Municipal Market Weekly

Ramirez Municipal Strategy

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Munis Likely to Underperform…We Like AMT bonds, CAL bonds

Last week

Munis outperformed Treasuries for the third consecutive week, extending gains across the curve as caution prevailed in the Treasury market amidst geopolitical events, including the French election and North Korea missile crisis. Corporate earnings generally beat estimates and economic data releases were slightly weaker. Munis benefitted from mildly positive inflows ($290 mil.) following the prior week's near-record $1.63 bil. of inflows, manageable BWICs, lower dealer inventories, and a well-placed and manageable new issue calendar. Munis outperformed Treasuries by 8 ratios in 5yrs, 5 ratios in 10yrs, and 3 ratios in 30yrs to end at 74%, 89%, and 98% of Treasuries, respectively. The MMD scale was bumped an average of 2.4 bps across the curve, including 5 bps in 5yrs and 3 bps in 10yrs and 15 yrs. Both MMD and Treasury 2s30s curves were 1 bp steeper to end at 195 bps and 171 bps respectively. The S&P Main Muni Index returned 18 bps on the week and is up 100 bps in April and 242 bps on the year (138 bps risk-adj). Treasuries gained an average of 13 bps on the week and are up 164 bps on the year, while Corporate Investment Grade gained 13 bps on the week and is up 240 bps on the year.

This week

Rates product in general should be out of favor vs risk assets, with risk-on sentiment off to a bang today on the heels of Sunday's first round of French elections and forthcoming (details?) of Trump's "massive" tax reform plan on Wednesday. Muni prices and inflows in particular could be adversely impacted by tax reform, especially if top individual tax brackets and/or corporate rates are lowered, which would, in theory, reduce advantages of the Muni tax-exemption. This week also has continued geopolitical unrest with North Korea's 85th anniversary, and Syria and Russia happenings. There is also BOJ and ECB policy meetings on Thursday, large Treasury auctions ($88 bil.), and a potential shutdown of the Federal Gov't on Friday. Economic releases include GDP, PCE, new home sales, retail sales, and durable goods. For all these reasons, Munis are likely to underperform Treasuries, and we will be selective buyers, particularly inside 10yrs where ratios appear rich vs 1 yr averages. New issue tax-exempt supply at $8.4 bil. is 37% above the 12 week moving average and should come cheaper.

A Few of Our Favorite Things:

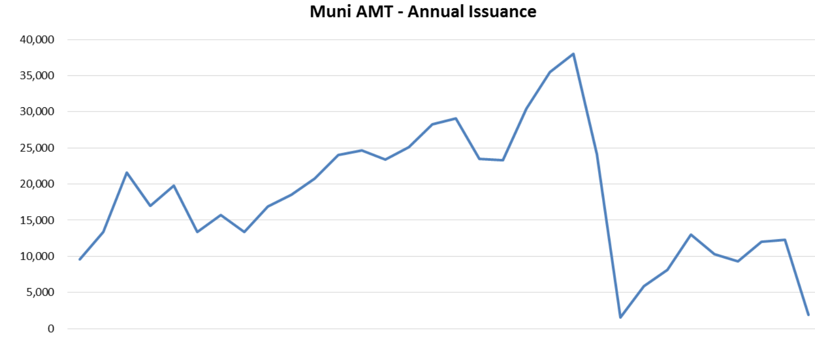
- AMT bonds, given probability that the AMT will be modified or eliminated as part of Trump's tax reform plan (see below)
- CAL market, given a large, declining net supply of California bonds (see below)
- 'A' rated names generally
- 'A' and 'AA' hospitals with solid market share and good liquidity given renewed dialogue on healthcare reform
- Barbell strategy as optimal portfolio given implied flatter Treasury curves

Supply

The $8.4 bil. of tax-exempt supply this week should be priced attractively. The negotiated calendar is led by $1.9 bil. Kaiser Permanente, $994 mil. Port Auth of NY/NJ, $530 mil. LA DWP, and in the competitive space, Maryland DOT with $285 mil. Over the next 30 days, we see gross supply at $12.99 bil. and net muni market supply at -$7.48 bil. The states that stand to experience the largest change in outstanding debt include California (-$4.30 bil.), Michigan (-$1.95 bil.), New York (-$785 mil.), Texas (+$576 mil.), and New Jersey (-$561 mil.). Muni new issue at $106 bil. on the year is down –12% YoY. We estimate long-term new issue gross supply in 2017 will end at $368 bil., for a decline of about $60 bil., or -14% YoY, which incorporates $204 bil. of new money bonds and $164 bil. of refundings. We expect 2017 to end with net market supply at +$38 bil.

