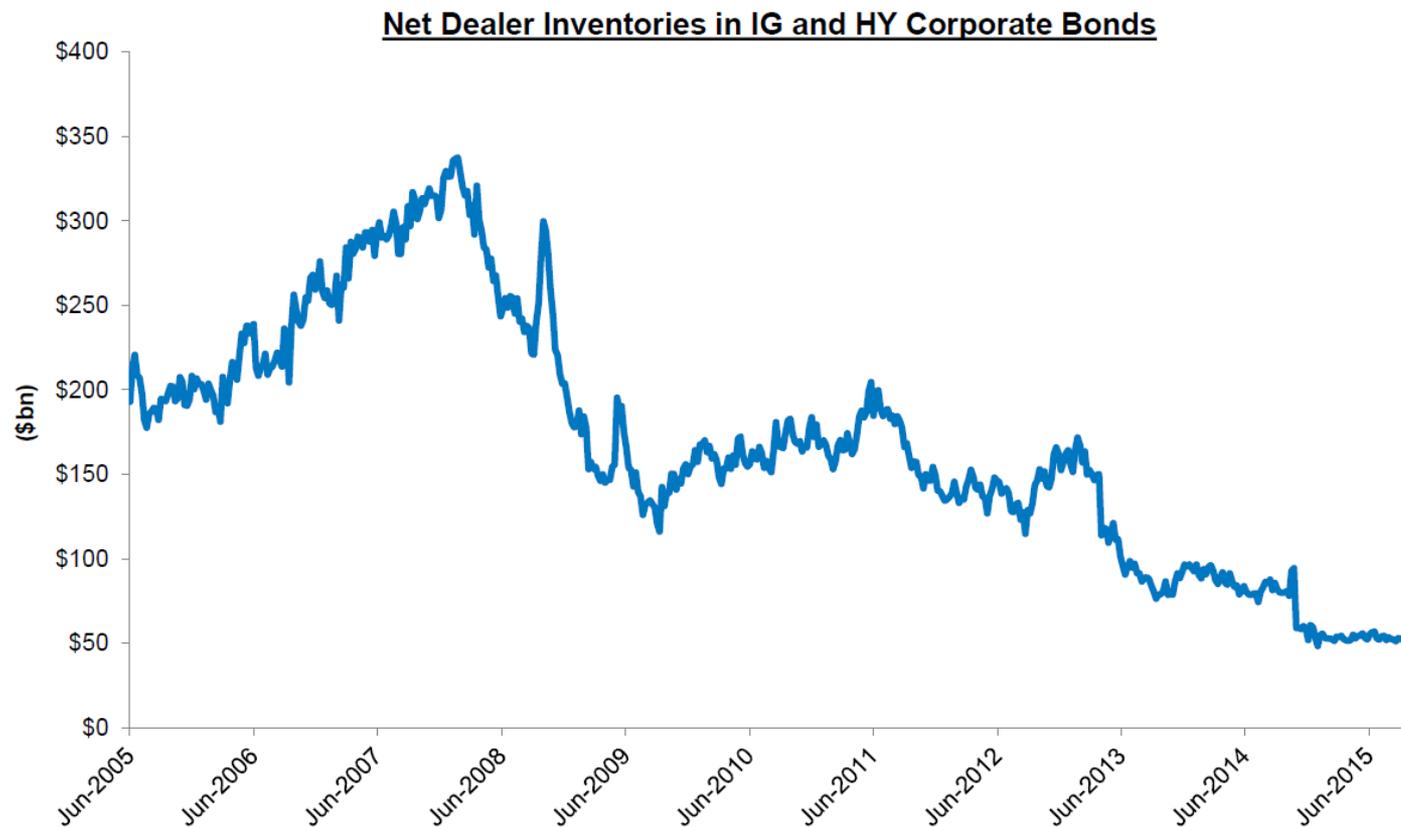


Source: Morgan Stanley, S&P.

Source: Centerbridge. Used with permission.



