



REUTERS/Thomas Peter

# LEVERAGED LOAN MONTHLY

THOMSON REUTERS LPC

DECEMBER 2016

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# LEVERAGED LOAN MONTHLY

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CLO Market Analysis

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# KEY POINTS

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## Primary Market:

- Leveraged loan issuance climbed to \$875 billion in 2016, up 12% from a year earlier and the third biggest year on record.
- The increase in issuance in 2016 was driven by a sharp jump in refinancing activity, which posted a 25% gain. In contrast, new money volume edged up by only 1%.
- Breaking out leveraged loan volume into pro rata issuance and institutional issuance, we see that the increase in leveraged loan deal flow was driven by a surge in institutional issuance, which was up 44% year over year. Pro rata issuance in contrast was down 7% .
- As in the broader leveraged loan market, it was mainly refinancing activity that drove institutional loan issuance higher. Refinancing volume soared by 85% to \$221 billion. New money institutional issuance at \$200 billion was up 14% compared to a year earlier.
- M&A leveraged loan volume dropped by 18% in 2016 to \$270 billion. That said, there were differences in the LBO and non-LBO segments. LBO issuance was up 20% to \$88 billion, while the larger non-LBO category was down 29% to \$183 billion.
- The technology and healthcare share of institutional loan debt outstanding grew in 2016. In turn, technology (13%) and healthcare (10%) remain the biggest sectors in the market, followed by retail (7%).
- Three companies defaulted in December, with nearly \$800 million of institutional loan debt. They were TwentyEighty Inc. (\$359 million), La Paloma Generating Co. LLC (\$411.7 million) and Cumulus Media (\$28.7 million). This brought institutional loan default volume to \$17.5 billion in 2016, up from \$16.4 billion in 2015. Energy (\$6.4 billion), Metals & Mining (\$3.9 billion) and Broadcasting & Media (\$2.3 billion) were the top sectors in terms of defaults in 2016. The trailing twelve month loan default rate fell to 1.8%.

# KEY POINTS

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• Average debt to EBITDA levels increased to 6.08 times for broadly syndicated LBO transactions in 2016, and declined to 5.33 times for institutional middle market LBOs. On a quarterly basis, large corporate LBO leverage increased to 6.17 times in 4Q16.

## Secondary Market:

• Loans posted their best performance in a few years, with open-end loan funds gaining 8.6% in 2016, while the S&P/LSTA loan index returned 10.2%.

• Secondary market prices climbed again in December. Institutional term loans finished the month up 48 bps to 97.09, while the flow name SMi100 increased by 35 bps to 99.03. For the year, Institutional term loans gained 401 bps and flow names climbed 242 bps.

• As of month-end December, 55% of loans are priced at 100-plus, up from 43% a month earlier. On a dollar weighted basis the par-plus share is an even loftier 67%. At the lower end of the price scale, 9% of credits are bid below 90 cents on the dollar.

• European flow names remain highly priced though they edged 11 bps lower in December to an average bid of 100.46. In full year 2016, European liquid names were up 147 bps.

• The share of par-plus loans in U.S. CLOs climbed to 65% in December. At the other end of the price spectrum, the share of loans bid below 90 cents on the dollar fell to 6%. In European deals, the share of par-plus loans is now at 72%.

• In terms of U.S. new issue CLO league table volumes, Citi led the way in arranging deals, with Credit Suisse Asset Management marginally ahead of GSO Blackstone in managing new deals, and U.S. Bank was the top trustee. In Europe, Citi was the top arranger and GSO Blackstone topped the manager table.

# KEY POINTS

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## CLOs / Loan Funds:

- U.S. CLO issuance fell for the third straight year, amounting to \$72.4 billion in 2016 (157 deals), down from \$98.5 billion in 2015. That said, Issuance increased in each quarter of the year, totaling \$26.3 billion in 4Q16.
- U.S. refinancing and reset volume surged to over \$31 billion in 4Q16, taking the full year volume to \$39.4 billion from 94 deals. Refinancing volume (excluding resets) amounted to nearly \$20 billion, with resets totaling \$19.5 billion.
- AAA discount margins have tightened in both the U.S. and Europe in recent months, though the tightening is more pronounced on European deals. U.S. CLO AAA discount margins averaged 146 bps in December compared to 97 bps for European deals.
- European CLO issuance climbed €16.8 billion (based on 41 deals) in 2016, up from €13.8 billion (34 deals) in 2015. Though well below pre-crisis highs, it was still the highest level of issuance since 2007.
- European CLO refinancing volume was €3.9 billion, with all this activity occurring since late September.
- Assets under management increased to \$445 billion for U.S. CLOs and held relatively steady at over €67 billion for European CLOs.
- Loan funds posted their sixth straight month of inflows, adding \$6.8 billion in December. This took inflows to \$7.8 billion for 2016, the first positive year since 2013.
- Loan mutual fund & ETF assets under management (market value) increased to \$136 billion in December.



REUTERS/Petar Kujundzic

## LEVERAGED LOAN MARKET OVERVIEW

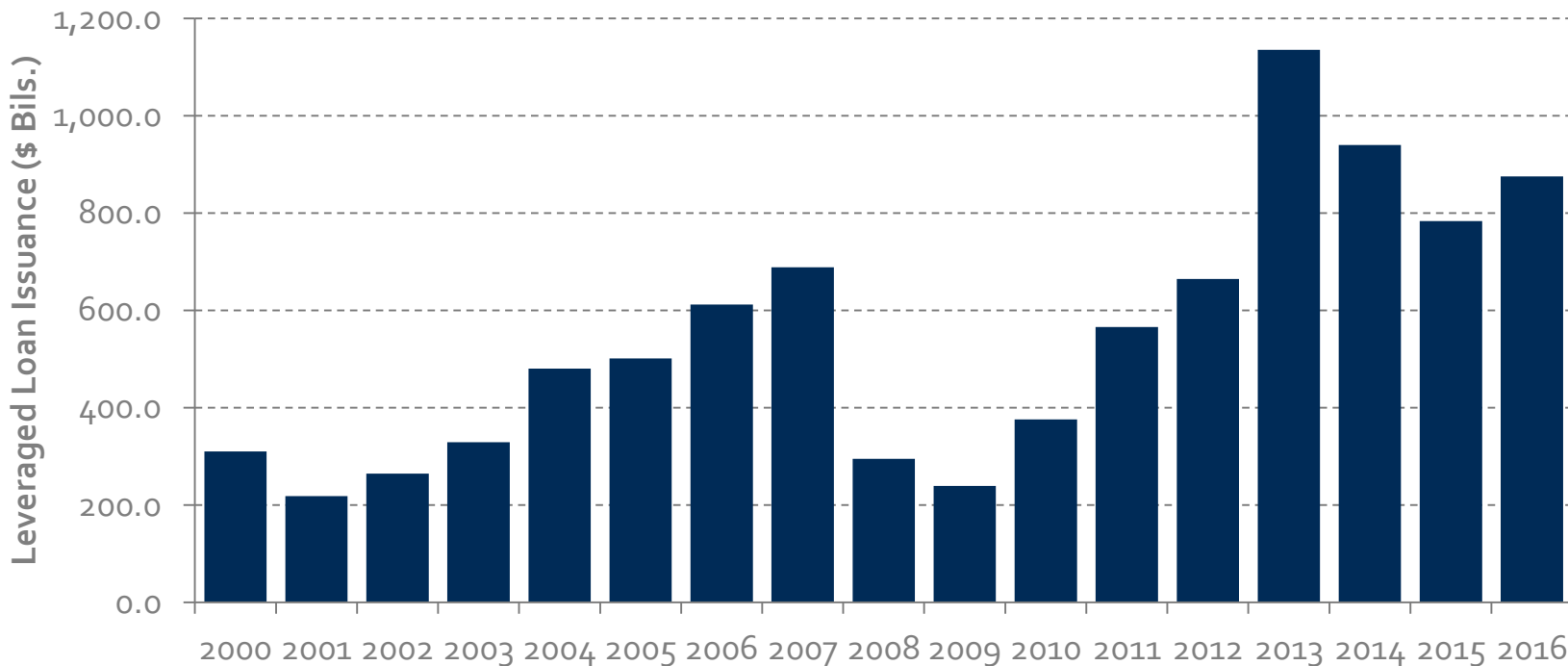
\*2016 loan volumes are based on the most recently available data and is subject to updates throughout the quarter.



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# LEVERAGED LOAN ISSUANCE

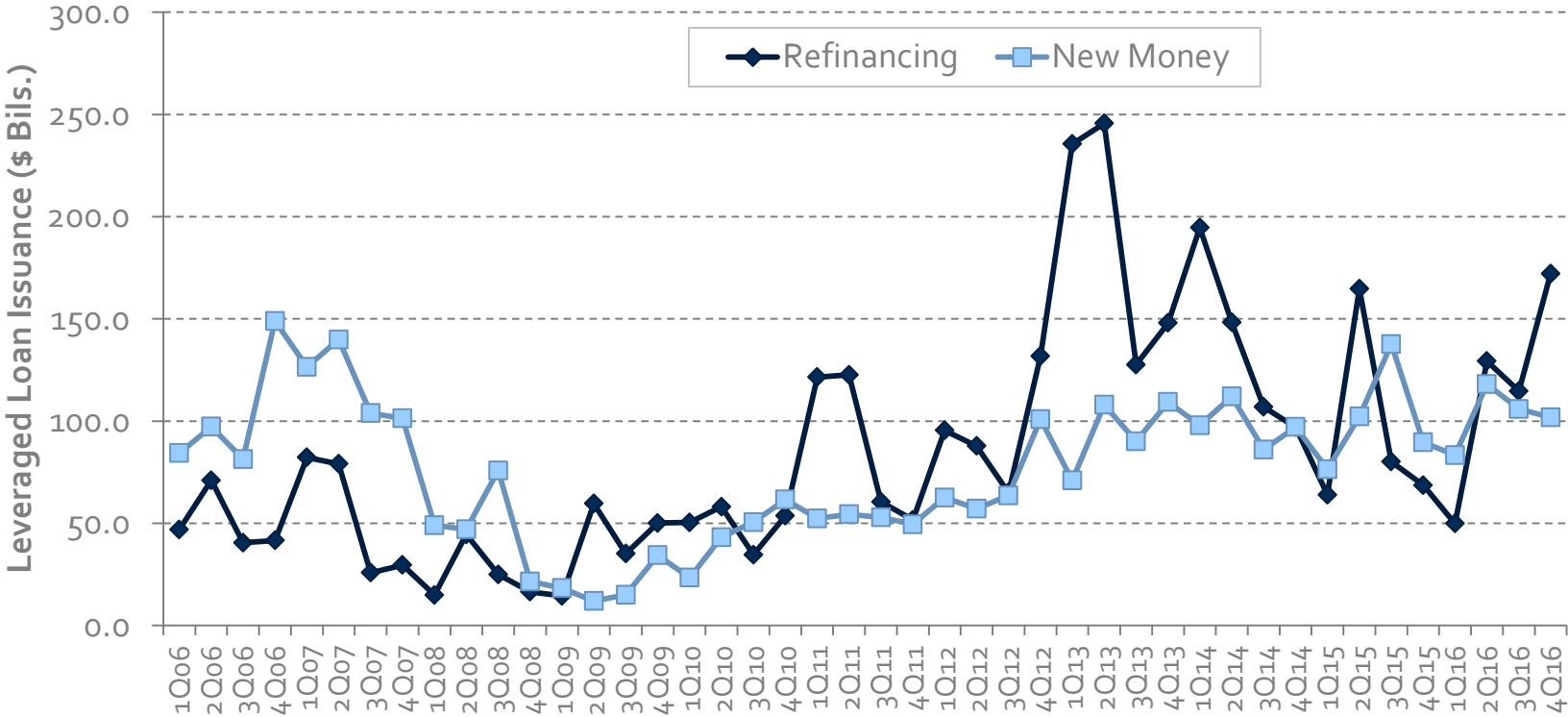
U.S. LEVERAGED LOAN ISSUANCE



- Leveraged loan issuance climbed to \$875 billion in 2016, up 12% from a year earlier and the third biggest year on record.

# LEVERAGED LOAN ISSUANCE: NEW MONEY VS. REFINANCING

### U.S. LEVERAGED LOAN ISSUANCE

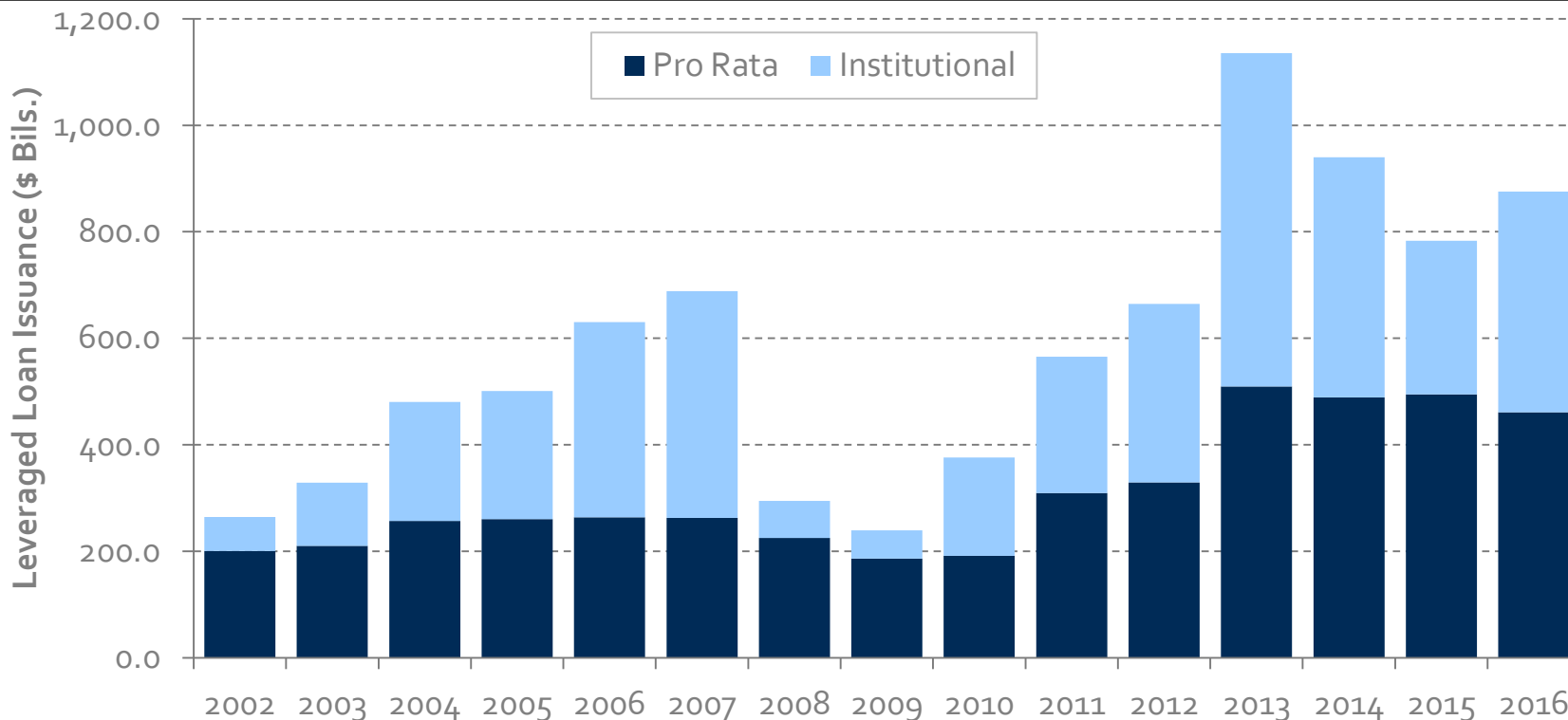


- The increase in leveraged loan issuance in 2016 was driven by a sharp jump in refinancing activity, which posted a 25% gain.
- In contrast, new money volume edged up by only 1%.



# LEVERAGED LOAN ISSUANCE: PRO RATA VS. INSTITUTIONAL

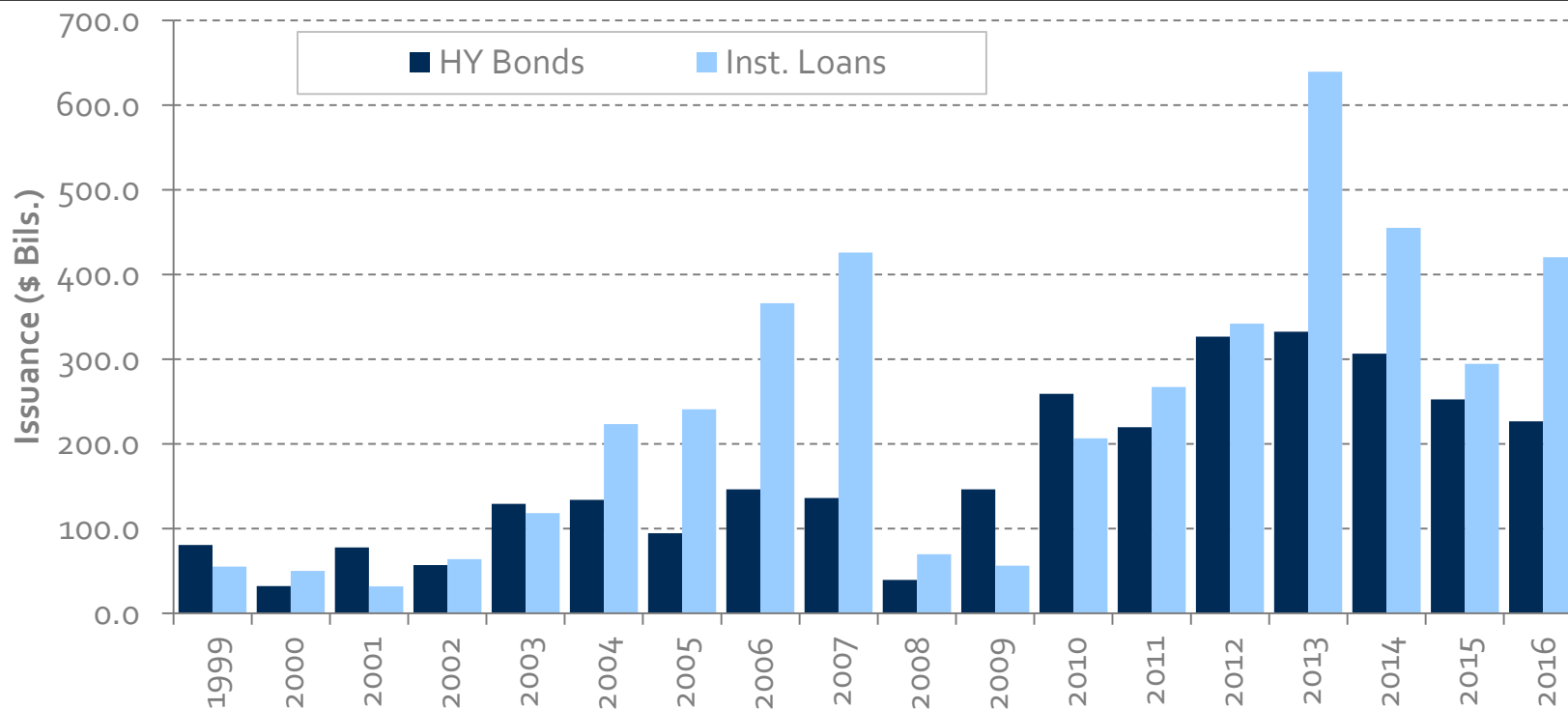
U.S. LEVERAGED LOAN ISSUANCE



- Breaking out leveraged loan volume into pro rata issuance and institutional issuance, we see that the increase in leveraged loan deal flow in 2016 was driven by a surge in institutional issuance, which was up 44% year over year.
- Pro rata issuance in contrast was down 7% .

## U.S. INSTITUTIONAL LOAN AND HY BOND ISSUANCE

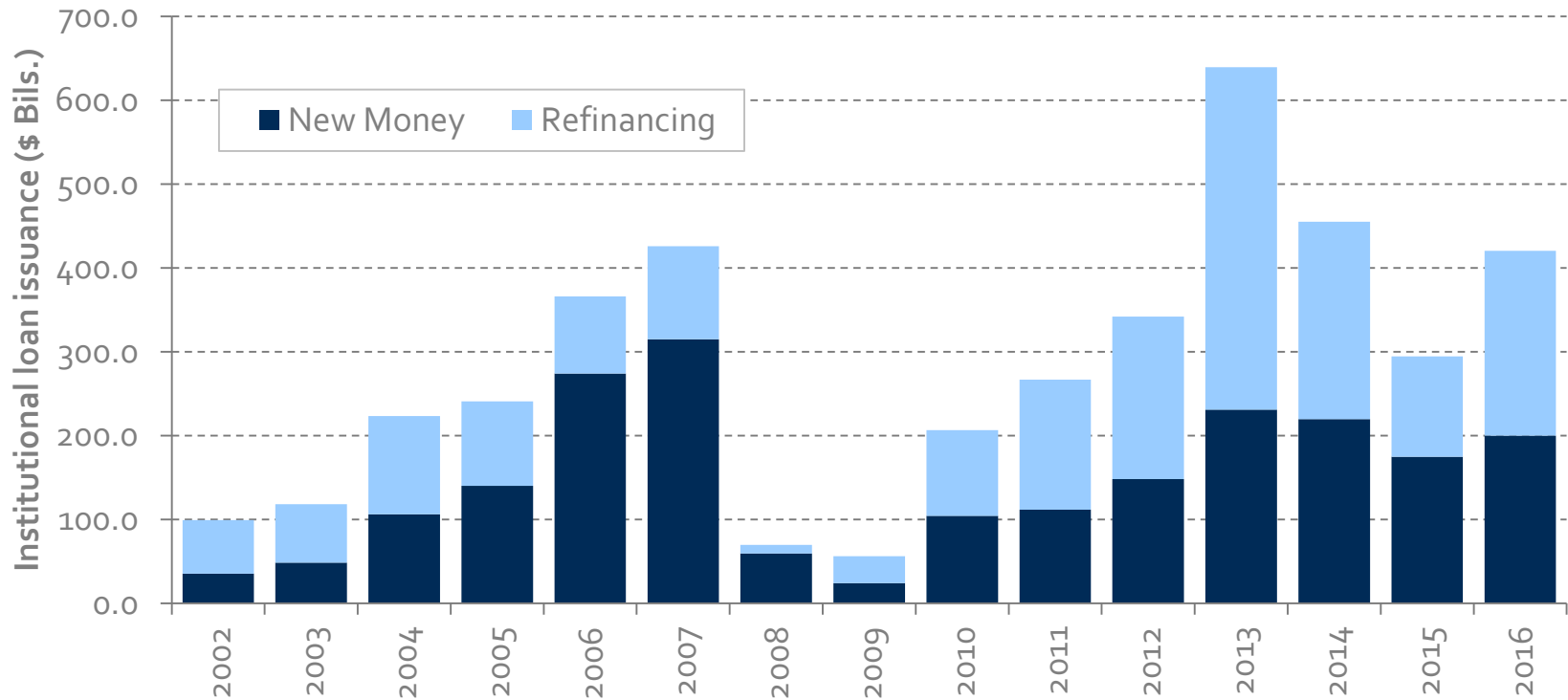
### U.S. LOAN AND BOND ISSUANCE



- Institutional loan volume amounted to \$421 billion in 2016, up from \$295 billion a year ago.
- High yield bond issuance totaled \$227 billion, down 10% from the previous year.

# U.S. INSTITUTIONAL ISSUANCE: NEW MONEY VS. REFINANCING

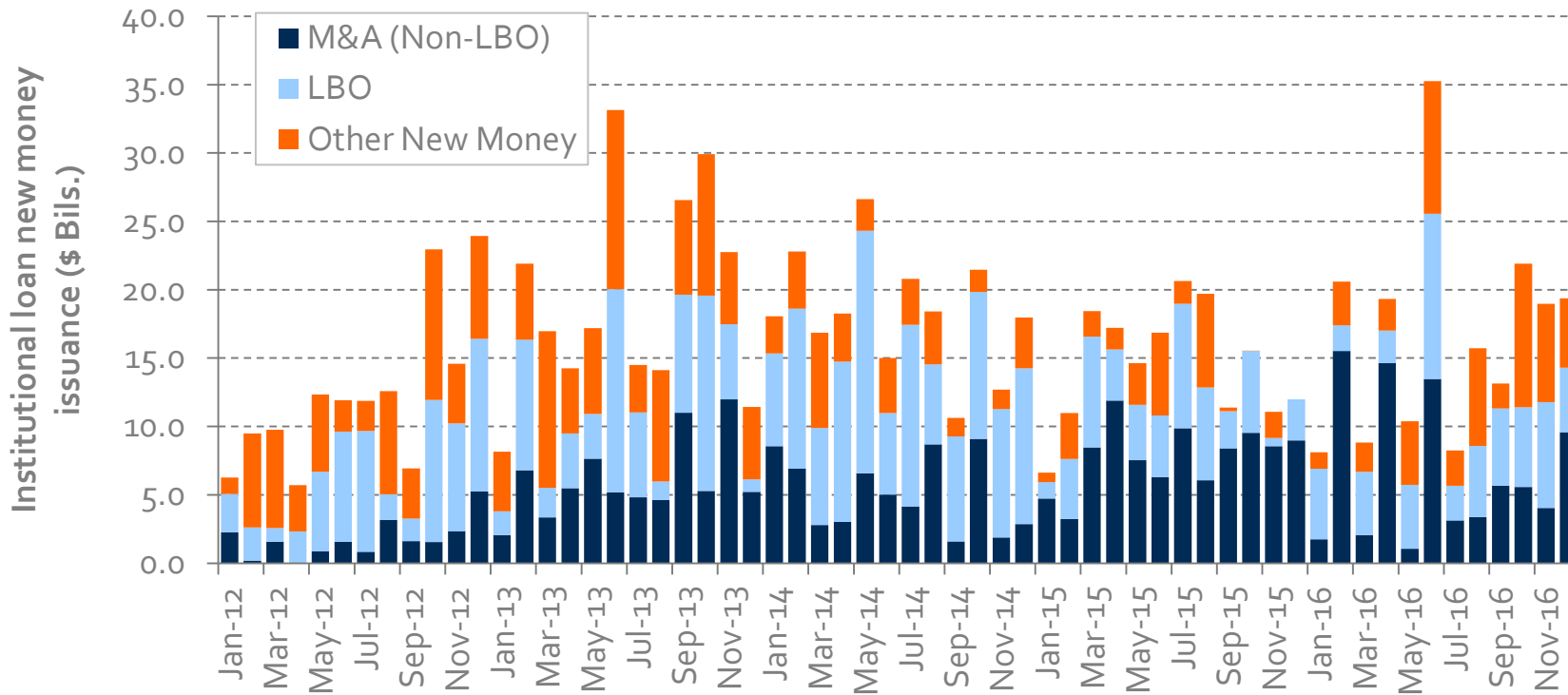
## U.S. INSTITUTIONAL LOAN ISSUANCE



- As in the broader leveraged loan market, it was mainly refinancing activity that drove institutional loan issuance higher.
- Refinancing volume soared by 85% to \$221 billion.
- New money institutional issuance at \$200 billion was up 14% compared to a year earlier.

# U.S. INSTITUTIONAL ISSUANCE: NEW MONEY BREAKOUT

U.S. INSTITUTIONAL LOAN ISSUANCE – NEW MONEY BREAKOUT



- Breaking out 2016 institutional loan new money issuance, we see that M&A (excluding LBOs) accounted for 40%, with LBOs at 31% and other purposes at 29%.
- LBO new money issuance was up 15% and M&A (ex. LBOs) fell 15% year over year, while other new money purposes (which includes purposes like dividend recaps, corporate purposes, bond paydowns and DIPs) more than doubled.

# 2016 LEVERAGED LOAN ISSUANCE BY INDUSTRY

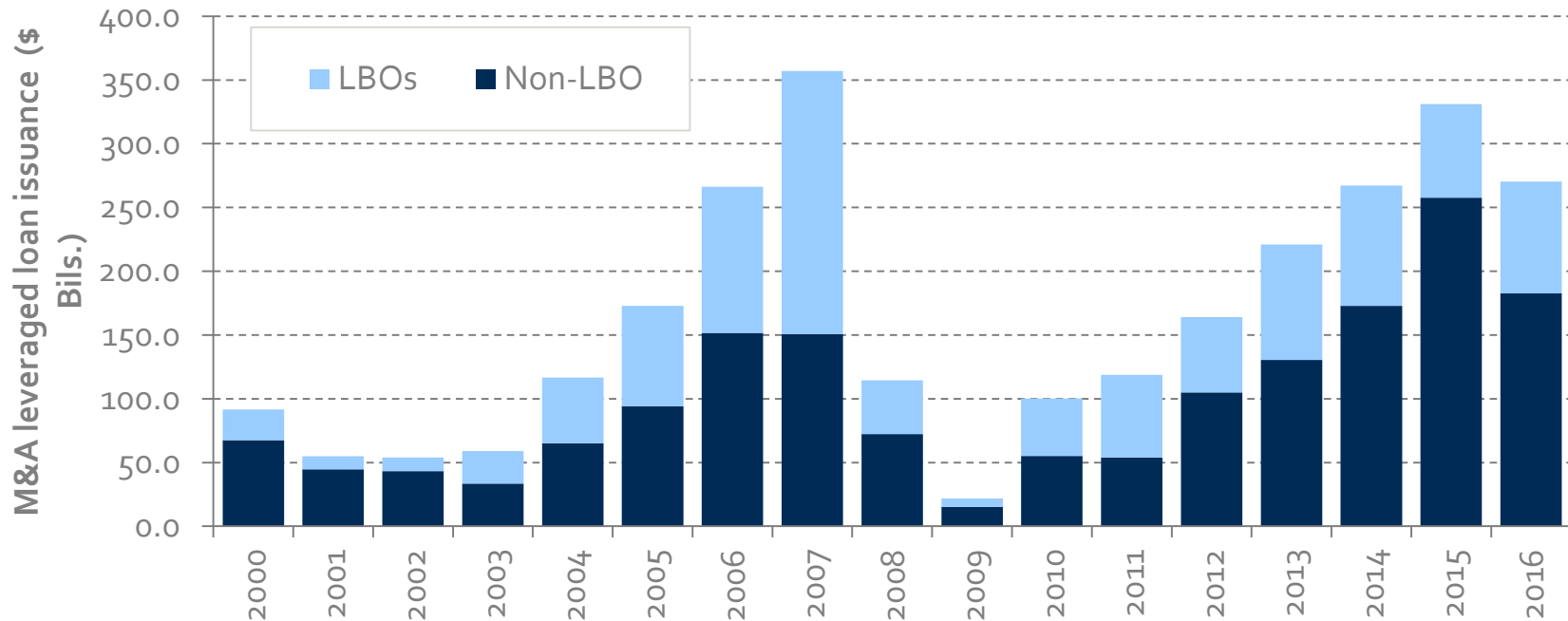
<b>Industry</b>	<b>Lev. Vol. (\$Bils.)</b>	<b>New Money Lev. Vol. (\$Bils.)</b>	<b>% of Lev. Vol</b>	<b>% of New Money Lev. Vol</b>
Technology	153.78	99.43	17.6%	24.3%
Retail & Supermarkets	65.12	16.72	7.4%	4.1%
Business Services	59.70	23.76	6.8%	5.8%
Healthcare	59.68	33.93	6.8%	8.3%
General Manufacturing	51.58	24.33	5.9%	5.9%
Oil and Gas	39.16	15.74	4.5%	3.8%
Services	38.18	19.28	4.4%	4.7%
Media	37.91	18.05	4.3%	4.4%
n/a	36.54	23.08	4.2%	5.6%
Wholesale	36.16	17.97	4.1%	4.4%
Financial Services	32.18	12.76	3.7%	3.1%
Chemicals, Plastics & Rubber	31.78	12.73	3.6%	3.1%
Leisure and Entertainment	27.15	11.06	3.1%	2.7%
Automotive	25.80	12.40	2.9%	3.0%
Utilities	25.78	6.11	2.9%	1.5%
REITS	25.63	10.03	2.9%	2.5%
Beverage, Food, and Tobacco Processing	23.51	14.26	2.7%	3.5%
Telecommunications	15.30	5.30	1.7%	1.3%
Hotel & Gaming	13.25	0.89	1.5%	0.2%
Construction	11.85	7.12	1.4%	1.7%
Paper & Packaging	11.21	4.19	1.3%	1.0%
Restaurants	10.70	6.72	1.2%	1.6%
Transportation	10.64	2.06	1.2%	0.5%
Aerospace and Defense	10.12	3.35	1.2%	0.8%
Textiles and Apparel	8.65	4.11	1.0%	1.0%
Shipping	7.76	1.77	0.9%	0.4%
Mining	2.98	1.01	0.3%	0.2%
Agriculture	2.86	0.96	0.3%	0.2%
Government	0.37	0.08	0.0%	0.02%

# 2016 INSTITUTIONAL LOAN ISSUANCE BY INDUSTRY

<b>Industry</b>	<b>Inst. Vol. (\$Bils.)</b>	<b>New Money Inst. Vol. (\$Bils.)</b>	<b>% of Inst. Vol</b>	<b>% of New Money Inst. Vol</b>
Technology	80.0	45.1	19.0%	22.6%
Retail & Supermarkets	38.7	7.9	9.2%	4.0%
Healthcare	34.4	18.6	8.2%	9.3%
Business Services	30.0	13.3	7.1%	6.6%
n/a	25.9	15.0	6.2%	7.5%
Services	23.7	15.9	5.6%	8.0%
Chemicals, Plastics & Rubber	18.9	6.0	4.5%	3.0%
Media	18.6	11.2	4.4%	5.6%
General Manufacturing	17.5	9.5	4.2%	4.7%
Leisure and Entertainment	15.9	5.8	3.8%	2.9%
Financial Services	13.3	6.4	3.2%	3.2%
Wholesale	10.4	5.8	2.5%	2.9%
Utilities	10.2	3.9	2.4%	2.0%
Telecommunications	10.1	4.4	2.4%	2.2%
Automotive	9.7	4.4	2.3%	2.2%
REITS	9.3	3.3	2.2%	1.6%
Beverage, Food, and Tobacco Processing	8.8	6.0	2.1%	3.0%
Hotel & Gaming	7.7	0.3	1.8%	0.1%
Paper & Packaging	6.6	2.6	1.6%	1.3%
Aerospace and Defense	6.1	2.4	1.5%	1.2%
Construction	6.0	5.6	1.4%	2.8%
Transportation	5.7	0.5	1.4%	0.2%
Restaurants	4.0	2.3	1.0%	1.2%
Oil and Gas	3.0	1.0	0.7%	0.5%
Shipping	2.8	0.4	0.7%	0.2%
Textiles and Apparel	1.4	1.4	0.3%	0.7%
Agriculture	1.0	0.8	0.2%	0.4%
Mining	0.9	0.1	0.2%	0.1%

# M&A LEVERAGED LOAN ISSUANCE

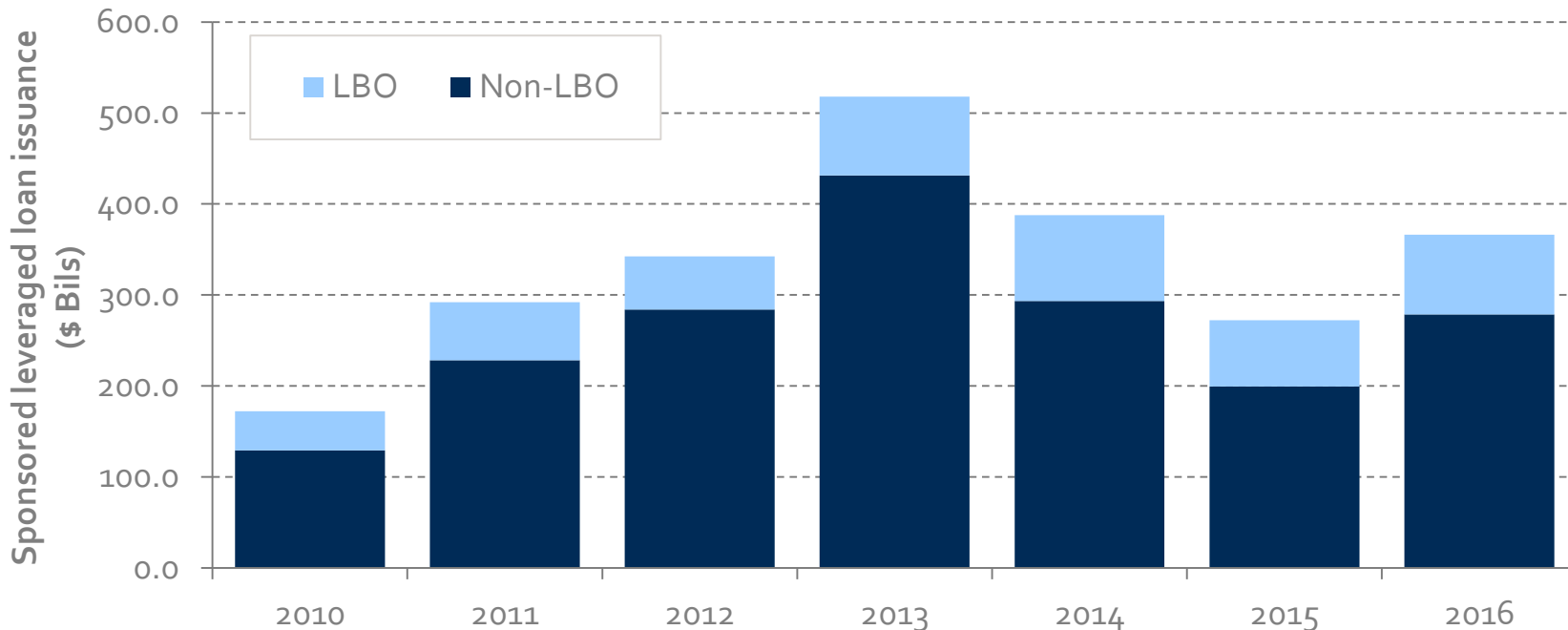
## U.S. M&A LEVERAGED LOAN ISSUANCE



- M&A leveraged loan volume dropped by 18% in 2016 to \$270 billion.
- That said, there were differences in the LBO and non-LBO segments. LBO issuance was up 20% to \$88 billion, while the larger non-LBO category was down 29% to \$183 billion.