AMT Munis

President Trump has vowed to repeal the 47-year old Alternative Minimum Tax (AMT) tax, which was originally instituted to capture tax revenue from about 1 mil. individuals, that due to deductions and exemptions, paid very little income tax at the time. As incomes have risen over the last 47 years and because the AMT thresholds have not been indexed to inflation, the AMT has morphed into an effective tax on over 4.6 mil. individuals, primarily middle and upper middle class individuals with numerous itemized deductions disallowed under the AMT. Muni bonds subject to the AMT are typically cheaper vs ordinary tax-exempt Munis due to the potential taxability of interest income. The Muni market has $151 bil. of outstanding AMT bonds currently with average issuance running about $12 bil. annually, or between 2%-5% of total annual Muni issuance. To the extent that President Trump does indeed seek to repeal, replace, or modify the AMT, all else equal, Munis subject to the AMT should appreciate in value.



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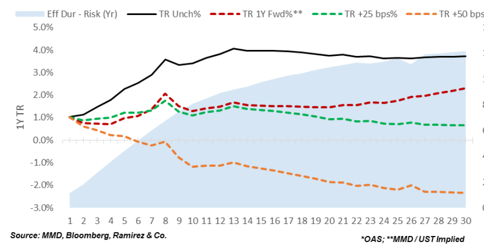
2017 Strategy: Barbell

We think curve positioning and credit are key to outperformance in 2017 given consensus regarding Fed rate in-creases and the (increasingly remote) potential for tax policy reform. Accordingly, we think a barbell portfolio strategy is optimal, including extension of effective portfolio to about 10yrs (20yr avg maturity) to both preserve income and hedge downside risk. Sectors we like include dedicated tax, transportation, public power, and housing.

MMD Callable Curve (5% Cpn) - 1Y Total Return Projections*



Source: MMD, Bloomberg, Ramirez & Co. *OAS; **MMD / UST Implied

MMD Callable Curve (5% Cpn) - 1Y Total Return Projections*								
	Mty	1-30y	1-5y	6-10y	11-15y	16-20y	21-25y	26-30y
	Eff Dur	10.4	3.3	6.9	9.2	10.5	11.3	11.9
Scenarios	Unch	3.59%	1.73%	3.19%	3.90%	3.87%	3.70%	3.68%
	1Y Fwd	1.63%	0.83%	1.47%	1.54%	1.48%	1.64%	2.09%
	+25 bps	1.02%	1.05%	1.32%	1.36%	1.12%	0.81%	0.69%
	+50 bps	-1.53%	0.37%	-0.52%	-1.13%	-1.60%	-2.04%	-2.26%
			1-10y		11-20y		21-30y	
Optimal (Barbell) Strategy:			33%		0%		67%	
TR: 1.87%		Eff Dur: 10.26		WAM*: 21.8				