Credit Market Landscape: Inventories

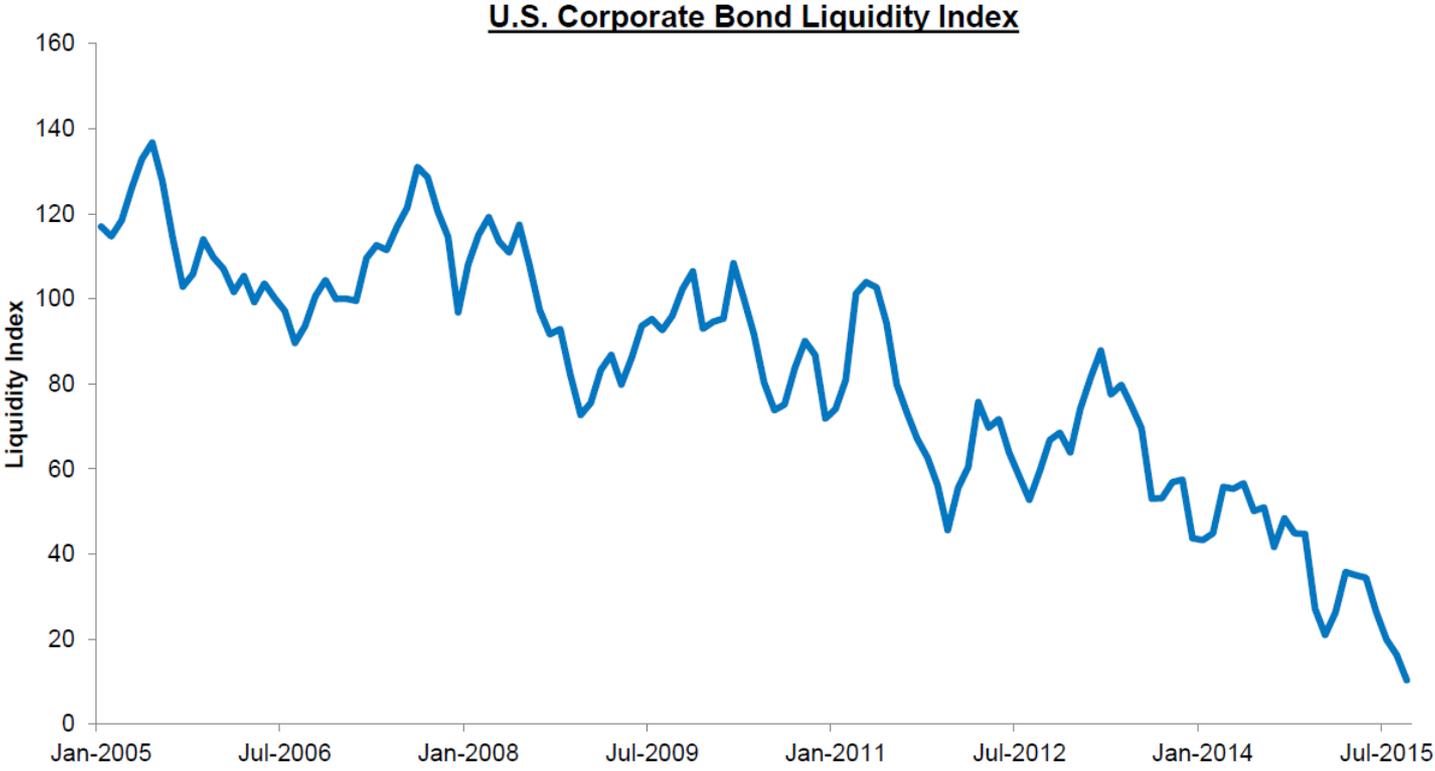


Source: Barclays, Federal Reserve.

Source: Centerbridge. Used with permission.