# SPONSORED LEVERAGED LOAN ISSUANCE: LBO VS. NON-LBO

SPONSORED LOAN ISSUANCE: LBO VS. NON-LBO

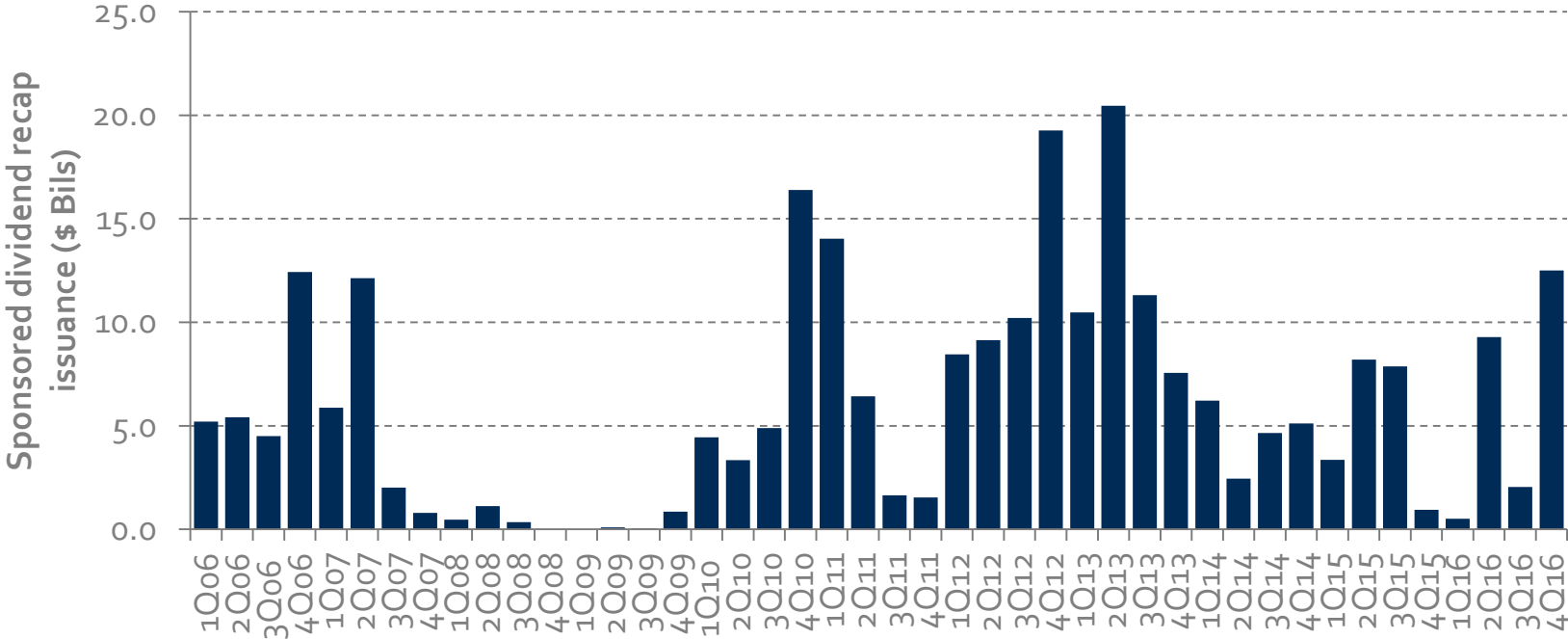


- Sponsored leveraged loan issuance increased by \$94 billion in 2016 to \$366 billion.
- The majority of this issuance represented non-LBO activity (\$279 billion – up 40% YoY), while LBO volume was at \$88 billion (up 20% YoY).



# SPONSORED DIVIDEND RECAP LOAN VOLUME

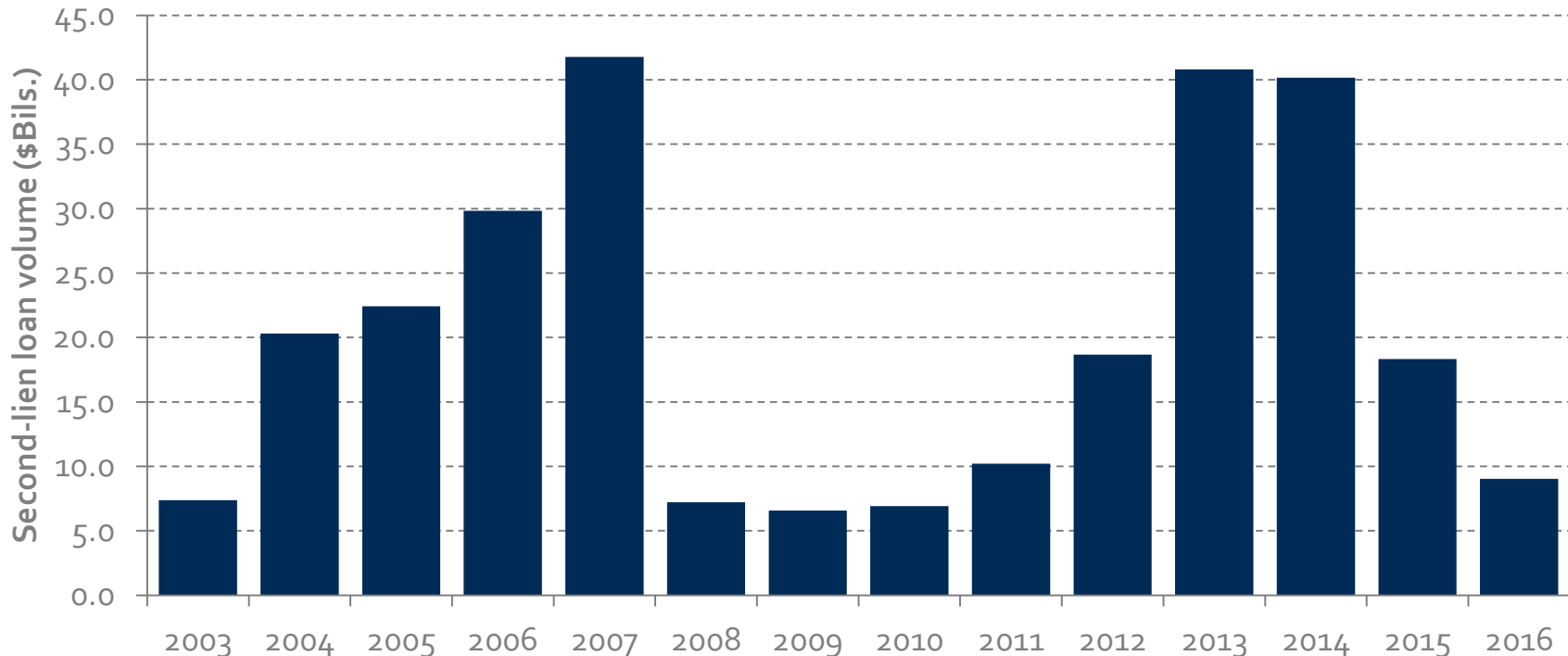
SPONSORED DIVIDEND RECAP LOAN VOLUME



- Dividend recap loan volume climbed sharply in the fourth quarter to \$12.5 billion, bringing volume in 2016 to \$24.3 billion, topping the full year 2015 figure of \$20.4 billion.

## SECOND-LIEN LOAN VOLUME

### U.S. SECOND-LIEN LOAN VOLUME

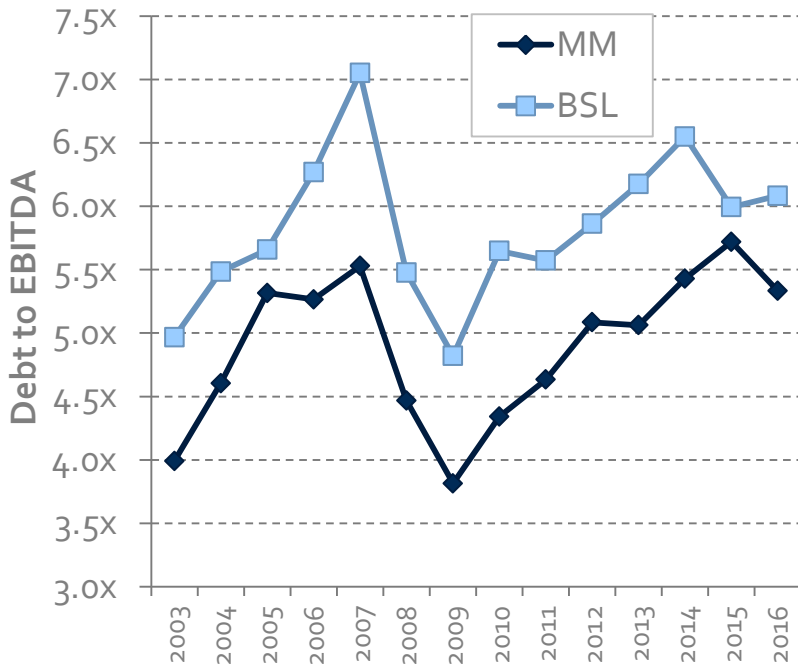


- Second-lien loan issuance fell again in 2016, totaling only \$9 billion, the lowest level since 2010.
- The first three quarters were particularly limited in terms of second-lien volume, averaging \$1.5 billion, before climbing in 4Q16 to \$4.5 billion.

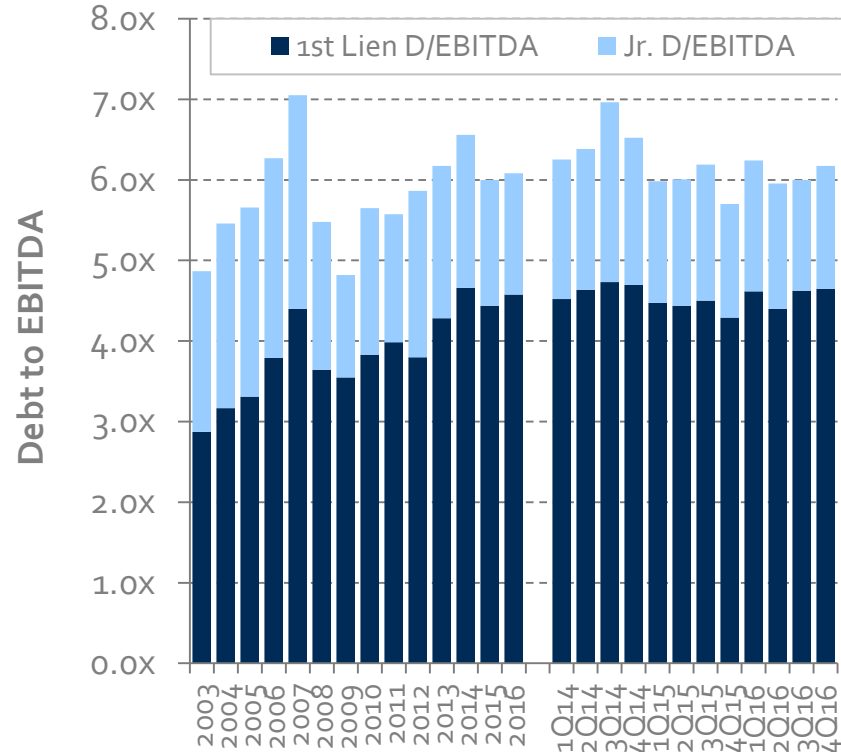


# LBO DEBT TO EBITDA LEVELS

BROADLY SYNDICATED VS. INST. MIDDLE MARKET



BROADLY SYNDICATED LBOs

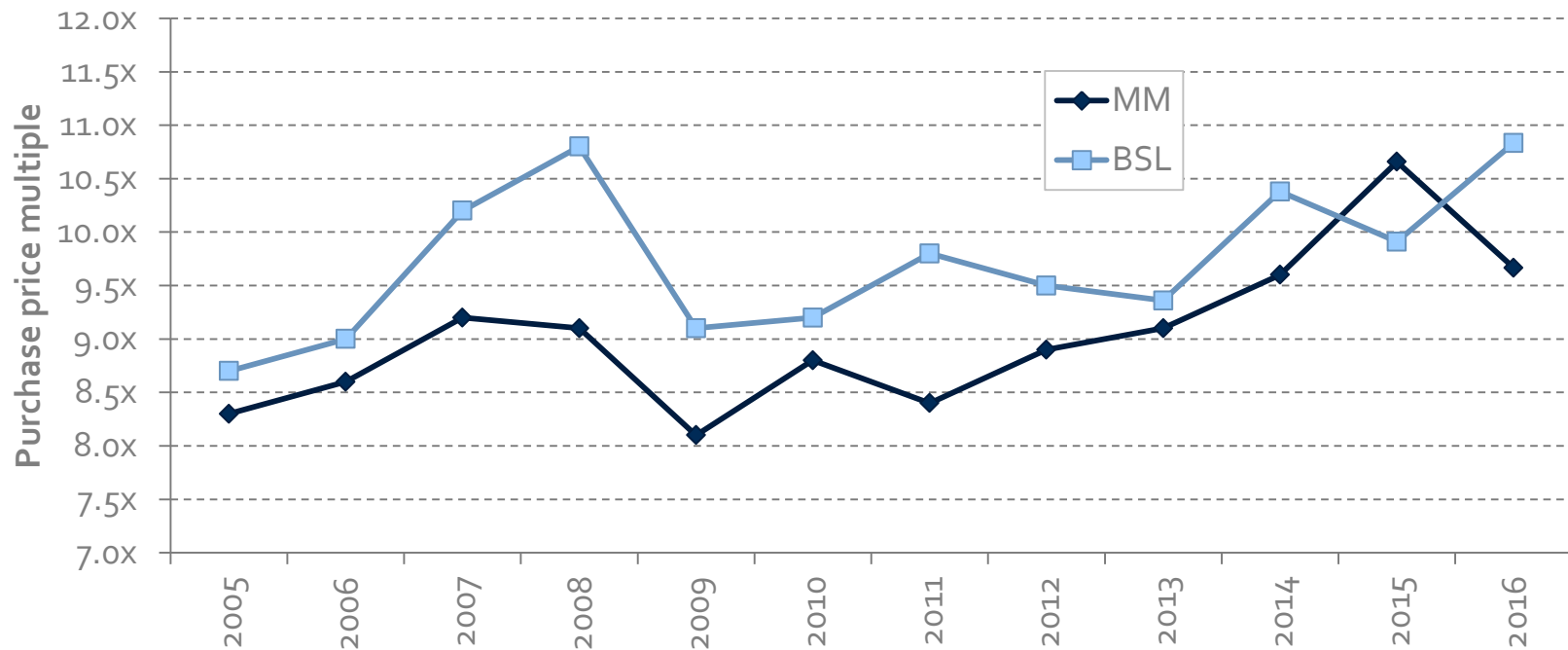


- Average debt to EBITDA levels increased to 6.08 times for broadly syndicated LBO transactions in 2016, and declined to 5.33 times for institutional middle market LBOs.
- On a quarterly basis, large corporate LBO leverage increased to 6.17 times in 4Q16.

# LBO PURCHASE PRICE MULTIPLES

## BROADLY SYNDICATED VS. INSTITUTIONAL MIDDLE MARKET

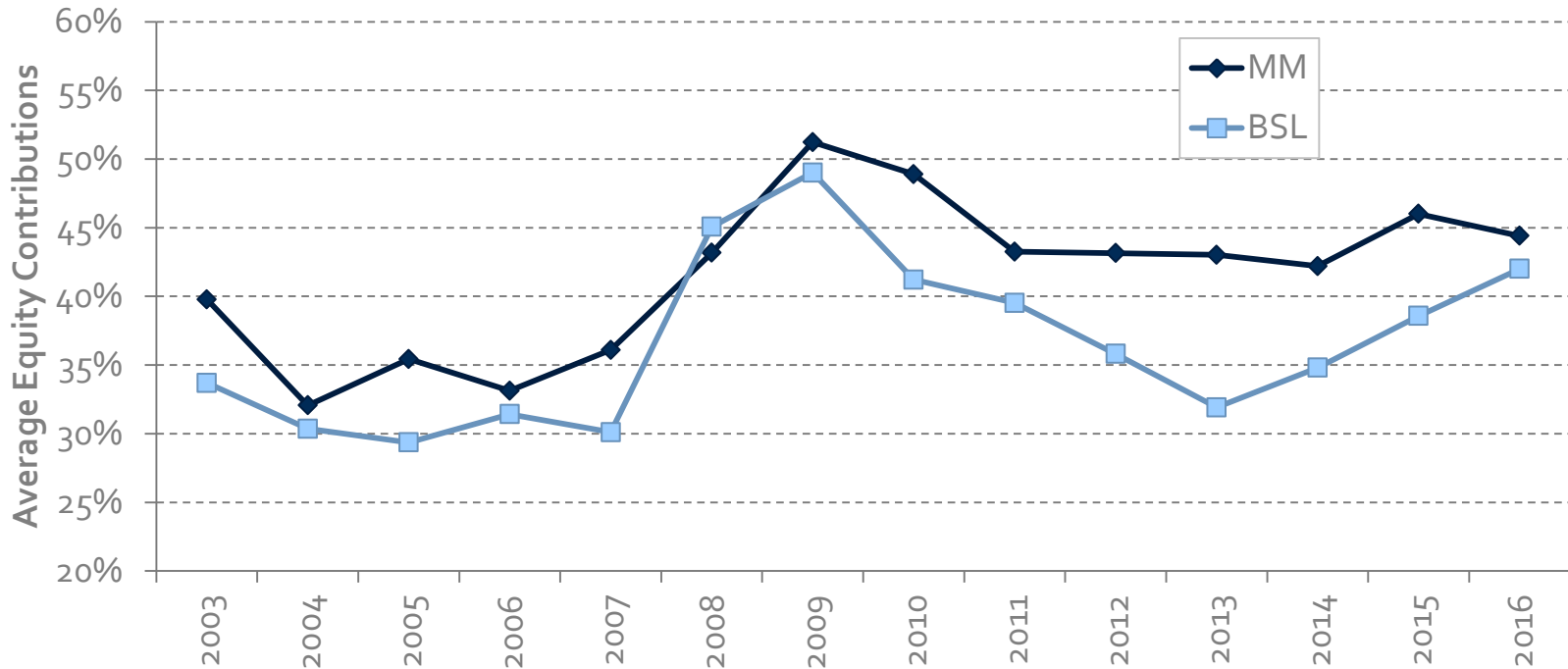
LBO PURCHASE PRICE MULTIPLES



- Average purchase price multiples increased to 10.8 times (from 9.9 times) for broadly syndicated LBOs in 2016.
- In comparison, institutional middle market deals went for lower multiples, averaging 9.7 times, down from 10.7 times last year.

# LBO EQUITY CONTRIBUTIONS: BROADLY SYNDICATED VS. INSTITUTIONAL MIDDLE MARKET

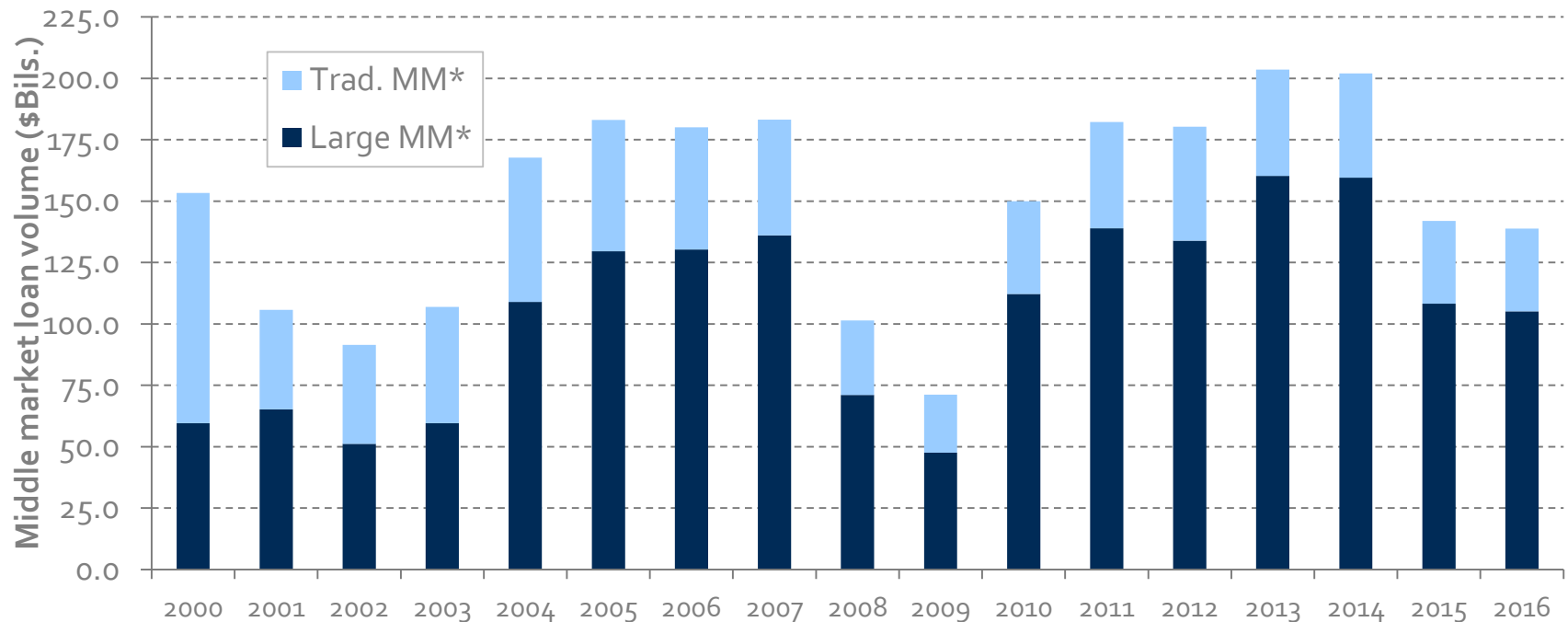
LBO EQUITY CONTRIBUTIONS



- The average equity contribution increased to 42% (from 39%) for broadly syndicated LBOs, and declined to 44% (from 46%) for institutional middle market LBOs.

# MIDDLE MARKET LOAN ISSUANCE

## U.S. MIDDLE MARKET LOAN VOLUME

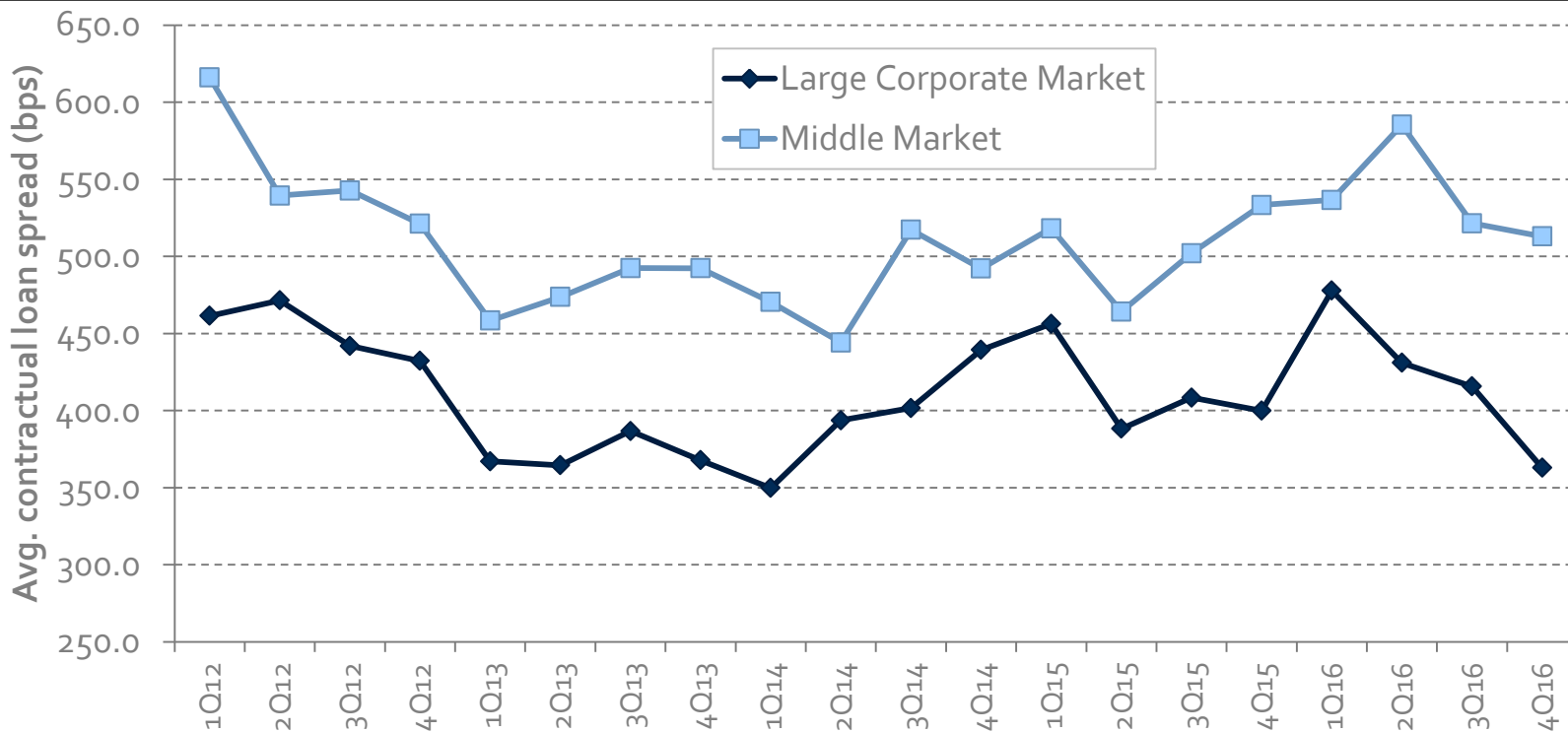


\*Traditional MM: Deal Size <=\$100M, Large MM: Deal Size >\$100M to \$500M, For all: Borrower Sales <\$500M

- Middle market lending activity slipped to \$139 billion in 2016, a drop of 2% from a year earlier. This was comprised of \$105 billion in large middle market volume and \$34 billion in traditional middle market issuance

# PRIMARY MARKET INSTITUTIONAL FIRST-LIEN LOAN SPREADS

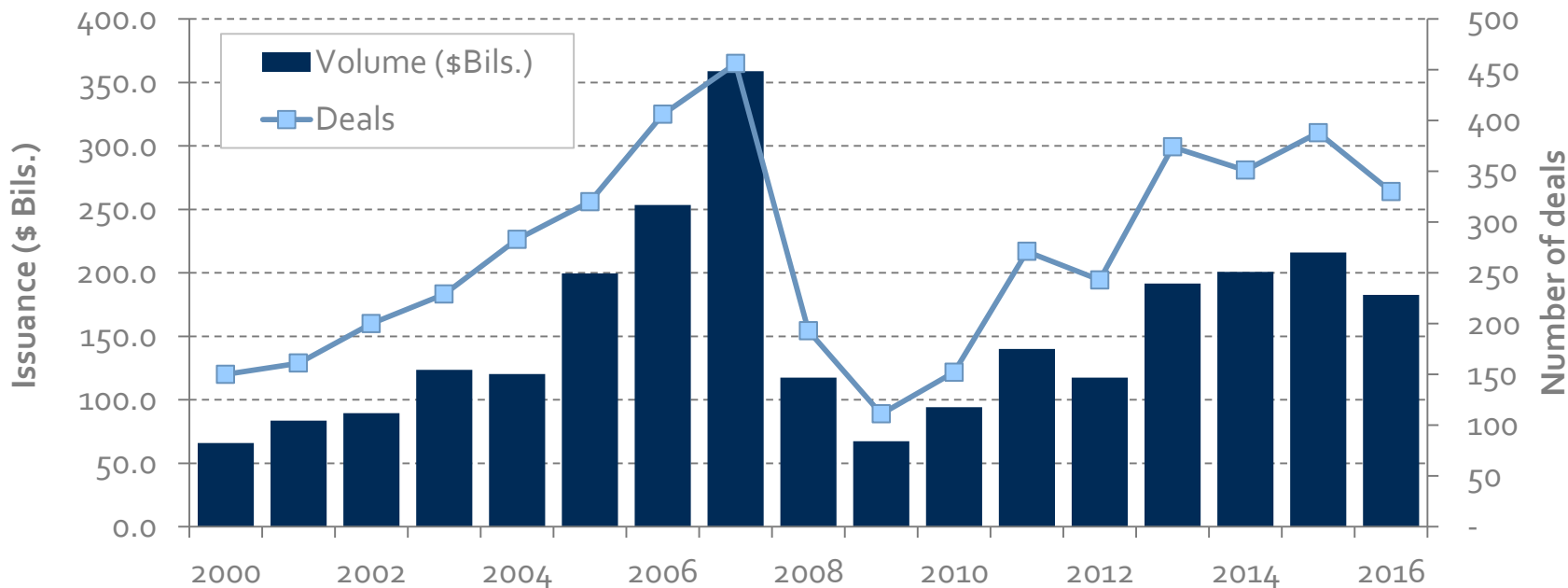
PRIMARY MARKET INSTITUTIONAL FIRST-LIEN LOAN SPREADS



- After peaking in the first quarter, contractual loan spreads in the large corporate market tightened in each subsequent quarter, averaging 363 bps in 4Q16.
- In the middle market, spreads declined in the second half of the year, reaching 513 bps in the fourth quarter.

# EUROPEAN LEVERAGED LOAN ISSUANCE

EUROPEAN LEVERAGED LOAN ISSUANCE

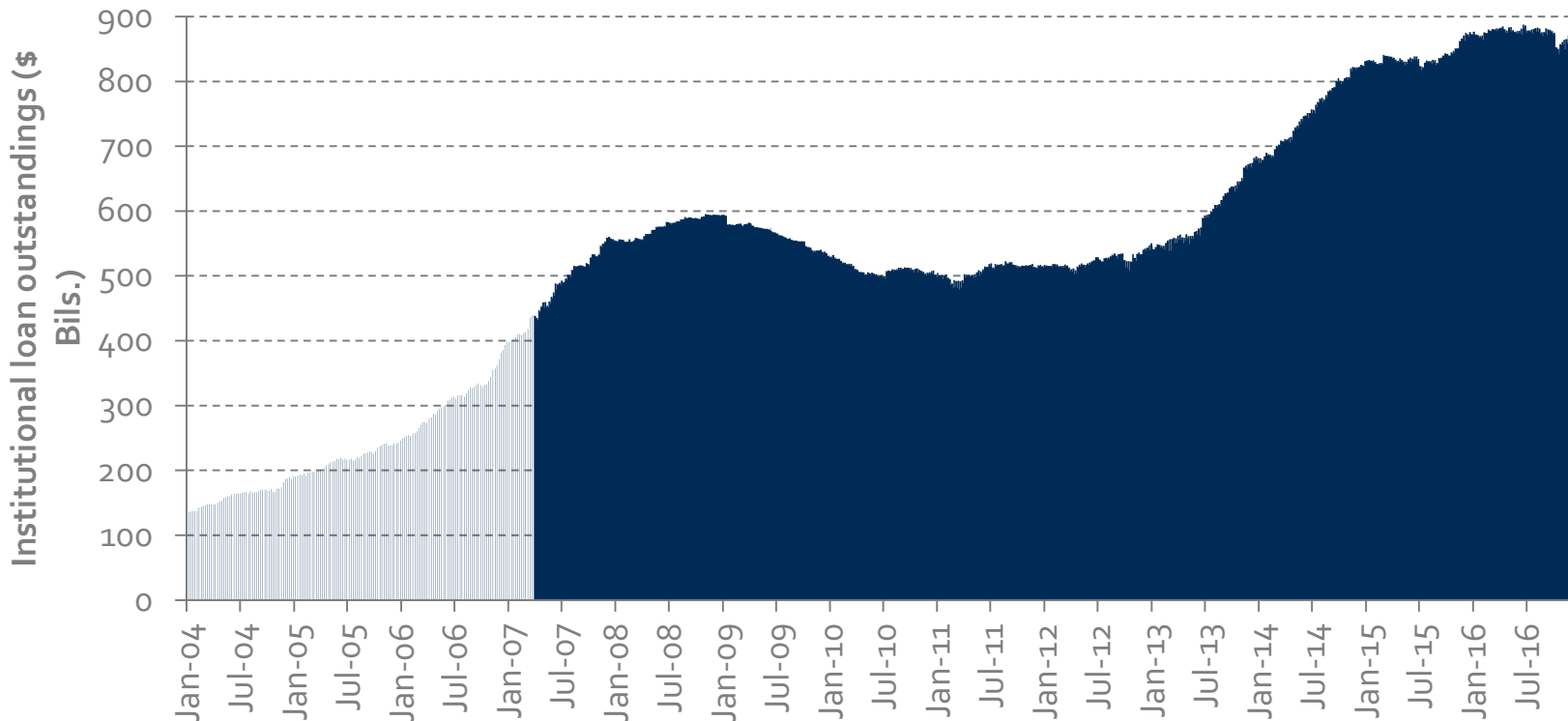


- European leveraged loan issuance fell to \$183 billion in 2016, a 15% drop from the prior year.



# INSTITUTIONAL LOAN OUTSTANDINGS

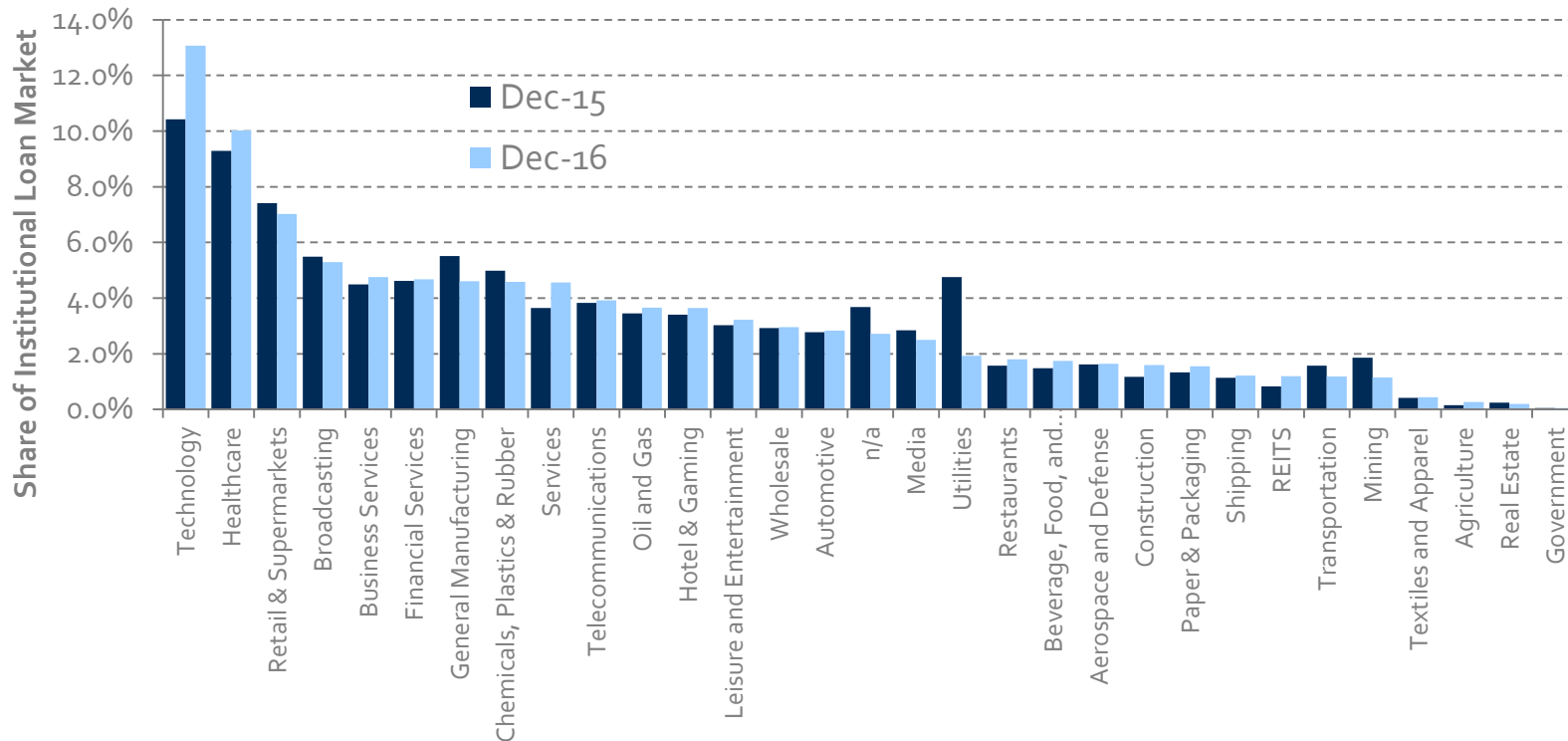
INSTITUTIONAL LOAN OUTSTANDINGS



- The size of the institutional market increased by \$8 billion to \$881 billion in December.
- This is marginally higher (1%) than at the same time last year.

