



Closed-End Fund Leverage and Implications of Rising Rates

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April 27, 2017

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- Mark Kelly, BlackRock
- Amit Jain, Wells Fargo
- Andrew Kleeman, Barings

FitchRatings



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Global ETFs Forum

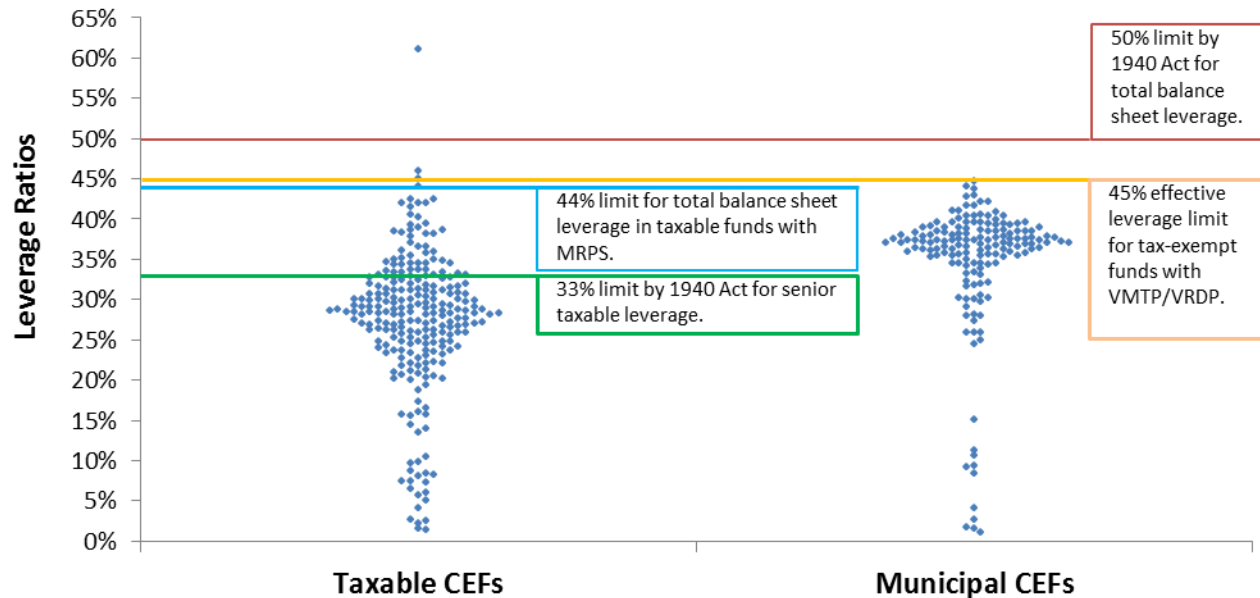
Thursday, April 27, 2017

The Metropolitan Club, One East 60th St., New York City

Closed-End Fund Leverage Ratios



- Leverage ratios limited by regulation, ratings, and risk management
- Municipal funds in high 30s
- Taxable funds range by sector, cluster around 30%
- Ratios greater than regulatory limit use non-traditional funding



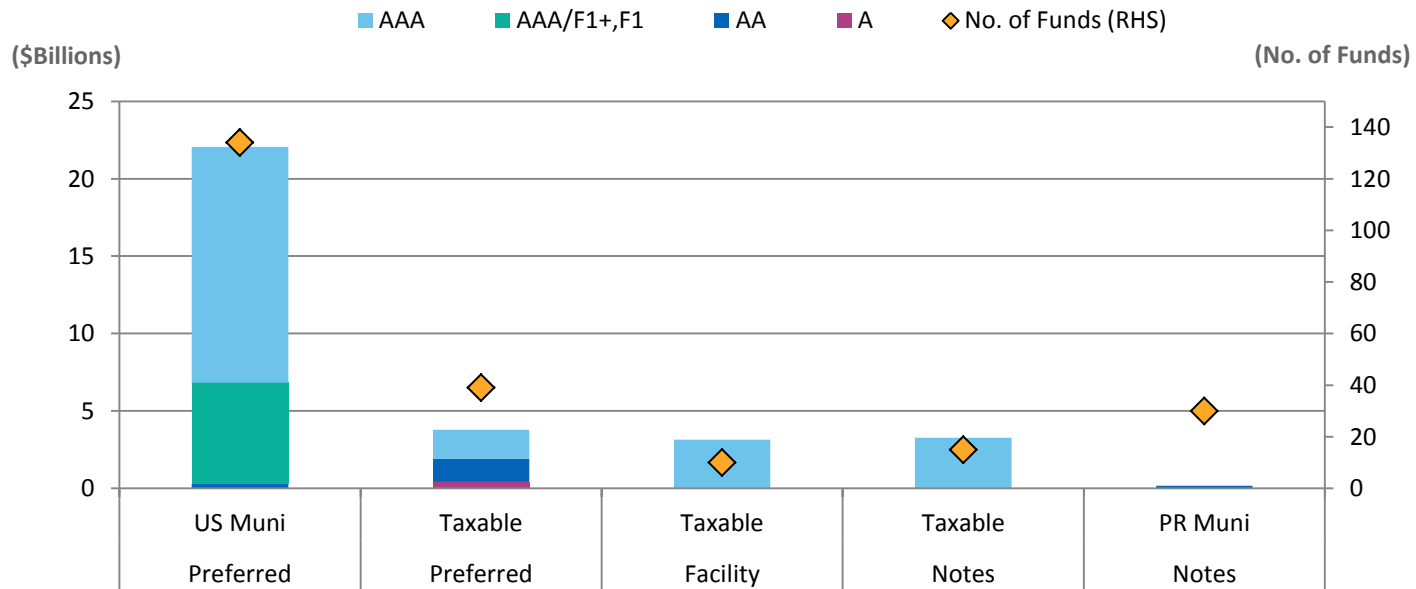
Source: Fitch. Data covers 408 U.S. leveraged CEFs with data as of 12/31/2016 or latest available. Graph illustrates regulatory and security leverage limits. Bank counterparties institute additional leverage limits, and funds with Fitch-rated securities incorporate limits in line with rating levels based on their asset/leverage profiles.