Credit Market Landscape: Corporate Liquidity

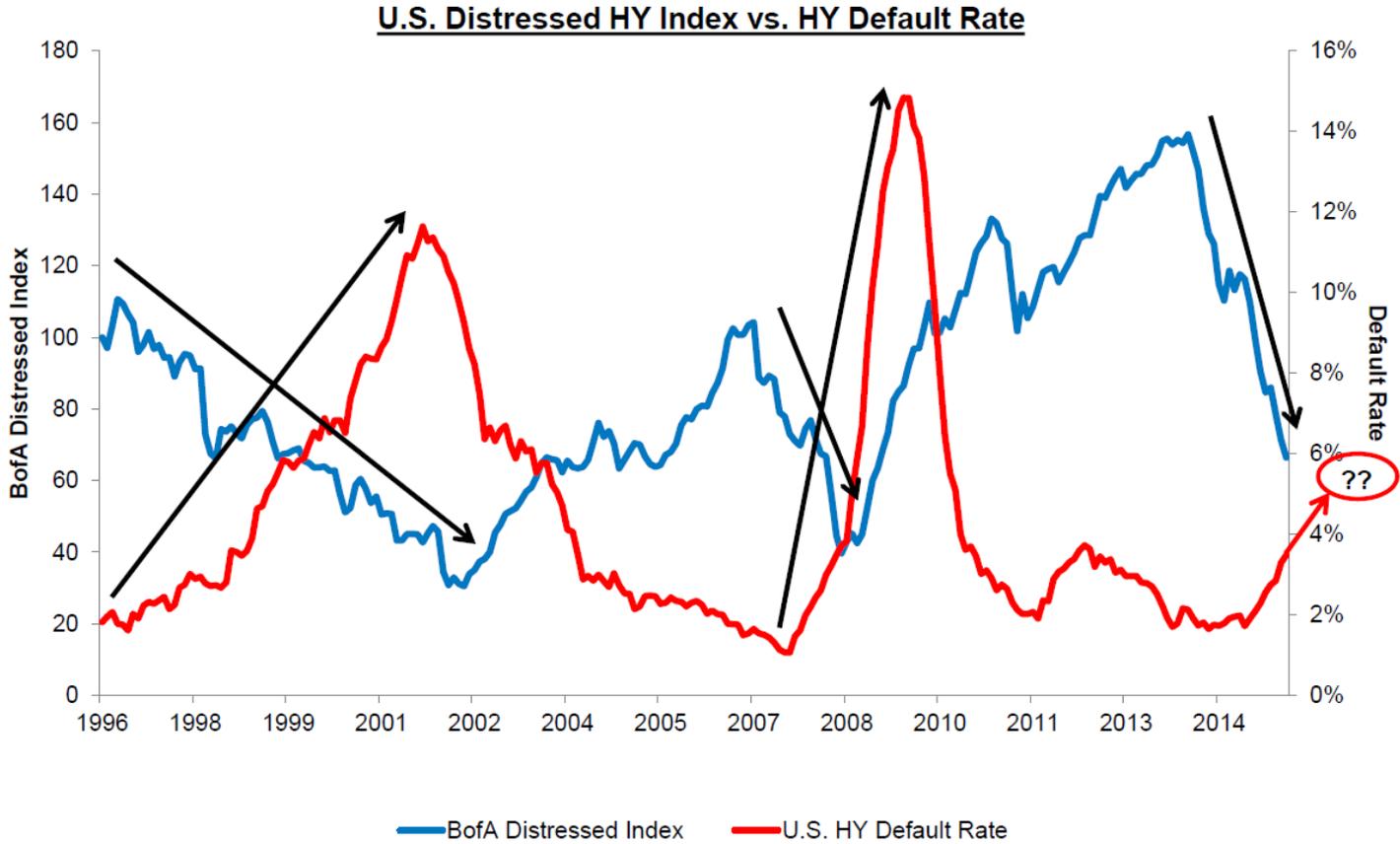


Source: RBS, Bloomberg, SIFMA, MarketAxess, Federal Reserve Bank of New York.
Note: U.S. corporate bonds index based on trading volumes, dealer inventories and bid-ask spreads. For the index, 100 = December 2006.

Source: Centerbridge. Used with permission.



Credit Market Landscape: HY Default Rate



Source: BAML, Bloomberg. As of February 4, 2016.

Source: Centerbridge. Used with permission.

Note: The BOAML Distressed High Yield index is from BofA Merrill Lynch and is used with permission. See disclaimer on last page.