# INDUSTRY BREAKDOWN OF INSTITUTIONAL LOAN OUTSTANDINGS

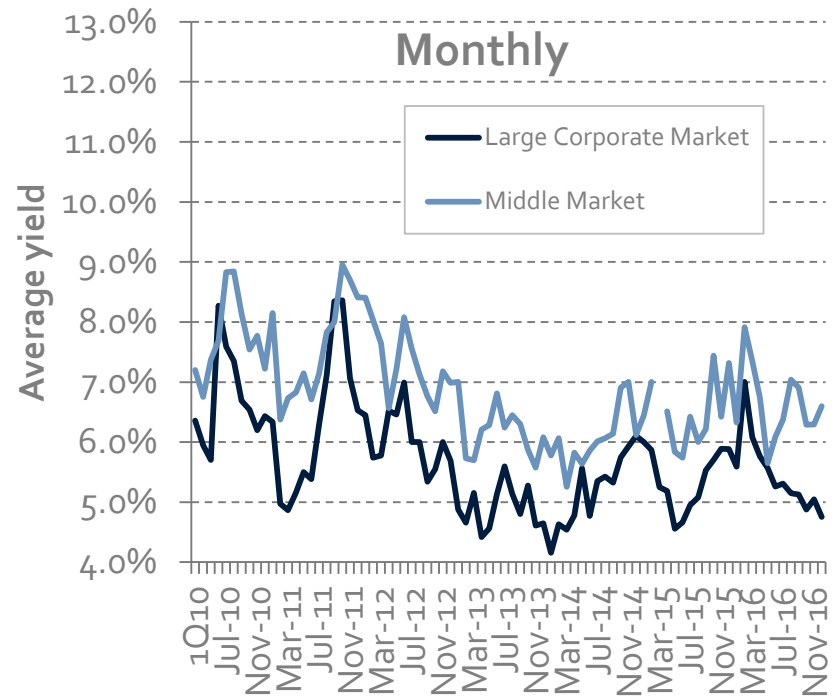
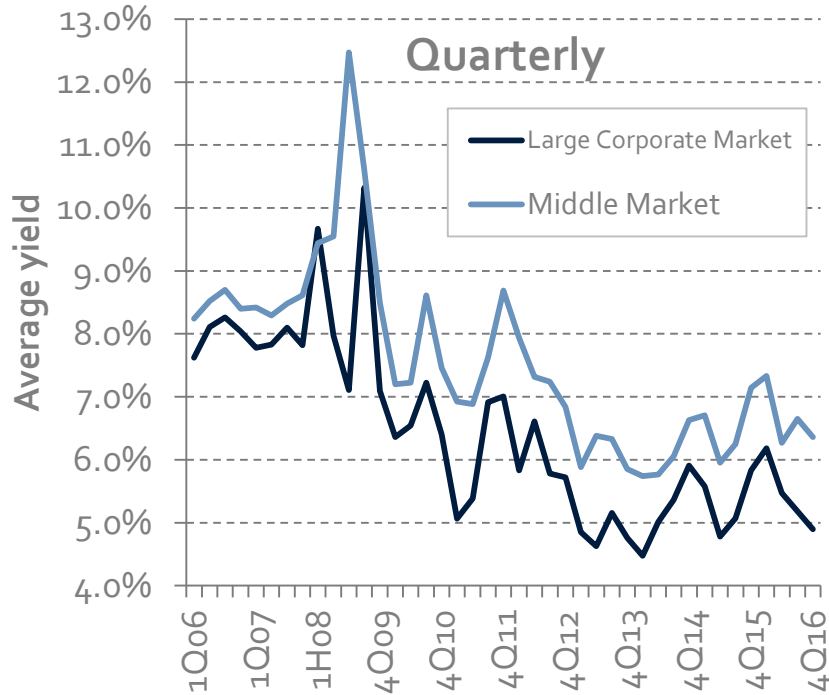
INDUSTRY BREAKDOWN



- The technology and healthcare share of institutional loan debt outstanding grew in 2016.
- Technology (13%) and healthcare (10%) remain the biggest sectors in the market, followed by retail (7%).
- The top 5 sectors account for 40% of outstanding institutional debt, while the top 10 sectors account for 63%.

# PRIMARY MARKET YIELDS

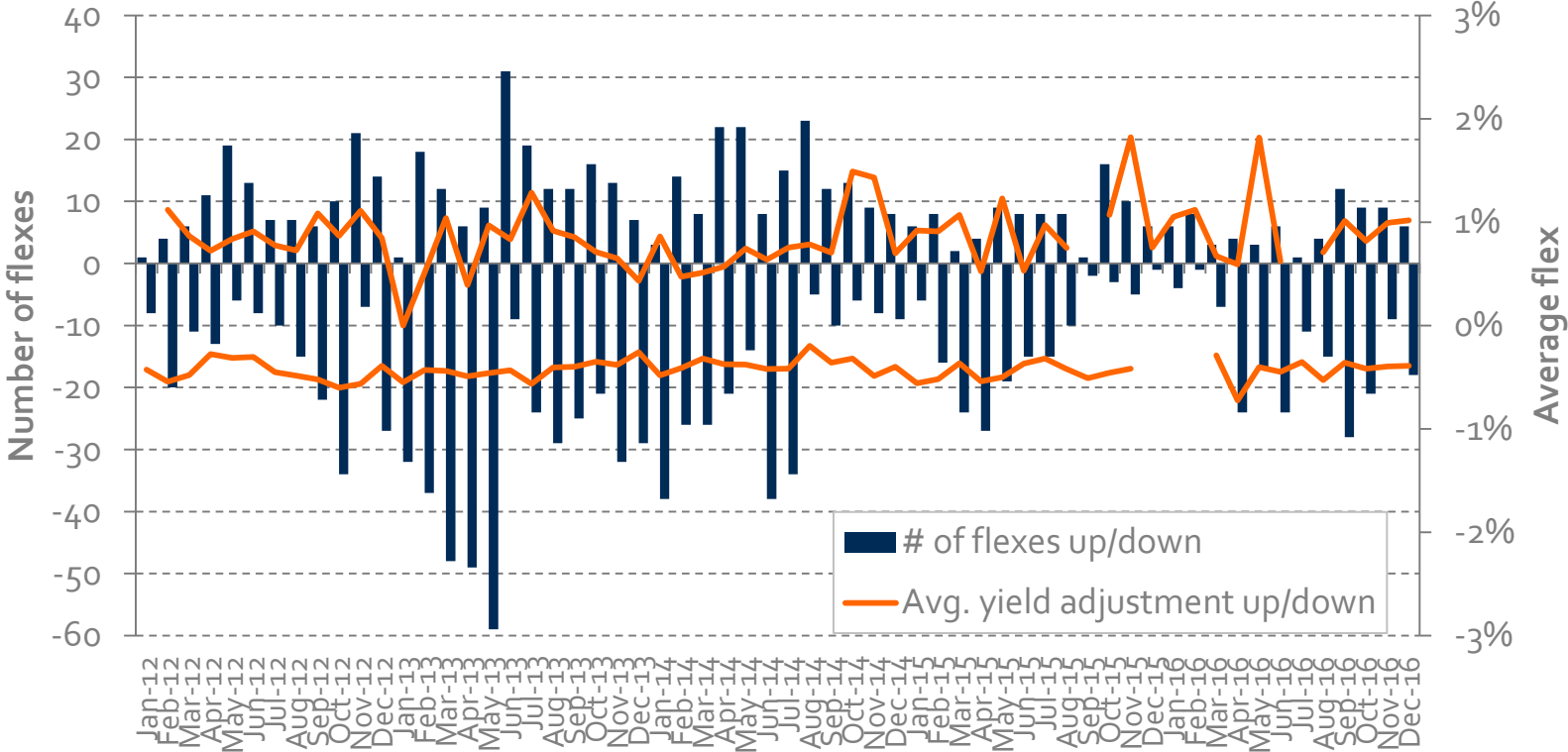
## U.S. PRIMARY MARKET INSTITUTIONAL LOAN YIELDS



- New issue yields tightened in 4Q16 for both large corporate and middle market deals.
- In the large corporate market, yields tightened to an average of 4.89%, their tightest level of the year, while middle market yields declined to 6.36%.

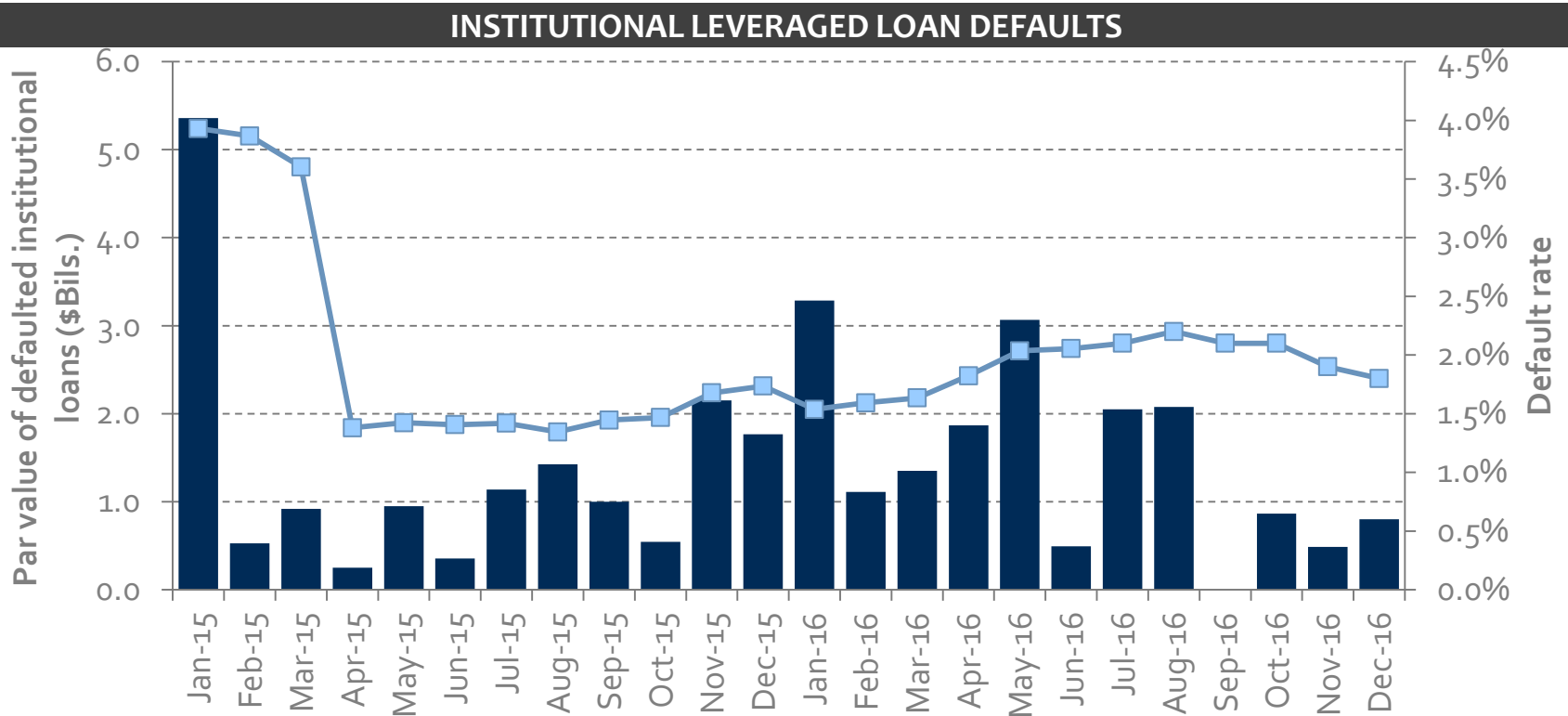
# INSTITUTIONAL LOAN FLEX ACTIVITY

INSTITUTIONAL LOAN FLEX ACTIVITY



- Downward flexes outpaced upward flexes by a ratio of 2:1 in 4Q16.
- This was the third quarter in a row that downward flex activity was more prevalent.

# INSTITUTIONAL LEVERAGED LOAN DEFAULTS



- Three companies defaulted in December, with nearly \$800 million of institutional loan debt. They were TwentyEighty Inc. (\$359 million), La Paloma Generating Co. LLC (\$411.7 million) and Cumulus Media (\$28.7 million).
- This brought institutional loan default volume to \$17.5 billion in 2016, up from \$16.4 billion in 2015.
- Energy (\$6.4 billion), Metals & Mining (\$3.9 billion) and Broadcasting & Media (\$2.3 billion) were the top sectors in terms of defaults in 2016.
- The trailing twelve month loan default rate fell to 1.8%.

# INSTITUTIONAL LEVERAGED LOAN DEFAULTS ON TTM BASIS

Month	Issuer	Par Value (\$ Mil.)	Default Date	Default Source	Industry
January 2016	Arch Coal Inc.	1,879.3	01/11/16	Chapter 11 Filing	Metals & Mining
	NewPage Corp.	731.3	01/26/16	Chapter 11 Filing	Paper & Containers
	RCS Capital Corp.	674.7	01/31/16	Chapter 11 Filing	Banking & Finance
	<b>Subtotal</b>	<b>3,285.2</b>			
February 2016	Noranda Aluminum Holding Corp.	467.3	02/08/16	Chapter 11 Filing	Metals & Mining
	Paragon Offshore	641.9	02/14/16	Chapter 11 Filing	Energy
	<b>Subtotal</b>	<b>1,109.2</b>			
March 2016	Sports Authority Inc.	300.0	03/02/16	Chapter 11 Filing	Retail
	Town Sports International Holdings Inc.	29.8	03/07/16	Distressed Exchange	Leisure & Entertainment
	Aspect Software Inc.	447.3	03/09/16	Chapter 11 Filing	Computers & Electronics
	Southcross Holdings LP	575.0	03/28/16	Chapter 11 Filing	Energy
	<b>Subtotal</b>	<b>1,352.1</b>			
April 2016	Vertellus Specialties Inc.	455.0	04/12/16	Missed Payment	Chemicals
	Peabody Energy Corp.	1,164.9	04/13/16	Chapter 11 Filing	Metals & Mining
	Stallion Oilfield Holding Inc.	47.0	04/15/16	Distressed Exchange	Energy
	Core Entertainment Inc.	200.0	04/28/16	Chapter 11 Filing	Broadcasting & Media
	<b>Subtotal</b>	<b>1,866.9</b>			
May 2016	Fairway Group Holdings Corp.	266.8	05/02/16	Chapter 11 Filing	Supermarkets & Drug Stores
	Atlas Iron Ltd.	134.5	05/06/16	Distressed Exchange	Metals & Mining
	Dex Media Inc.	2,110.0	05/16/16	Chapter 11 Filing	Broadcasting & Media
	EP Energy LLC	38.0	05/17/16	Distressed Exchange	Energy
	Fieldwood Energy LLC	517.5	05/26/16	Distressed Exchange	Energy
	<b>Subtotal</b>	<b>3,066.8</b>			
June 2016	Seventy Seven Operating LLC	492.0	06/07/16	Chapter 11 Filing	Energy
	<b>Subtotal</b>	<b>492.0</b>			

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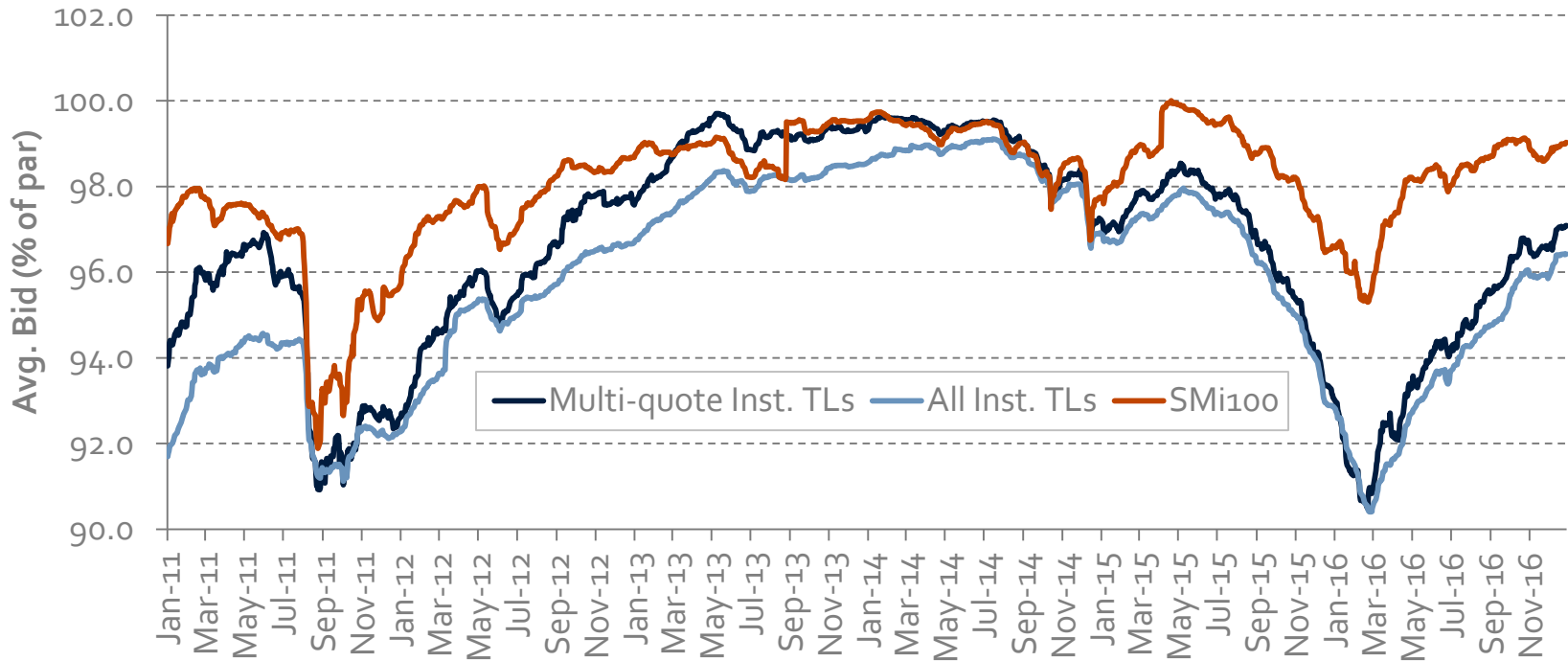
# INSTITUTIONAL LEVERAGED LOAN DEFAULTS ON TTM BASIS

Month	Issuer	Par Value (\$ Mil.)	Default Date	Default Source	Industry
July 2016	FTS International Inc.	46.2	07/01/16	Distressed Exchange	Energy
	Transtar Holding Co.	540.0	07/08/16	Missed Payment	Automotive
	C&J Energy Services Ltd	1,049.4	07/20/16	Chapter 11 Filing	Energy
	Atinum Midcon I LLC	100.0	07/22/16	Chapter 11 Filing	Energy
	Atlas Resource Partners LP/Atlas Energy LP	315.0	07/27/16	Chapter 11 Filing	Energy
	<b>Subtotal</b>	<b>2,050.6</b>			
August 2016	Templar Energy LLC	1,450.0	08/05/16	Missed Payment	Energy
	Stallion Oilfield Holding Inc.	328.0	08/14/16	Missed Payment	Energy
	Foresight Energy LP	297.8	08/30/16	Restructuring	Metals & Mining
	<b>Subtotal</b>	<b>2,075.8</b>			
September 2016	No Default Activity				
October 2016	Tervita Corp.	244.6	10/18/16	Chapter 15 Filing	Services & Miscellaneous
	Key Energy Services Inc.	289.7	10/24/16	Chapter 11 Filing	Energy
	Performance Sports Group Ltd.	330.5	10/31/16	Chapter 11 Filing	Consumer Products
	<b>Subtotal</b>	<b>864.7</b>			
November 2016	Bennu Oil & Gas LLC	487.0	11/30/16	Chap7 Filing	Energy
	<b>Subtotal</b>	<b>487.0</b>			
December 2016	TwentyEighty Inc.	359.0	12/05/16	Missed Payment	Services & Miscellaneous
	La Paloma Generating Co. LLC	411.7	12/06/16	Chap11 Filing	Utilities, Power & Gas
	Cumulus Media Inc.	28.7	12/30/16	Distressed Exchange	Broadcasting & Media
	<b>Subtotal</b>	<b>799.4</b>			

Source: Fitch U.S. Leveraged Loan Default Index.

# U.S. SECONDARY MARKET BID LEVELS

U.S. SECONDARY MARKET AVERAGE BID

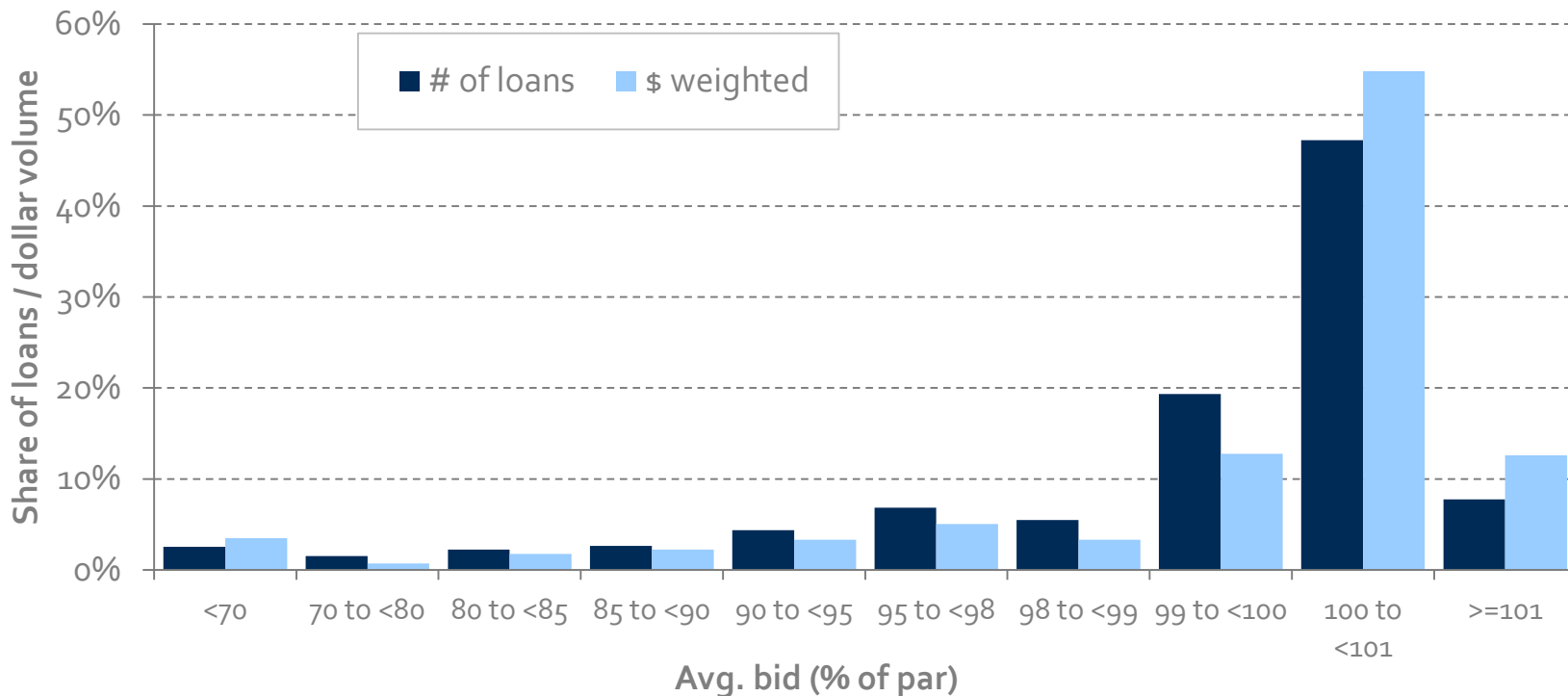


- Secondary market prices climbed again in December. Institutional term loans finished the month up 48 bps to 97.09, while the flow name SMi100 increased by 35 bps to 99.03.
- For the year, Institutional term loans gained 401 bps and flow names climbed 242 bps.



# DISTRIBUTION OF SECONDARY MARKET BIDS

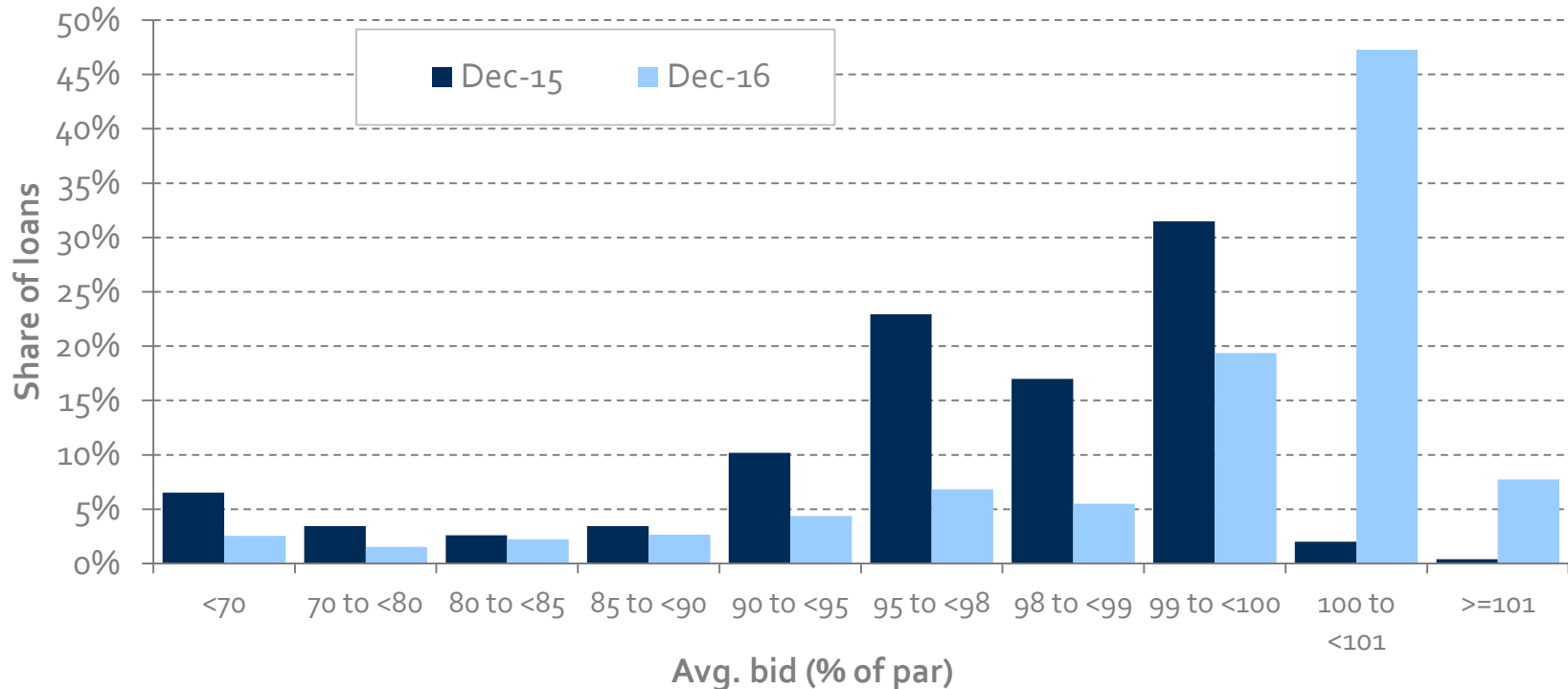
MULTI-QUOTE INSTITUTIONAL TERM LOAN BIDS



- As of month-end December, 55% of loans are priced at 100-plus, up from 43% a month earlier. On a dollar weighted basis the par-plus share is higher at 67%.
- At the lower end of the price scale, 9% of credits are bid below 90 cents on the dollar.

# DISTRIBUTION OF SECONDARY MARKET BIDS – DEC 2015 VS. DEC 2016

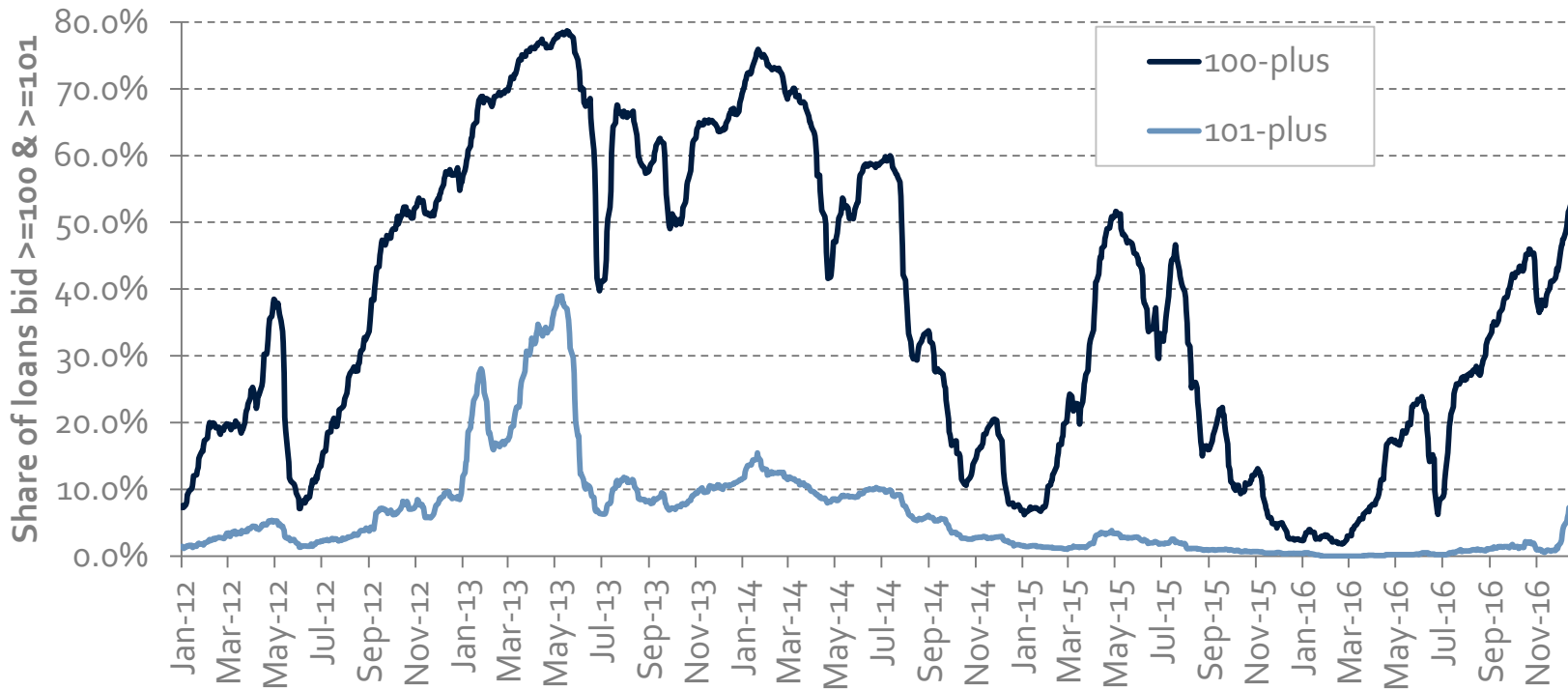
## MULTI-QUOTE INSTITUTIONAL TERM LOAN BIDS



- Compared to a year ago, there is now a much higher share of highly bid loans, following the strong rebound in prices.
- Currently, 13% of loans are bid below 95, down from 26% twelve months ago.
- At the other end of the price spectrum, 55% are bid in the par-plus range compared to only 2% a year ago.

# PAR-PLUS & 101-PLUS MARKET SHARE

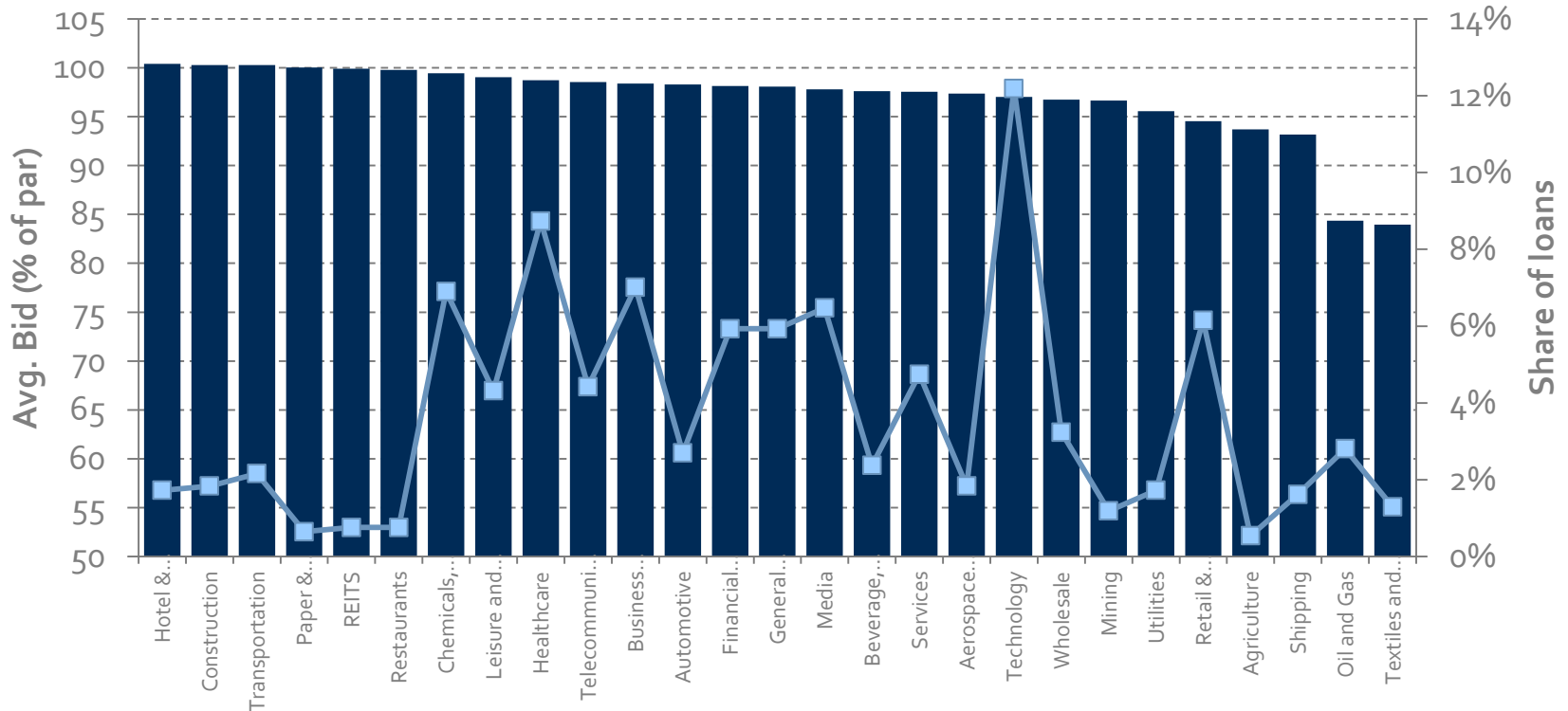
U.S. 100-PLUS & 101-PLUS SHARE: MULTI-QUOTE INSTITUTIONAL TERM LOANS



- The share of par-plus loans climbed in December to 55%, up twelve percentage points from a month earlier, and the highest level since July 2014.
- The 101-plus share increased to 8% from 1% in the course of the month.