Fitch U.S. Closed-End Fund Ratings



- US Taxable: \$10.2 billion of debt/preferred across 50 funds
- US Municipal: \$21.1 billion of preferred across 134 funds
- PR Municipal: note facilities across 30 funds

Fitch-Rated Leverage by Rating Level

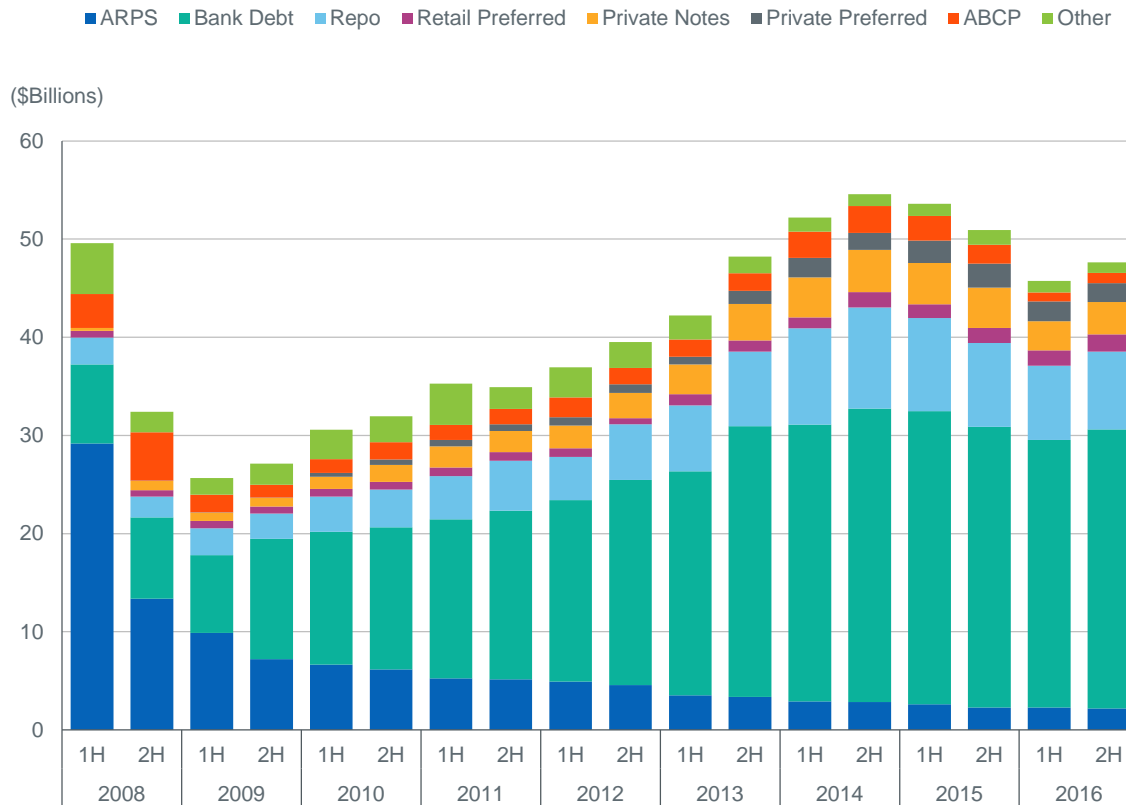


Source: Fitch. Data as of 4/21/17

Taxable CEF Leverage Profile



Leverage Used in Taxable CEFs



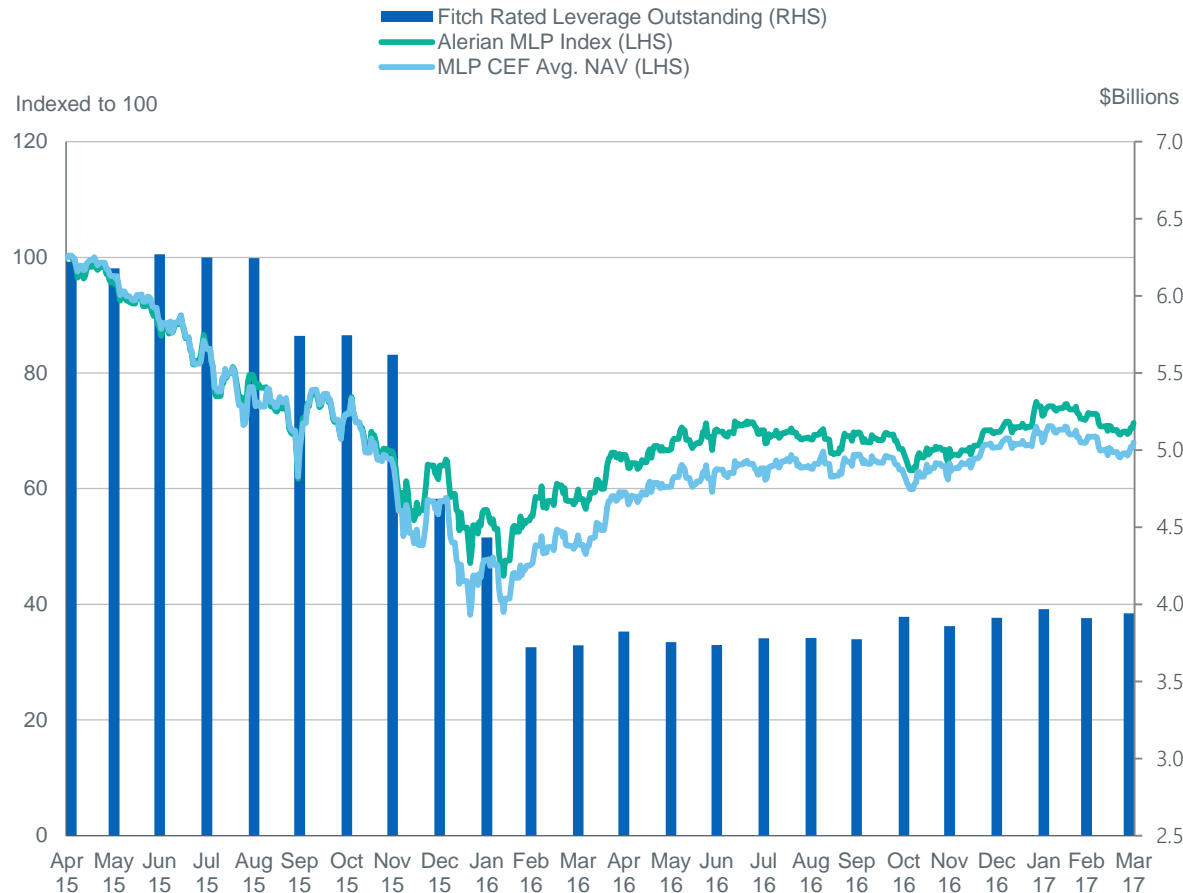
- Total leverage down year over year, but up over past 6 months
- Observed increases in bank debt utilization and reverse-repo
- Recent preferred issuance motivated by funding diversification and regulatory leverage limits
- 2H2016 Totals: Bank Debt \$28.4bil, Repo \$7.9bil, Priv. Notes \$3.3bil, ARPS \$2.2bil, Priv. Pfd. \$1.9bil, Retail Pfd. \$1.8bil, ABCP \$1.1bil, Other \$1.1bil