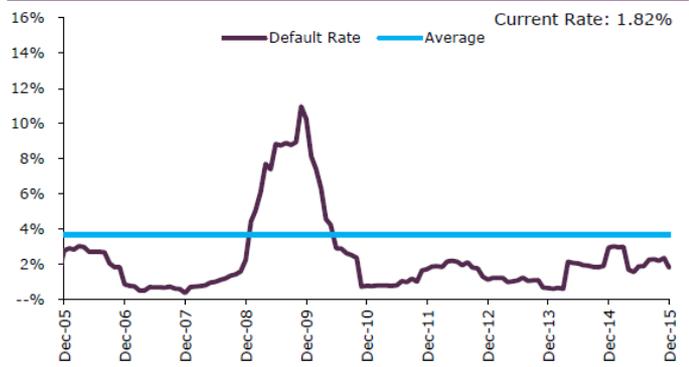


Credit Market Landscape: Long-term HY Default Rate

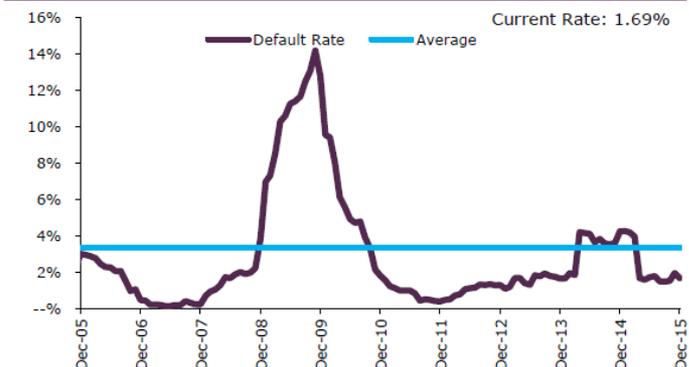
Source: JPMorgan, as of Dec 2015

Default and Recovery Rates – U.S.

LTM High-Yield Default Rate (%)



LTM 1st Lien Default Rate (%)



LTM High-Yield Recovery Rate (%)



LTM 1st Lien Recovery Rate (%)



Source: KKR. Used with permission.

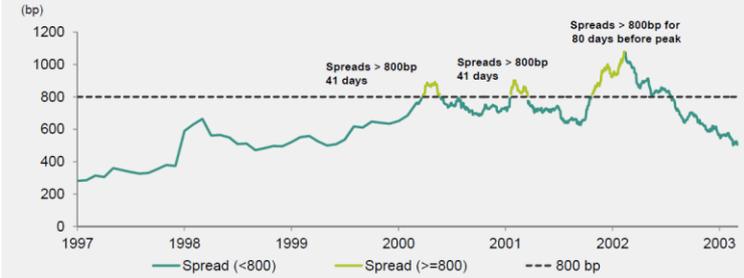


Credit Market Landscape: HY Spread & Returns

In 2002, High Yield Above 800 bps for 80 Days Before the Peak

Time at Peak Spreads

HY Spreads During 1997 - 2002 Bear Market

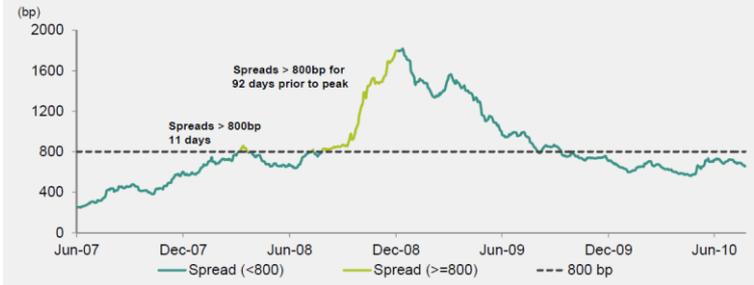


Source: Morgan Stanley Research, the Yield Book, Moody's, Bloomberg
As of January 19, 2016.

Even in the Crisis, Investors Could Only Buy at Better Levels than Today for 92 Days Before the Peak

Time at Peak Spreads

HY Spreads During 2007 - 2008 Bear Market



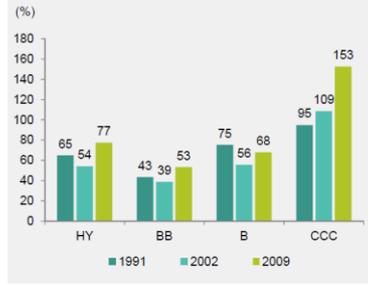
Source: Morgan Stanley Research, the Yield Book, Moody's, Bloomberg
As of January 19, 2016.

High Yield Returns After the Bear Market Peak

HY Total Returns 12M After Spreads Peaked



HY Total Returns 24M After Spreads Peaked



1991 peak - 12/31/1990, 2002 peak - 10/10/2002, 2008 peak - 12/5/2008
Source: Morgan Stanley Research, the Yield Book
As of January 19, 2016.