# SECONDARY MARKET BIDS – BY SECTOR

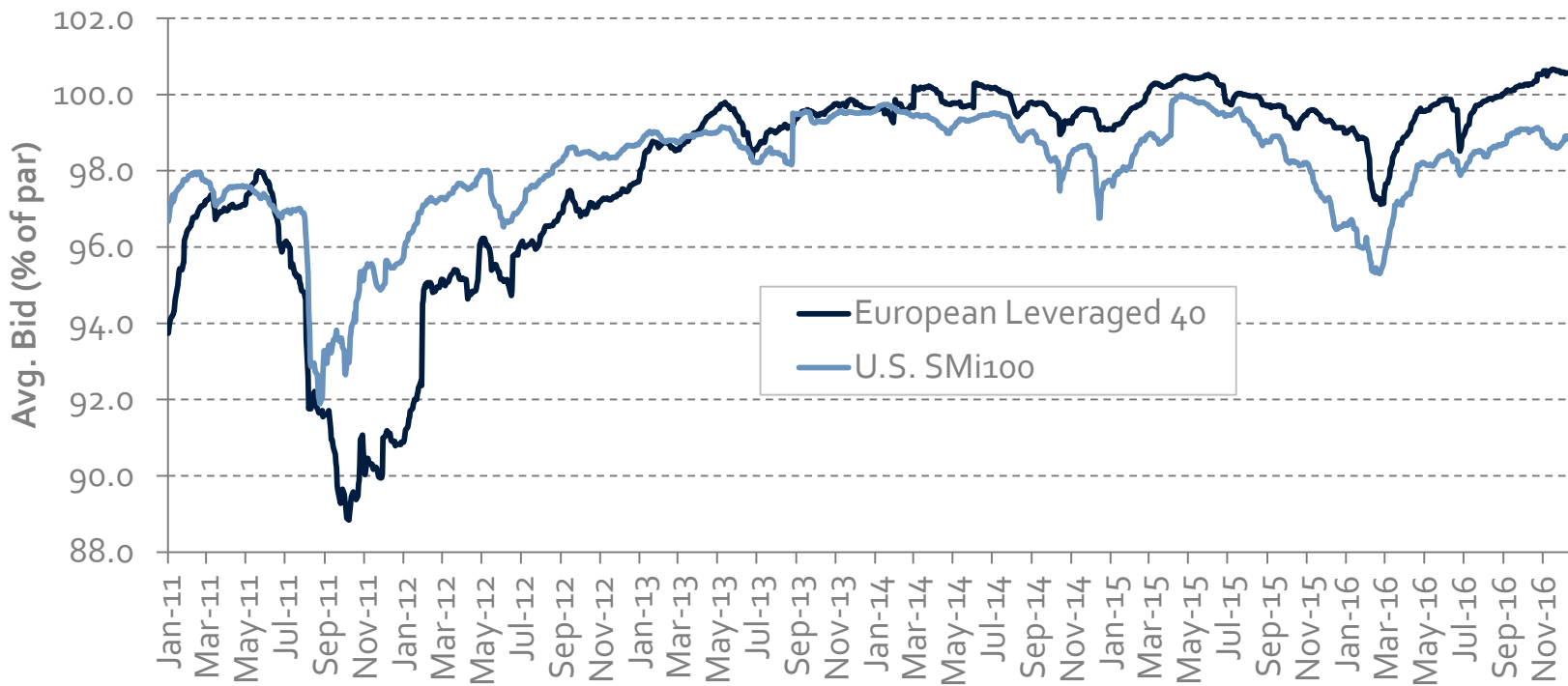
SECONDARY MARKET BIDS – BY SECTOR



- Looking across industries, the sectors bid highest are hotel & gaming, construction, transportation, and paper & packaging, which are all bid above 100.
- The largest sectors of technology and healthcare are bid at 97.01 and 98.74, respectively.

# SECONDARY MARKET BID LEVELS: EUROPE

SECONDARY MARKET AVERAGE BIDS



- European flow names remain highly priced though they edged 11 bps lower in December to an average bid of 100.46. US flow names gained 35 bps to 99.03.
- In full year 2016, European flow names were up 147 bps and US credits climbed 242 bps.



REUTERS/Petar Kujundzic

# INVESTOR OVERVIEW

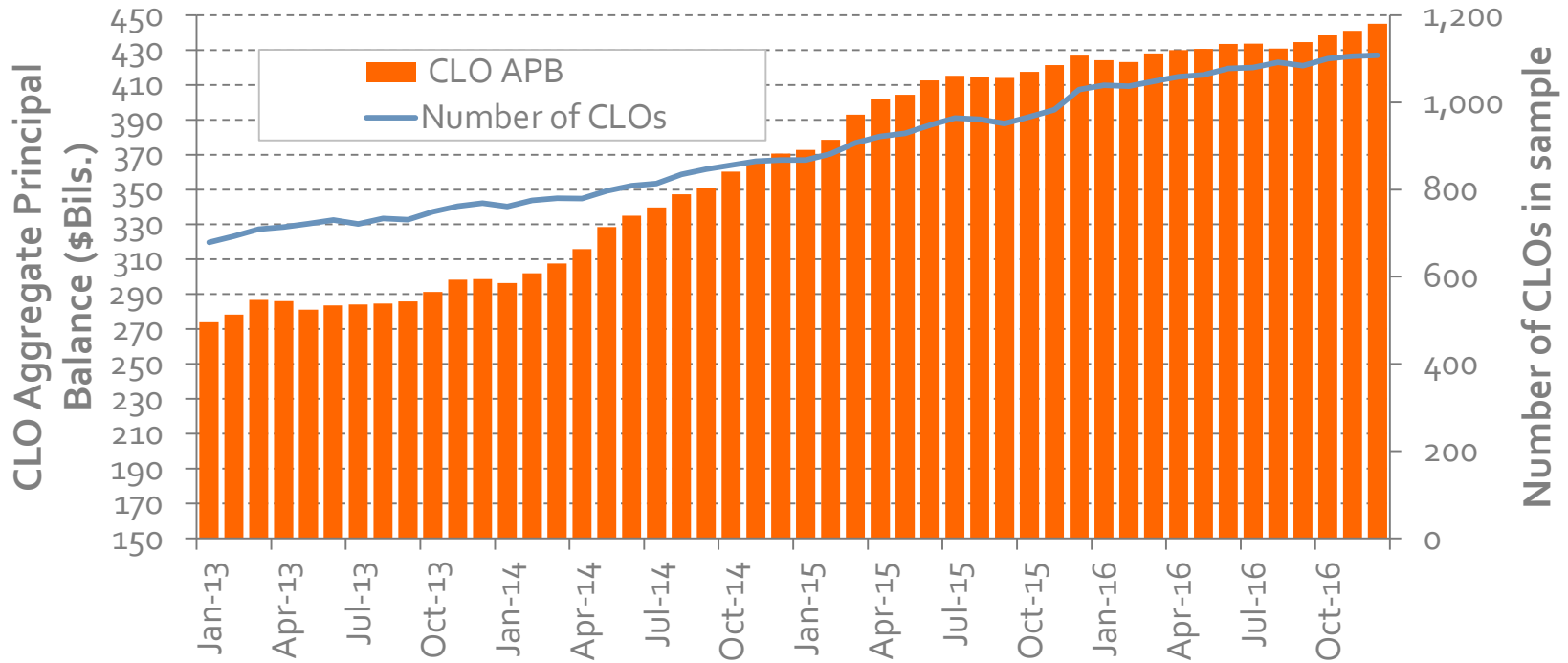
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THOMSON REUTERS

# U.S. CLO ASSETS UNDER MANAGEMENT

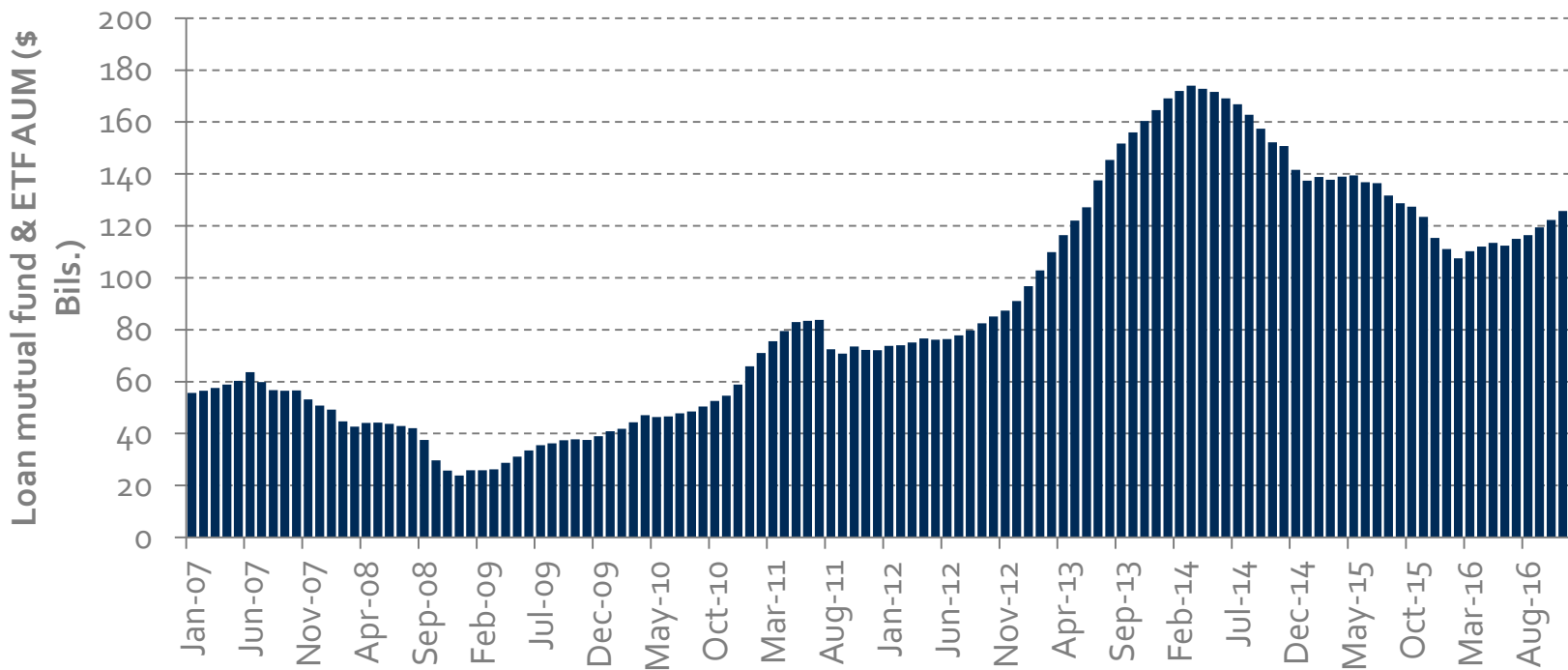
## ASSETS UNDER MANAGEMENT



- U.S. CLO assets under management increased to \$445 billion in December.

# LOAN FUNDS AUM

## U.S. LOAN MUTUAL FUND & ETF ASSETS UNDER MANAGEMENT\*



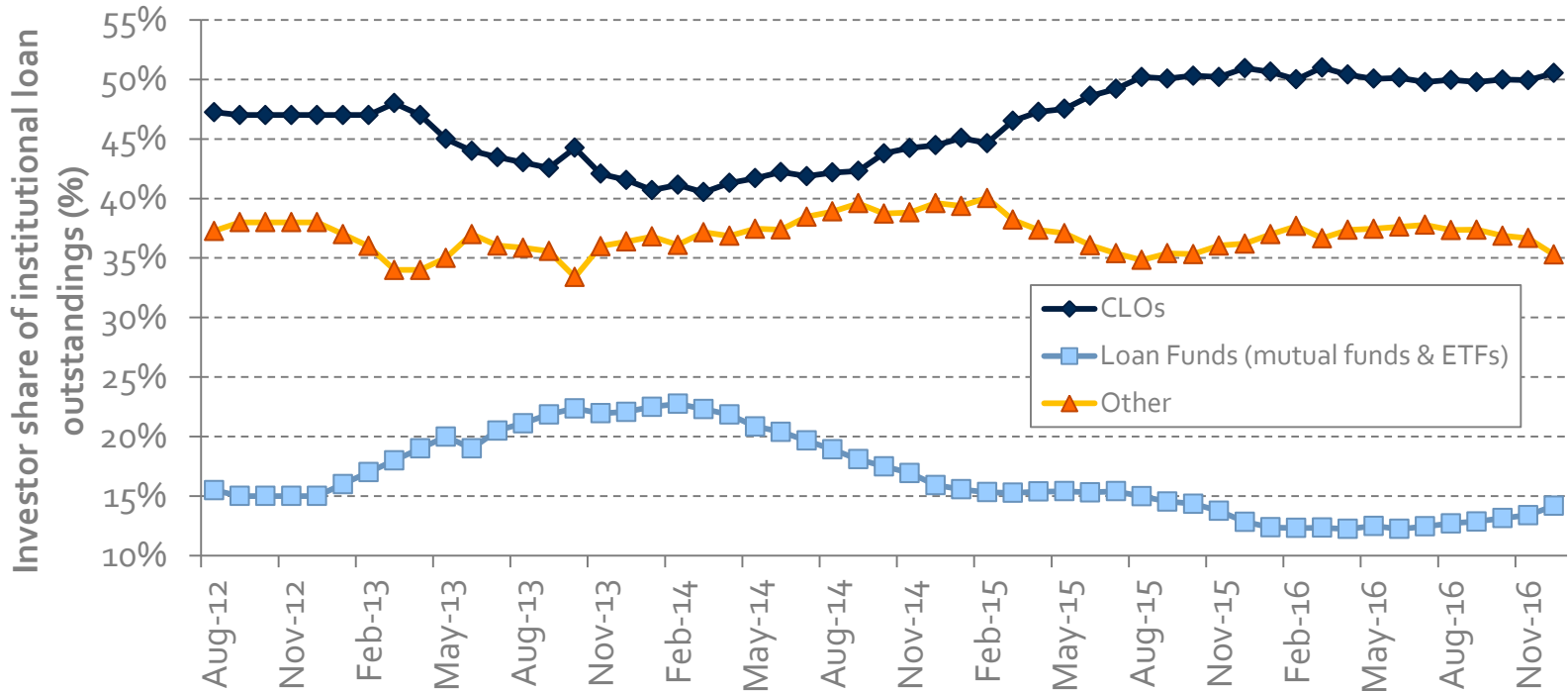
\*Based on the most recent data available

■ Loan mutual fund & ETF assets under management (market value) increased to \$136 billion.



# INVESTOR SHARE OF INSTITUTIONAL LOAN OUTSTANDINGS

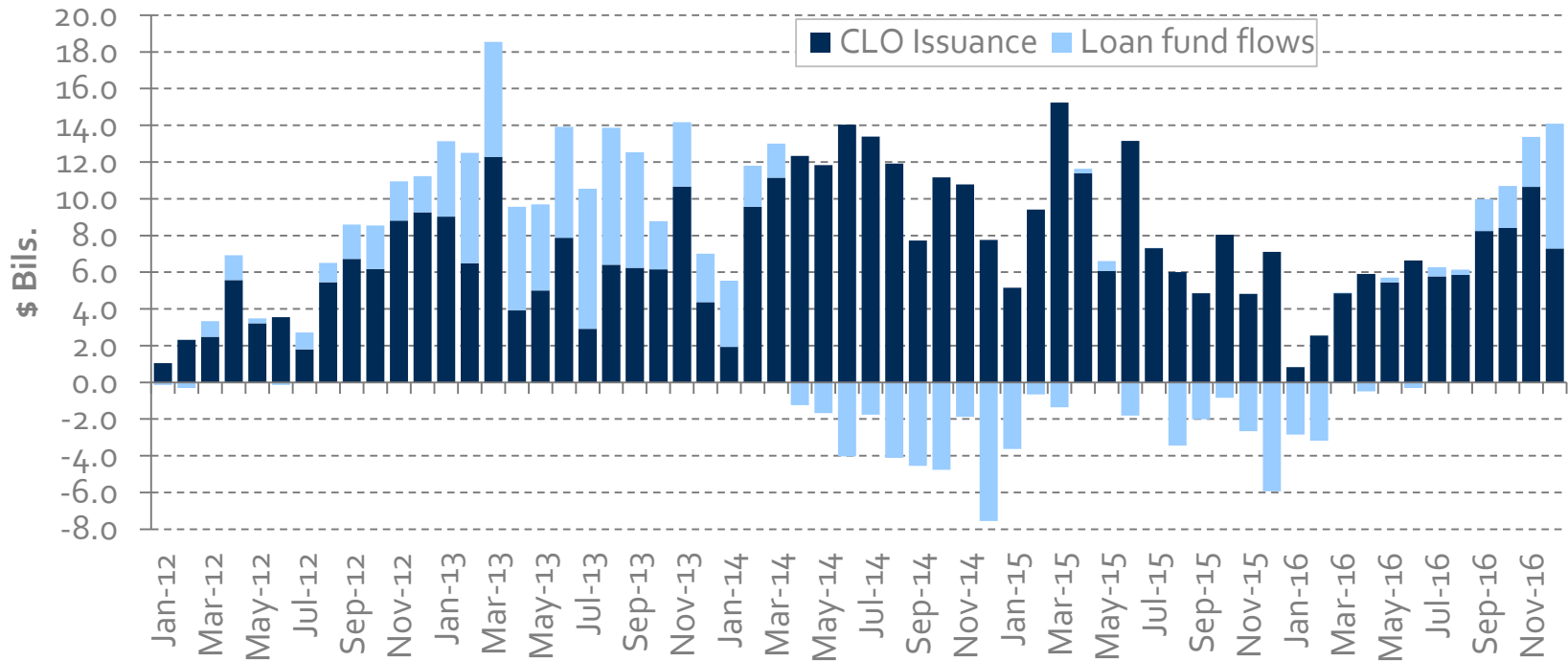
INVESTOR SHARE OF INSTITUTIONAL LOAN OUTSTANDINGS



- The CLO share of institutional loan outstandings is at 51%.
- Loan mutual funds & ETF market share has edged up to 14%.

# CLO ISSUANCE VS. LOAN FUND FLOWS - MONTHLY

MONTHLY CLO ISSUANCE VS. LOAN FUND FLOWS



- U.S. CLOs issued another \$7.3 billion worth of deals in December, taking issuance to \$72.4 billion in 2016.
- Loan funds posted their sixth straight month of inflows, adding \$6.8 billion in December. This took inflows to \$7.8 billion for full-year 2016.



REUTERS/Petar Kujundzic

## CLO MARKET ANALYSIS\*

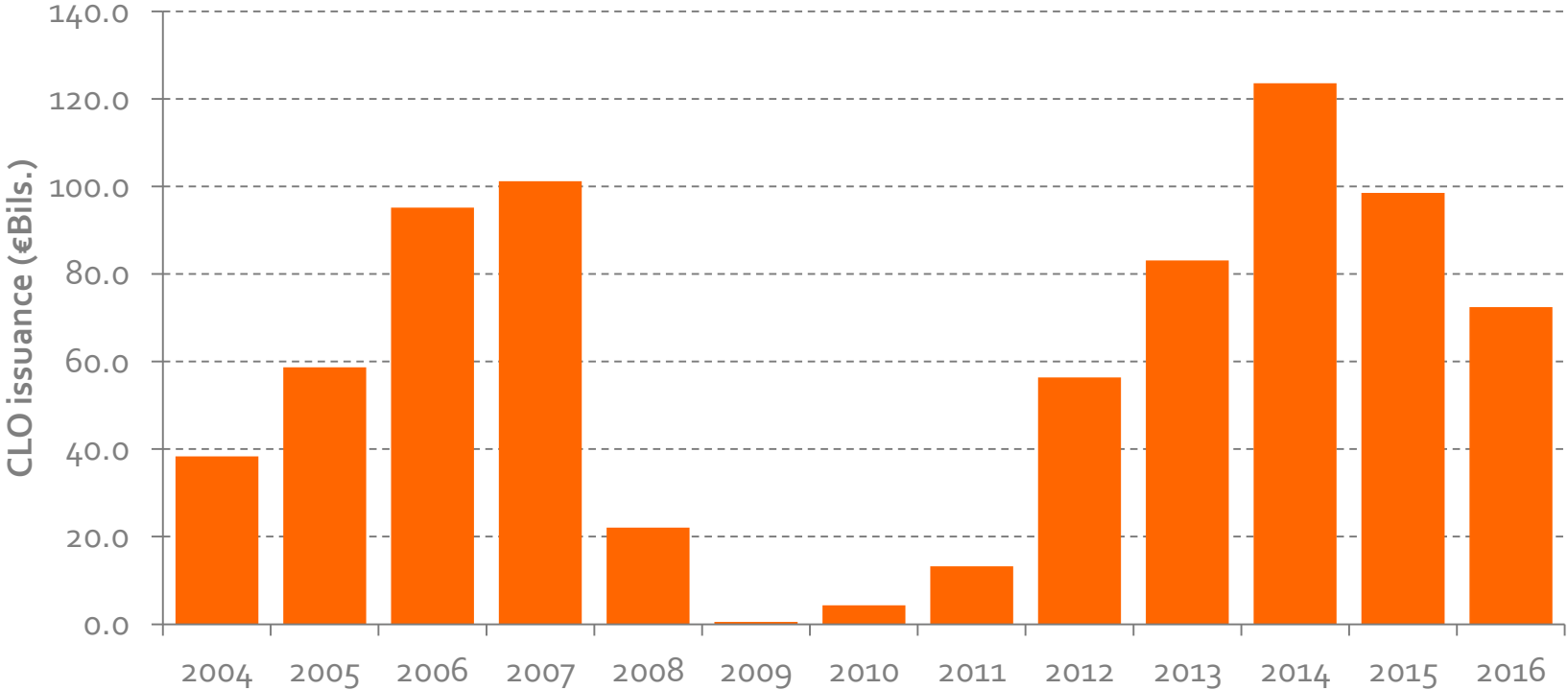
\*Based on the most recently available data in Thomson Reuters LPC Collateral



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# U.S CLO ISSUANCE - ANNUAL

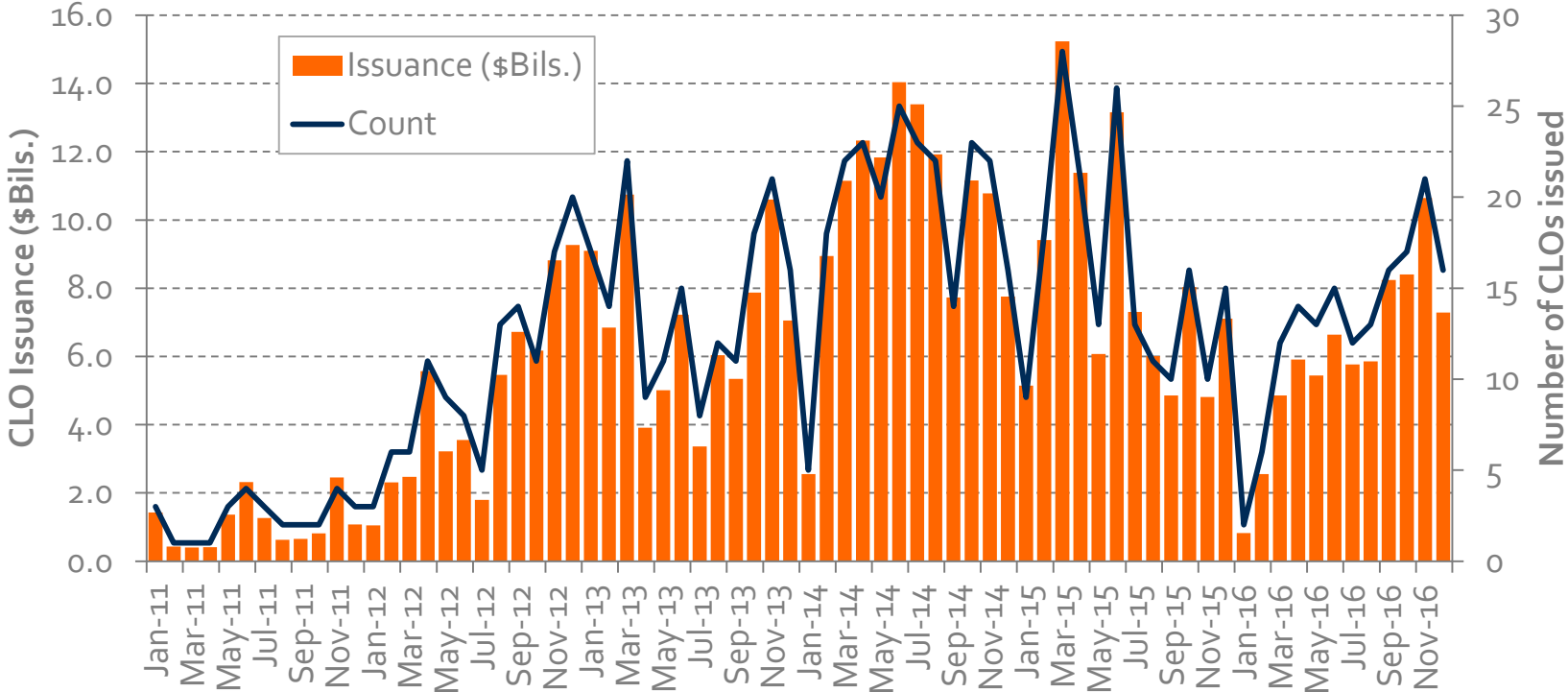
U.S CLO ISSUANCE



- U.S. CLO issuance fell for the third straight year, amounting to \$72.4 billion in 2016 (157 deals), down from \$98.5 billion in 2015.

# U.S. CLO ISSUANCE - MONTHLY

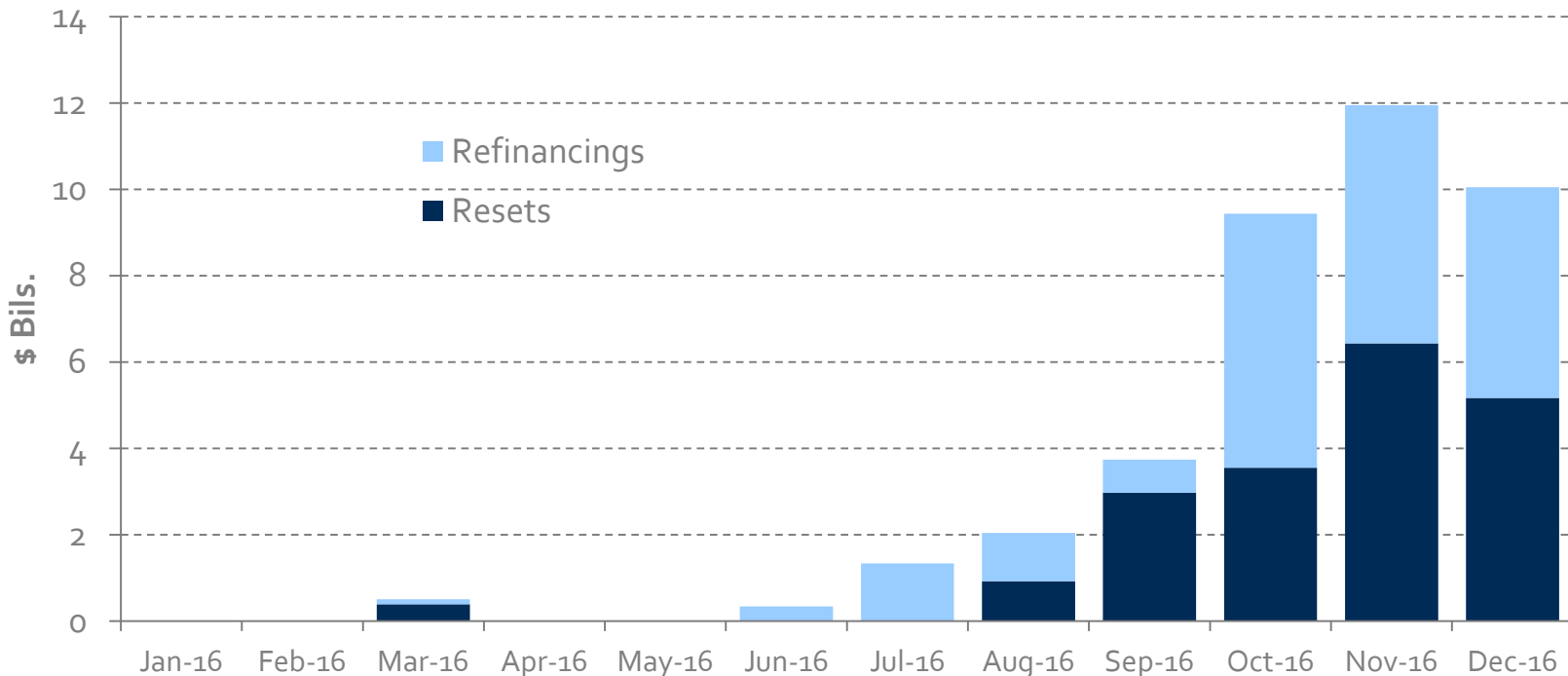
## CLO ISSUANCE



- U.S. CLOs issued another \$7.3 billion worth of deals in December, taking full year 2016 issuance to \$72.4 billion.
- Issuance increased in each quarter, totaling \$26.3 billion in 4Q16.

# U.S. CLO REFINANCINGS & RESETS

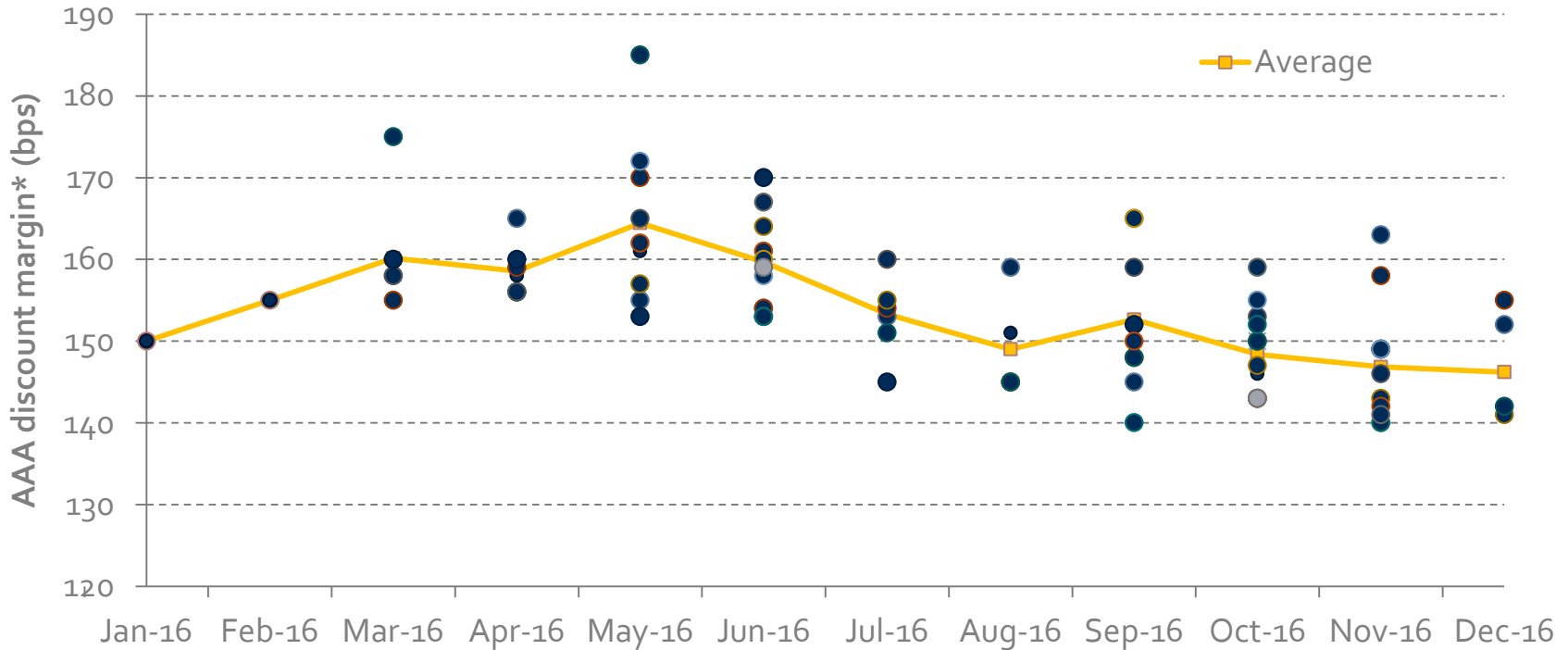
U.S. CLO REFINANCINGS & RESETS



- U.S. refinancing and reset volume surged to over \$31 billion in 4Q16, taking the full year volume to \$39.4 billion from 94 deals.
- Refinancing volume (excluding resets) amounted to nearly \$20 billion, with resets totaling \$19.5 billion.

# U.S. CLO AAA SPREADS

U.S. BSL CLO AAA SPREADS\*

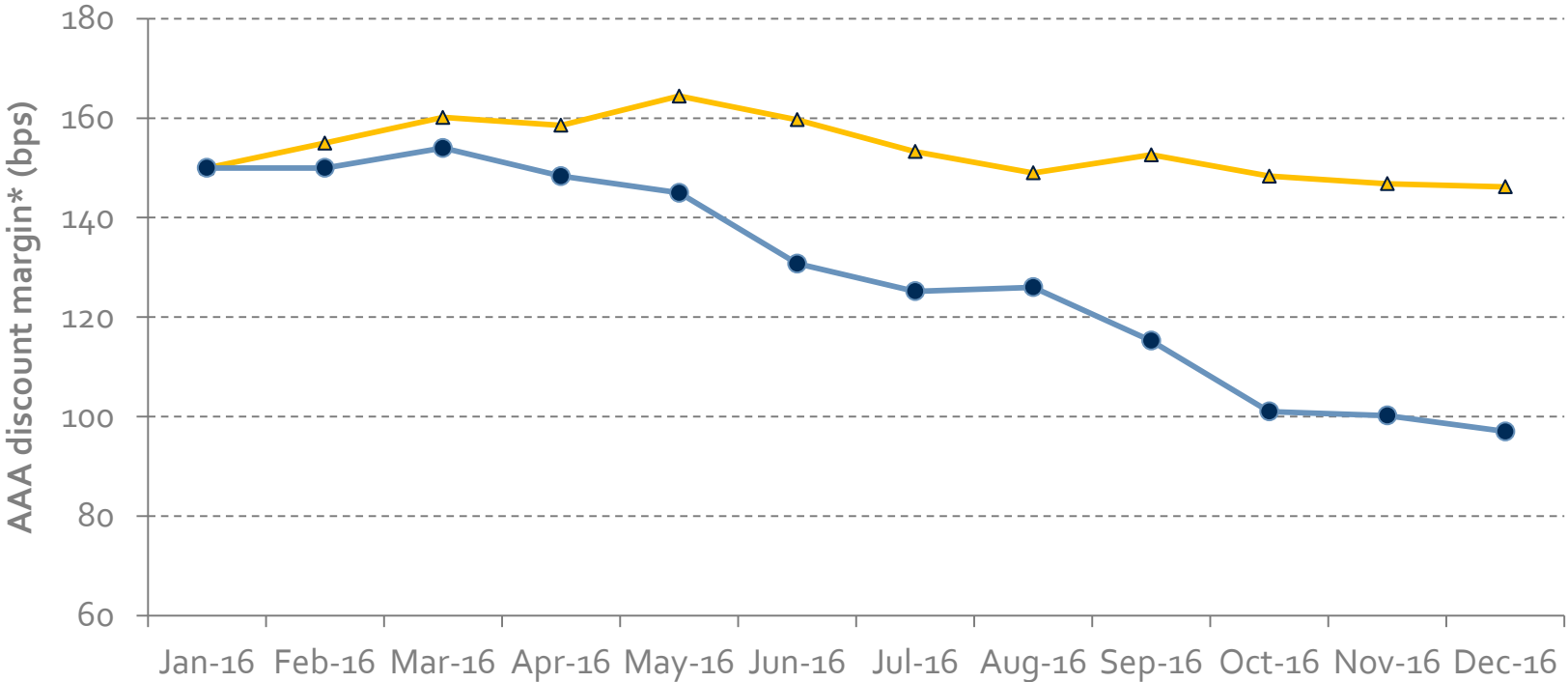


\*Based on deals where discount margin available

- CLO AAA discount margins averaged 146 bps in December, similar to the prior month.
- Discount margins on AAA tranches ranged from 141 bps to a high of 155 bps.