Source: Fitch, SEC Filings, press releases.
Data in billions, as of 12/31/2016 or latest available, covers \$47.6 billion in outstanding leverage across 250 U.S. closed-end funds.

MLP CEF Leverage



Normalized Asset Performance vs. Leverage Outstanding



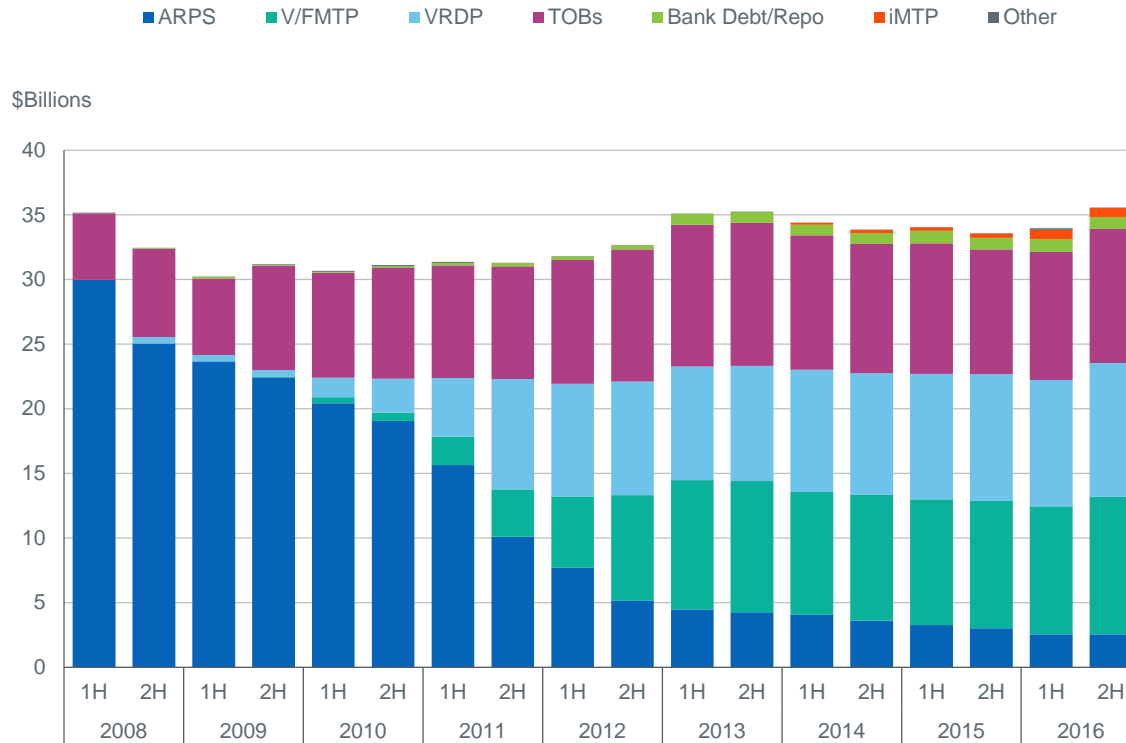
- Significant deleveraging in the MLP sector through early 2016
- Funds have been cautious to increase leverage
- Increased utilization of bank facilities recently
- Average leverage ratio for MLP CEFs has decreased from 45.8% on Feb. 11, 2016 to 26.4% on Mar. 31, 2017

Source: Fitch, Alerian, Bloomberg. Leverage data includes MLP funds rated by Fitch as of 4/30/2015.