Performance as High-Yield Spreads Cross 800 bps

	High-Yield Annualized Returns				
	1 Year	2 Year	3 Year	4 Year	5 Year
Average	25.6%	20.3%	17.2%	14.9%	13.7%
Median	24.5%	19.0%	14.9%	13.5%	12.9%
High	61.4%	36.9%	25.9%	23.5%	20.5%
Low	(20.1)%*	3.2%	9.9%	7.4%	8.5%
Positive Periods	40	42	42	42	41
Negative Periods	2	-	-	-	-

*Returns for the next 12 months starting March 2008.
As of February 16, 2015.
Source: J.P. Morgan

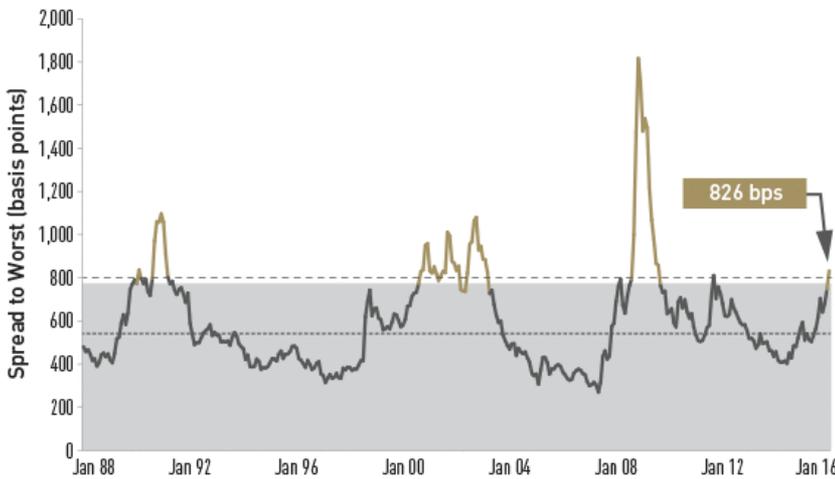
Source: AllianceBernstein. Used with permission.



Credit Market Landscape: HY Spread & Returns

Chart 1. High-Yield Spreads Rarely Have Been Higher

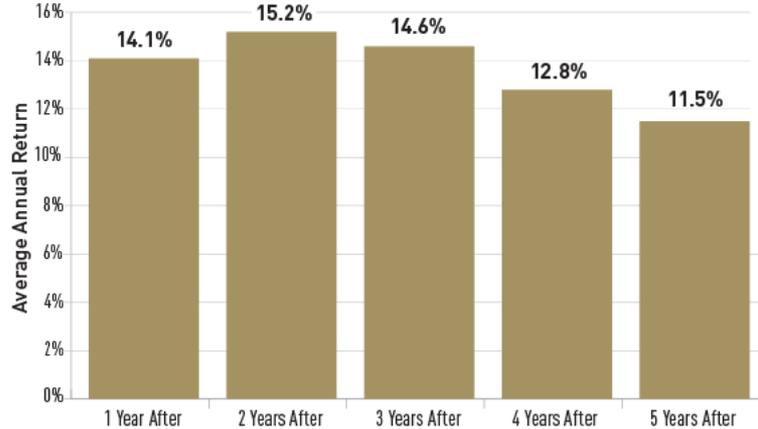
U.S. high-yield corporate bond spread over Treasuries, January 31, 1986–January 29, 2016



Source: Credit Suisse. Yield spreads represented by the Credit Suisse High Yield Index.

Chart 2. How Have Investors Fared after Spreads Exceed 800 Basis Points?

Average return on the Credit Suisse High Yield Index during indicated periods after spreads have reached 800 bps



800 bps Spread Crossed	1 Year After	2 Years After	3 Years After	4 Years After	5 Years After
February 1990	10.3%	23.1%	20.2%	19.1%	15.1%
September 1990	36.9%	28.4%	24.0%	18.5%	17.6%
September 2000	-4.9%	-1.1%	7.8%	9.1%	8.6%
September 2002	20.8%	16.2%	14.1%	11.8%	11.8%
September 2008	3.8%	12.2%	10.9%	11.5%	10.7%
September 2011	17.9%	12.4%	10.6%	6.8%	5.2%*