# U.S. VS. EUROPEAN CLO AAA SPREADS

BSL CLO AAA SPREADS\*



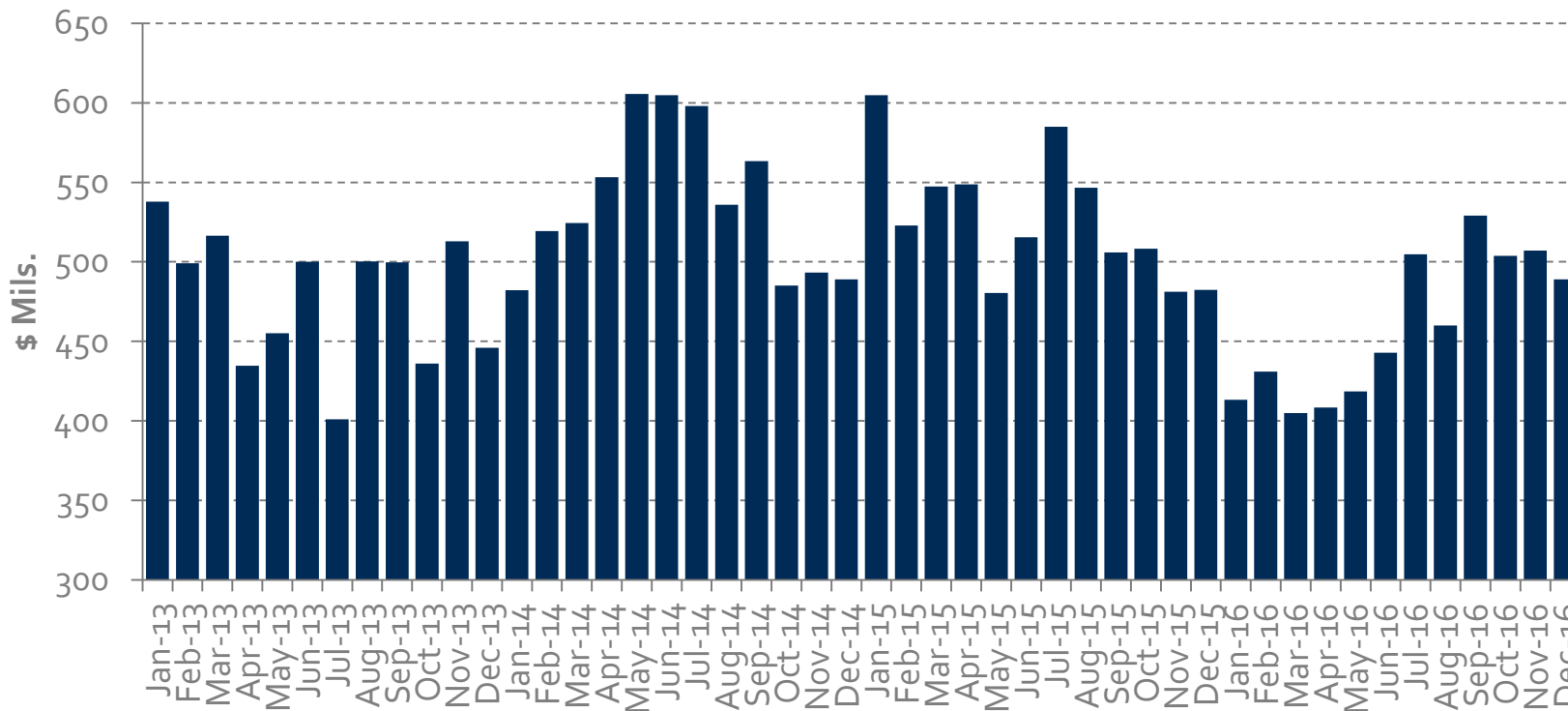
\*Based on deals where discount margin available

- AAA discount margins have tightened in both the U.S. and Europe in recent months.
- That said the tightening has been more pronounced on European deals.



# U.S. CLO AVERAGE SIZE

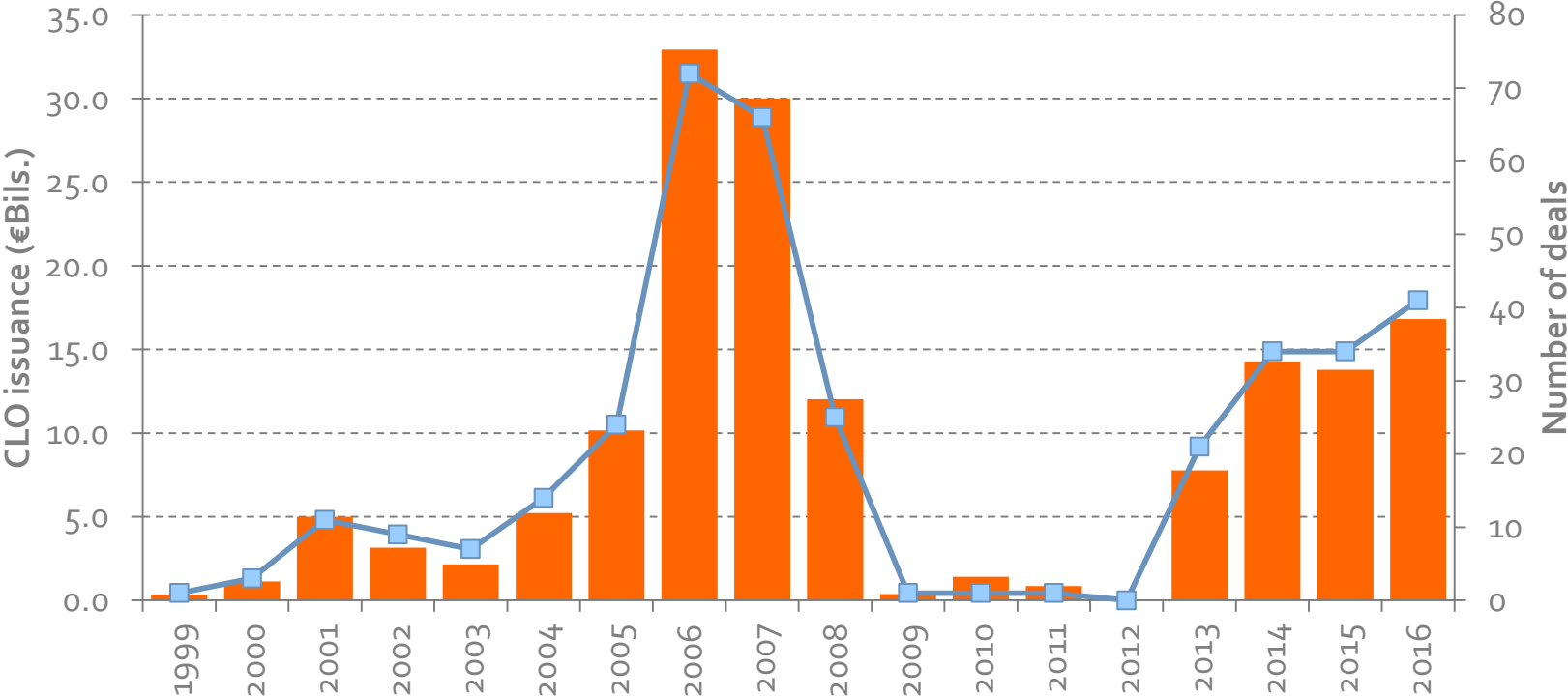
U.S. BSL CLO AVERAGE SIZE



- The average size of the BSL CLOs issued in December declined to \$489 million with deals ranging from \$356 million to \$614 million.
- The average deal size in 2016 was \$467 million, down from \$527 million in 2015.

# EUROPEAN CLO ISSUANCE - ANNUAL

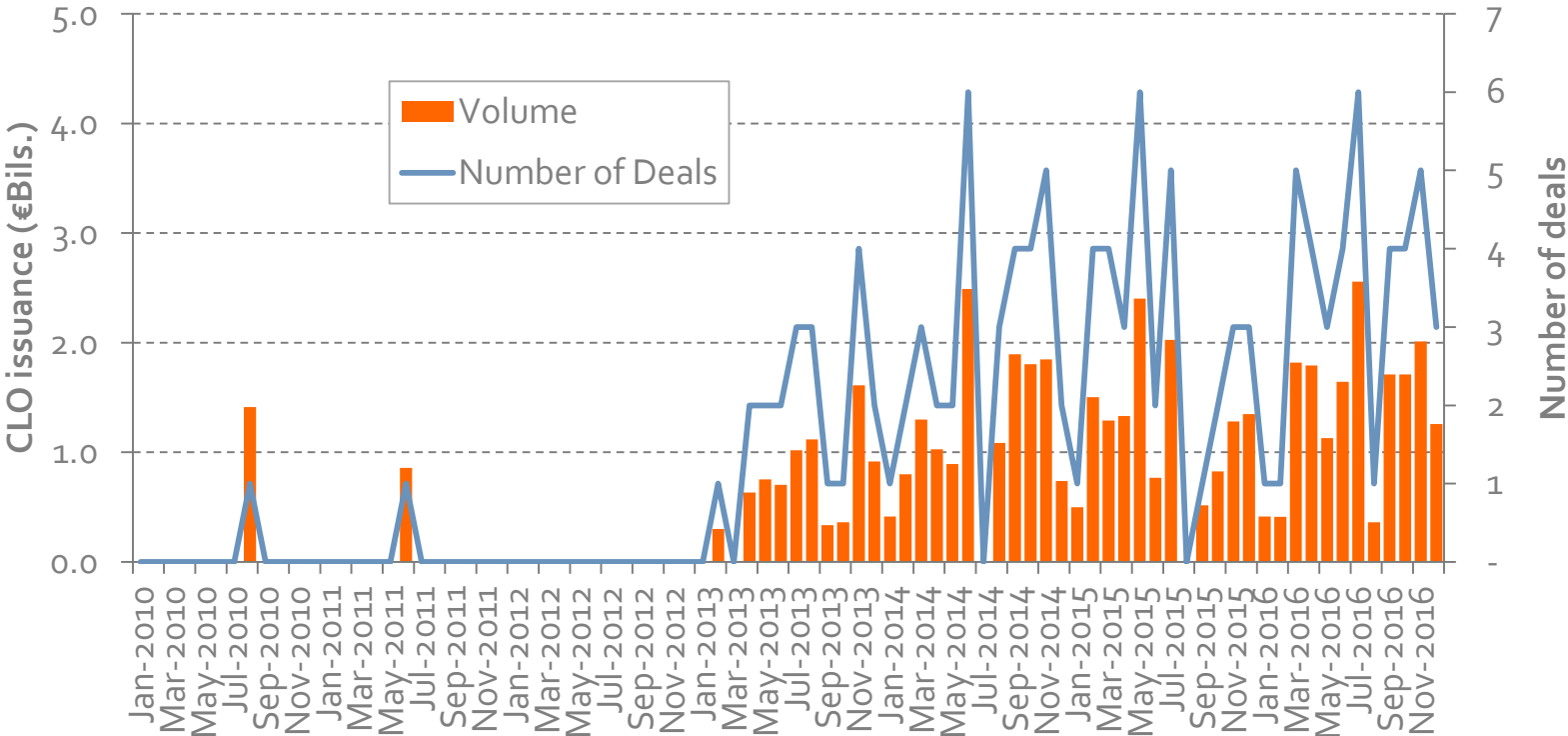
EUROPEAN CLO ISSUANCE



- European CLO issuance climbed €16.8 billion (based on 41 deals) in 2016, up from €13.8 billion (34 deals) in 2015.
- Though well below pre-crisis highs, it was still the highest level of issuance since 2007.

# EUROPEAN CLO ISSUANCE - MONTHLY

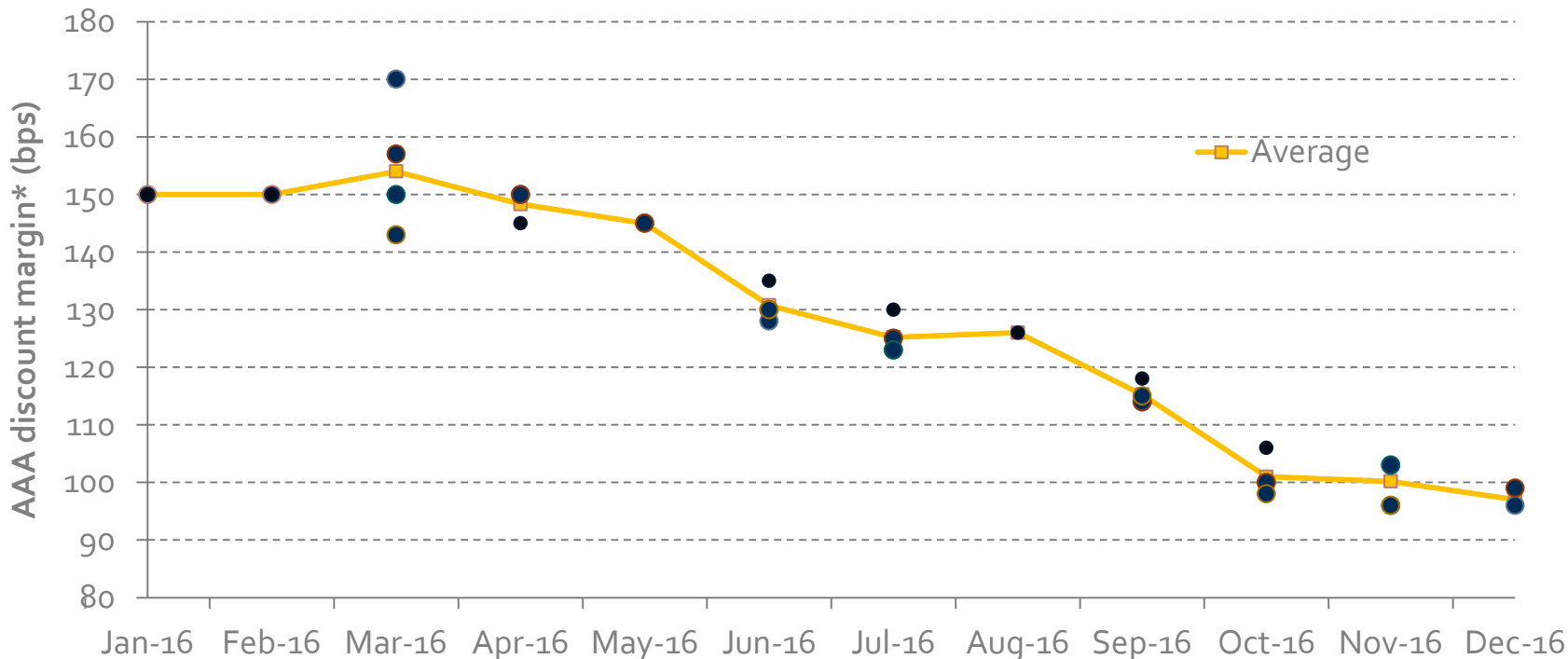
### EUROPEAN CLO ISSUANCE



- The European CLO market added €1.3 billion of issuance from three deals in December.
- Issuance climbed to €5 billion in 4Q16, taking full year 2016 volume to €16.8 billion (based on 41 deals), up from €13.8 billion (34 deals) in 2015.

# EUROPEAN CLO AAA SPREADS

EUROPEAN BSL CLO AAA SPREADS\*

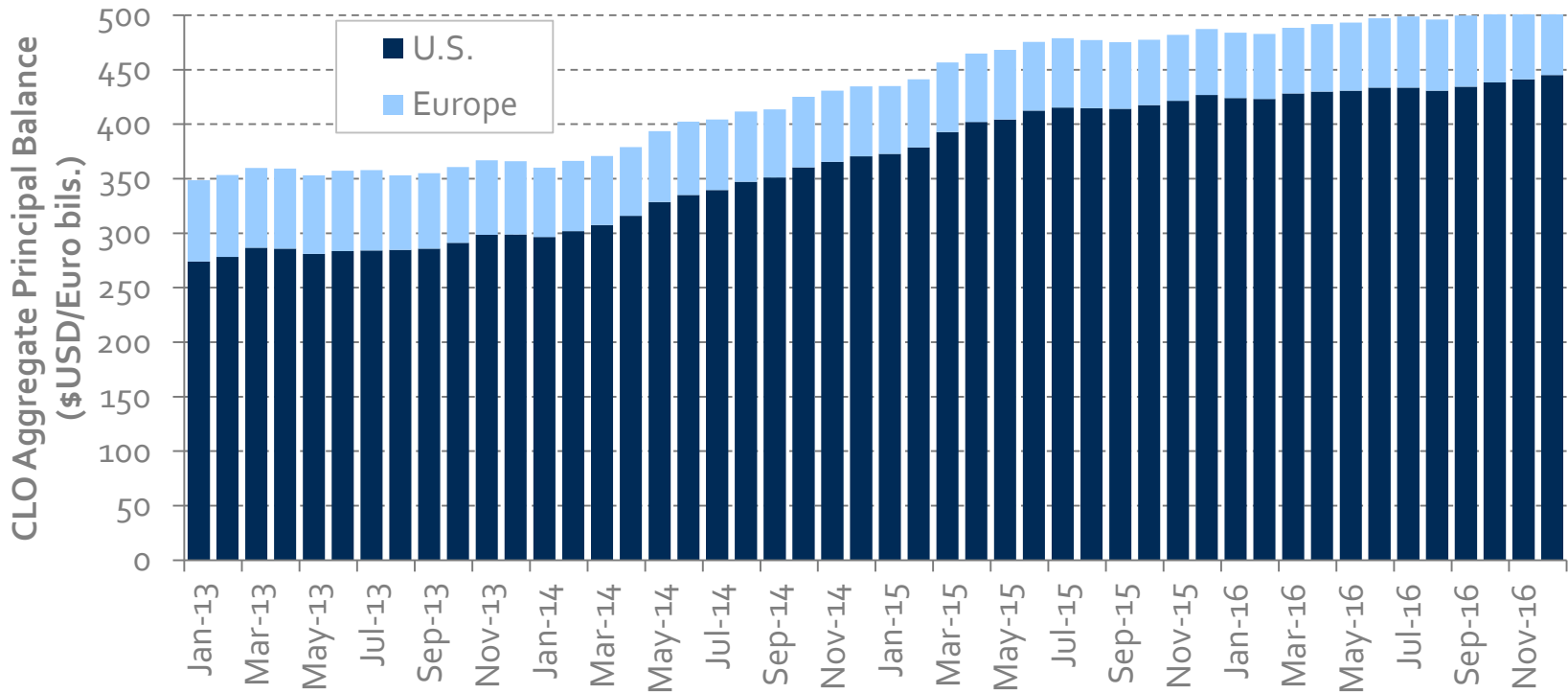


\*Based on deals where discount margin available

■ AAA discount margins on European deals have tightened sharply in recent months. The average discount margin fell below 100 bps in December to reach 97 bps.

# CLO ASSETS UNDER MANAGEMENT

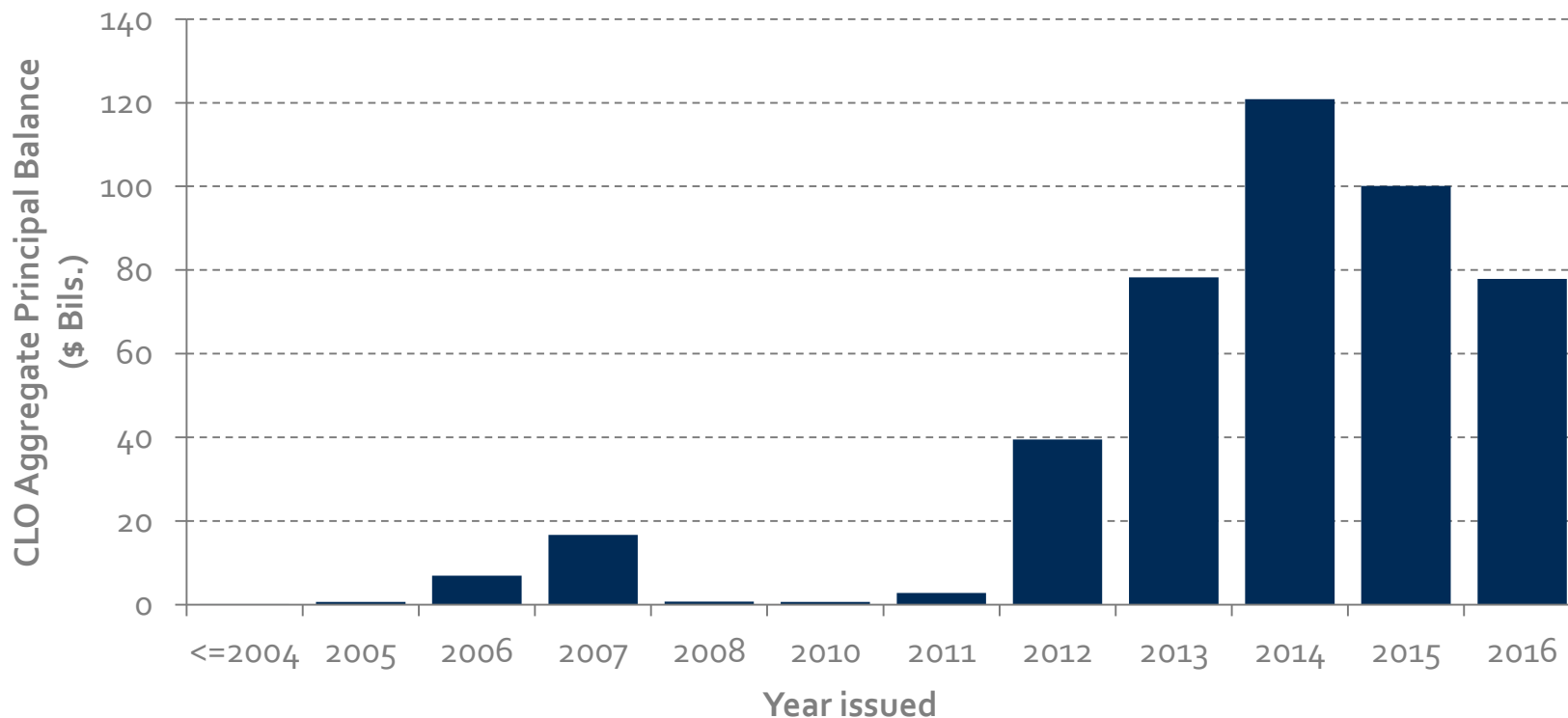
CLO AGGREGATE PRINCIPAL BALANCE: U.S. & EUROPE



- Assets under management increased to \$445 billion for U.S. CLOs and held relatively steady at over €67 billion for European CLOs.

# U.S. CLO AUM BY VINTAGE

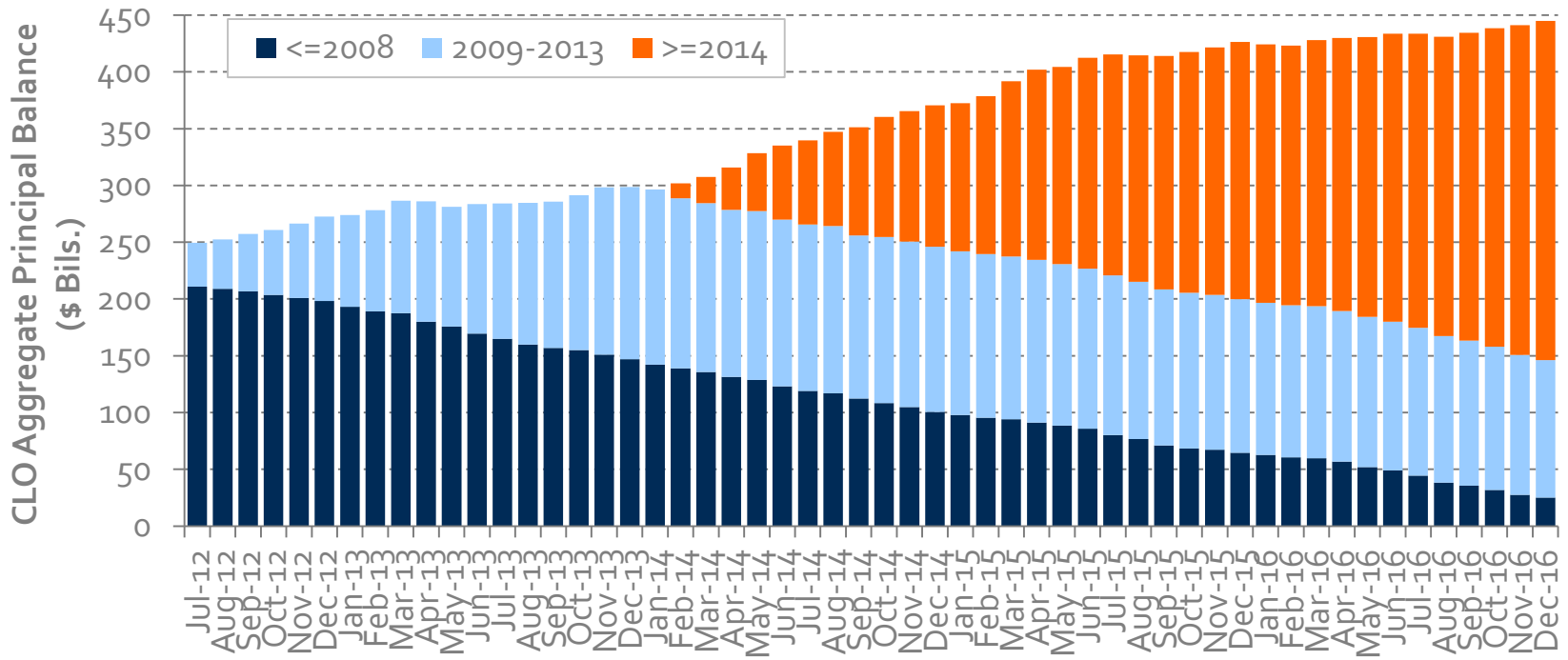
U.S. CLO AGGREGATE PRINCIPAL BALANCE BY VINTAGE



- CLO 2.0s now account for 94% of U.S. CLO assets under management.
- Deals issued since the beginning of 2015 represent 40% of CLO assets under management.

# U.S. CLO AUM BY VINTAGE\*

U.S. CLO AGGREGATE PRINCIPAL BALANCE BY VINTAGE

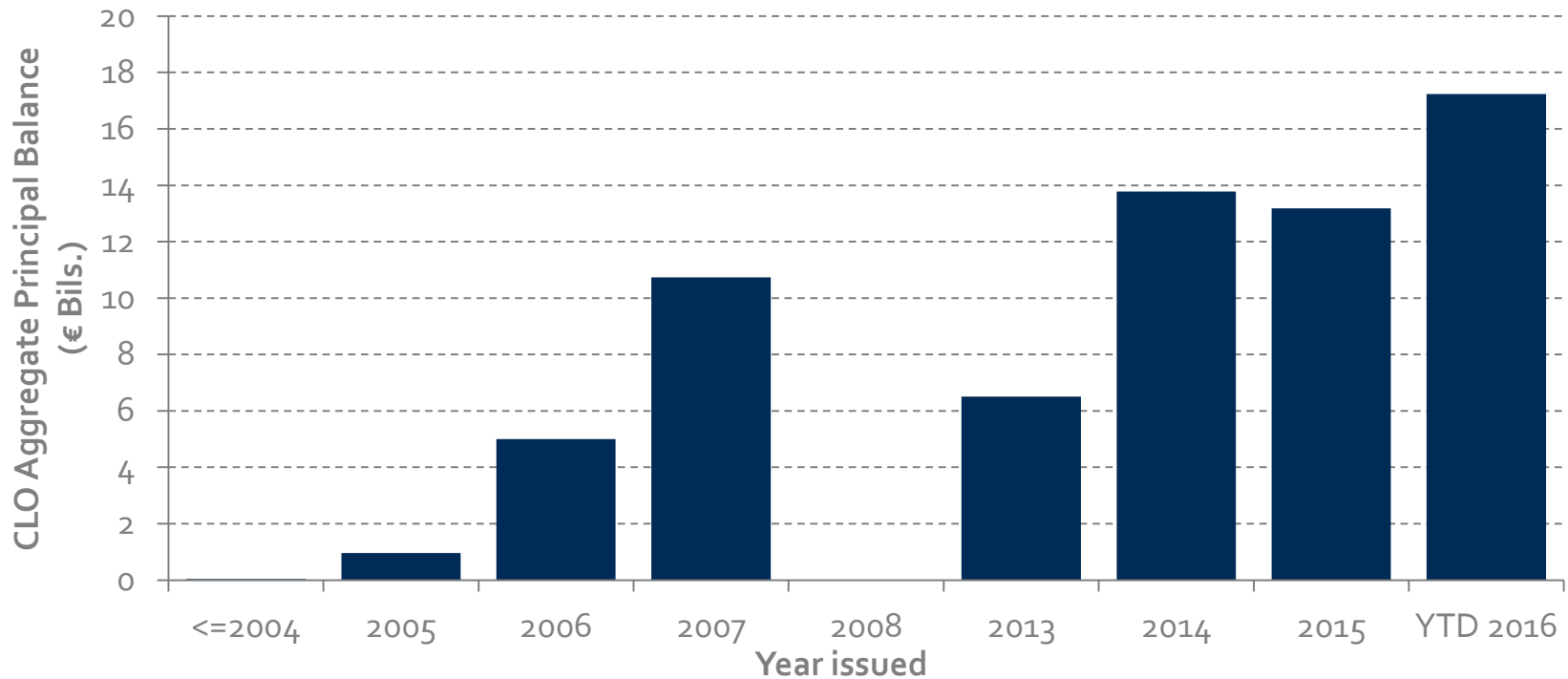


\*Based on year issued

- The CLO 1.0 share of the market is now at 6%, down from 15% a year ago.

# EUROPEAN CLO AUM BY VINTAGE

EUROPEAN CLO AGGREGATE PRINCIPAL BALANCE BY VINTAGE



\*Based on year issued

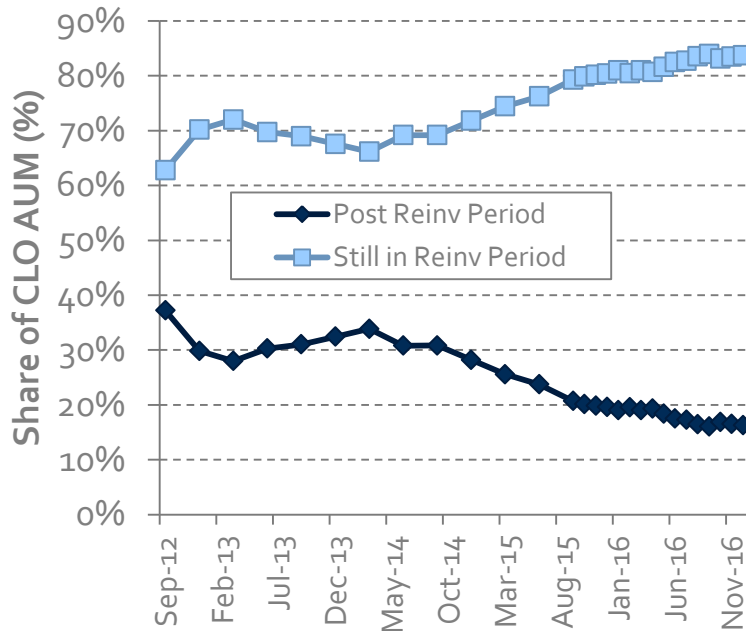
- European CLO 2.0s assets under management is now nearly €51 billion or 75% of the market.



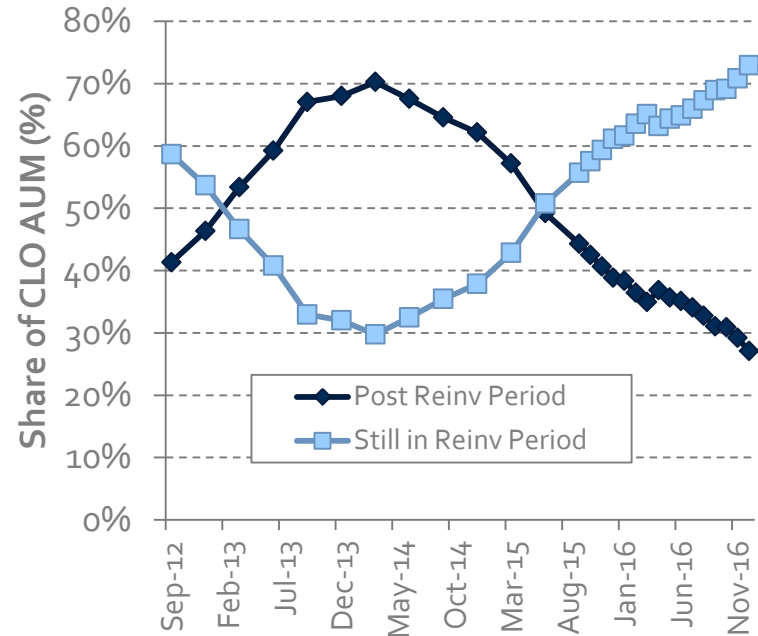
# SHARE OF ASSETS HELD BY CLOs THAT ARE STILL IN / PAST THEIR STATED REINVESTMENT PERIOD

## SHARE OF ASSETS HELD BY CLOs THAT ARE STILL IN THEIR STATED REINVESTMENT PERIOD

U.S. CLOs



European CLOs



- For U.S. CLOs, the share of assets held in CLOs still in their reinvestment period is now at 84% of the market and represents a gain of 4 percentage points this year.
- For European CLOs, the corresponding share has climbed to 73%, a 12 percentage point increase in the last year.