Market Performance Indicators

WEEK ENDING: 4/21/17 4/14/17

INDEX MONITOR

INDEX	Eff Dur	TOTAL RETURN (%) WTD	MTD	YTD	YTD RISK ADJ	1Y	1Y risk adj	3Y	5Y	YIELD (%) 4/21/17	WTD Δ	YTD Δ	Lo 1Y	Hi 1Y	Mean 1Y	Z-score 1Y	Z-score 3Y
TREASURY-TERM																	
TREASURY - ALL	6.1	0.13	0.96	**1.64**	0.47	**0.01**	0.00	2.32	1.59	1.81	0.01	-0.11	1.04	2.09	1.56	0.80	1.59
SHORT	1.9	0.06	0.19	**0.51**	0.53	**0.44**	0.44	0.74	0.64	1.24	-0.02	-0.06	0.59	1.48	1.02	0.85	1.70
SHORT-INT	3.9	0.05	0.69	**1.31**	0.49	**0.37**	0.14	1.94	1.33	1.65	-0.01	-0.17	0.84	2.04	1.41	0.68	1.21
INTRMD	5.6	-0.01	1.00	**1.92**	0.48	**-0.09**	-0.02	2.78	1.74	1.94	0.00	-0.22	1.11	2.35	1.71	0.60	0.73
LONG-INT	7.7	-0.06	1.24	**2.34**	0.44	**-0.82**	-0.14	3.72	2.28	2.18	0.00	-0.21	1.28	2.57	1.93	0.62	0.47
LONG	17.5	-0.01	2.23	**4.13**	0.40	**-1.79**	-0.15	7.07	4.15	2.85	-0.01	-0.18	2.01	3.20	2.64	0.58	0.13
MUNICIPAL-QUALITY																	
MUNI-EXEMPT	4.7	0.18	1.00	**2.42**	1.38	**1.00**	0.41	3.83	3.68	2.35	-0.03	-0.32	1.68	2.87	2.19	0.46	0.16
MUNI-TAXABLE	8.1	0.17	1.21	**2.36**	0.53	**2.73**	0.56	5.61	4.99	3.81	0.00	-0.12	3.30	4.03	3.66	0.65	-0.04
HIGH GRADE	4.7	#VALUE!	1.13	**2.72**	1.26	**0.36**	0.14	2.94	2.81	1.79	-0.04	-0.40	1.18	2.41	1.67	0.32	0.50
'A' RATED	4.6	0.13	1.01	**2.35**	1.28	**0.81**	0.32	4.00	3.98	2.38	-0.02	-0.30	1.59	2.88	2.15	0.55	0.43
'BBB' RATED	5.2	0.17	1.16	**2.85**	1.37	**1.04**	0.37	5.01	4.13	3.25	-0.03	-0.35	2.34	3.73	2.96	0.60	0.33
HIGH YIELD	7.9	-0.09	1.43	**5.54**	1.66	**5.32**	1.48	6.19	6.25	6.06	0.00	-0.37	5.14	6.57	6.09	-0.08	0.39
MUNICIPAL-TERM																	
SHORT	1.8	0.07	0.25	**1.13**	2.62	**0.79**	1.38	0.98	1.06	1.21	-0.02	-0.30	0.77	1.58	1.12	0.38	1.27
SHORT-INT	3.3	0.18	0.64	**2.01**	1.96	**0.75**	0.57	1.85	1.93	1.54	-0.03	-0.38	1.04	2.06	1.45	0.30	0.85
INTRMD	4.8	0.25	1.13	**2.76**	1.45	**0.71**	0.28	3.28	3.25	2.15	-0.04	-0.39	1.49	2.75	2.00	0.37	0.48
LONG-INT	5.2	0.28	1.27	**2.91**	1.34	**0.69**	0.24	3.73	3.64	2.31	-0.04	-0.37	1.60	2.91	2.15	0.39	0.37
MUNICIPAL-SECTOR																	
PRE-RE	2.4	0.08	0.27	**1.05**	2.23	**0.63**	0.95	1.04	1.07	1.06	-0.03	-0.28	0.67	1.43	0.99	0.35	1.25
GO	4.8	0.17	1.03	**2.34**	1.26	**0.39**	0.16	3.07	2.99	2.02	-0.02	-0.31	1.37	2.53	1.87	0.43	0.31
DED TAX	5.6	0.06	0.89	**1.95**	0.94	**1.29**	0.48	3.37	2.73	2.82	-0.03	-0.26	2.06	3.25	2.59	0.59	0.36
WTR-SWR	5.0	0.18	1.06	**2.42**	1.16	**0.47**	0.17	4.12	3.94	2.26	-0.02	-0.33	1.47	2.84	2.04	0.51	0.30
PUB PWR	4.7	0.20	1.51	**2.55**	1.25	**1.67**	0.68	3.90	3.09	2.52	-0.02	-0.42	1.85	3.13	2.38	0.37	0.61
HEALTHCARE	5.0	0.23	1.18	**2.63**	1.22	**1.21**	0.43	5.30	5.34	3.02	-0.03	-0.29	2.04	3.54	2.72	0.61	0.27
HIGHER ED	5.6	0.15	1.13	**2.72**	1.26	**0.80**	0.27	4.22	4.13	2.66	-0.03	-0.31	1.83	3.20	2.41	0.57	0.60
TRANSPORT	5.1	0.20	1.08	**2.61**	1.30	**0.85**	0.31	4.39	4.23	2.48	-0.02	-0.35	1.73	3.05	2.28	0.49	0.26
HOUSING	5.7	0.18	0.91	**2.46**	1.42	**2.06**	1.00	4.32	4.46	3.01	-0.02	-0.24	2.57	3.39	2.94	0.32	-0.59
TOBACCO	9.0	0.59	1.96	**13.14**	3.54	**11.05**	2.11	14.04	12.82	4.65	-0.16	-1.00	4.52	5.87	4.99	-0.91	-1.73
CORP-MUNI	4.0	0.10	0.88	**2.52**	1.90	**1.40**	0.68	4.87	4.73	3.21	-0.02	-0.37	2.35	3.73	2.94	0.57	0.41
GLOBAL / CORP																	
GLOBAL AGG	7.0	0.07	1.11	**2.89**	0.49	**-0.69**	-0.12	-0.28	0.52	1.56	0.00	-0.08	1.07	1.76	1.41	0.70	-0.08
US CORP-IG	7.4	0.13	1.16	**2.40**	0.61	**3.71**	0.87	3.85	4.33	3.23	0.02	-0.16	2.75	3.52	3.12	0.47	0.24
US CORP-HY	4.0	0.11	0.49	**3.20**	1.30	**13.41**	3.89	4.78	7.87	5.83	0.00	-0.18	5.51	7.64	6.42	-1.03	-0.72

