Maintaining Public Sector Funding Access:

The Importance of Preserving Money Market Mutual Funds (MMFs)

New MMF regulations, taking effect in October of this year, are having major negative consequences for issuers and borrowers of debt held by money market funds. Specifically, Tax-Exempt MMFs (TE MMFs) are closing and assets are leaving. This is drying up a very important municipal financing conduit.

As TE MMF funds close (or shorten their maturities), municipalities have fewer buyers for their debt. Even when they are able to place issues with the remaining TE funds, due to the shortened maturity structure, they are less able to lock in rates and more subject to weekly rate resets. This increases volatility and adds to their borrowing costs. If they are not able to place their issues with TE MMFs, only two options are available. They must turn to other lenders that have higher transaction costs or charge higher rates or they must defer or cancel infrastructure, educational/healthcare facilities or other municipal projects.

This paper will show the following, all of which demonstrate the negative impacts on municipal financing of new MMF regulation:

- Tax-Exempt MMFs are closing
- Remaining TE funds are shortening maturities
- Managers that use TE funds on behalf of their customers are exiting those funds

We estimate specifically that 30 - 50% of these assets, which is the portion originating from non-retail investors, are likely to run off. This level of run-off will profoundly reduce the short-term market for municipal debt. They will snowball into more fund closures and further tighten the municipal short-term debt market. Without Tax-Exempt MMFs, municipalities will be forced to seek higher cost borrowing like bank credit, or reduce their short-term capital consumption. Projects in infrastructure, healthcare, education, and government services will be impacted.

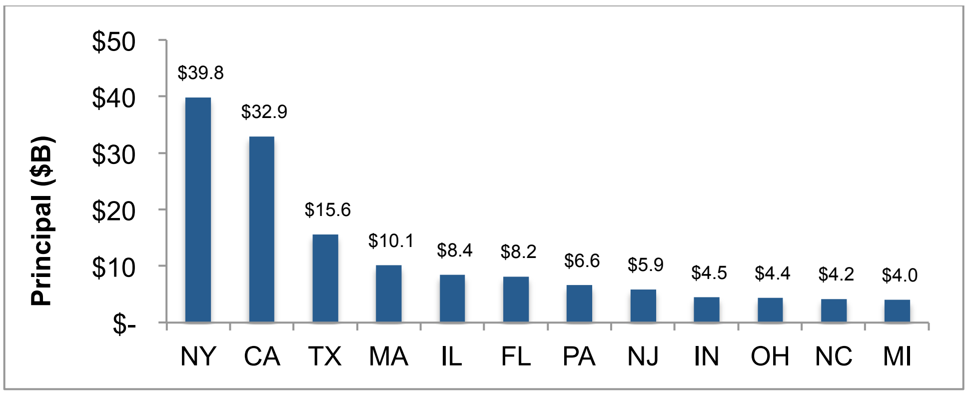
Treasury Strategies, Inc.
309 W. Washington
11th Floor
Chicago, Illinois 60606
t +1 312-443-0840
f +1 312-443-0847
www.TreasuryStrategies.com

I. Background

MMFs have historically been an important holder of short-term municipal debt. As of December 2015, they provided nearly $250 billion of short-term funding to municipalities by purchasing their short-term debt instruments.

Figure 1 shows the large Tax-Exempt MMF investments in municipal debt of highly populated industrial and economic centers including New York, California, Texas, Massachusetts, Illinois, and Florida.

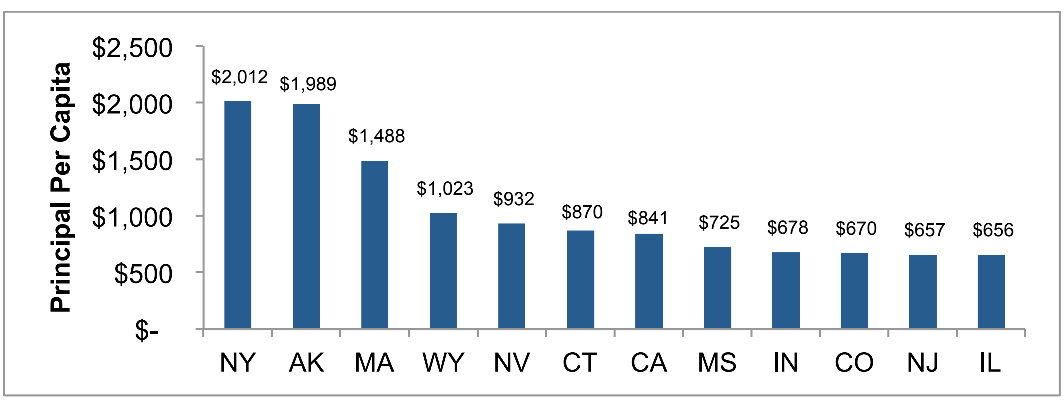
Figure 1. Tax-Exempt Money Fund Holdings of Short-Term Municipal Debt – Top 12 States ($B), Source: CraneData.com, December 2015