# TOP LOAN HOLDINGS IN U.S. CLO PORTFOLIOS

Rank	Issuer	Approx. Amount (\$Bils.)*
1	Valeant Pharmaceuticals	3.138
2	Dell Inc	2.794
3	Asurion Corp	2.759
4	Transdigm	2.751
5	First Data Corp	2.721
6	Community Health	2.606
7	Albertson	2.410
8	Calpine Corp	2.109
9	Charter Communications	2.052
10	Avago Technologies	1.995
11	Scientific Games	1.976
12	Univision Communications	1.890
13	American Airlines	1.877
14	Bass Pro Group LLC	1.706
15	Numericable SAS	1.683
16	Ineos Group Ltd	1.590
17	Formula One Group	1.534
18	Petsmart Inc	1.454
19	WME IMG Holdings LLC	1.415
20	Royalty Pharma	1.387
21	Advantage Sales & Marketing	1.354
22	Level 3 Communications	1.344
23	Travelport Inc	1.301
24	Pharmaceutical Product Development	1.284
25	BMC Software	1.277

Rank	Issuer	Approx. Amount (\$Bils.)*
26	Berry Plastics Corp	1.239
27	Federal-Mogul Corp	1.224
28	Endo Pharmaceuticals	1.224
29	Universal Services of America LP	1.211
30	TEX Operations Co LLC	1.193
31	Dynegy Inc	1.187
32	Protection One	1.178
33	Acosta	1.162
34	Fortescue Metals Group Ltd	1.155
35	DTZ US Borrower LLC	1.154
36	Energy Transfer Equity LP	1.151
37	Western Digital Corp	1.149
38	Tribune Co	1.144
39	MacDermid Inc	1.124
40	Sabre Holdings Corp	1.111
41	Infor Global Solutions	1.103
42	Chrysler Corp	1.088
43	Communications Sales & Leasing Inc	1.079
44	Cablevision Systems Corp	1.062
45	Carestream Health	1.034
46	ZIGGO BV	1.033
47	Neiman Marcus Group Inc	1.027
48	Petco Animal Supplies	1.008
49	WideOpenWest Finance LLC	1.008
50	Huntsman ICI	0.990

\*Excludes CLOs not yet in LPC Collateral

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# TOP LOAN HOLDINGS IN U.S. CLO PORTFOLIOS

Rank	Issuer	Approx. Amount (\$Bils.)*
51	NXP BV	0.977
52	Clarke American	0.974
53	MultiPlan Inc	0.971
54	Univar NV	0.970
55	Ortho-Clinical Diagnostics	0.948
56	Lightower Fiber Networks	0.947
57	Riverbed Technology Inc	0.942
58	Windstream Corp	0.929
59	Brickman Group	0.911
60	Gardner Denver Inc.	0.907
61	Envision Healthcare	0.900
62	Amaya Gaming Group	0.896
63	Informatica Corp	0.890
64	Harbor Freight Tools	0.884
65	Reynolds Group	0.880
66	Aramark Corporation	0.880
67	Revlon	0.875
68	Wheelerlaborator Allevard SA	0.870
69	Micro Focus International Plc	0.870
70	ON Semiconductor	0.858
71	Avaya Inc	0.853
72	UPC Broadband Holding	0.842
73	LPL Financial Services	0.821
74	Cengage Learning	0.798
75	Quikrete Holdings	0.796

Rank	Issuer	Approx. Amount (\$Bils.)*
76	Seadrill Ltd	0.794
77	TransUnion LLC	0.788
78	Endurance International	0.788
79	JBS USA	0.784
80	McGraw-Hill global Education Holdings	0.783
81	US Renal Care Inc	0.781
82	Mallinckrodt Group Inc	0.779
83	Jeld-Wen Inc	0.776
84	HCA Inc.	0.775
85	La Quinta	0.775
86	Seaworld Parks and Entertainment Inc	0.774
87	KAR Holdings Inc	0.772
88	Catalent Pharma	0.771
89	Michaels Stores Inc	0.764
90	Tronox Inc	0.762
91	Gates Group	0.762
92	Eastern Power LLC	0.761
93	Hamilton Sundstrand Industrial	0.758
94	Cumulus Media	0.751
95	Lions Gate Entertainment	0.751
96	Mediacom Broadband	0.751
97	Syniverse Technologies	0.751
98	Husky International	0.747
99	Vertiv	0.741
100	Epicor Software Corp	0.737

\*Excludes CLOs not yet in LPC Collateral

# TOP LOAN HOLDINGS IN EUROPEAN CLO PORTFOLIOS

Rank	Issuer	Approx. Amount (€Bils.)*
1	Ineos Group Ltd	1.049
2	Numericable SAS	0.995
3	eircom Group Plc	0.950
4	ZIGGO BV	0.893
5	IDCSalud Quiron	0.842
6	Flint Group	0.681
7	First Data Corp	0.679
8	Ista International GmbH	0.668
9	Telenet Operatives NV	0.574
10	Springer Science & Business Media GmbH	0.574
11	SIG Combibloc Group AG	0.514
12	Wind Telecomunicazione Spa	0.510
13	Verallia SA	0.509
14	BSN Medical GmbH & Co KG	0.494
15	Douglas Holding AG	0.488
16	Euro Garages Ltd	0.471
17	MacDermid Inc	0.427
18	Ceva Sante Animale SA	0.418
19	VERISURE HOLDING AB	0.408
20	Patheon Inc	0.390
21	Western Digital Corp	0.381
22	Ion Trading Technologies LTD	0.375
23	Tele Columbus GmbH & Co	0.358
24	Solera	0.346
25	Technicolor SA (Thomson)	0.327

Rank	Issuer	Approx. Amount (€Bils.)*
26	Iglo Foods Group Ltd	0.327
27	Compagnie Europeenne de Prevoyance [CEP]	0.318
28	Unit 4 Agresso NV	0.316
29	Mediq NV	0.316
30	Diaverum AB [Ex-Gambro Healthcare]	0.315
31	Solenis International	0.313
32	Le Groupe Vedici	0.313
33	Gas Natural Fenosa Telecomunicaciones [GNFT]	0.309
34	EVRY ASA	0.308
35	Allnex USA Inc	0.306
36	Bureau Van Dijk Electronic Publishing BV	0.300
37	Swissport International Ltd	0.298
38	Infor Global Solutions	0.295
39	Inovyn Ltd	0.291
40	Delachaux SA	0.287
41	Computer Patent Annuities Global Ltd [CPA]	0.287
42	Foncia SA	0.278
43	Action Nederland BV	0.278
44	Unilabs Holdings SA	0.276
45	Constantia Flexibles International GmbH	0.272
46	ALTICE FINANCING SA	0.272
47	Sebia International SA	0.271
48	BMC Software	0.263
49	Oxea GmbH	0.262
50	M7 Group SA	0.261

\*Excludes CLOs not yet in LPC Collateral



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SOURCE: THOMSON REUTERS LPC

# TOP LOAN HOLDINGS IN EUROPEAN CLO PORTFOLIOS

Rank	Issuer	Approx. Amount (€Bils.)*
51	Coherent Inc	0.261
52	AENOVA	0.261
53	Kuoni Reisen Holding AG	0.258
54	Scandlines GmbH	0.253
55	Gardner Denver Inc.	0.250
56	Triangle FM Services	0.247
57	Sivantos Pte Ltd	0.247
58	Catalent Pharma	0.246
59	Scout24	0.245
60	IMS Healthcare	0.245
61	Valeo Foods Ltd	0.244
62	Exopack LLC	0.241
63	Signode Industrial Group US Inc	0.238
64	CBR Holdings GmbH & Co	0.237
65	Orion Engineered Carbons	0.231
66	Santander Asset Management	0.229
67	Cortefiel SA	0.227
68	Keter Group	0.224
69	Keurig Green Mountain Inc.	0.224
70	CeramTec GmbH	0.223
71	TMF GROUP HOLDING BV	0.221
72	Webhelp SA	0.221
73	AVR Holding	0.217
74	OGF [Pompes Funebres Generale]	0.215
75	Coty Inc	0.214

Rank	Issuer	Approx. Amount (€Bils.)*
76	Univar NV	0.210
77	Armacell International GmbH	0.208
78	Genesys Telecommunications Laboratories	0.201
79	Capsugel	0.198
80	Minimax GmbH	0.195
81	STYROLUTION GROUP GMBH	0.195
82	IMS HEALTH INC	0.191
83	United Biscuits Finance Plc	0.189
84	Maxeda DIY BV	0.188
85	Amaya Gaming Group Inc	0.187
86	Fraikin SA	0.184
87	Jacobs Douwe Egberts	0.184
88	Diebold Inc	0.184
89	Vistra Group Holdings SA	0.182
90	AHT Cooling Systems GmbH	0.181
91	Kinetic Concepts	0.180
92	ANGUS Chemical Co	0.180
93	Informatica Corp	0.179
94	Deoleo SA	0.178
95	Tipico Co Ltd	0.178
96	Continental Foods	0.176
97	Oberthur Card Systems SA	0.176
98	HES Beheer NV	0.175
99	Ethypharm SA	0.172
100	Novacap SA	0.171

\*Excludes CLOs not yet in LPC Collateral

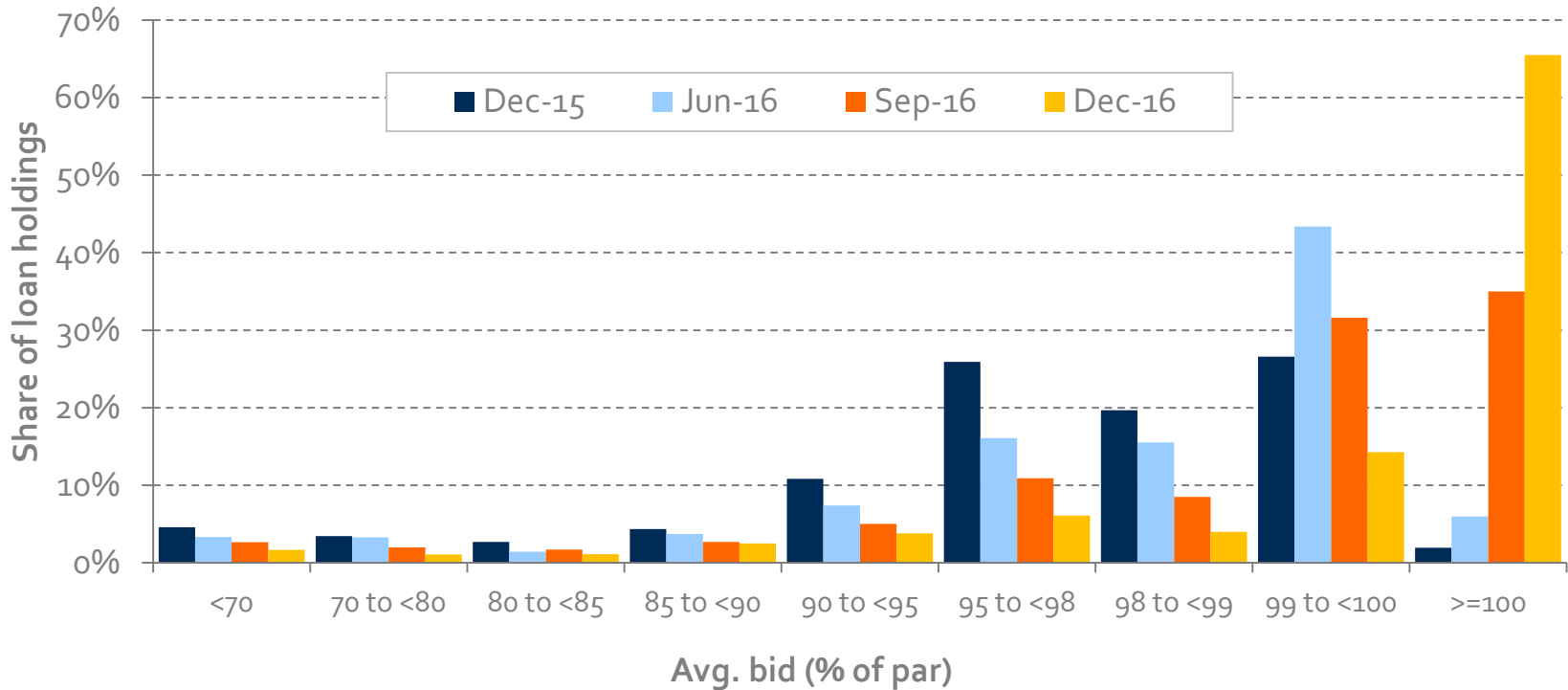


THOMSON REUTERS

SOURCE: THOMSON REUTERS LPC

# DISTRIBUTION OF SECONDARY MARKET PRICES OF LOAN ASSETS IN CLOs – U.S. CLOs

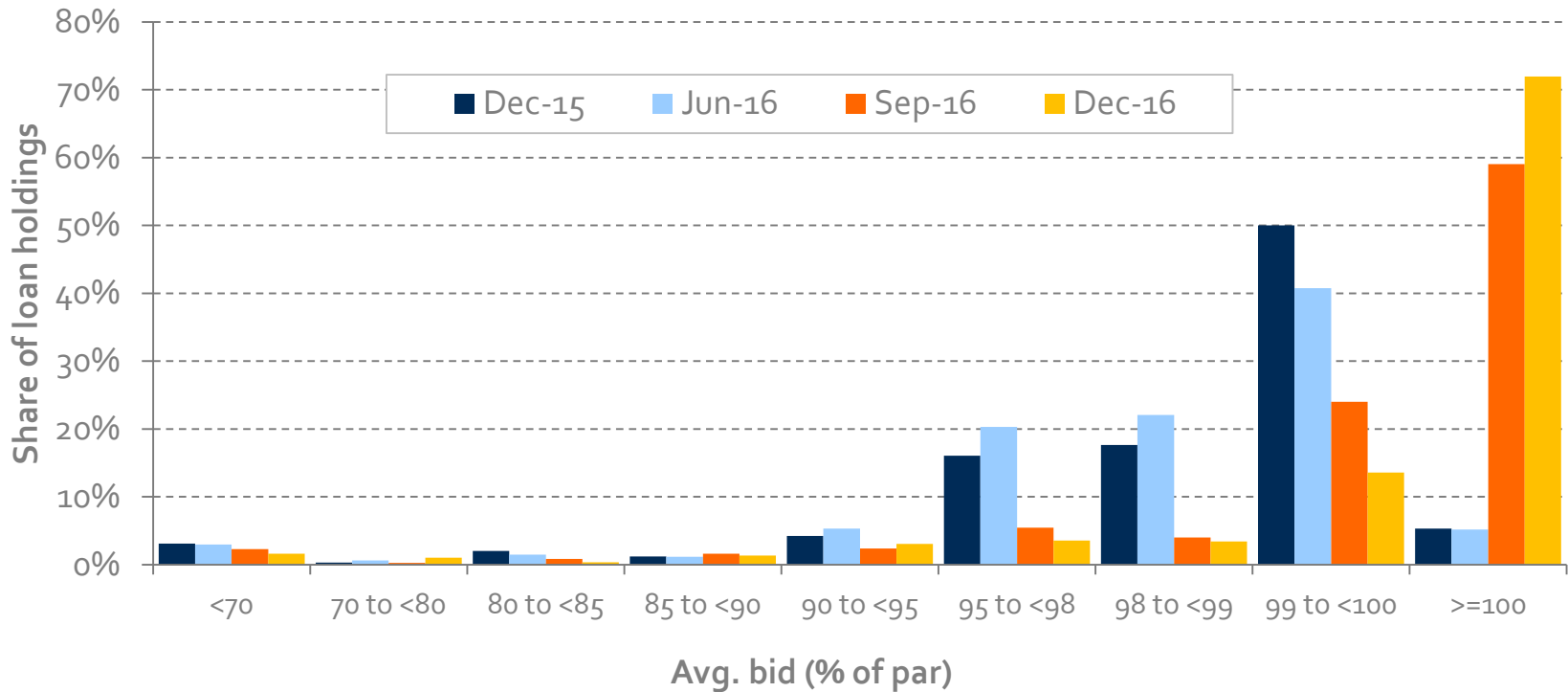
DISTRIBUTION OF SECONDARY MARKET PRICES OF LOAN ASSETS IN CLOs



- The share of par-plus loans in U.S. CLOs climbed to 65% in December.
- At the other end of the price scale, the share of loans bid below 90 cents on the dollar fell to 6%.

# DISTRIBUTION OF SECONDARY MARKET PRICES OF LOAN ASSETS IN CLOs – EUROPEAN CLOs

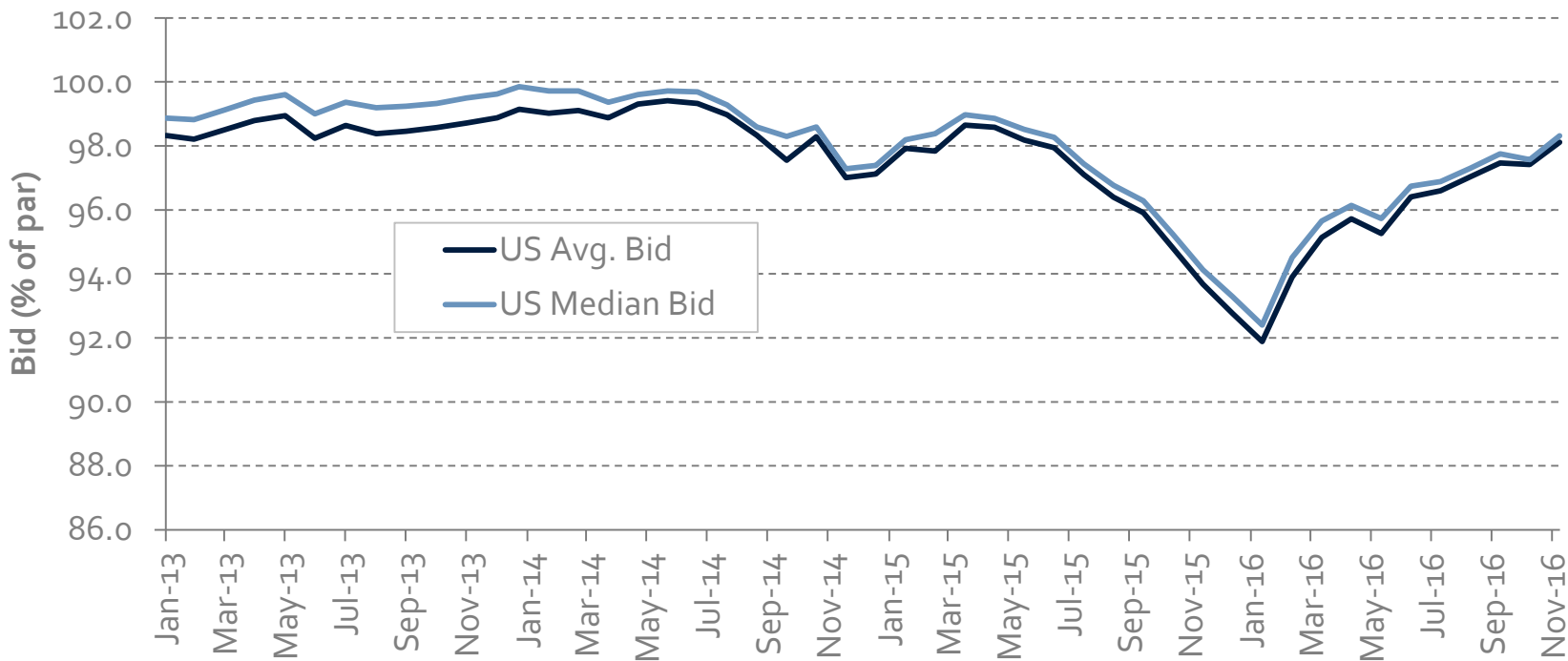
DISTRIBUTION OF SECONDARY MARKET PRICES OF LOAN ASSETS IN CLOs



- In European deals, the share of par-plus loans is now at 72%.

# AVERAGE BID OF U.S. CLO PORTFOLIOS (UNDERLYING ASSETS)

AVERAGE BID OF U.S. CLO PORTFOLIOS

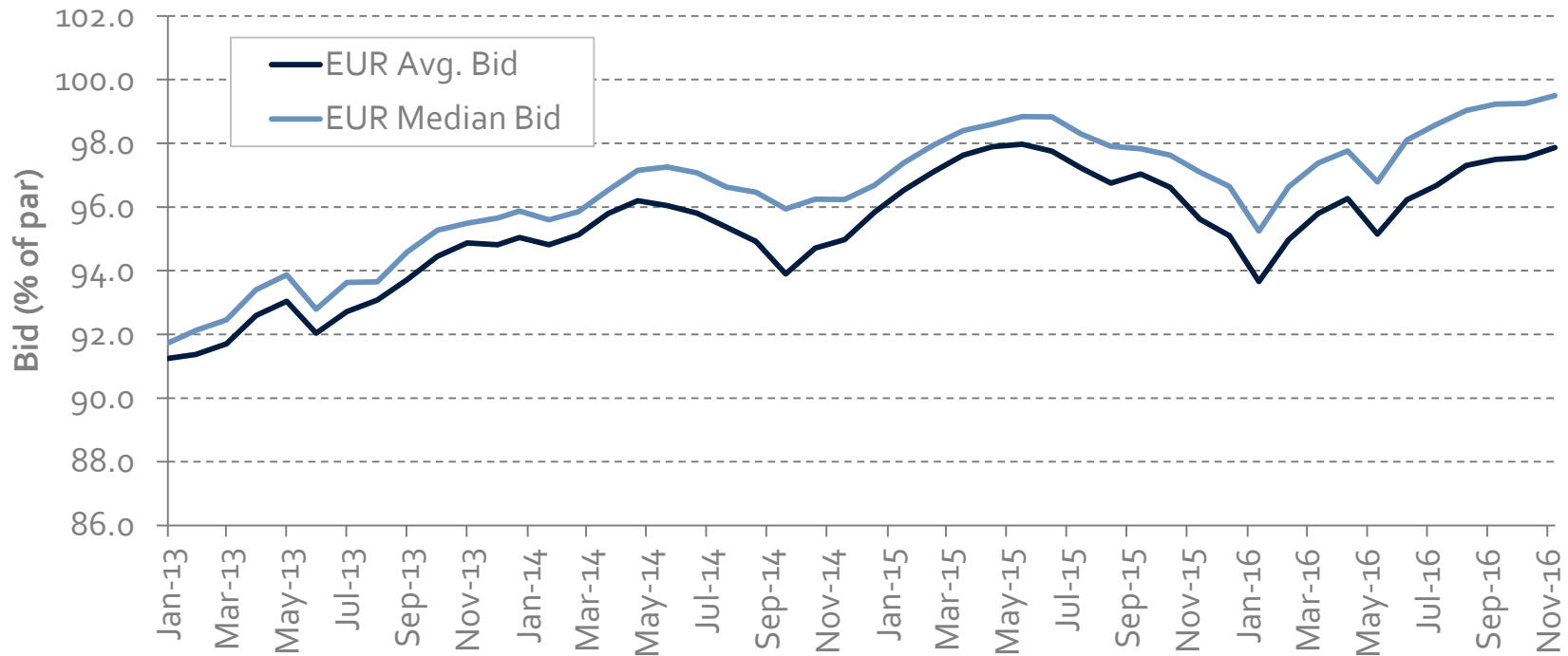


- The average bid of U.S. CLO portfolios increased to 98.11 in December, a gain of 70 bps. The median bid climbed to 98.31.
- For full year 2016, the average and median bids are up over 400 bps.



# AVERAGE BID OF EUROPEAN CLO PORTFOLIOS (UNDERLYING ASSETS)

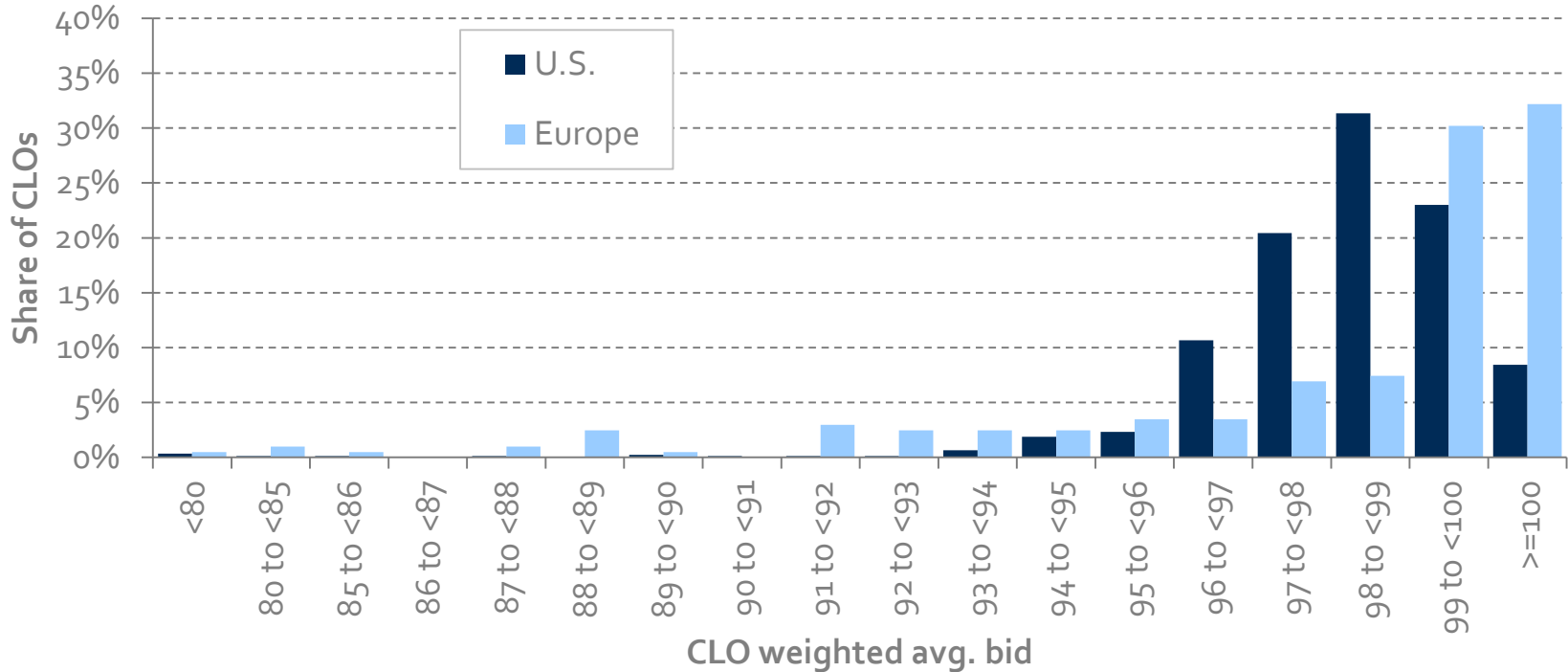
## AVERAGE BID OF EUROPEAN CLO PORTFOLIOS



- The average bid of European CLOs asset portfolios gained 32 bps to 97.87 in December. The median bid increased to 99.50 from 99.25 a month earlier.
- For full year 2016, the average and median bids are up over 200 bps.

# WEIGHTED AVERAGE BID OF CLO PORTFOLIOS: U.S. VS. EUROPE

CLO PORTFOLIO WEIGHTED AVERAGE BID DISTRIBUTION (UNDERLYING ASSETS)



\*Excludes CLOs less than \$50 million in size.

Looking at the distribution of CLO portfolio prices, 75% of US CLOs have a weighted average bid on their assets in the 97 to sub-100 area. In comparison, most European deals (62%) are bid in the in the 99-plus area.



REUTERS/Petar Kujundzic

# LIST OF RECENT CLOs / LEAGUE TABLES



THOMSON REUTERS

## 2016 U.S. CLOs

Date priced	CLO manager	CLO name	Agent bank	Trustee	Deal size	AAA size	Equity size
22-Jan-16	Babson Capital	Babson CLO 2016-1	Morgan Stanley	Citi/Virtus	407.00	250.50	36.50
22-Jan-16	Voya Investment Management	Voya CLO 2016-1	JP Morgan	US Bank	419.30	257.30	37.75
2-Feb-16	Golub Capital	Golub 30	Greensledge	US Bank	478.00		95.50
12-Feb-16	NewStar Financial	Newstar Commercial Loan Funding 2016-1	Wells Fargo	US Bank	348.01	196.50	45.51
24-Feb-16	Neuberger Berman	Neuberger Berman CLO XXI	Morgan Stanley	US Bank	361.50	226.20	30.90
25-Feb-16	BlackRock Financial Management	Magnetite XVII	Deutsche Bank	Deutsche Bank	498.75	320.00	38.75
25-Feb-16	Credit Suisse Asset Management	Madison Park Funding XX	JP Morgan	Wells Fargo	504.90	310.00	44.90
25-Feb-16	Denali Capital	Denali Capital CLO XII	BNP Paribas	US Bank	358.84	222.25	36.86
4-Mar-16	Highbridge Principal Strategies	Highbridge Loan Management 8-2016	Morgan Stanley	US Bank	406.75	251.00	37.75
9-Mar-16	Oaktree Capital Management	Oaktree EIF I Series A	Wells Fargo	BNY Mellon	470.00	289.80	88.10
15-Mar-16	American Capital Asset Management	ACAS CLO 2016-9	Citi	US Bank	405.48	268.00	36.48
16-Mar-16	Wellfleet Credit Partners	Wellfleet CLO 2016-1	Morgan Stanley	US Bank	358.50	229.50	34.50
17-Mar-16	Carlyle Investment Management	Carlyle GMS CLO 2016-1	JP Morgan	State Street	402.90	246.40	34.90
18-Mar-16	Symphony Asset Management	Symphony CLO XVII	Greensledge	BNY Mellon	512.00	320.75	52.00
21-Mar-16	LCM Asset Management	LCM XXI	Deutsche Bank	Deutsche Bank	381.06	235.00	36.36
23-Mar-16	Invesco	Upland CLO	Citi	US Bank	406.25	260.00	38.25
23-Mar-16	Creek Source LLC	Mill Creek CLO II	Goldman Sachs	Wells Fargo	302.50	196.50	34.60
24-Mar-16	Telos Asset Management	Telos CLO 2016-7	Societe Generale	US Bank	252.37	156.50	27.37
24-Mar-16	Octagon Credit Investors	Octagon Investment Partners 26	Bank of America Merrill Lynch	US Bank	509.10	310.00	49.10
31-Mar-16	Canyon Capital	Canyon CLO 2016-1	Goldman Sachs	Deutsche Bank	451.00	292.50	39.25

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## 2016 U.S. CLOs

Cont'd from prior slide

Date priced	CLO manager	CLO name	Agent bank	Trustee	Deal size	AAA size	Equity size
13-Apr-16	BlueMountain Capital Management	BlueMountain CLO 2016-1	JP Morgan	Citi/Virtus	424.00	263.50	33.00
15-Apr-16	Regatta Loan Management	Regatta VI	Morgan Stanley	US Bank	411.00	255.00	42.00
20-Apr-16	American Money Management Corp	AMMC CLO 18	Jefferies	US Bank	406.15	243.00	38.15
20-Apr-16	Onex Credit Partners	OCP 2016-11	Citi	Citi/Virtus	501.60	310.00	45.10
20-Apr-16	Prudential Investment Management	Dryden 42 Senior Loan Fund	BNP Paribas	US Bank	401.75	248.00	35.75
20-Apr-16	Zais Group	Zais CLO 4	RBC Capital Markets	US Bank	280.70	188.50	35.20
20-Apr-16	Golub Capital	Golub Capital Partners CLO LTD 2016-31	Wells Fargo	Wells Fargo	354.29	192.50	98.41
25-Apr-16	Sound Point Capital Management	Sound Point CLO XI	Credit Suisse	US Bank	512.50	322.50	52.50
26-Apr-16	Palmer Square Capital Management	Palmer Square Loan Funding 2016-2	JP Morgan	Citi/Virtus	200.78	135.00	15.78
27-Apr-16	Highbridge Principal Strategies	Highbridge Loan Management 9-2016	Citi	US Bank	502.55	310.00	42.55
27-Apr-16	Carlyle Investment Management	Carlyle GMS CLO 2016-2	Citi	US Bank	499.00	310.00	39.00
27-Apr-16	Sankaty Advisors	Race Point X	Citi	Wells Fargo	401.85	259.00	31.35
29-Apr-16	Black Diamond Capital Management	Black Diamond CLO 2016-1	JP Morgan	US Bank	359.60	213.50	38.30
29-Apr-16	Brightwood Capital Advisors	Brightwood Capital Fund III	Natixis	US Bank	652.80	358.80	230.00
2-May-16	Trinitas Capital Management	Trinitas CLO IV	Wells Fargo	US Bank	406.65	260.00	36.65
5-May-16	Aegon USA Investment Management	Cedar Funding V	Jefferies	Citi/Virtus	397.15	254.00	28.65
10-May-16	Apollo Credit Management	ALM XIX	Citi	US Bank	473.35	308.75	36.35
12-May-16	MidOcean Credit Partners	MidOcean Credit CLO V	Credit Suisse	Wells Fargo	405.25	256.00	29.25
13-May-16	DFG Investment Advisors	Vibrant CLO 2016-4	Goldman Sachs	Citi/Virtus	406.00	260.00	40.00
16-May-16	York Capital	York CLO-3	Morgan Stanley	US Bank	403.20	269.50	31.70

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## 2016 U.S. CLOs

Cont'd from prior slide

Date priced	CLO manager	CLO name	Agent bank	Trustee	Deal size	AAA size	Equity size
17-May-16	Newfleet Asset Management	Newfleet CLO 2016-1	Wells Fargo	BNY Mellon	356.3	228.0	36.3
18-May-16	THL Credit	THL Credit Wind River 2016-1	RBC Capital Markets	US Bank	608.3	384.0	56.3
23-May-16	Rothschild	Ocean Trails 2016-6	Nomura	US Bank	305.5	194.0	26.0
25-May-16	Octagon Credit Investors	Octagon Investment Partners 27	Citi	US Bank	510.4	310.0	50.4
26-May-16	Steele Creek Investment Management	Steele Creek CLO 2016-1	BNP Paribas	Deutsche Bank	306.5	192.3	24.0
31-May-16	Arrowpoint Asset Management	Arrowpoint CLO 2016-5	Goldman Sachs	US Bank	354.5	224.0	17.5
31-May-16	KKR Financial Advisors	KKR CLO 14	Natixis	BNY Mellon	508.2	320.0	50.5
02-Jun-16	TCI Capital Management	Flatiron 2016-1	Bank of America Merrill Lynch	Deutsche Bank	408.5	256.0	40.5
03-Jun-16	Teacher's Advisors Inc	TIAA CLO I	Wells Fargo	US Bank	455.5	292.5	41.5
07-Jun-16	Voya Investment Management	Voya CLO 2016-2	Citi	US Bank	407.3	259.0	39.2
09-Jun-16	TPG Capital	TICP CLO V	Bank of America Merrill Lynch	US Bank	410.3	240.0	42.3
10-Jun-16	GSO Blackstone	Westcott Park CLO	Wells Fargo	Wells Fargo	650.1	413.4	61.3
10-Jun-16	Apollo Credit Management	ALM XVIII	BNP Paribas	US Bank	450.1	275.0	36.6
16-Jun-16	Guggenheim Investment Management	Seven Sticks CLO	Citi	US Bank	401.5	256.0	33.3
16-Jun-16	PineBridge Investments	Galaxy CLO XXII	Goldman Sachs	US Bank	400.0	256.4	28.0
16-Jun-16	MJX Asset Management	Venture CLO XXIII	Credit Suisse	Citi/Virtus	411.3	258.5	40.8
17-Jun-16	Benefit Street Partners	Benefit Street Partners CLO IX	Morgan Stanley	US Bank	404.4	256.0	34.4
17-Jun-16	Guggenheim Investment Management	1828 CLO	Greensledge	US Bank	410.0	250.4	44.3
22-Jun-16	GoldenTree Asset Management	GoldenTree Loan Opportunities XII	Greensledge	BNY Mellon	411.0	246.8	41.4
22-Jun-16	Anchorage Capital Group	Anchorage Capital CLO 8	Deutsche Bank	US Bank	409.8	251.2	32.6
23-Jun-16	Ares Management	Ares XXXIX	JP Morgan	US Bank	510.0	330.0	45.0
30-Jun-16	Mariner Investment Group	Mariner CLO 2016-3	Citi	US Bank	503.4	330	43.4

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SOURCE: THOMSON REUTERS LPC

## 2016 U.S. CLOs

Cont'd from prior slide

Date priced	CLO manager	CLO name	Agent bank	Trustee	Deal size	AAA size	Equity size
1-Jul-16	Monroe Capital	Monroe Capital MML CLO 2016-1	BNP Paribas	Deutsche Bank	305.0	168.0	50.0
8-Jul-16	Apex Credit Partners	JFIN CLO 2016-1	Jefferies	US Bank	353.5	222.0	31.5
12-Jul-16	Invesco	Annisa CLO	Barclays	BNY Mellon	408.4	256.0	40.4
14-Jul-16	Sound Point Capital Management	Sound Point CLO XII	Credit Suisse	US Bank	722.5	456.8	73.3
15-Jul-16	Credit Suisse Asset Management	Madison Park Funding XXI	Citi	Wells Fargo	814.3	516.0	78.3
15-Jul-16	Prudential Investment Management	Dryden 43 Senior Loan Fund	Deutsche Bank	US Bank	612.3	381.0	55.5
21-Jul-16	BlueMountain Capital Management	BlueMountain CLO 2016-2	Citi	Citi/Virtus	505.6	304.9	46.8
22-Jul-16	Golub Capital	Golub Capital Investment Corp 2016	Wells Fargo	Wells Fargo	410.1	220.0	86.7
22-Jul-16	CVC Credit Partners	Apidos CLO 24	Bank of America Merrill Lynch	BNY Mellon	409.0	248.0	41.0
26-Jul-16	Intermediate Capital Group	ICG US CLO 2016-1, LTD.	Citi	US Bank	405.8	256.0	37.8
25-Jul-16	Guardian Life	PAIA CLO 2016-1	JP Morgan	State Street	406.0	250.5	43.0
29-Jul-16	Babson Capital Management	Babson CLO 2016-II	Morgan Stanley	US Bank	411.0	254.5	40.5
9-Aug-16	Carlyle Investment Management	Carlyle GMS CLO 2016-3	Citi	State Street	504.8	323	44.8
10-Aug-16	KKR	KKR CLO 15	Credit Suisse	BNY Mellon	410.8	258.5	40.25
11-Aug-16	Cerberus	Cerberus Loan Funding 2016-1	Natixis	US Bank	415.7	213	93.3
11-Aug-16	3i Debt Management	Jamestown CLO IX	Citi	US Bank	407.6	260	39.55
11-Aug-16	MJX Asset Management	Venture CLO XXIV	Jefferies	Citi/Virtus	525.5	338	42.45
16-Aug-16	Ballyrock Investment Management	Ballyrock CLO 2016-1	Goldman Sachs	US Bank	354.1	224	32.8
19-Aug-16	Trinitas Capital Management	Trinitas CLO V	Morgan Stanley	US Bank	409.0	258	39