Rich | Fair | Cheap

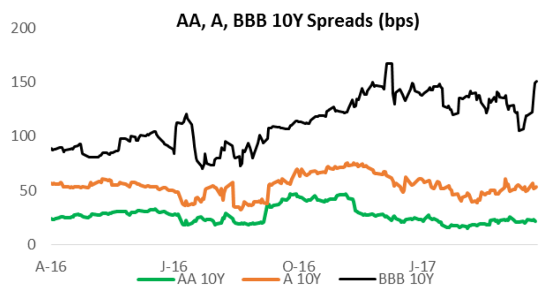
*Rich/Cheap: +/- 1.5 Z-scr

Rates & Ratios

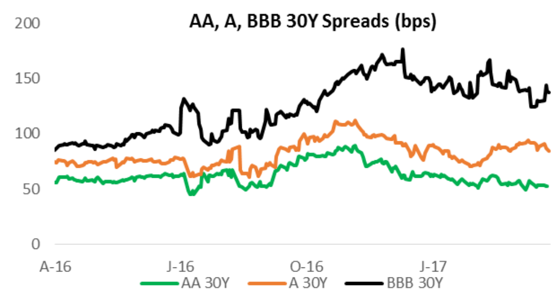
	4/21/2017	4/14/2017	1/3/2017	4/22/2016	Lo 12M	Hi 12M	Mean 12M	SD 12M	Z-Score 12M	Z-Score 4Y
	YIELDS (%)									
AAA MMD / UST										
2 Yr	76%	82%	100%	80%	66%	115%	89%	10.88	-1.184	-0.736
5 Yr	75%	82%	91%	75%	69%	103%	83%	6.46	-1.353	-0.757
10 Yr	89%	94%	94%	88%	82%	106%	94%	3.88	-1.170	-1.058
30 Yr	98%	101%	99%	97%	86%	108%	97%	4.33	0.145	-0.756
UST										
2 Yr	1.25	1.18	1.23	0.81	0.54	1.38	0.96	23.50	1.222	2.200
5 Yr	1.84	1.73	1.97	1.34	0.91	2.13	1.51	37.17	0.885	1.303
10 Yr	2.30	2.21	2.46	1.87	1.34	2.62	2.00	39.47	0.783	0.152
30 Yr	2.96	2.88	3.07	2.68	2.11	3.22	2.70	34.11	0.753	-0.207
AAA MMD										
2 Yr	0.95	0.97	1.23	0.64	0.52	1.23	0.85	22.20	0.438	1.648
5 Yr	1.37	1.42	1.79	1.00	0.84	1.91	1.26	34.31	0.317	0.682
10 Yr	2.05	2.08	2.32	1.65	1.29	2.58	1.87	40.86	0.436	-0.211
30 Yr	2.90	2.91	3.05	2.60	1.93	3.35	2.64	42.03	0.616	-0.427
							Legend:	Rich	Fair	Cheap