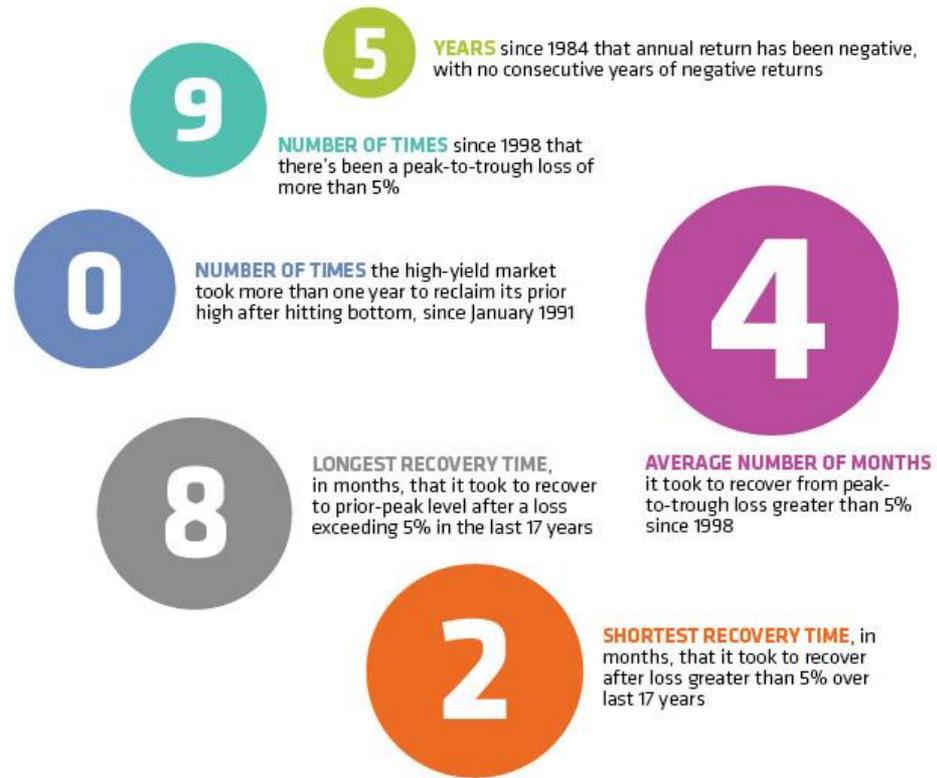
Source: Morningstar. *As of January 31, 2016.

Source: Lord Abbett. Used with permission.



Credit Market Landscape: HY Spread & Returns

US HIGH YIELD BY THE NUMBERS



Past performance is not a guarantee of future results. Individuals cannot invest directly in an index. As of December 31, 2015; US high yield is represented by the Barclays US High Yield Index. Source: Barclays and AB

Source: AllianceBernstein. Used with permission.



Credit Market: Bond and Loan Default Rates

Figure 4: Bond and loan default rates move higher in March

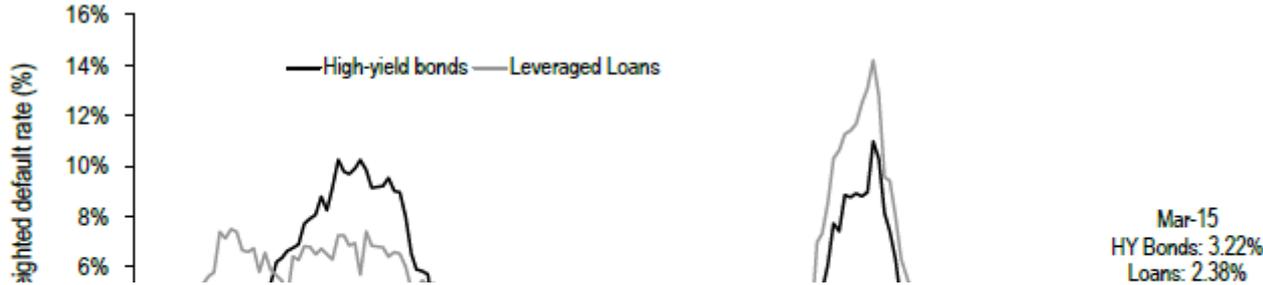
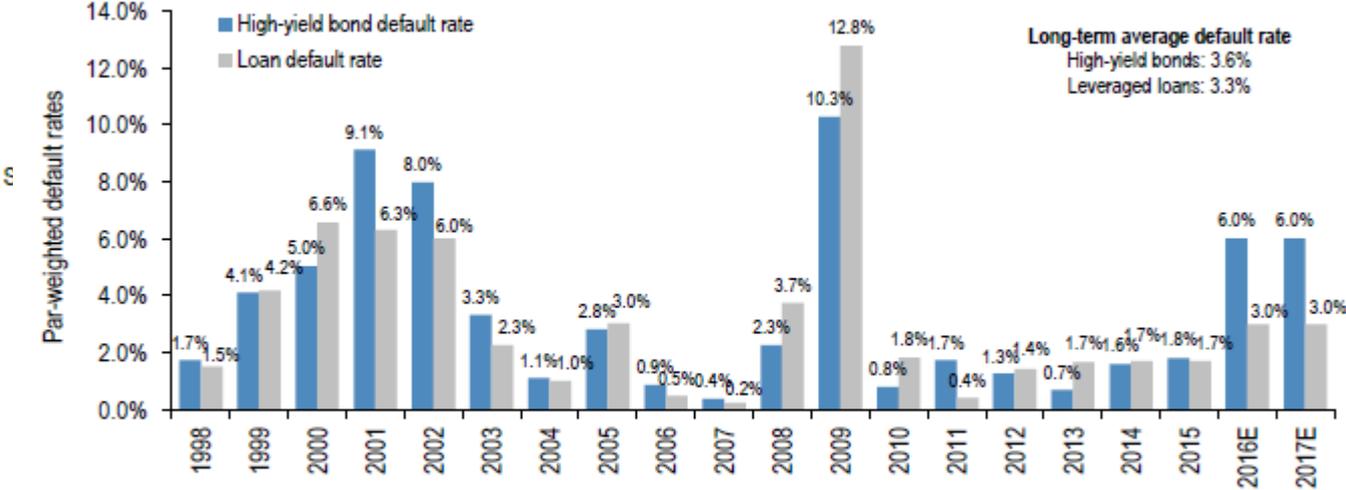