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## 2016 U.S. CLOs

Cont'd from prior slide

Date priced	CLO manager	CLO name	Agent bank	Trustee	Deal size	AAA size	Equity size
19-Aug-16	Canyon Capital	Canyon CLO 2016-2	JP Morgan	Deutsche Bank	461	288	47
22-Aug-16	NewStar Financial	Arch Street CLO	Credit Suisse	US Bank	410	259	34
23-Aug-16	GSO Blackstone	Jay Park CLO	Citi	Citi/Virtus	509	307	49
23-Aug-16	Prudential Investment Management	Dryden 45 Senior Loan Fund	Wells Fargo	Deutsche Bank	659	403	61
25-Aug-16	TIAA-CREF Alternatives Advisors	TIAA Churchill Middle Market CLO I	Wells Fargo	BNY Mellon	382	212	40
25-Aug-16	Neuberger Berman	Neuberger Berman CLO XXII	Bank of America Merrill Lynch	US Bank	409	248	41
2-Sep-16	Crestline Denali Capital	Denali Capital CLO XIV	BNP Paribas	US Bank	361	222	39
8-Sep-16	Octagon Credit Investors	Octagon Investment Partners 28	Morgan Stanley	US Bank	706	434	62
9-Sep-16	Garrison Capital	Garrison Funding 2016-1	Deutsche Bank	Deutsche Bank	410	258	38
12-Sep-16	Symphony Asset Management	TCI-Symphony CLO 2016-1	Bank of America Merrill Lynch	Deutsche Bank	515	320	55
13-Sep-16	Ares Management	Ares XL	Goldman Sachs	Wells Fargo	707	455	63
15-Sep-16	Credit Suisse Asset Management	Madison Park Funding XXII	Wells Fargo	Wells Fargo	809	516	73
15-Sep-16	LCM Asset Management	LCM XXII	Natixis	Deutsche Bank	449	280	41
15-Sep-16	Garrison Capital	Garrison Funding LTD 2016-2	Natixis	Deutsche Bank	300	138	108
22-Sep-16	Onex Credit Partners	OCP 2016-12	Bank of America Merrill Lynch	Citi/Virtus	558	341	57
16-Sep-16	Regatta Loan Management	Regatta VII Funding LTD 2016-1	BNP Paribas	US Bank	407	256	39
26-Sep-16	Carlson Capital	Cathedral Lake 2016-4	Jefferies	US Bank	404	239	36
23-Sep-16	Zais Group	ZAIS CLO 5, LIMITED	JP Morgan	US Bank	409	260	41
27-Sep-16	THL Credit	THL Credit Windriver 2016-2	Morgan Stanley	US Bank	656	416	58
28-Sep-16	Wellfleet Credit Partners	Wellfleet CLO 2016-2, LTD.	Citi	US Bank	406	260	38
28-Sep-16	Voya Investment Management	Voya CLO 2016-3	Credit Suisse	State Street	608	372	56
29-Sep-16	BlackRock Financial Management	Magnetite CLO LTD 2016-18	Goldman Sachs	US Bank	536	340	46

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## 2016 U.S. CLOs

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Date priced	CLO manager	CLO name	Agent bank	Trustee	Deal size	AAA size	Equity size
3-Oct-16	CVC Credit Partners	Apidos CLO 25	Bank of America Merrill Lynch	BNY Mellon	716.50	451.5	72.5
6-Oct-16	BlueMountain Capital Management	BlueMountain CLO 2016-3	Barclays	US Bank	480.10	294.5	43.1
7-Oct-16	American Money Management Corp	AMMC CLO 19	MUFG Securities	Citi/Virtus	459.86	288	45.85
10-Oct-16	GSO Blackstone	Burnham Park CLO	Wells Fargo	Wells Fargo	558.07	352	52.065
13-Oct-16	Aegon USA Investment Management	Cedar Funding VI	Jefferies	Citi/Virtus	498.47	317.5	37.85
14-Oct-16	Alcentra	Shackleton CLO 2016-9	Morgan Stanley	US Bank	412.50	256	42.5
19-Oct-16	NewStar Financial	Newstar Berkeley Fund CLO	Citi	US Bank	505.50	290	57.4
20-Oct-16	Sound Point Capital Management	Sound Point CLO XIV	Credit Suisse	BNY Mellon	715.00	451	71
25-Oct-16	Neuberger Berman	Neuberger Berman CLO XXIII	Bank of America Merrill Lynch	US Bank	412.00	248	44
26-Oct-16	TPG Capital	TICP CLO VI	Bank of America Merrill Lynch	US Bank	411.00	248	43
27-Oct-16	Carlyle Investment Management	Carlyle GMS CLO 2016-4	Citi	State Street	508.45	302.5	48.45
28-Oct-16	Barings LLC	Barings CLO 2016-3	Citi	Citi/Virtus	512.33	310	52.5
28-Oct-16	Guggenheim Investment Management	Salem Fields CLO	Citi/MUFG Securities	US Bank	449.00	287.7	36.6
28-Oct-16	Brigade Capital Management	Battalion CLO X	Citi	US Bank	404.30	260	36.1
28-Oct-16	Cerberus	Cerberus Loan Funding 2016-2	Natixis	US Bank	348.70	178.7	78.2
31-Oct-16	Oak Hill Advisors	OHA Loan Funding 2016-1	Morgan Stanley	Citi/Virtus	609.00	370	58
31-Oct-16	Crescent Capital Group	Atlas VII CLO	Morgan Stanley	Wells Fargo	411.00	250.5	42.5

## 2016 U.S. CLOs

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Date priced	CLO manager	CLO name	Agent bank	Trustee	Deal size	AAA size	Equity size
1-Nov-16	Golub Capital	Golub Capital CLO Partners 33(M)	Greensledge/Natixis	Wells Fargo	410.90		105.9
2-Nov-16	GSO Blackstone	Bristol Park	BNP Paribas	US Bank	561.68	357.5	54.3
3-Nov-16	York Capital	York CLO-4	Morgan Stanley	US Bank	408.00	254.0	40.0
7-Nov-16	Seix Advisors	Mountain View 2016-1	Credit Suisse	Citi/Virtus	309.00	195.0	31.5
8-Nov-16	MidOcean Credit Partners	MidOcean Credit CLO VI	Jefferies	Wells Fargo	402.70	242.0	34.7
8-Nov-16	Anchorage Capital Group	Anchorage Capital CLO 9	JP Morgan	US Bank	560.68	343.8	43.7
9-Nov-16	Palmer Square Capital Management	Palmer Square Loan Funding 2016-3	JP Morgan	Citi/Virtus	252.90	170.0	20.4
16-Nov-16	Symphony Asset Management	Symphony CLO XVIII	BNP Paribas	Deutsche Bank	504.00	310.0	44.0
17-Nov-16	MJX Asset Management	Venture CLO XXV	Jefferies	BNY Mellon	601.60	384.0	49.6
17-Nov-16	Voya Investment Management	Voya CLO 2016-4	Morgan Stanley	US Bank	707.00	448.0	63.0
18-Nov-16	Benefit Street Partners	Benefit Street Partners CLO X	Deutsche Bank	US Bank	510.52	320.0	50.5
22-Nov-16	KKR	KKR CLO 16	Citi	US Bank	711.30	455.0	67.0
22-Nov-16	Credit Suisse Asset Management	Madison Park Funding CLO 2016-24	JP Morgan	US Bank	762.88	465.0	71.4
22-Nov-16	Tennenbaum Capital Management	TCP Waterman CLO 2016-1	Natixis	US Bank	351.15	185.0	101.2
22-Nov-16	Brightwood Capital Advisors	Brightwood Capital Fund III 2016-2	Natixis	US Bank	750.00	412.2	238.9
22-Nov-16	Och Ziff Capital Management	OZLM CLO 2016-15	Bank of America Merrill Lynch	Wells Fargo	409.25	252.0	41.3
28-Nov-16	Oak Hill Advisors	OHA Credit Partners XIII	Greensledge	Citi/Virtus	410.50	258.0	40.5
29-Nov-16	Ares Management	Ares XLI	BNP Paribas	US Bank	614.1	390	62.1
30-Nov-16	Bain Capital Credit	Bain Capital Credit CLO 2016-2	MUFG Securities	BNY Mellon	537.60	325.5	54.6

## 2016 U.S. CLOs

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LIST OF CLOS

Date priced	CLO manager	CLO name	Agent bank	Trustee	Deal size	AAA size	Equity size
30-Nov-16	LCM Asset Management	LCM XXIII	Greensledge	Deutsche Bank	407.6	249.0	38.1
30-Nov-16	Axa Investment Advisors	Allegro CLO 2016-1	Goldman Sachs	US Bank	456.2	288.0	42.2
1-Dec-16	Trimaran Advisors	Catamaran CLO 2016-1	Credit Suisse	US Bank	408.8	256.0	40.8
1-Dec-16	Highbridge Principal Strategies	Highbridge Loan Management 2016-10	Citi	Citi/Virtus	410.2	248.0	42.2
1-Dec-16	Invesco	Riserva CLO	Credit Suisse	BONY/Mellon	614.0	384.0	62.0
1-Dec-16	Callidus Capital Management	Callidus ABL Corporation 2016-1	Deutsche Bank	Deutsche Bank	125.0		38.3
2-Dec-16	Fortress	Fortress Credit Opportunities 2016-7	Natixis	US Bank	700.1	330.8	147.2
2-Dec-16	Maranon Capital	Maranon Loan Funding 2016-1	Citi	US Bank	304.1	174.0	37.0
2-Dec-16	TCI Capital Management	TCI-Cent CLO 2016-1	Citi	Deutsche Bank	510.2	320.0	50.2
6-Dec-16	Octagon Credit Investors	Octagon Investment Partners 29	Credit Suisse	US Bank	510.8	310.0	50.8
7-Dec-16	DFG Investment Advisors	Vibrant CLO 2016-5	BNP Paribas	Citi/Virtus	458.4	288.0	44.4
8-Dec-16	Oaktree Capital Management	Oaktree EIF III Series I	Wells Fargo	US Bank	601.7	372.0	112.7
9-Dec-16	CIFC	CIFC Funding 2016-1	BNP Paribas	US Bank	509.3	322.5	49.3
9-Dec-16	Cerberus	Cerberus Loan Funding XVII	Wells Fargo	Wells Fargo	349.1		89.1
9-Dec-16	Alliance Bernstein	ABPCI Direct Lending Fund CLO 2016-1	Natixis	US Bank	351.3		87.9
13-Dec-16	GSO Blackstone	Taconic Park CLO	Citi	Citi/Virtus	510.5	325.0	50.5
13-Dec-16	Kramer Van Kirk Credit Strategies Inc	KVK CLO 2016-1	Goldman Sachs	Wells Fargo	355.5	218.8	33.5
29-Dec-16	Goldman Sachs BDC / Regents of University of California	GSAM - Senior Credit Fund SPV I, LLC	Natixis	State Street	566.2	337.5	188.7

## 2016 U.S. CLO - PRICING

Date priced	CLO name	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM
22-Jan-16	Babson CLO 2016-1	150	150	225	225	325	325	385	475	655	890		
22-Jan-16	Voya CLO 2016-1	150		220		295		420		655			
2-Feb-16	Golub Capital CLO 2016-30					233		425					
12-Feb-16	Newstar Commercial Loan Funding 2016-1	230	230	375	375	540	540						
24-Feb-16	Neuberger Berman CLO XXI	155		240		330		495		700			
25-Feb-16	Magnetite XVII	155	155	235	235	345	345	515	575	815	950		
25-Feb-16	Madison Park Funding XX	155		235		330		445		740			
25-Feb-16	Denali Capital CLO XII	175		245		345		465		775			
4-Mar-16	Highbridge Loan Management 8-2016	155	155	240	240	375	375	485	624	790	975		
9-Mar-16	Oaktree EIF I Series A	158	158	250	250	400							
15-Mar-16	ACAS CLO 2016-9	158		340		360		535		855		855	
16-Mar-16	Wellfleet CLO 2016-1	175		265		365		557		858			
17-Mar-16	Carlyle GMS CLO 2016-1	158		235		330		490		760			
18-Mar-16	Symphony CLO XVII	150		225		335		480		740			
21-Mar-16	LCM XXI	155	155	240	240	350	350	510	570	765	910		
23-Mar-16	Upland CLO	160	160	240	240	345	350	435	600	825	990		
23-Mar-16	Mill Creek CLO II	175	175	250	257	335	365	485	570	775	960		
24-Mar-16	Telos CLO 2016-7	165		270		325		500		750			
24-Mar-16	Octagon Investment Partners 26	158	158	250	250	335	350	495	570	785	935		
31-Mar-16	Canyon CLO 2016-1	160	160	243	243	355	360	545/485	590/570	750	960		

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## 2016 U.S. CLO - PRICING

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Date priced	CLO name	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM
13-Apr-16	BlueMountain CLO 2016-1	158	158	230	230	325	325	450	500	730	800		
15-Apr-16	Regatta VI	169		240		342		505		701			
20-Apr-16	AMMC CLO 18	165	165	260	260	324		500		667/725			
20-Apr-16	OCP 2016-11	159	159	240	245	345	345	500	600	700/900	900		
20-Apr-16	Dryden 42 Senior Loan Fund	156	156	215	215	215	315	450	preplaced	725	795		
20-Apr-16	Zais CLO 4	158		255		366		562					
20-Apr-16	Golub Capital Partners CLO LTD 2016-31	220	220	315	325	440	460						
25-Apr-16	Sound Point CLO XI	165		240		320		465		695			
26-Apr-16	Palmer Square Loan Funding 2016-2	135	135	210	210	315	315	430	450	700	750		
27-Apr-16	Highbridge Loan Management 9-2016	156	156	225	225	330		530		645	800		
27-Apr-16	Carlyle GMS CLO 2016-2	156	156	220	220	330		530		645	800		
27-Apr-16	Race Point X	160	160	235	235	345		550		725	835	750	1050
29-Apr-16	Black Diamond CLO 2016-1	165		265		335		485		815			
29-Apr-16	Brightwood Capital Fund III	264											
2-May-16	Trinitas CLO IV	175		275		370		530/650		863			
5-May-16	Cedar Funding V	161	161	235	235	310	325	465	465	770	770		
10-May-16	ALM XIX	155	155	220	220	300	300	435	450	735	775		
12-May-16	MidOcean Credit CLO V	170		260		350		550		695		730	
13-May-16	Vibrant CLO 2016-4	165	170	240	255	330	360	450	575	675			
16-May-16	York CLO-3	157	157	220	220	335	335	535/495	535	568	900		

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## 2016 U.S. CLO - PRICING

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Date priced	CLO name	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM
17-May-16	Newfleet CLO 2016-1	185	185	275		375		675		1100			
18-May-16	THL Credit Wind River 2016-1	165	165	235	235	320	320	465	530	750	850		
23-May-16	Ocean Trails 2016-6	175		258		345		500		775			
25-May-16	Octagon Investment Partners 27	153	153	215	215	300	300	475	475	710	800		
26-May-16	Steele Creek CLO 2016-1	170		250		350		600		675			
31-May-16	Arrowpoint CLO 2016-5	172	172	230	255	325	355	465	573	695	950		
31-May-16	KKR CLO 14	162	162	230	230	321	325	435	490	700	882		
02-Jun-16	Flatiron 2016-1	155		220		305		435		725			
03-Jun-16	TIAA CLO I	170	170	230	252	325	352	520	575	805/1000	950/1000		
07-Jun-16	Voya CLO 2016-2	154	154	210	210	290	290	425	455	695	800		
09-Jun-16	TICP CLO V	164	164	239	249	300	320	435/498	498/528	750	950		
10-Jun-16	Westcott Park CLO	153	153	210	210	290	290	435	450	720	800		
10-Jun-16	ALM XVIII	153	153	215	215	290	290	435	450	760	800		
16-Jun-16	Seven Sticks CLO	170	170	230	230	325	325	410	520	760	925		
16-Jun-16	Galaxy CLO XXII	158	158	210	210	290	290	445	450	700/825	825/840	820	950
16-Jun-16	Venture CLO XXIII	165		230		320		445		770			
17-Jun-16	Benefit Street Partners CLO IX	161	161	210	210	295	295	420	480	667	905		
17-Jun-16	1828 CLO	160	160	240	240	340	340	450	515	700	925		
22-Jun-16	GoldenTree Loan Opportunities XII	153	153	215	215	290	290	425	450	715	850		
22-Jun-16	Anchorage Capital CLO 8	165	167	225	225	315	315	420	495	650			
23-Jun-16	Ares XXXIX	153		200		275		430		725			
30-Jun-16	Mariner CLO 2016-3	159	159	200		290		400		700			

## 2016 U.S. CLO - PRICING

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Date priced	CLO name	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM
1-Jul-16	Monroe Capital MML CLO 2016-1	225		330		450		675		900			
8-Jul-16	JFIN CLO 2016-1	175		260		360		465		720			
12-Jul-16	Annisa CLO	155	155	210	215	290	290	430	485	725	925		
14-Jul-16	Sound Point CLO XII	166		225		290		425		640			
15-Jul-16	Madison Park Funding XXI	153	153	200	200	275	275	400	450	725	800		
15-Jul-16	Dryden 43 Senior Loan Fund	154	154	200	200	270	270	410	450	725	825		
21-Jul-16	BlueMountain CLO 2016-2	155	155	200	200	270	270	410	435	700	775		
22-Jul-16	Golub Capital Investment Corp 2016	215	215	300	300								
22-Jul-16	Apidos CLO 24	150	151	200	200	270	270	395	435	755	795		
26-Jul-16	ICG US CLO 2016-1, LTD.	160	160	220	220	300	300	425	480	675	855		
25-Jul-16	PAIA CLO 2016-1	170		245		345		475		700			
29-Jul-16	Babson CLO 2016-II	145	145	190	190	260	260	390	420	690	775		
9-Aug-16	Carlyle GMS CLO 2016-3	151	151	190	190	250	250	400	415	700	750		
10-Aug-16	KKR CLO 15	156		180		270		400		645			
11-Aug-16	Cerberus Loan Funding 2016-1	215	215	315	315	385	410	550	600	720	750		
11-Aug-16	Jamestown CLO IX	157/150		200		270		385/470		665			
11-Aug-16	Venture CLO XXIV			205		290		425/405		672			
16-Aug-16	Ballyrock CLO 2016-1	159	159	200	200	270	275	425	460	725	825	805	860
19-Aug-16	Trinitas CLO V	170		215		315		441		740			
19-Aug-16	Canyon CLO 2016-2	150		200		260		380		675			
22-Aug-16	Arch Street CLO	165		224		300		420		695		860	

## 2016 U.S. CLO - PRICING

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Date priced	CLO name	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM
23-Aug-16	Jay Park CLO	145	145	180	180	240	240	385	400	700	725		
23-Aug-16	Dryden 45 Senior Loan Fund	145	145	180	180	240	240	385	400	685	750		
25-Aug-16	TIAA Churchill Middle Market CLO I	215	215	288	301	368	401	540	600	800	950	1000	1200
25-Aug-16	Neuberger Berman CLO XXII	145	145	180	180	240	245	385	425	675	765		
2-Sep-16	Denali Capital CLO XIV	157	159	195	195	265	265	390	435	695	840		
8-Sep-16	Octagon Investment Partners 28	145	145	180	180	240	240	400	400	725	725	650	725
9-Sep-16	Garrison Funding 2016-1	169		225		307		470		665			
12-Sep-16	TCI-Symphony CLO 2016-1	148	148	180	190	240	240	380	400	670	730		
13-Sep-16	Ares XL			185	185	240	240	370	415	660	770		
15-Sep-16	Madison Park Funding XXII	148	148	180	180	240	240	400	415	665	750		
15-Sep-16	LCM XXII	148	148	180	180	240	240	385	385	665	665		
15-Sep-16	Garrison Funding LTD 2016-2	220	220	315	320	400	420	600	625				
22-Sep-16	OCP 2016-12	157	159	200	200	290	290	415	480	610	840		
16-Sep-16	Regatta VII Funding LTD 2016-1	152	152	180/200	205	260	260	375	420	715	800		
26-Sep-16	Cathedral Lake 2016-4	165	165	235	235	330	330		451	510	683/783	850	
23-Sep-16	ZAIS CLO 5, LIMITED	153		240		330		450		700			
27-Sep-16	THL Credit Windriver 2016-2	150	150	190	190	250/275	275	440	440	648/760	760		
28-Sep-16	Wellfleet CLO 2016-2, LTD.	165	165	220	225	300	300	450/500	485/500	700	820		
28-Sep-16	Voya CLO 2016-3	143		180		240		385		685			
29-Sep-16	Magnetite CLO LTD 2016-18	140	140	175	175	235	235	400	400	700	740		
3-Oct-16	Apidos CLO 25	146	146	180	180	240	240	400	400	695/725	725		
6-Oct-16	BlueMountain CLO 2016-3	143	143	180	180	240	240	385	400	685	735		
7-Oct-16	AMMC CLO 19	150	150	190	190	280	280	375	420	700	805		
10-Oct-16	Burnham Park CLO	143		180		240		385		685			
13-Oct-16	Cedar Funding VI	147	147	193	193	240	240	400	400	775	775		
14-Oct-16	Shackleton CLO 2016-9	150	150	190	190	250	250	374	430	676	825		



# 2016 U.S. CLO - PRICING

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Date priced	CLO name	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM
19-Oct-16	Newstar Berkeley Fund CLO	210	210	290	290	395	395	510	575	775	1000		
20-Oct-16	Sound Point CLO XIV	153	153	200	200	265	280	385	425	665	800		
25-Oct-16	Neuberger Berman CLO XXIII	143	143	180	180	255	255	377	425	658	775		
26-Oct-16	TICP CLO V	155	155	206	210	280	280	420	480	655	815		
27-Oct-16	Carlyle GMS CLO 2016-4	143	143	180	180	250	250	390	410	690	760		
28-Oct-16	Barings CLO 2016-3	143	143	190	190	250	250	395	415	725	775		
28-Oct-16	Salem Fields CLO	152	152	200	200	275	275	450	450	750/825	825		
28-Oct-16	Battalion CLO X	155	159	210	225	280	285	425	430	700	875		
28-Oct-16	Cerberus Loan Funding 2016-2	205	205	300	300	380	400	535	575				
31-Oct-16	OHA Loan Funding 2016-1	143	143	180	180	255	255	375	415	650	760		
31-Oct-16	Atlas VII CLO	150	150	200	200	280	280	390	450	692	810		

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Date priced	CLO name	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM
1-Nov-16	Golub Capital CLO Partners 33(M)					248							
2-Nov-16	Bristol Park	142	142	190	190	260	260	410	425	725	775		
3-Nov-16	York CLO-4	163	163	223	223	305	305	410	478	694	840		
7-Nov-16	Mountain View 2016-1	160		220		285		400		700			
8-Nov-16	MidOcean Credit CLO VI	158	158	223	223	315	315	435	480	734	870		
8-Nov-16	Anchorage Capital CLO 9	151		195		280		400		725			
9-Nov-16	Palmer Square Loan Funding 2016-3												
16-Nov-16	Symphony CLO XVI	143	143	180	180	250	250	400	420	635	750		
17-Nov-16	Venture CLO XXV	149	149	200	200	260	260	430/421	430/450	716	850		
17-Nov-16	Voya CLO 2016-4	146	146	185	185	250	250	415	415	760/665	760		
18-Nov-16	Benefit Street Partners CLO X	149	149	200	200	280	280	370	435	685	790		
22-Nov-16	KKR CLO 16	149	149	180	180	260	260	410	430	725	790		
22-Nov-16	Madison Park Funding CLO 2016-24	141		180		260		385		715			
22-Nov-16	TCP Waterman CLO 2016-1	205		300		345							
22-Nov-16	Brightwood Capital Fund III 2016-2	228		335		495							
22-Nov-16	OZLM CLO 2016-15	149		210		270		400		715			
28-Nov-16	OHA Credit Partners XIII	145		185		0.043		415		715			
29-Nov-16	Ares XLI	141	141	180	180	260	260	420	440	700	765		
30-Nov-16	Bain Capital Credit CLO 2016-2	142	142	190	190	260	260	425	440	704	780		
30-Nov-16	LCM XXIII	140	140	185	185	255	255	395	415	705	750		
30-Nov-16	Allegro CLO 2016-1	140	140	195	195	260	260	385	415	715	790		

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Date priced	CLO name	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM
1-Dec-16	Catamaran CLO 2016-1	153		200		285		385		665			
1-Dec-16	Highbridge Loan Management 2016-10	141	141	180	180	260	260	365	420	650	750		
1-Dec-16	Riserva CLO	146		190		290		390		675			
1-Dec-16	Callidus ABL Corporation 2016-1												
2-Dec-16	Fortress Credit Opportunities 2016-7	205	205	295	295	395	395	563	580	749	785		
2-Dec-16	Maranon Loan Funding 2016-1	210	210	290	290	395	395	525	575	775/1000	1000		
2-Dec-16	TCI-Cent CLO 2016-1	152	152	220	220	260	270	400	445	675	790		
6-Dec-16	Octagon Investment Partners 29	141		185		255		425		655			
7-Dec-16	Vibrant CLO 2016-5		155		210		295		450		815		
8-Dec-16	Oaktree EIF III Series I	141	141	200	200	270	270						
9-Dec-16	CIFC Funding 2016-1	148		185		270		400		675			
9-Dec-16	Cerberus Loan Funding XVII					253	253	530	575				
9-Dec-16	ABPCI Direct Lending Fund CLO 2016-1					270		592					
13-Dec-16	Taconic Park CLO	142	142	187	187	265	265	405	415	690	765		
13-Dec-16	KVK CLO 2016-1	154		225		315		440		790			
29-Dec-16	GSAM - Senior Credit Fund SPV I, LLC												

## 2016 U.S. CLO REFINANCINGS / RESETS

CLO manager	CLO name	Date priced	Size (\$Mils.)	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM	Note
Apollo Credit Management	ALM 2013-8	03/08/16	120.00		155											
American Money Management Corp	AMMC CLO IX	03/31/16	389.00	158	158	250	250	360	360	565	575	765	940			Reset
American Capital Asset Management	ACAS CLO 2013-2	06/30/16	160.00	145	145	220	220									
Neuberger Berman	Neuberger Berman CLO 2012-12	06/30/16	183.00	130												
Carlyle Investment Management	Carlyle GMS CLO 2013-4	07/05/16	150.00	152		210										
Carlyle Investment Management	Carlyle GMS CLO 2014-3	07/07/16	155.00	145	145											
Neuberger Berman	Neuberger Berman CLO 2014-6	07/08/16	355.00	145		217		275								
KKR	KKR Financial CLO LTD 2013-2	07/15/16	235.00	145	145											
CIFC	CIFC Funding 2012-1	07/21/16	298.00	129	129											
Ares Management	Ares Enhanced Loan Investment Strategy 2013-1	07/27/16	141.00	140	140	205	205	290	290							
Crescent Capital Group	Atlas Senior Loan Fund 2012-1	08/04/16	256.00	122	122	180	180	250	250	390	390					
Carlyle Investment Management	Carlyle GMS CLO 2012-3	08/18/16	556.40	145	145	185	185	250	250	410	410	745	745			Reset
Crescent Capital Group	Atlas Senior Loan Fund 2012-2	08/25/16	350.25	123		170		235		390						
Voya Investment Management	Voya CLO 2012-4	08/30/16	371.20	145	145	185	185	250	250	425	425	765	765			Reset
Ares Management	Ares XXV CLO 2012-3	08/30/16	507.30	122		175		250		390		700				
GSO Blackstone	Finn Square CLO	09/02/16	415.00	121		170		220								
Apollo Credit Management	ALM VII	09/13/16	641.00	148	148	185	185	250	250	385	400	710	750			Reset
BlackRock Financial Management	Magnetite VII	09/14/16	552.00	135	135	175	175	233	233	375	375	700	700			Reset
Anchorage Capital Group	Anchorage CLO 2012-1	09/23/16	460.00	148		210		270		415		725				Reset

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## 2016 U.S. CLO REFINANCINGS / RESETS

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CLO manager	CLO name	Date priced	Size (\$Mils.)	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM	Note
Canyon Capital	Canyon CLO 2012-1	09/27/16	302.50	143		190		250		410		750				Reset
Apollo Credit Management	ALM Loan Funding 2013-8	09/27/16	558.75	149	149	180	180	260	260	395	410	710	750	950	950	Reset
THL Credit	Wind River CLO 2012-1	09/28/16	461.20	145	145	185	185	265	265	410	410	738	785			Reset
New York Life Investment Management	Flatiron CLO 2012-1	09/29/16	349.50	121		170		250		390						
Alcentra	Shackleton CLO 2012-2	10/04/16	338.00	121		185		265		390						
Carlson Capital	Cathedral Lake CLO 2013-1	10/04/16	219.80	140												
Prudential Investment Management	Dryden SLF 2012-25	10/05/16	503.40	120		170		250								
Credit Suisse Asset Management	Atrium 2012-8	10/06/16	460.00	135		190		250		400		725				Reset
MJX Asset Management	Venture X CLO 2012-10	10/06/16	344.39	122	122	200	200	265	265	410	410					
MJX Asset Management	Venture XV 2013-15	10/06/16	553.50	152		200		260/385		415/480		711				Reset
Och Ziff Capital Management	OZLM Funding 2012-2	10/06/16	498.50	144		200		275		400		730				Reset
CIFC	CIFC Funding 2014-5	10/07/16	462.00	140		200		270		415						
Crescent Capital Group	Atlas Senior Loan Fund V	10/07/16	405.50	143	143	200	200	265	265							
PineBridge Investments	Galaxy XVII	10/07/16	372.15	140		180		240								
GoldenTree Asset Management	GoldenTree Loan Opportunities 2014-9	10/07/16	518.80	137	137	190	190	250	250							
Tall Tree Investment	Lockwood Grove CLO	10/12/16	367.50	147	147	227	227	335	335	500	500	775	775			Reset
Carlyle Investment Management	Carlyle GMS CLO 2012-4	10/14/16	558.70	145	145	190	190	260	260	410	410	751	775			Reset
American Money Management Corp	AMMC CLO XI	10/17/16	405.40	140	140	205	205	285	285	425	425	725	840			Reset
BNP Paribas Asset Management	BNPP IP CLO 2014-2R	10/16/16	222.25	135												

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## 2016 U.S. CLO REFINANCINGS / RESETS

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CLO manager	CLO name	Date priced	Size (\$Mils.)	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM	Note
Anchorage Capital Group	Anchorage Capital CLO 3	10/17/16	387.25	143		205		265								
CIFC	CIFC Funding 2012-3	10/19/16	430.00	120		175		270		400						
Golub Capital	Golub Capital BDC 2010-1	10/20/16	234.00	190		240										
Credit Suisse Asset Management	Madison Park Funding X	10/21/16	713.00	145	145	190	190	260	260	420	420	762	795			Reset
Alcentra	Shackleton CLO 2012-1	10/25/16	290.07	121		200		280		420						
LCM Asset Management	LCM 2012-17	10/27/16	330.00	135		185		250								
Columbia Management Investment Advisers	Cent CLO 2014-22	10/31/16	495.85	141		195		340		295						
Voya Investment Management	Voya CLO 2014-1	10/31/16	328.00	133	133	185	185	260	260							
Par-Four Investment Management	Tralee CLO 2014-3	11/03/16	256.00	145		200		290		475						
BlueMountain Capital Management	BlueMountain CLO 2012-2	11/04/16	554.55	142	142	190	190	260	260	415	415	710	745			Reset
PineBridge Investments	Galaxy CLO XIV	11/04/16	462.00	137		195		280		430		790				Reset
Saratoga Investment Corp	Saratoga 2013-1	11/07/17	282.40	155	155	270	270	335	345	470	470	665	665	850		Reset
Sankaty Advisors	Race Point 2012-7	11/07/17	498.00	120	120	175	175	265	265							
Octagon Credit Investors	Octagon Investment Partners 21	11/07/17	605.50	135		190		260								
Prudential Investment Management	Dryden SLF 2014-33	11/07/17	937.35	143		185		250		435		654				Reset
Neuberger Berman	Neuberger Berman CLO XVIII	11/08/16	459.50	143	143	185	185	255	255	425	425	775	800			Reset
GoldenTree Asset Management	GoldenTree Loan Opportunities XI	11/08/16	425.50	138		190		260								
Onex Credit Partners	OCP CLO 2012-2	11/08/16	367.20	140		200		285		468		875				Reset
BlueMountain Capital Management	BlueMountain CLO 2014-4	11/09/16	412.75	135		185		255								

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## 2016 U.S. CLO REFINANCINGS / RESETS

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CLO manager	CLO name	Date priced	Size (\$Mils.)	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM	Note
CVC Credit Partners	Apidos CLO 2014-17	11/09/16	410.00	131	131	185	185	250	250							
Apollo Credit Management	ALM Loan Funding 2013-7R2	11/09/16	858.26	143		200		275		410		745				Reset
CVC Credit Partners	Apidos CLO 2012-11	11/10/16	370.65	144		195		270		405		765				Reset
Arrowpoint Asset Management	Arrowpoint CLO 2013-1	11/15/16	331.20	152		215		295		468		771				Reset
BlackRock Financial Management	Magnetite XII	11/17/16	489.00	133		180		255								
Trimaran Advisors	Catamaran CLO 2014-2	11/17/16	372.75	140	140	205	205	295	295							
CVC Credit Partners	Apidos CLO 2015-20	11/17/16	407.00	133		180		260								
Invesco	Betony CLO	11/17/16	483.25	135	135	195	195	285	285							
Oak Hill Advisors	OHA Loan Funding 2012-1	11/18/16	330.00	135		185		260		415		725				Reset
Allianz	West CLO 2012-1	11/22/16	335.25	124		200										
Trimaran Advisors	Catamaran CLO 2012-1	11/23/16	332.75	119		195		285								
Mariner Investment Group	ELM CLO 2014-1	11/23/16	501.50	155	155	215	215	295	295	440	440	715	800			Reset
Oak Hill Advisors	OHA Loan Funding 2015-1	11/29/16	559.70	141		180		255		420						Reset
3i Debt Management	Jamestown CLO I	11/30/16	419.87	155		205		325		450		840				Reset
CIFC	CIFC 2015-1	11/30/16	488.40	139	139	195	195	280	280							
Carlyle Investment Management	Carlyle GMS 2014-1	12/01/16	579.00	130	130	180	180	275	275							
American Money Management Corp	AMMC CLO XV	12/02/16	406.00	135	135	190	190	280	280							
MidOcean Credit Partners	MidOcean Credit 2012-1	12/05/16	296.40	145		250		340		455		837				Reset
BlueMountain Capital Management	BlueMountain CLO 2013-1	12/06/16	460.60	140	140	190	190	264	265	415	415	750	750			Reset

## 2016 U.S. CLO REFINANCINGS / RESETS

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CLO manager	CLO name	Date priced	Size (\$Mils.)	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	B coupon	B DM	Note
Apollo Credit Management	ALM VII R	12/06/16	408.70	141	144	200	200	270	270	404	425	714	760			Reset
Prudential Investment Management	Dryden SLF 2014-36	12/07/16	657.35	142	142	185	185	280	280	424	445	780	810			Reset
Eaton Vance	Eaton Vance CLO 2013-1	12/08/16	401.90	142	142	210	210	300	300	425		760		575		Reset
GSO Blackstone	Treman Park CLO	12/08/16	390.00	137												
Och Ziff Capital Management	OZLM Funding III	12/08/16	583.13	155	155	210	210	300	300	425	440	777	810			Reset
Benefit Street Partners	Benefit Street Partners CLO IV	12/09/16	460.75	149	149	205	205	290	290	405	405	725	825			Reset
Oak Hill Advisors	OHA Credit Partners VII	12/09/16	691.50	142	142	185	185	270	270	420	420	750	750			Reset
GSO Blackstone	Pinnacle Park	12/12/16	399.38	126	126	185	185	265	265							
LCM Asset Management	LCM XIII	12/13/16	465.50	141	141	185	185	270	270	405	430	730	790			Reset
NewStar Financial	Longfellow Place CLO	12/13/16	418.00	118	100	180	180	275	275							
BlueMountain Capital Management	Bluemountain 2015-1	12/13/16	409.20	133		190		250								
Palmer Square Capital Management	Palmer Square CLO 2014-1	12/14/16	368.15	137		190		270		400		690				Reset
Napier Park	Regatta II	12/14/16	373.20	154	154	215	215	290	290	430	450	759	815			Reset
Credit Suisse Asset Management	Madison Park Funding XVI	12/14/16	491.28	133		190		265								
MJX Asset Management	Venture XIX	12/15/16	365.40	137	137	200	200	285	285							
Alcentra	Shackleton 2015-VII	12/16/16	412.50	137	137	195	195	285	285							
Ares Management	Ares XXXIII CLO	12/16/16	526.80	135	135	195	195	280	280	420	420					
CIFC	CIFC Funding 2014-4	12/21/16	488.00	138	138	190	190	265	265							



## 2016 U.S. CLO ARRANGER LEAGUE TABLE (BY VOLUME)

Rank	Bank Holding Company	Arranger Volume	# of Deals	Market Share
1	Citi	13,166.73	28	18.2%
2	Morgan Stanley	7,480.85	16	10.3%
3	Wells Fargo	6,810.06	14	9.4%
4	Credit Suisse	6,037.50	12	8.3%
5	JP Morgan	5,673.39	13	7.8%
6	Natixis	5,598.20	12	7.7%
7	BNP Paribas	5,237.61	12	7.2%
8	Bank of America Merrill Lynch	5,167.60	11	7.1%
9	Goldman Sachs	4,322.39	10	6.0%
10	Jefferies	3,589.17	8	5.0%
11	Deutsche Bank	2,947.56	7	4.1%
12	GreensLedge Capital	2,834.49	7	3.9%
13	MUFG Securities	1,221.96	3	1.7%
14	RBC Capital Markets	889.00	2	1.2%
15	Barclays	888.50	2	1.2%
16	Nomura	305.50	1	0.4%
17	Societe Generale	252.37	1	0.3%