*Rich/Cheap: +/- 1.5 Z-score

Credit Spreads Are Avg, except for BBBs



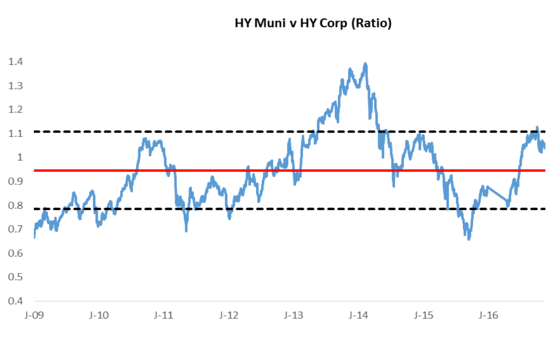
Source: Bloomberg



Source: Bloomberg

MUNI TAX-EXEMPT SPREADS							
		4/21/17	Avg	Min	Max	SD	Z-Scr
10Y	**AA**	0	27	15	47	8	-3.43
	A	0	54	32	76	10	-5.55
	BBB	0	112	70	167	23	-4.85
30Y	**AA**	0	63	45	89	10	-6.52
	A	0	82	61	112	12	-7.00
	BBB	0	124	85	176	25	-4.92
	HY	314	337	250	403	34	-0.69

Source: Bloomberg



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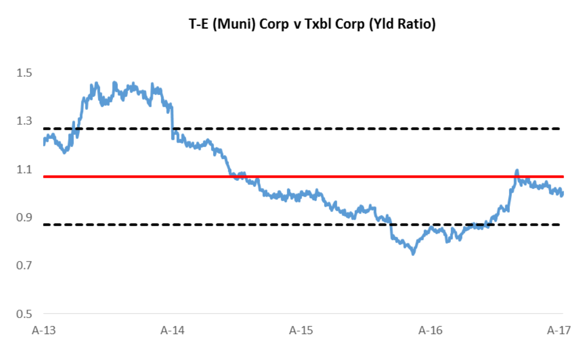


Source: Bloomberg

Muni Primary Market

Gross Supply ($ in millions)

	As of 4/21/17
Last Week	6,964.6
12wk Moving Avg	6,184.8
YTD	106,068.7

Source: Bloomberg

Weekly Visible Supply ($ in millions)

	Week of 4/24/17
Total	8,475.7
Comp.	1,787.0
Neg.	6,688.7

Source: Bond Buyer

30-Day Visible Supply ($ in millions)

	Current	2017 High		2017 Low	
	Total	$	Date	$	Date
Total	14,656.8	18,007.8	(1/10)	6,494.0	(2/9)
Comp.	4,106.0	5,718.3	(4/11)	1,395.8	(1/27)
Neg.	10,550.8	13,684.4	(1/10)	3,937.6	(2/16)

Source: Bond Buyer

Top Competitive Issuances Coming to Market

Issuer	State	Amount ($ 000's)
Maryland Dept of Transp	MD	285,000
Rhode Island	RI	158,945
Metropolitan Council	MN	145,000
Hayward USD	CA	134,000
Delaware Transp Auth	DE	103,855

Source: Bond Buyer

Top Negotiated Issuances Coming to Market

Issuer	State	Amount ($ 000's)
California Hlth Facs Fin	CA	1,900,000
Port Auth NY & NJ	NY	994,740
Los Angeles Dept of Wtr & Pwr	CA	530,030
Beaverton SD #48J	OR	297,847
Chino Vly USD	CA	262,000

Source: Bond Buyer

Underwriters will attempt to market $8.48 bil. of municipals in the week of 4/24, led in the negotiated space by $1.90 bil. California Hlth Facs Fin, $995 mil. Port Auth NY & NJ, and $530 mil. Los Angeles Dept of Wtr & Pwr. The competitive calendar is highlighted by $285 mil. Maryland Dept of Transp and $59 mil. Rhode Island.

Ramirez Negotiated Issuances Coming to Market

Issuer	State	Amount ($ 000's)	Senior Manager	Ramirez Role
Port Auth NY & NJ	NY	994,740	Wells Fargo	Co-Senior Manager
Atlanta Wtr & Wste	GA	226,820	Siebert	Co-Senior Manager
Los Angeles Dept of Wtr & Pwr	CA	530,030	BAML	Co-Manager
Connecticut HFA	CT	125,000	JP Morgan	Co-Manager
Rhode Island Infrastructure Bank	RI	11,230	Janney	Co-Senior Manager