Municipal CEF Leverage Profile



Leverage Used in Municipal CEFs



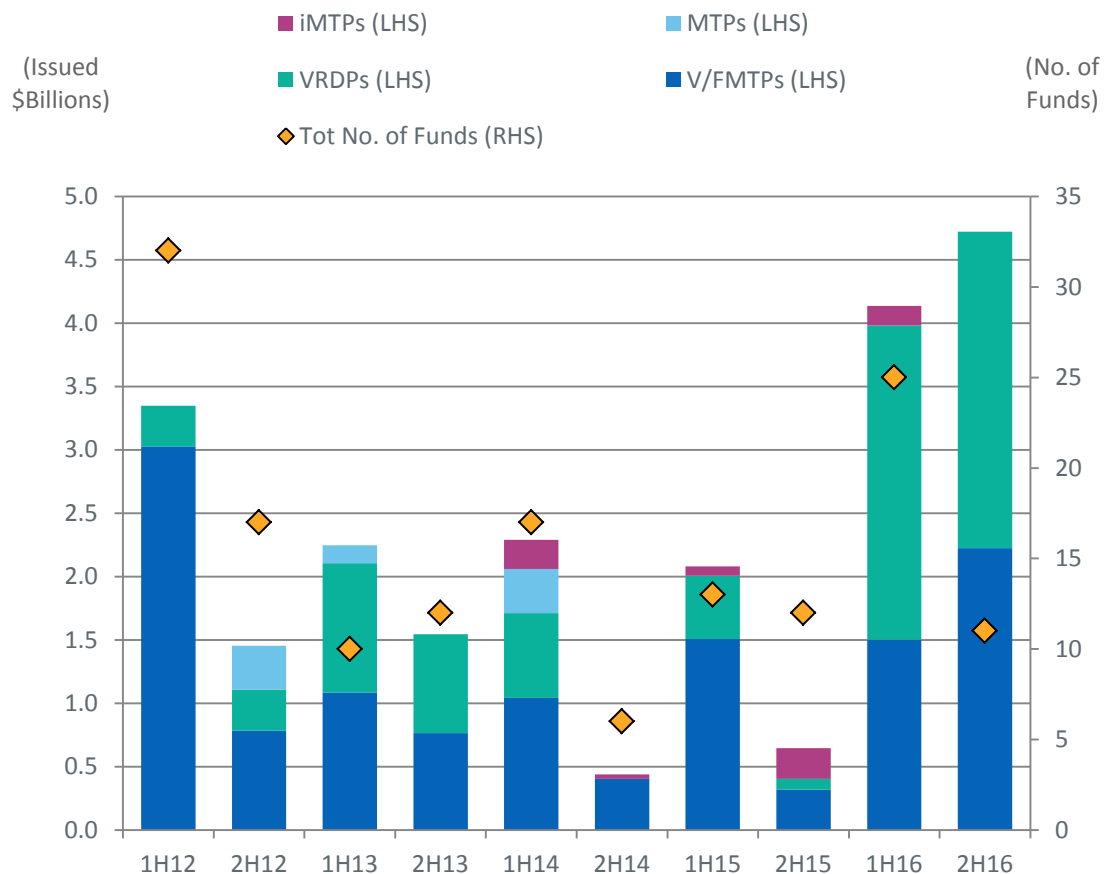
- Additional preferred issuance in 2016 to reach target leverage ratios
- Remaining ARPS continue to be slowly redeemed, although low activity in 2H2016
- VRDP, VMTP, and TOBs continue to be primary sources of leverage
- 2H2016 Totals: V/FMTP \$10.7bil, TOBs \$10.4bil, VRDP \$10.3bil, ARPS \$2.5bil, Bank Debt/Repo \$0.9bil, iMTP \$0.7bil

Source: Fitch, SEC Filings, and press releases.
Data in billions as of 12/31/2016 or latest available, covers \$35.6 billion in outstanding leverage across 158 U.S. closed-end funds.

Municipal CEF Leverage Issuance



Municipal CEF Leverage Issuance



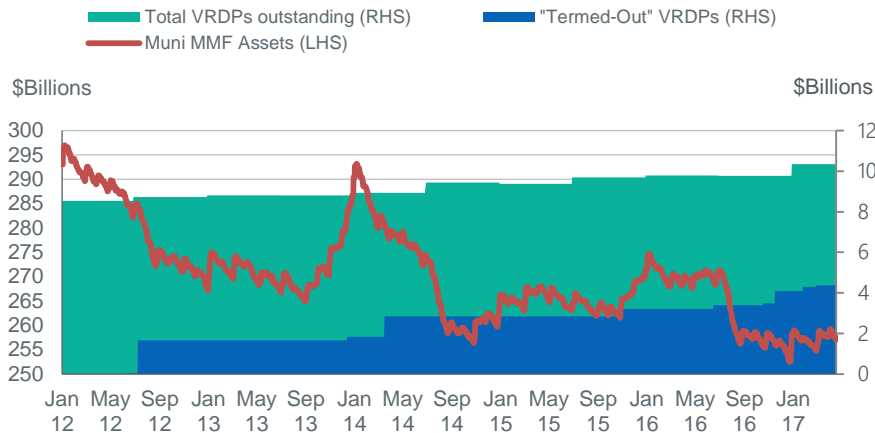
- Significant issuance volume in 2016
- Refinancing associated with fund mergers has been the primary driver of issuance
- Direct placements with banks (V/FMTPs, Term VRDPs) have increased as municipal MMF assets have declined

Source: Fitch, SEC Filings. Reflects the issuance of new non-ARPS preferred shares. Data may overstate new issuance in cases of fund mergers where transfer of the acquired fund's preferred shares were done in-kind.