The reach of TE MMFs is even more striking when viewed in light of population. These funds represent over $700 for every man, woman and child in the U.S. That's up to $2,000 per household that will be lost if these funds shrink or disappear.

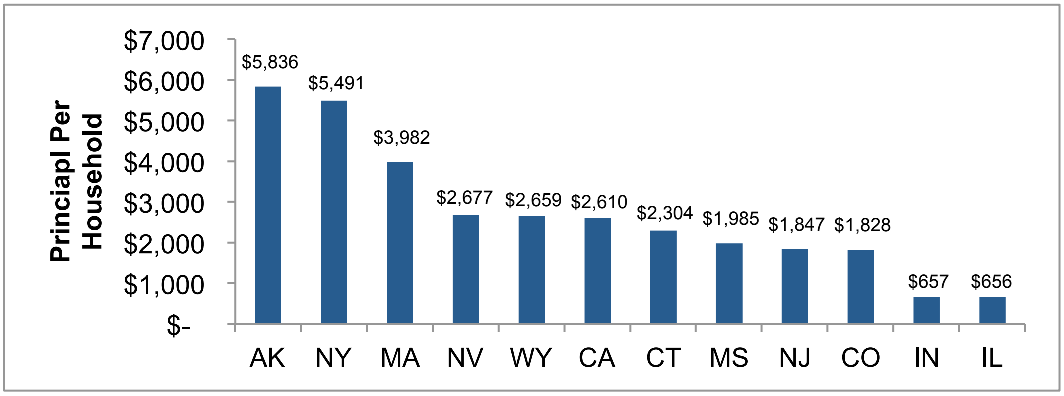
The impact is geographically diverse. The per capita effects are just as pronounced in Nevada, Wyoming, and Colorado as they are in New York and California.

Figure 2. Tax-Exempt Money Fund Holdings of Short-Term Municipal Debt – Top 12 States by Assets Per Capita, Source: CraneData.com (December 2015), U.S. Census



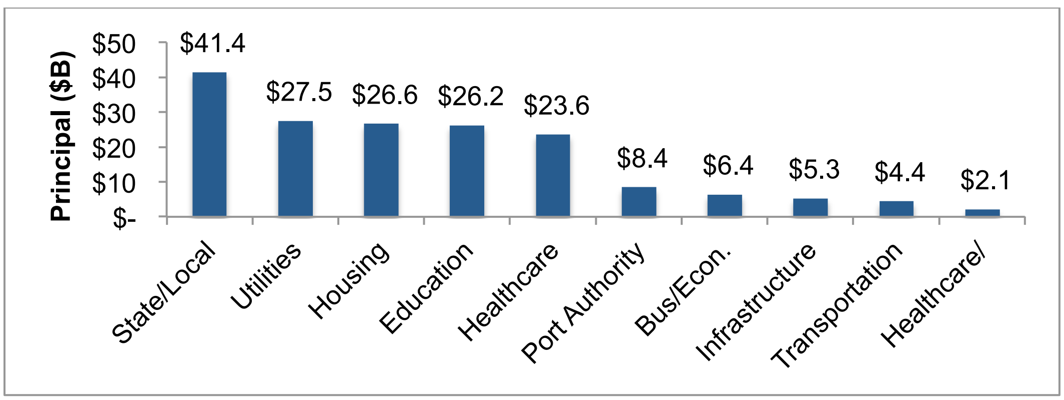
Treasury Strategies
The Power of Experience®

Figure 3. Tax-Exempt Money Fund Holdings of Short-Term Municipal Debt – Top 12 States by Assets Per Occupied Housing Unit, Source: CraneData.com (December 2015), U.S. Census, ACS



As Figure 4 illustrates, these funds help finance a wide variety of important public activities. Healthcare, housing, education, and utilities each have over $20B held by TE MMFs. If TE MMFs disappear or shrink, funding for all these sectors is at risk.