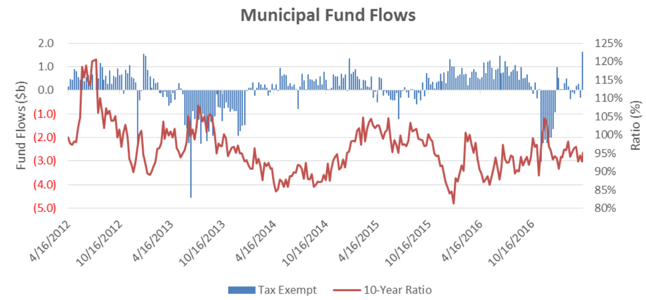
Economic Calendar

Monday (4/24)	Tuesday (4/25)	Wednesday (4/26)	Thursday (4/27)	Friday (4/28)
Chicago Fed Nat Activity Index	FHFA House Price Index	MBA Mortgage Applications	Wholesale Inventories	Employment Cost Index
Dallas Fed Manf. Activity	New Home Sales	2-Year Floating Rate Note Auction	Durable Goods Orders	GDP Annualized
Fed Speaker: Kashkari	Conf. Board Consumer Confidence	5-Year Note Auction	Cap Goods Orders	Personal Consumption
3-Month Bill Auction	Richmond Fed Manufact. Index		Initial Jobless Claims	GDP Price Index
6-Month Bill Auction	4-Week Bill Auction		Continuing Claims	Core PCE
	52-Week Bill Auction		Bloomberg Consumer Comfort	Chicago Purchasing Manager
	2-Year Note Auction		Pending Home Sales	U. of Mich. Sentiment
			7-Year Note Auction	Fed Speaker: Harker

Source: Bloomberg

Municipal Market Weekly
Ramirez Municipal Strategy

Muni Market Demand



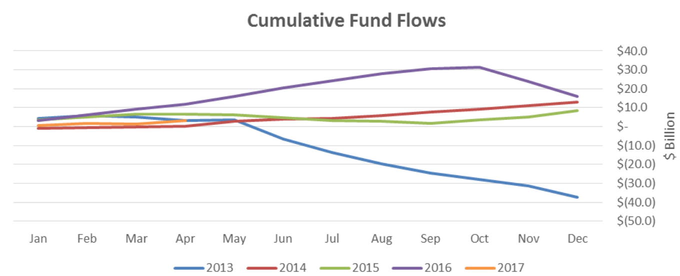
Source: Lipper Fund Flows

Tax-exempt mutual funds experienced inflows of $290 mil. in the week ending April 19, following inflows of $1.63 bil. last week, which marked the largest single weekly net inflow since rebounding from the US financial crisis (October 7, 2009).

US Lipper Fund Flows

Sector	Flow Change ($B)	YTD ($B)
Tax-Exempt	Inflow: 0.290	Inflow: 3.060
Money Market	Outflow: -11.303	Outflow: -71.418
Taxable	Inflow: 1.506	Inflow: 49.854
Equities	Inflow: 0.866	Inflow: 34.292

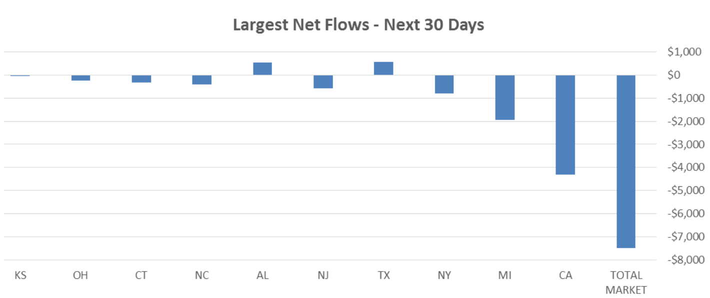
Source: Lipper Fund Flows



Source: Bloomberg

Muni Market Supply

Over the next 30 days, we see gross supply at $12.99 bil. and net muni market supply at -$7.48 bil. The states that stand to experience the largest change in outstanding debt include California (-$4.30 bil.), Michigan (-$1.95 bil.), New York (-$785 mil.), Texas (+$576 mil.), and New Jersey (-$561 mil.). We estimate long-term new issue gross supply for 2017 at $368 bil., for a decline of about $60 bil., or -14%, which incorporates $204 bil. of new money bonds and $164 bil. of refundings. We expect 2017 to end with net market supply at +$38 bil.