Terminating Out VRDP



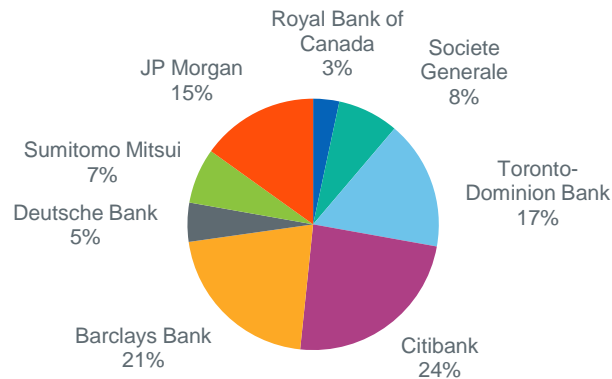
Municipal MMF Assets vs "Termed-Out" VRDPs



Source: Fitch, SEC Filings, iMoneyNet. Data as of 4/19/17.

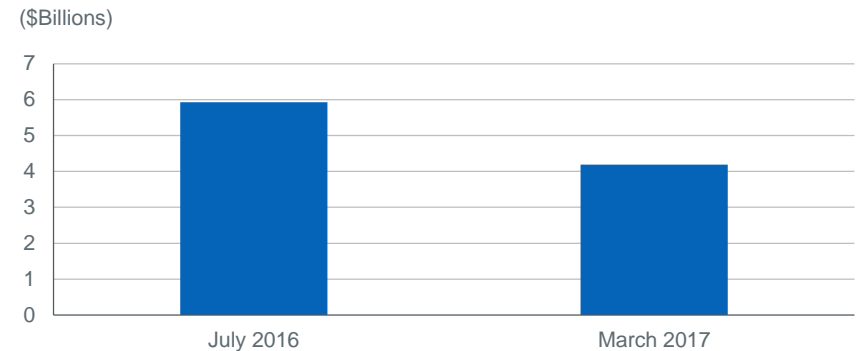
- Municipal MMFs traditionally have been the main buyers of VRDPs
- MMF reform drove MMF fund outflows, leading some VRDPs to be placed with banks
- Over half are still remarketed
- New liquidity providers are entering the market

VRDP Liquidity Provider Market Share



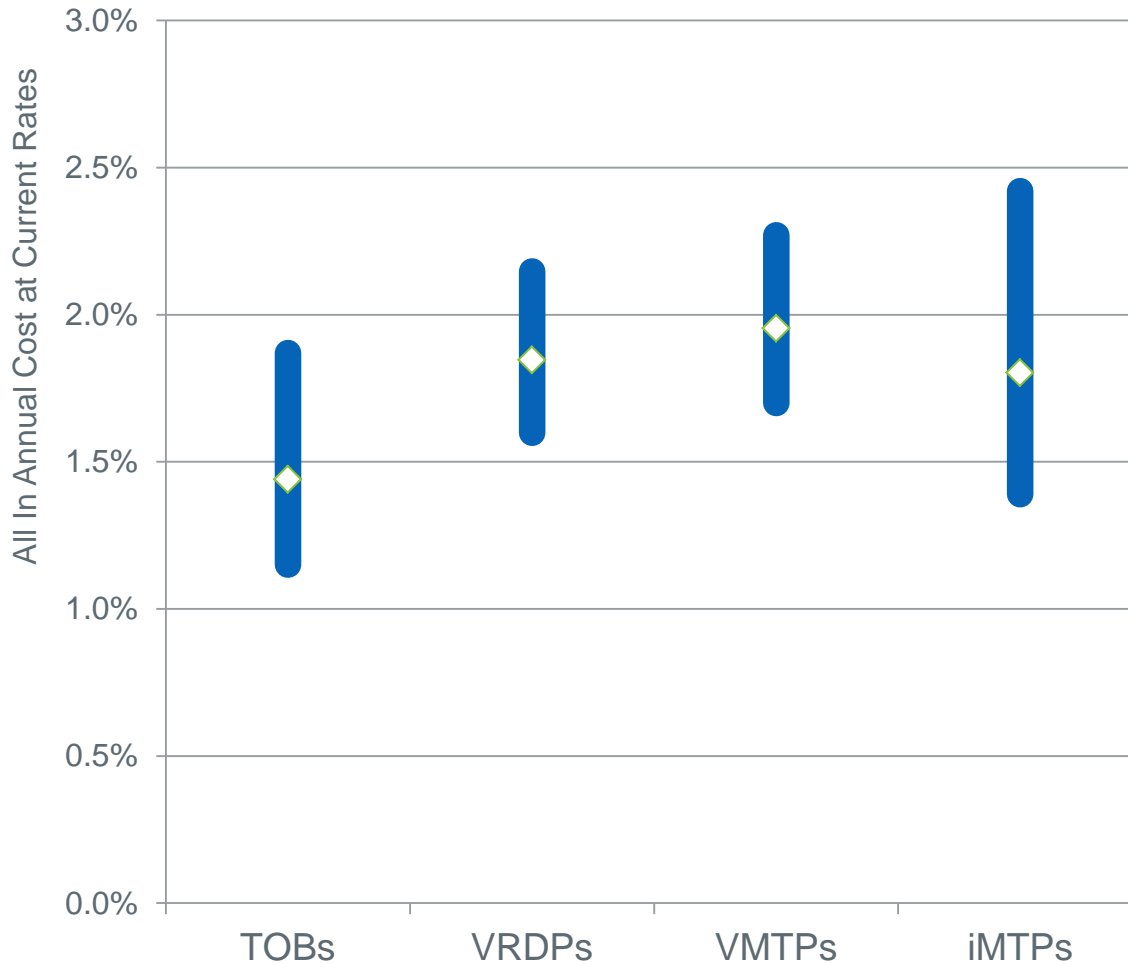
Source: Fitch, SEC Filings. Data as of 4/21/17 covering remarketed VRDPs.