Figure 5: High-yield bond and leveraged loan default rate forecast



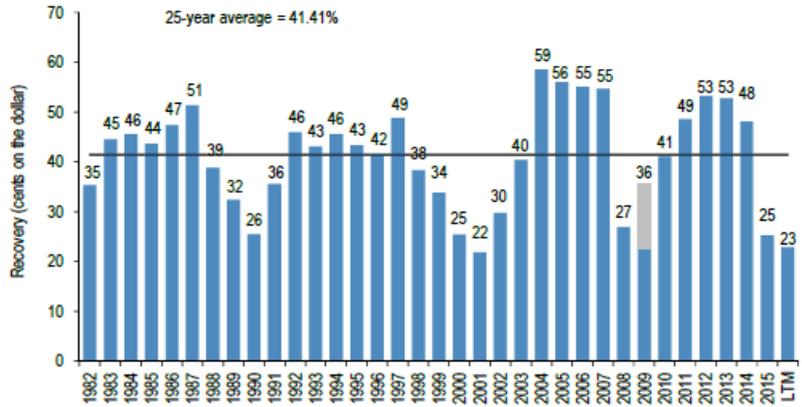
Note: 2014 default rates exclude TXU's \$36.1bn default.
Source: J.P. Morgan.

Source: JP Morgan Default Monitor. Used with permission.



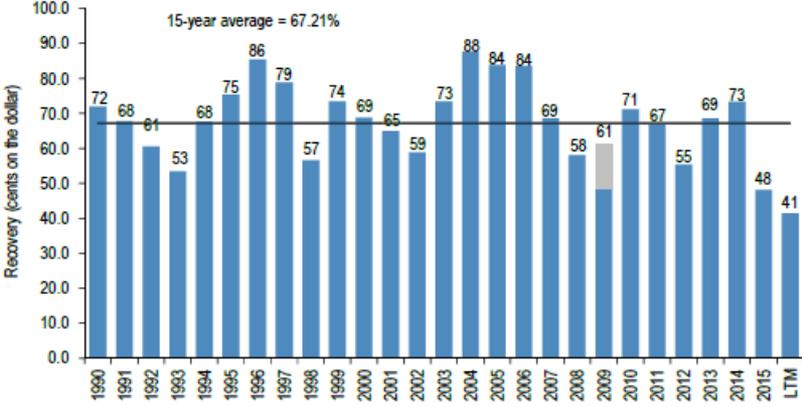
Credit Market: Bond and Loan Recovery Rates

Bond issuer-weighted recovery rates



Note: Recoveries in 2009 were 22.4 based on prices 30-days post default and were 35.7 based on year-end prices.
 Source: Moody's Investors Services; J.P. Morgan

First-lien leveraged loan issuer-weighted recovery rates



Note: Recoveries in 2009 were 48.3 based on prices 30-days post default and were 61.4 based on year-end prices.
 Sources: Moody's Investors Service; J.P. Morgan; Markit

Source: JP Morgan Default Monitor. Used with permission.



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