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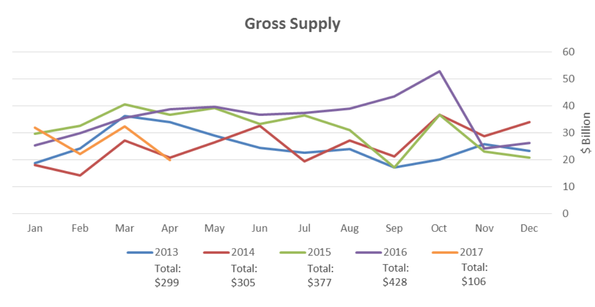
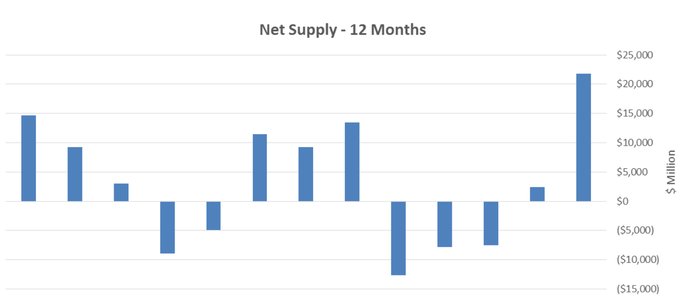


Source: Bloomberg, Ramirez



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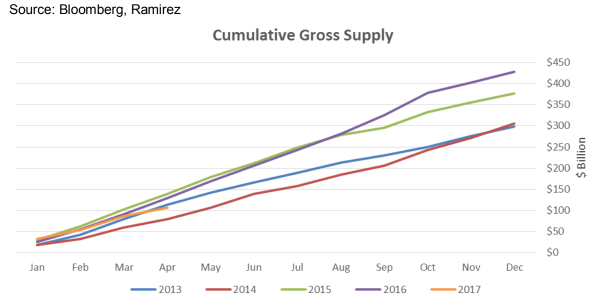

Source: Bloomberg, Ramirez

Ramirez Managed Deals

$994,740,000
The Port Authority of New York and New Jersey
Consolidated Bonds

Issue: Bonds rated Aa3/AA-/AA-. Pricing Tuesday, April 25, 2017. Ramirez & Co. is **Co-Senior Manager** of this transaction. Port Authority of New York and New Jersey (Authority) Consolidated Bonds (Bonds), Series 200, 201, and 202 proceeds are used to refund certain series of outstanding Consolidated Bonds and Commercial Paper, finance capital projects, and pay issuance costs.

Security: Series 200-202 are secured by Authority net revenues, issued on parity with $21.4 bil. of outstanding Bonds. Reserves include the Authority's general reserve and the indenture's consolidated bond reserve (CBRF) with a combined balance of $3.96 bil., or 18% of Bonds. The Authority manages the combined reserve balance in excess of two years debt service. Additional bonds require 1.3x coverage of maximum annual debt service. The rate covenant is debt service coverage (DSC) of 1.0x.

Credit Overview: The Authority is a joint venture between the States of New York and New Jersey to provide critical transportation infrastructure to 8.3 million residents across the metropolitan region. The Authority is a self-supporting entity with independent rate-setting ability and own-source revenues, comprised of tolls, fares, landing and dockage fees, rentals and other charges. The Authority's facilities consist of two tunnels (Lincoln, Holland), four bridges (Outerbridge, Goethals, Bayonne, George Washington), five airports (including LaGuardia, JFK, Newark), World Trade Center sites (WTC), a bus terminal, PATH rapid transit system, Trans-Hudson ferry service, and marine terminals. In FY16, the Authority had total operating revenues of $5.17 bil. (+7%), net revenues available for debt service of $2.3 bil., and total DSC of 1.96x. Debt to operating revenue was 4.2x. Increased revenues in FY16 were driven by higher passenger volumes on tunnels and bridges (+2.4%), aviation (+5.1%), and PATH (+2.6%). The Authority's primary operating revenue sources include tolls and fares (36%), rentals (30%), and aviation fees (22%). Unrestricted cash and investments in FY16 was $5.5 bil., or 627 days cash on hand. The Authority's recently approved 2017-2026 capital plan totals $32.2 bil., comprised of $11.6 bil. for aviation, $10 bil. for tunnels, bridges, and terminals, $4.4 bil. for PATH, $1.1 bil. for ports, and $1.8 bil. for WTC.