VRDPs held by Municipal MMFs



Source: Crane Data.

Tax-Exempt CEFs – Current Leverage Costs



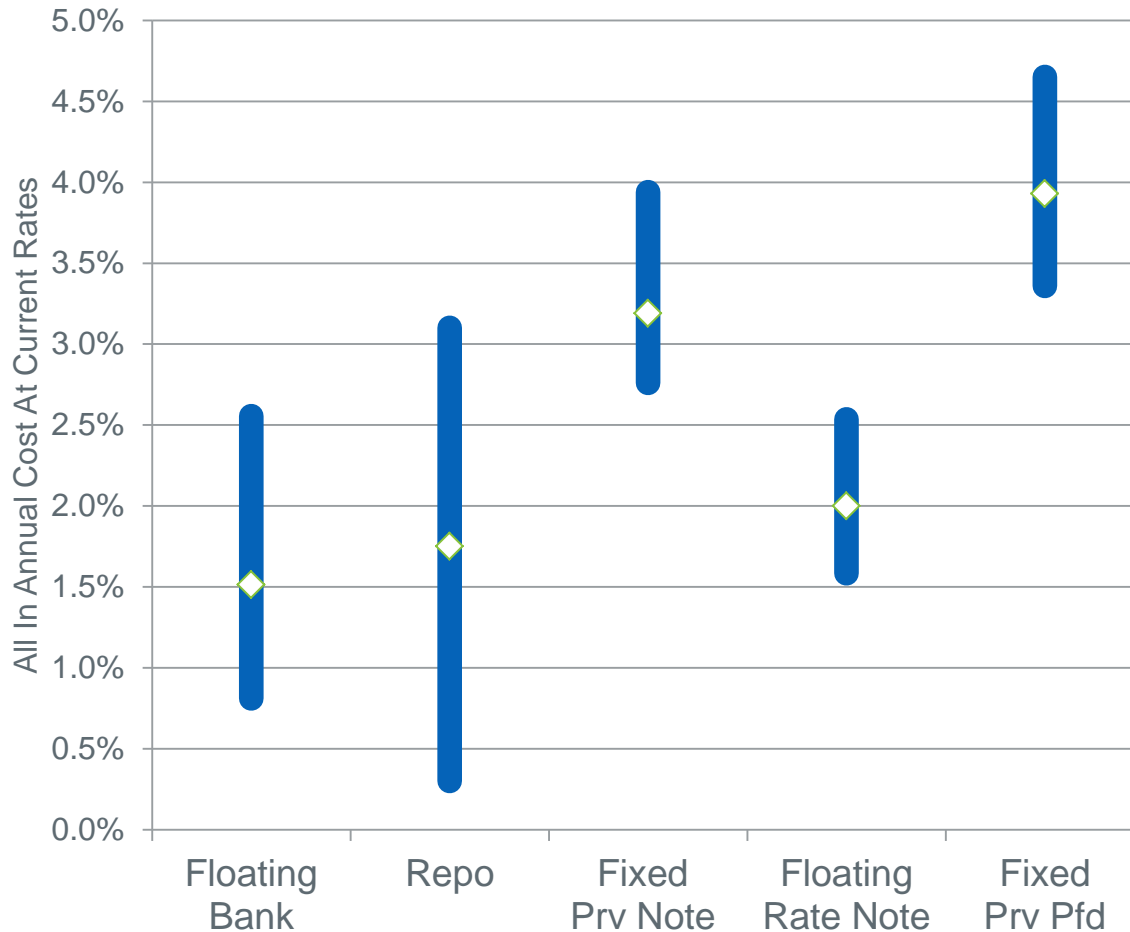
- Most tax-exempt CEF financing is tied to or trades in line with SIFMA
- SIFMA's increase has led to increases in cost for municipal CEFs and has caused some to cut dividends

Costs vary by:

- Term of the issuance;
- Manager track record;
- Portfolio sector and quality;
- Prevalent interest rates;
- Market timing.

Source: Fitch, public filings. Figures represent typical issuances from Jan 2015 – Mar 2017. All costs above are floating rate and constitute the sum of the referenced index + spread. These are subject to fluctuate in line with movements in the index rate.

Taxable CEFs – Current Leverage Costs



Costs vary by:

- Term of the issuance;
- Manager track record;
- Portfolio sector and quality;
- Secured/unsecured status;
- Seniority in capital structure;
- Prevalent interest rates;
- Collateral type;
- Market timing.

Source: Fitch, public filings. Figures represent typical issuances from Jan 2015 – Mar 2017. Floating rate instruments sum up the all-in cost of the referenced index + spread. These are subject to fluctuation in line with movements in the index rate, unlike fixed rate issuances.