## 2016 U.S. CLO MANAGER LEAGUE TABLE (BY VOLUME)

Rank	CLO Manager	CLO Volume	# of Deals	Market Share
1	Credit Suisse Asset Management	2,891.00	4	4.0%
2	GSO Blackstone	2,789.22	5	3.9%
3	Octagon Credit Investors	2,235.75	4	3.1%
4	Voya Investment Management	2,141.55	4	3.0%
5	Sound Point Capital Management	1,950.00	3	2.7%
6	Carlyle Investment Management	1,915.15	4	2.6%
7	Ares Management	1,831.10	3	2.5%
8	Prudential Investment Management	1,673.17	3	2.3%
9	Golub Capital	1,653.27	4	2.3%
10	KKR	1,630.25	3	2.3%
11	MJX Asset Management	1,538.30	3	2.1%
12	Symphony Asset Management	1,531.25	3	2.1%
13	Invesco	1,428.65	3	2.0%
14	BlueMountain Capital Management	1,409.65	3	1.9%
15	Brightwood Capital Advisors	1,402.80	2	1.9%
16	Barings LLC	1,330.33	3	1.8%
17	Highbridge Principal Strategies	1,319.45	3	1.8%
18	THL Credit	1,263.80	2	1.7%
19	NewStar Financial	1,263.26	3	1.7%
20	Guggenheim Investment Management	1,260.44	3	1.7%
21	LCM Asset Management	1,237.26	3	1.7%
22	Neuberger Berman	1,182.50	3	1.6%
23	CVC Credit Partners	1,125.50	2	1.6%
24	Cerberus	1,113.47	3	1.5%
25	Oaktree Capital Management	1,071.66	2	1.5%
26	Onex Credit Partners	1,059.35	2	1.5%
27	BlackRock Financial Management	1,034.34	2	1.4%
28	Oak Hill Advisors	1,019.50	2	1.4%
29	Anchorage Capital Group	970.50	2	1.3%
30	Apollo Credit Management	923.40	2	1.3%

# 2016 U.S. CLO MANAGER LEAGUE TABLE (BY VOLUME)

Cont'd from prior slide

Rank	CLO Manager	CLO Volume	# of Deals	Market Share
31	TCI Capital Management	918.70	2	1.3%
32	Benefit Street Partners	914.92	2	1.3%
33	Canyon Capital	912.00	2	1.3%
34	Aegon USA Investment Management	895.62	2	1.2%
35	American Money Management Corp	866.01	2	1.2%
36	DFG Investment Advisors	864.43	2	1.2%
37	TPG Capital	821.25	2	1.1%
38	Regatta Loan Management	818.05	2	1.1%
39	Trinitas Capital Management	815.65	2	1.1%
40	York Capital	811.20	2	1.1%
41	MidOcean Credit Partners	807.95	2	1.1%
42	Wellfleet Credit Partners	764.55	2	1.1%
43	Crestline Denali Capital	719.81	2	1.0%
44	Garrison Capital	710.09	2	1.0%
45	Fortress	700.10	1	1.0%
46	Zais Group	689.20	2	1.0%
47	Goldman Sachs BDC/Regents of University of California	566.20	1	0.8%
48	Bain Capital Credit	537.60	1	0.7%
49	CIFC	509.25	1	0.7%
50	Mariner Investment Group	503.40	1	0.7%
51	Axa Investment Advisors	456.20	1	0.6%
52	Teacher's Advisors Inc	455.55	1	0.6%
53	Palmer Square Capital Management	453.68	2	0.6%
54	Alcentra	412.50	1	0.6%
55	Crescent Capital Group	411.00	1	0.6%
56	GoldenTree Asset Management	410.95	1	0.6%
57	Och Ziff Capital Management	409.25	1	0.6%
58	Trimaran Advisors	408.75	1	0.6%
59	3i Debt Management	407.55	1	0.6%
60	Park Avenue Institutional Advisers	405.95	1	0.6%

## 2016 U.S. CLO MANAGER LEAGUE TABLE (BY VOLUME)

Cont'd from prior slide

Rank	CLO Manager	CLO Volume	# of Deals	Market Share
61	Intermediate Capital Group	405.75	1	0.6%
62	American Capital Asset Management	405.48	1	0.6%
63	Brigade Capital Management	404.30	1	0.6%
64	Carlson Capital	404.15	1	0.6%
65	Sankaty Advisors	401.85	1	0.6%
66	PineBridge Investments	400.00	1	0.6%
67	TIAA-CREF Alternatives Advisors	382.19	1	0.5%
68	Black Diamond Capital Management	359.60	1	0.5%
69	Newfleet Asset Management	356.30	1	0.5%
70	Kramer Van Kirk Credit Strategies Inc	355.50	1	0.5%
71	Arrowpoint Asset Management	354.50	1	0.5%
72	Ballyrock Investment Management	354.10	1	0.5%
73	Apex Credit Partners	353.50	1	0.5%
74	Alliance Bernstein	351.30	1	0.5%
75	Tennenbaum Capital Management	351.15	1	0.5%
76	Seix Advisors	309.00	1	0.4%
77	Steele Creek Investment Management	306.50	1	0.4%
78	Rothschild	305.50	1	0.4%
79	Monroe Capital	305.00	1	0.4%
80	Maranon Capital	304.13	1	0.4%
81	Creek Source LLC	302.50	1	0.4%
82	Telos Asset Management	252.37	1	0.3%
83	Callidus Capital Management	125.00	1	0.2%

## 2016 U.S. CLO TRUSTEE LEAGUE TABLE (BY VOLUME)

Rank	Trustee	Trustee Volume	# of Deals	Market Share
1	US Bank	38,150.21	83	52.7%
2	Citi/Virtus	9,276.51	21	12.8%
3	Wells Fargo	8,255.72	17	11.4%
4	BONY/Mellon	7,052.49	14	9.7%
5	Deutsche Bank	6,691.65	16	9.2%
6	State Street	2,996.30	6	4.1%

## 2016 EUROPEAN CLOs

CLO Manager	CLO Name	Deal Size (€m)	Date Priced	Agent Bank	Liability Spread (bps)					
					AAA	AA	A	BBB	BB	B
Oaktree Capital Management	Arbour CLO III	414.35	15-Jan-16	Citi	150	220	305	420	644	856
BlackRock Investment Management	Blackrock European CLO I	410.24	9-Feb-16	Credit Suisse	150					
CVC Credit Partners	CVC Cordatus Loan Fund VI	411.00	17-Mar-16	Credit Suisse	150	215	350	515		
BlueMountain Fuji Management	BlueMountain Euro CLO 2016-1	409.80	22-Mar-16	JP Morgan	170	235	335	515	815	
NM Rothschild & Sons	Contego CLO III	307.80	22-Mar-16	Deutsche Bank	157	220	335	510	800	
Commerzbank	Bosphorus CLO II	277.70	24-Mar-16	Stifel	143	215			750	875
3i Debt Management	Harvest CLO XV	413.00	30-Mar-16	RBC/Resource Capital	150	225	335			
Carlyle Investment Management	Carlyle Global Market Strategies Euro CLO 2016-1	410.00	8-Apr-16	Citi	145					
Credit Suisse Asset Management	Cadogan Square CLO VII	411.65	12-Apr-16	Morgan Stanley	150	220	330	490	770	
Blackstone/GSO	Elm Park CLO	558.18	27-Apr-16	Deutsche Bank	150	210	315	435	640	865
Pramerica Investment Management	Dryden 44 Euro CLO 2015	412.90	29-Apr-16	JP Morgan						
Apollo Credit Management	ALME Loan Funding V	357.00	13-May-16	Barclays	145	210	310	430	700	950
Spire Partners	Aurium CLO II	359.70	20-May-16	Credit Suisse	145					
Intermediate Capital Managers	St Paul's CLO VI	412.80	20-May-16	Citi	145	215	310			
KKR Credit Advisors	Avoca CLO XVI	462.80	3-Jun-16	BNP Paribas	135	205	310	430		
Babson Capital Europe	Babson Euro CLO 2016-1	410.00	8-Jun-16	JP Morgan	128					
Cairn Capital	Cairn CLO VI	362.00	9-Jun-16	Barclays	130	205	305	430	725	1020
GoldenTree Asset Management	Laurelin 2016-1	407.40	13-Jun-16	Credit Suisse	130	205	310			
Accunia	Accunia European CLO I	421.23	5-Jul-16	Deutsche Bank						
CVC Credit Partners	CVC Cordatus Loan Fund VII	454.20	8-Jul-16	Citi	130	215	320	450	760	

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# 2016 EUROPEAN CLOs

Leveraged Loan Monthly - December 2016

Cont'd from prior slide

CLO Manager	CLO Name	Deal Size (€m)	Date Priced	Agent Bank	Liability Spread (bps)					
					AAA	AA	A	BBB	BB	B
Alcentra	Jubilee CLO 2016-XVII	414.50	18-Jul-16	Morgan Stanley	125	205				
3i Debt Management	Harvest CLO XVI	452.00	20-Jul-16	Credit Suisse	125	205	305			
AXA Investment Managers	Adagio V CLO	361.00	22-Jul-16	JP Morgan	123					
Blackstone/GSO	Griffith Park CLO	453.60	28-Jul-16	Barclays	123	200	300	435	740	1140
Chenavari Credit Partners	Toro European CLO 2	362.75	12-Aug-16	Citi	126	205	300	435	740	1040
Pramerica Investment Management	Dryden 46 Euro CLO 2016	471.18	16-Sep-16	Barclays	118					
Pinebridge Investments Europe	Euro-Galaxy V CLO	411.10	29-Sep-16	JP Morgan	114					
Oaktree Capital Management	Arbour CLO IV	413.45	30-Sep-16	Barclays	114	175	267	380	650	950
Blackstone/GSO	Clarinda Park CLO	415.10	30-Sep-16	Citi	115	175	270			
Tikehau Investment Management	Tikehau CLO II	414.20	13-Oct-16	Citi	106	170	257	365	685	964
KKR Credit Advisors	Avoca CLO XVII	465.50	14-Oct-16	Morgan Stanley	100	170	250	370	670	950
Carlyle Investment Management	Carlyle Global Market Strategies Euro CLO 2016-2	415.00	20-Oct-16	BAML	100	170	250	370	700	977
BlackRock Investment Management	Blackrock European CLO II	415.80	27-Oct-16	Citi	98	160	240	365	690	981
Och-Ziff Capital Management	OZLME CLO I	413.00	3-Nov-16	BAML	103	165	245	370	720	1025
GLG Partners	GLG Euro CLO II	364.00	4-Nov-16	Morgan Stanley	103	170	250	380		
Credit Suisse Asset Management	Cadogan Square CLO VIII	479.14	9-Nov-16	Barclays	96	160	240	373	720	1000
Ares Management	Ares European CLO VIII	417.00	17-Nov-16	Goldman Sachs	96	160	240	370	745	1000
Halcyon Loan Advisors	Halcyon Loan Advisors European Funding 2016	338.00	18-Nov-16	Citi	103	170	250	380	760	1050
OakHill	Oak Hill European Credit Partners 2016-5	479.20	2-Dec-16	Goldman Sachs	96	155	235	360	710	975
Pramerica Investment Management	Dryden 48 Euro CLO 2016	414.50	2-Dec-16	BNP Paribas	96	167	260	373	745	1025
Cairn Capital	Cairn CLO VII	363.50	14-Dec-16	Barclays	99	160	240	370	725	1000

## 2016 EUROPEAN CLO REFINANCINGS

CLO manager	CLO name	Date priced	Size (€ Mils.)	AAA coupon	AAA DM	AA coupon	AA DM	A coupon	A DM	BBB coupon	BBB DM	BB coupon	BB DM	Note
Carlyle Investment Management	Carlyle GMS Euro 2013-2	30-Sep-16	268.6	115		180		270		380				
Prudential Investment Management	Dryden XXVII Euro CLO 2013	8-Nov-16	385.8	108/98		175		265/260						
Oaktree Capital Management	Arbour CLO 2014-1	21-Nov-16	266.2	85		150		280						
Apollo Credit Management	Alme Loan Funding 2014-2	2-Dec-16	337.4	100		160		235		365		623		Reset
CVC Credit Partners	CVC Cordatus Loan Fund III	2-Dec-16	333.2	87		150		230						
KKR	Avoca CLO 2013-10	5-Dec-16	276.5	91		155		235		360		605		Reset
Intermediate Capital Group	St Paul's CLO 2014-4	12-Dec-16	327.5	101		172		250						
Intermediate Capital Group	St Paul's CLO 2014-3	12-Dec-16	450.4	99		172		250		370				
PineBridge Investments	Euro-Galaxy III CLO	14-Dec-16	343.2	102		160		240		385		625		Reset
Carlyle Investment Management	Carlyle GMS Euro 2014-1	14-Dec-16	277.6	140		200		265						
Alcentra	Jubilee CLO 2014-XII	16-Dec-16	358.0	105	105	175	175	230	230					
Barings LLC	Babson Euro CLO 2014-1	22-Dec-16	281.75	110		173/235								



## 2016 EUROPEAN CLO ARRANGER LEAGUE TABLE (BY VOLUME)

Rank	Bank Holding Company	Bookrunner Volume (€)	# of Deals	Market Share
1	Citi	3,637	9	21.6%
2	Barclays	2,900	7	17.2%
3	Credit Suisse	2,040	5	12.1%
4	JP Morgan	2,005	5	11.9%
5	Morgan Stanley	1,656	4	9.8%
6	Deutsche Bank	1,287	3	7.7%
7	Goldman Sachs	896	2	5.3%
8	BNP Paribas	877	2	5.2%
9	BAML	828	2	4.9%
10	Stifel	278	1	1.7%
11	RBC	207	1	1.2%
12	Resource Capital	207	1	1.2%

## 2016 EUROPEAN CLO MANAGER LEAGUE TABLE (BY VOLUME)

Rank	CLO Manager	Manager Vol. (Euros)	Deals	Market Share
1	Blackstone/GSO	1,426.9	3	8.5%
2	Pramerica Investment Management	1,298.6	3	7.7%
3	KKR Credit Advisors	928.3	2	5.5%
4	Credit Suisse Asset Management	890.8	2	5.3%
5	CVC Credit Partners	865.2	2	5.1%
6	3i Debt Management	865.0	2	5.1%
7	Oaktree Capital Management	827.8	2	4.9%
8	BlackRock Investment Management	826.0	2	4.9%
9	Carlyle Investment Management	825.0	2	4.9%
10	Cairn Capital	725.5	2	4.3%
11	OakHill	479.2	1	2.8%
12	Accunia	421.2	1	2.5%
13	Ares Management	417.0	1	2.5%
14	Alcentra	414.5	1	2.5%
15	Tikehau Investment Management	414.2	1	2.5%
16	Och-Ziff Capital Management	413.0	1	2.5%
17	Intermediate Capital Managers	412.8	1	2.5%
18	Pinebridge Investments Europe	411.1	1	2.4%
19	Babson Capital Europe	410.0	1	2.4%
20	BlueMountain Fuji Management	409.8	1	2.4%
21	GoldenTree Asset Management	407.4	1	2.4%
22	GLG Partners	364.0	1	2.2%
23	Chenavari Credit Partners	362.8	1	2.2%
24	AXA Investment Managers	361.0	1	2.1%
25	Spire Partners	359.7	1	2.1%
26	Apollo Credit Management	357.0	1	2.1%
27	Halcyon Loan Advisors	338.0	1	2.0%
28	NM Rothschild & Sons	307.8	1	1.8%
29	Commerzbank	277.7	1	1.7%



REUTERS/Petar Kujundzic

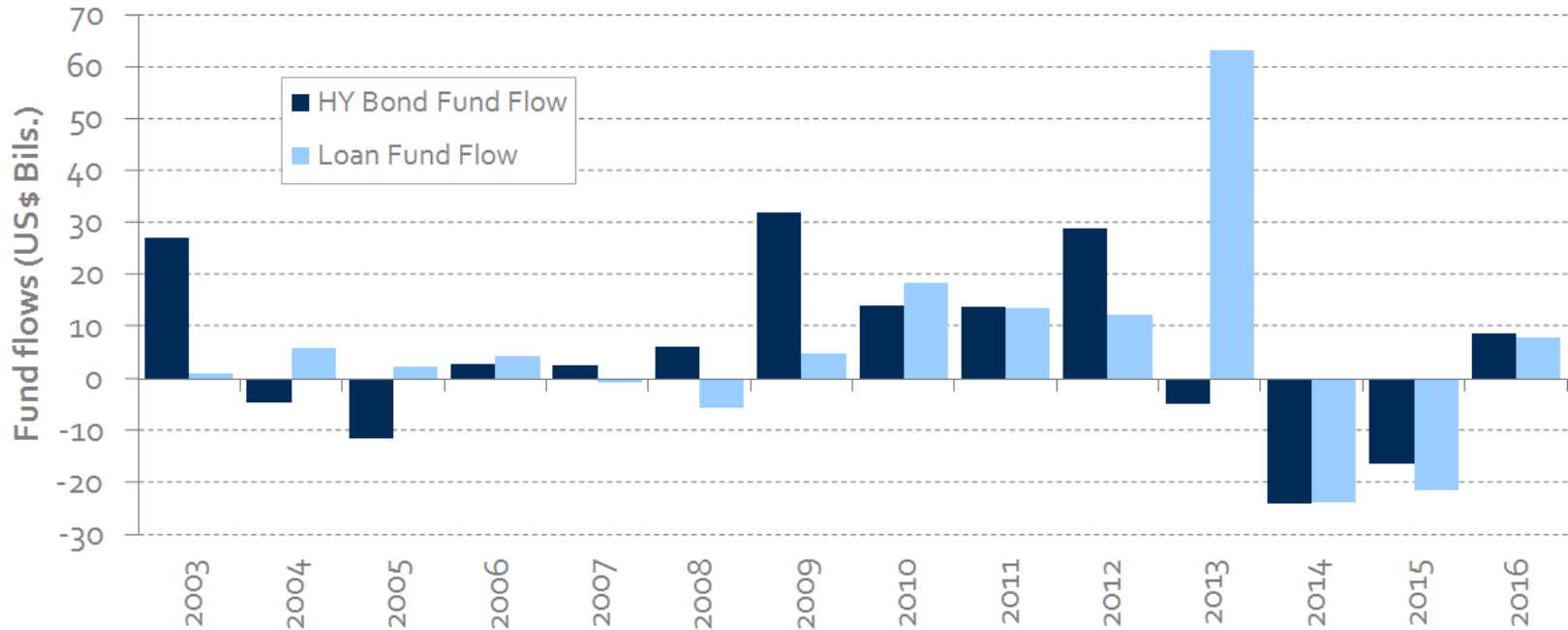
# LOAN MUTUAL FUND FLOWS & RETURNS



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# U.S. LOAN VS. HY BOND FUND FLOWS - ANNUAL

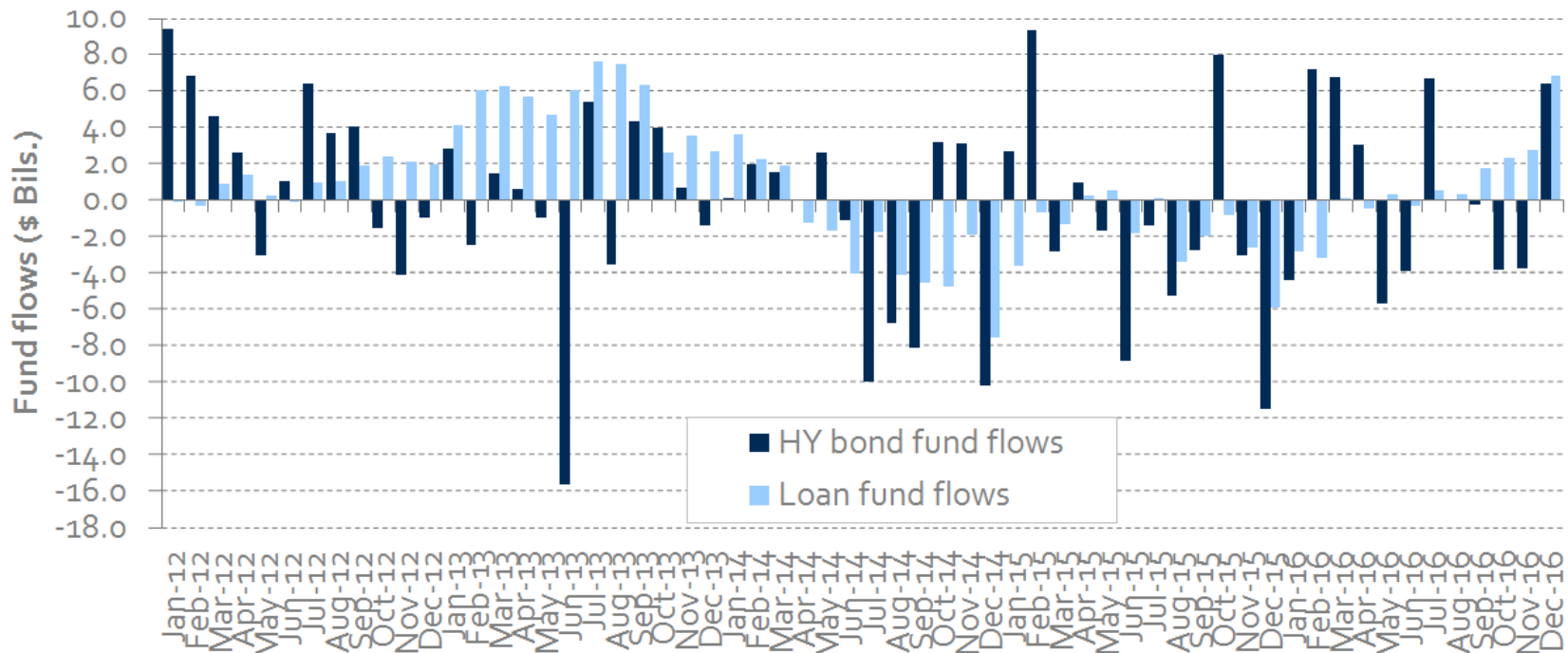
LOAN VS. HY BOND FUND FLOWS



- Loan funds pulled in \$7.8 billion in 2016, the first positive year since 2013.
- High yield bond funds added \$8.6 billion in 2016, the first year of inflows since 2012.

# LOAN VS. HY BOND FUND FLOWS\* - MONTHLY

MONTHLY LOAN VS. HY BOND FUND FLOWS



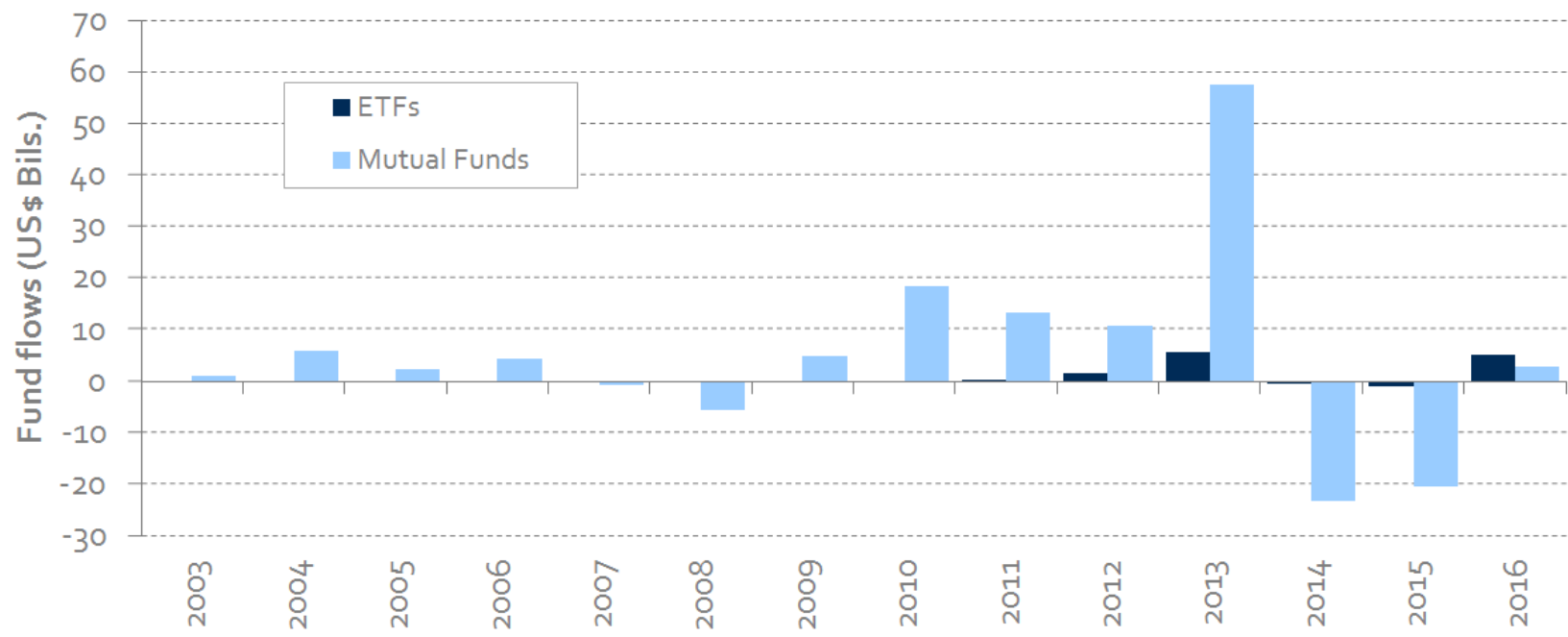
\* Based on the most recently available data and is subject to future updates.

- Loan funds posted their sixth straight month of inflows, adding \$6.8 billion in December. This took inflows to \$7.8 billion for full year 2016.
- HY bond funds reversed course and posted an inflow of \$7 billion in December, taking inflows for the year to \$8.6 billion.

# LOAN FUND FLOWS – MUTUAL FUND VS. ETF BREAKOUT\* - ANNUAL

LOAN FUND FLOWS & RETURNS

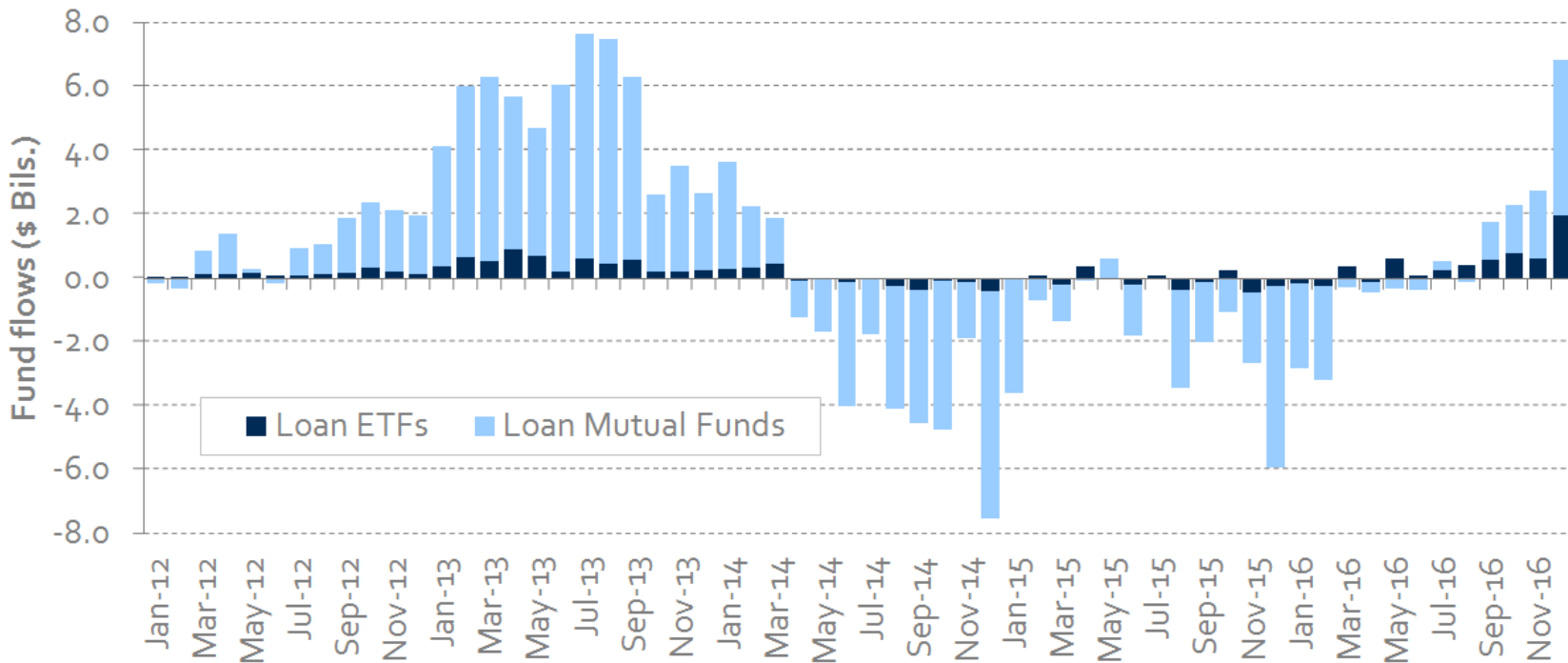
LOAN FUND FLOWS – MUTUAL FUND VS. ETF BREAKOUT



- The relatively smaller ETF category captured the largest share of loan fund inflows in 2016. ETFs added \$5 billion compared to \$2.8 billion for mutual funds.

# LOAN FUND FLOWS – MUTUAL FUND VS. ETF BREAKOUT\*

LOAN FUND FLOWS – MUTUAL FUND VS. ETF BREAKOUT

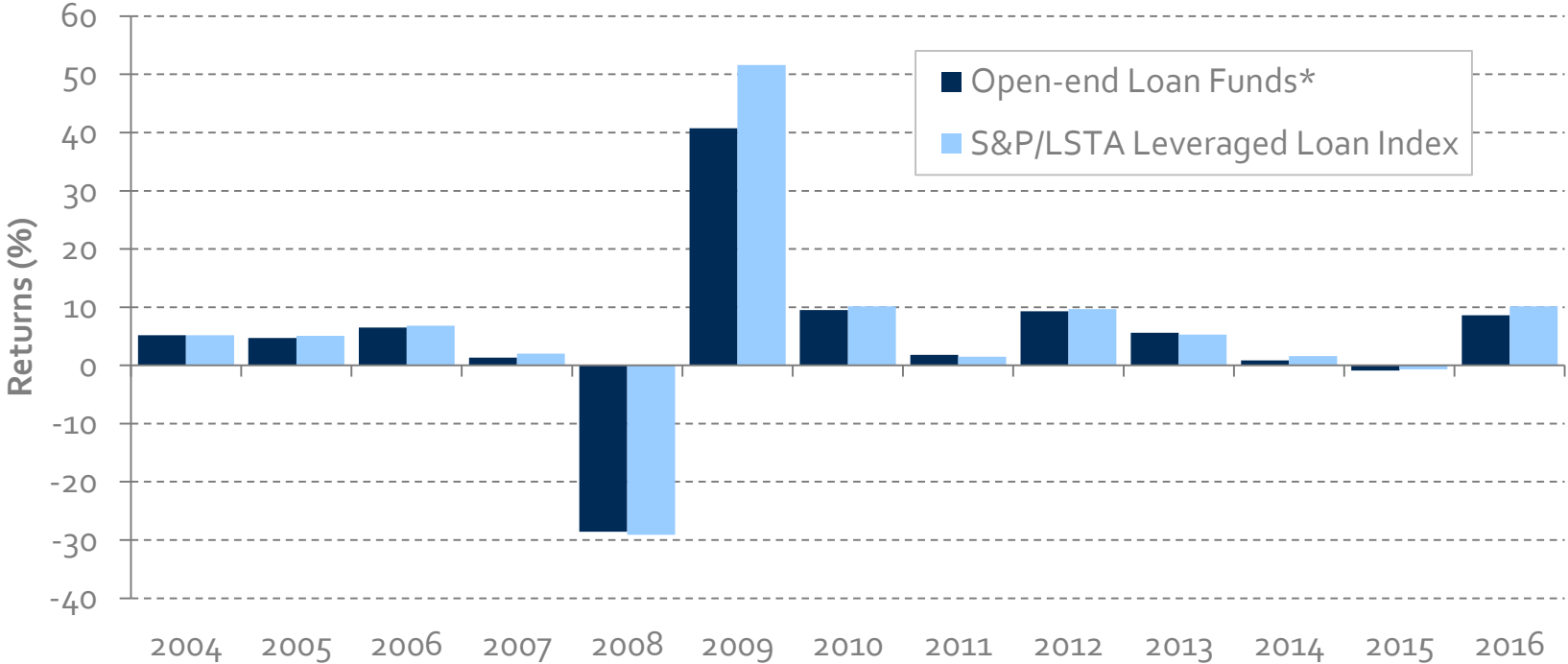


\* Based on the most recently available data and is subject to future updates.

- Breaking out loan fund flows into the mutual fund and ETF categories, ETFs added \$2 billion and mutual funds added \$4.8 billion in December.

# LOAN FUNDS VS. LOAN INDEX – ANNUAL RETURNS

ANNUAL FUND VS. INDEX RETURNS



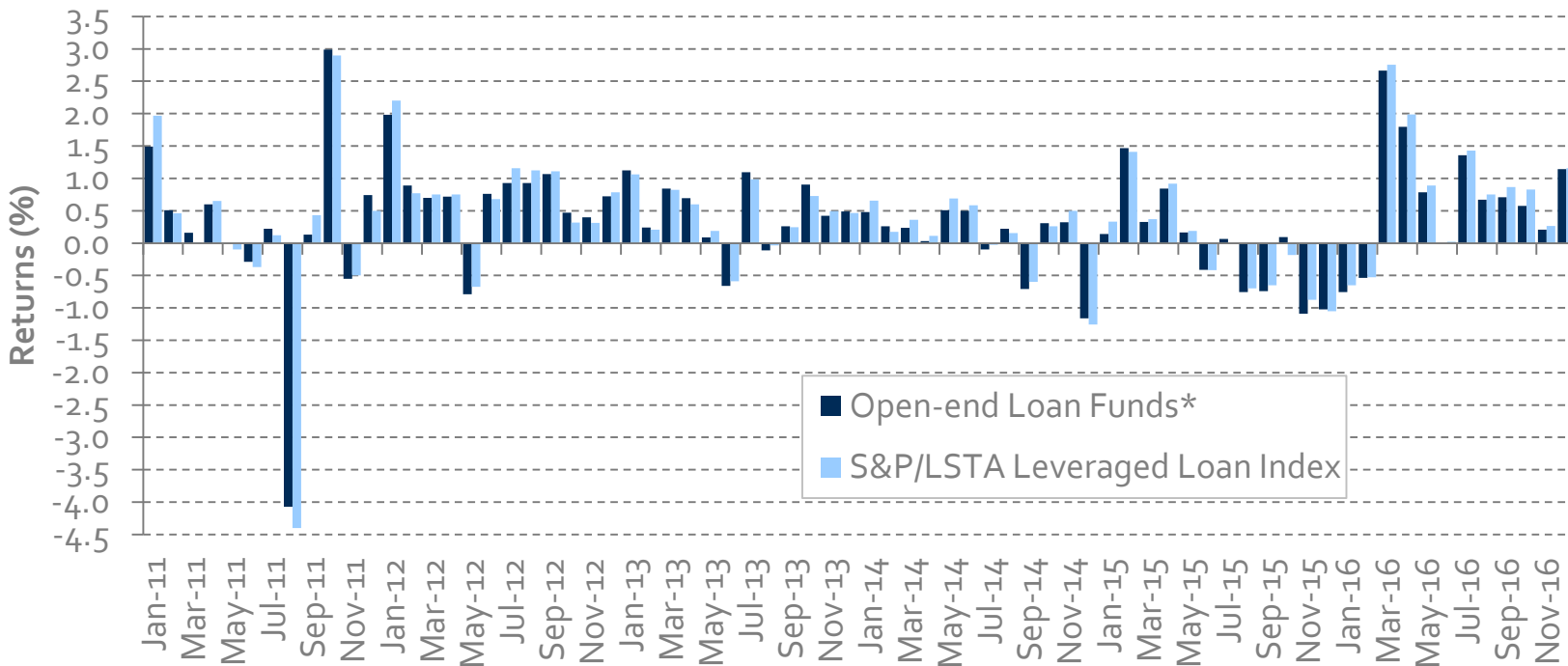
\*Based on a straight average of all open-end loan mutual fund returns.

- Loans posted their best performance in a few years, with open-end loan funds gaining 8.6% in 2016, while the S&P/LSTA loan index returned 10.2%.



# LOAN FUNDS VS. LOAN INDEX – MONTHLY RETURNS

MONTHLY FUND VS. INDEX RETURNS



\*Based on a straight average of all open-end loan fund returns.

- Loan returns jumped in December, with open-end loan funds up 1.14% and the S&P/LSTA index gaining 1.16%.
- This brought the 2016 return to 8.6% for open-end funds and 10.2% for the index.

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