$226,820,000
City of Atlanta, Georgia
Water and Wastewater Revenue Refunding Bonds,

Issue: Bonds rated Aa2/AA-/A+. Pricing Tuesday, April 25, 2017. Ramirez & Co. is **Co-Senior Manager** of this transaction. Proceeds will be used to refund certain outstanding debt.

Security: The bonds are secured by a senior lien on the net revenues of the City of Atlanta's combined Water and Wastewater System (System). Pledged revenues do not include Municipal Option Sales Tax (MOST) Revenues, although such revenues may be taken into account for the city's rate covenant and additional bonds test. MOST revenues are derived from a special one-percent sales and use tax and are dedicated to water and sewer projects. The dedication of these revenues for such purposes is subject to voter reauthorization every four years, with the most recent reauthorization being in FY16. The System has a rate covenant and an additional bonds test of 1.10x annual debt service requirements.

Credit Overview: The System operates more than 2,800 miles of water distribution pipelines and 2,150 miles of sewer lines, serving a population of approximately 1.8 million across a service area that includes the City of Atlanta and various surrounding areas. The combined system has 153,892 water connections and 88,912 wastewater connections. The five largest water and wastewater customers account for 2.9% and 1.3% of billings, respectively. Residential customers account for 55% of water revenues and 54% of wastewater revenues, while commercial customers account for 40% of water revenues and 42% of wastewater revenues. Atlanta's City Council has full rate setting authority. City Council approved rate increases each year from FY09-11, but have not approved any since then. No additional rate increases are expected over the next few years, but rate increases may be necessary if the levy of MOST revenues is not reauthorized in FY20. The System's outstanding debt totals more than $3 billion, including $2.75 billion of parity senior lien revenue bonds. In FY16 the system generated an operating surplus of $142.9 million (30.6% margin) on operating revenues of $466.9 million (+1.6% YoY). Net revenues available for debt service totaled $389.7 million, providing 1.84x debt service coverage on the bonds. System liquidity is reflected by 1,243 days cash on hand. The monthly average combined water and wastewater bill for residential users was $194.42. The System's five-year capital improvement program (FY17-22) totals $883 million. FY16 MOST revenues totaled $132.7 million (+0.8% YoY). Since 2004 they have provided $1.4 billion to support O&M expenses.

$530,030,000
Department of Water and Power
of the City of Los Angeles
Water System Revenue Bonds

Issue: Bonds rated Aa2/AA+/AA. Pricing Thursday, April 27, 2017. Ramirez & Co. is **Co-Manager** of this transaction. Proceeds will be used to fund system capital improvements and to refund certain outstanding bonds, state loans, and a water system revolving loan.

Security: The Bonds are special obligations of the Department of Water and Power of the City of Los Angeles (LADWP or Department), payable from gross revenues of the water system. Covenants include an additional bonds test of 1.25x maximum annual debt service (MADS) and a rate covenant of 1.0x annual debt service. There is no debt service reserve fund.

Credit Overview: LADWP is the largest municipal utility in the United States, with a service area encompassing 473 square-miles and a population of 3.9 million residents. The Department provides electric service through its power system and water service through its water system to the City of Los Angeles (City). The operations and finances of the water system are separate from those of the power system. The water system is the largest retail water supplier in California, operating 7,260 miles of water pipes, 95 pumping stations, and 130 storage tanks and reservoirs. The system has approximately 678,000 customers, which account for 89% of system revenues. Water rate increases are subject to approval by the City Council. The current water rate ordinance went into effect on 4/15/16. Under the new ordinance, rates are tied to the cost of providing water at various tiers of usage. Based on anticipated usage, the rates are expected to increase by an average annual rate of 4.8% through July 2019. In FY16 the water system generated an operating surplus of $396.0 million (35% margin) on operating revenues of $1.13 billion (+4.5% YoY). Through the first 6 months of FY17 (12/31/16) the system had an operating surplus of $199.6 million (37% margin) on operating revenues of $544.1 million (+14.9% YoY). FY16 revenues provided 1.99x debt service coverage on the bonds. System liquidity is reflected by 172 days cash on hand. Long-term debt totals $5.16 billion. The system's five-year capital plan (FY17-21) totals $6.31 billion. The average residential rate is $5.12 per hundred cubic feet of water. The typical residential customer spends approximately 3.4% of their monthly household income on water and power costs.

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