CEF Bank Financing



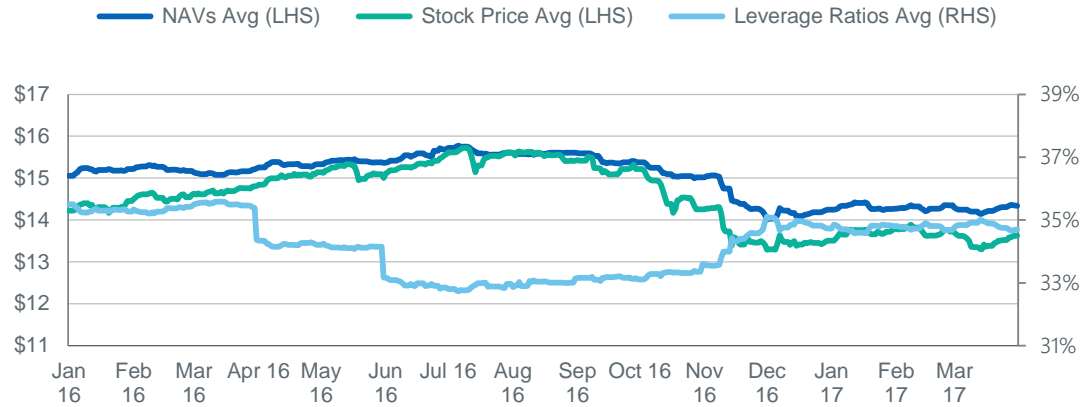
Bank Counterparties	Direct Facility / Loan / Margin (\$mn)	Number of Funds	ABCP Conduit (\$mn)	Number of Funds	Reverse Repos (\$mn)	Number of Funds	Total (\$mn)	%	Change from April 2016
BNP Paribas	9,133	51	0	0	1,013	16	10,146	27%	-1,033
State Street Bank and Trust Company	6,831	52	0	0	0	0	6,831	18%	-149
Bank of Nova Scotia	5,905	46	168	1	0	0	6,073	16%	966
Bank of New York	1,941	11	0	0	686	4	2,627	7%	437
Societe Generale	942	5	0	0	787	9	1,729	5%	1,084
Royal Bank of Canada	0	0	0	0	1,694	22	1,694	4%	-575
Bank of America	930	5	0	0	217	9	1,147	3%	-429
All Other Counterparties	1,424	20	806	5	4,223	120	6,453	17%	-1,280
Not Disclosed	1,406	12	83	1	0	0	1,489	4%	-684
Total	28,511	187	1,057	7	8,620	35	38,187	100%	-1,664

Source: Fitch, public filings, bank data. Figures based on actual amounts funded (not commitment) for public U.S. 1940 Act CEFs, excluding continuously-offered. Counterparty figures may be overstated in cases of lending syndicates where financial statement notes only disclose the lead. Changes from prior periods may be over/understated where funds do not disclose the counterparty publicly but the counterparty discloses the lending relationship to Fitch as of a certain date.

Municipal CEF Performance



IG Muni CEFs



Since 1/1/16:

- Leverage down 0.8%
- NAVs down 4.8%
- Discounts narrowed 0.5%

HY Muni CEFs



Since 1/1/16:

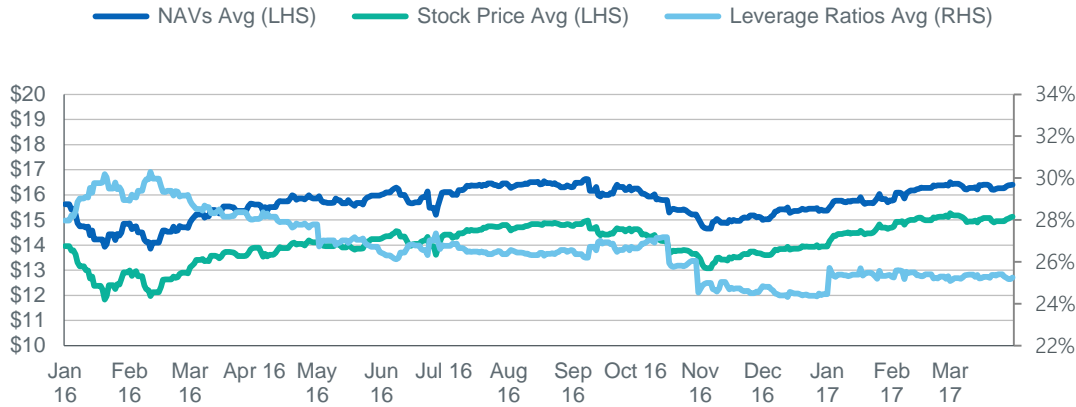
- Leverage up 1.5%
- NAVs down 3.9%
- Discounts flat

Source: Fitch, Bloomberg, public filings. Data represent sector average. Leverage ratios were calculated using the most recent figures available at Mar-2017.

Taxable CEF Performance



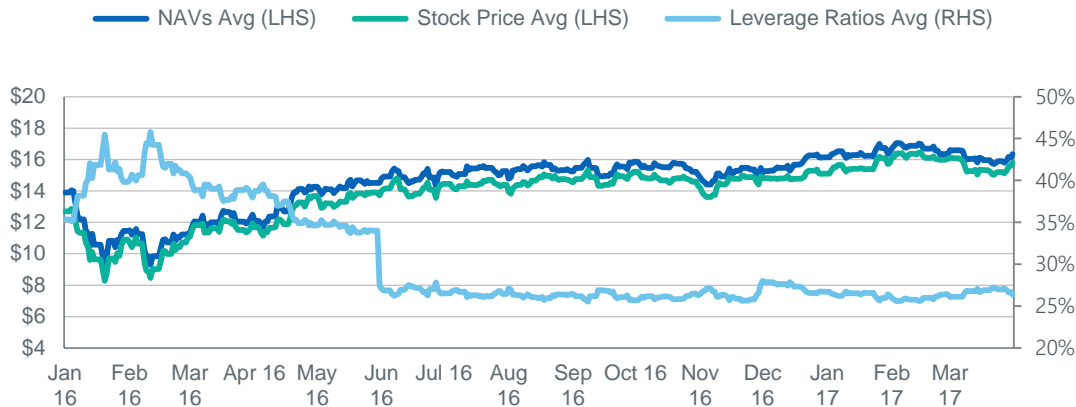
General Equity CEFs



Since 1/1/16:

- Leverage down 2.7%
- NAVs up 4.9%
- Discounts narrowed 3.1%

MLP CEFs



Since 1/1/16:

- Leverage down 8.9%
- NAVs up 17.6%
- Discounts narrowed 4.4%

Source: Fitch, Bloomberg, public filings. Data represent sector average. Leverage ratios were calculated using the most recent figures available at Mar-2017.

Taxable CEF Performance (continued)



HY Corp Bond CEFs



Since 1/1/16:

- Leverage down 3.2%
- NAVs up 16.7%
- Discounts narrowed 3.2%

Senior Loan CEF



Since 1/1/16:

- Leverage down 1.9%
- NAVs up 11.7%
- Discounts narrowed 6.1%

Source: Fitch, Bloomberg, public filings. Data represent sector average. Leverage ratios were calculated using the most recent figures available at Mar-2017.



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- Rating Criteria:

Rating Closed-End Fund Debt and Preferred Stock

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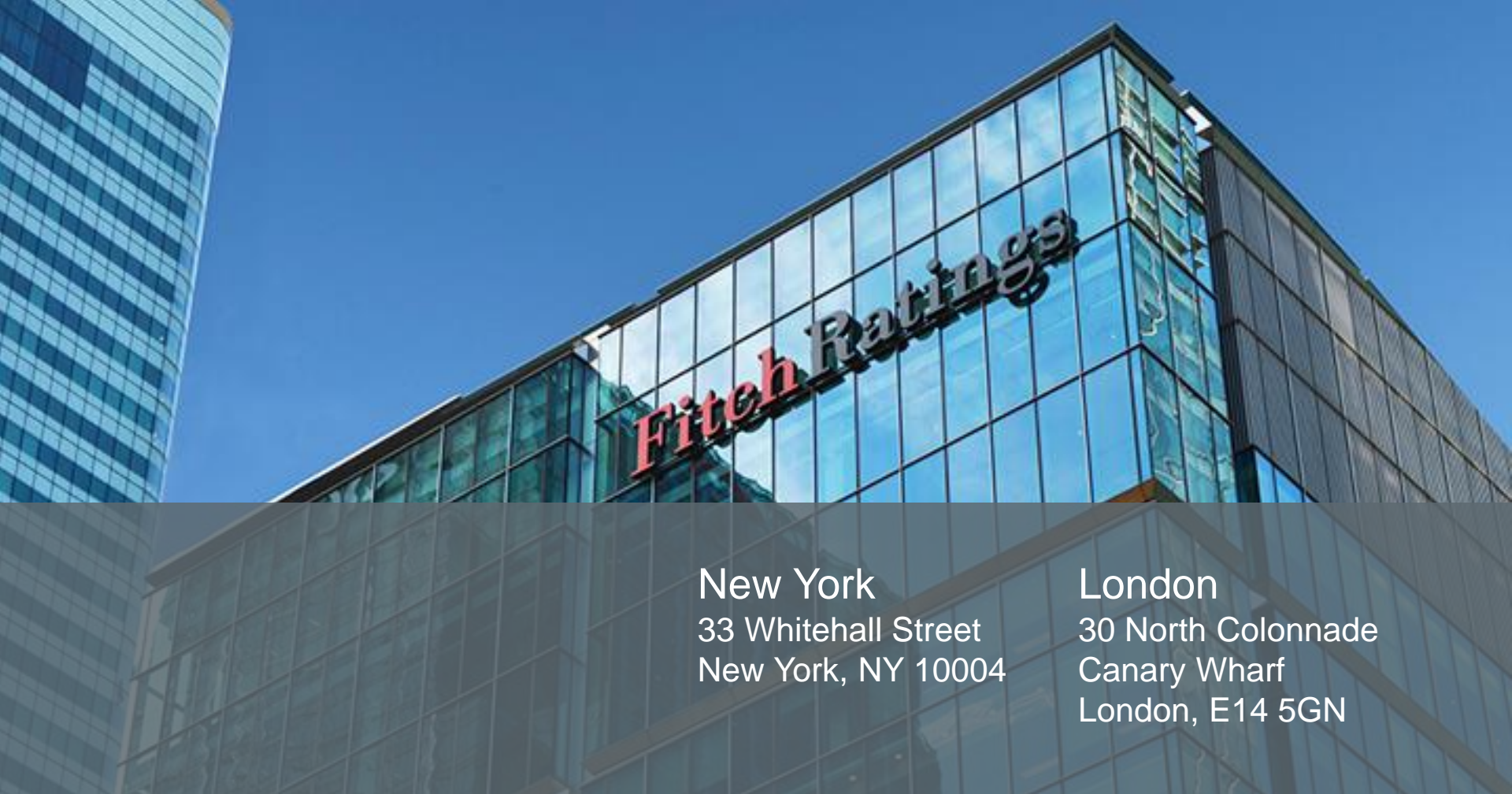
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