Figure 4. Tax-Exempt Money Fund Holdings of Short-Term Municipal Debt –Top 10 Sectors, Source: CraneData.com, December 2015 ($B)



Treasury Strategies
The Power of Experience®

Figure 5, using Idaho as an example, illustrates the broad cross-section of municipal issuers. As the table shows, TE MMFs support Idaho-based healthcare, housing, industrial development, infrastructure, and state and local governments. These issuers are at risk should funds continue to shrink or close.

Figure 5. Tax-Exempt Money Fund Idaho-based issuers, Source: CraneData.com, December 2015

IDAHO				
Holding (12/31/15)	**Principal**	**Final Maturity**	**Type**	**Issuer Type**
IDAHO HEALTH FACILITIES AUTHORITY REVHOSPITAL (TRINITY HEALTH CREDITGROUP) SERIES 2013ID, 0.13%	10,100,000	3/1/16	VRDN	Healthcare
Idaho Health Facilities Authority, (Series 2013ID) , TOBs , (Trinity Healthcare Credit Group) , 0.130%	22,805,000	3/1/16	VRDN	Healthcare
IDAHO HOUSING & FIN ASSN	15,575,000	1/7/16	VRDN	Housing
Idaho Housing & Finance Association Single Family Mortgage Revenue VRDO	7,615,000	1/7/16	VRDN	Housing
IDAHO HOUSING AND FINANCE ASSOCIAT	5,850,000	1/7/16	VRDN	Housing
IDAHO HSG & FIN ASSN NONPROFIT FAC	17,180,000	1/7/16	VRDN	Housing
IDAHO ST HSG & FIN ASSN SF MTGE	8,935,000	1/7/16	VRDN	Housing
IDAHO ST HSG & FIN ASSN SF MTGE REVENUE	21,295,000	1/7/16	VRDN	Housing
Lenexa Multi-family Hsg. Rev. (Meadows Apts. Proj.) Series A, LOCFannie Mae VRDN	13,865,000	1/7/16	VRDN	Housing
CASSIA CNTY IDAHO INDL DEV CORP REVIDB & PCR (EAST VALLEY CATTLE LLC)SERIES 2006 (LOC: COOPERATIEVECENTRALE RAIFFEISEN-BOERENLEENBANKBA), 0.05%	7,000,000	1/7/16	VRDN	Industrial
CASSIA CNTY IDAHO INDL DEV CORP REVIDB & PCR (OAK VALLEY HEIFERS LLC)SERIES 2007 (LOC: COOPERATIEVECENTRALE RAIFFEISEN-BOERENLEENBANKBA), 0.05%	1,800,000	1/7/16	VRDN	Industrial
Idaho Eagle Industrial Development Corps.	1,830,000	1/7/16	VRDN	Industrial
Power County, ID IDC (J. R. Simplot Co.) , (Series 2012) Weekly VRDNs,(Rabobank Nederland NV, UtrechtLOC), 0.050%	35,000,000	12/1/36	VRDN	Industrial
Ammon Idaho Urban Renewal Agy Var-Tax Increment-Se	1,145,000	8/1/24	VRDN	Infrastructure
Idaho Building Authority Revenue (Prison Facilities Project) VRDO	31,215,000	1/7/16	VRDN	Infrastructure
IDAHO ST BLDG AUTH BLDG REV	7,370,000	1/7/16	VRDN	Infrastructure
COEUR D ALENE IDAHO	10,000,000	1/7/16	VRDN	State / Local
IDAHO ST	180,000,000	6/30/16	VRDN	State / Local
Idaho St Tans	15,550,000	6/30/16	VRDN	State / Local
IDAHO ST TAX ANTICIPATION NOTE	19,000,000	6/30/16	VRDN	State / Local
IDAHO STATE OF GO Tax Anticipation NoteSERIES 2015, 2.00%	75,000,000	6/30/16	VRDN	State / Local
Idaho TAN	60,000,000	6/30/16	VRDN	State / Local
State of Idaho	37,200,000	6/30/16	VRDN	State / Local
GRAND TOTAL:	**605,330,000**			

II. Tax-Exempt MMFs have been closing at an increasing rate

Since the announcement of the final rule in 2014 with a target implementation of October 2016, 40 Tax-Exempt MMFs have closed or announced they will close. That process has a double impact. The pace of closures is accelerating. These funds are no longer in a position to buy new municipal debt, thereby shrinking the market and also putting upward pressure on borrowing costs.

The funds that are closing have a wide reach as shown in Figure 6:

- They account for approximately $14.4B in short-term municipal debt holdings.

- The pace of closures is increasing as implementation nears; almost twice as many funds closed in first quarter 2016 as in all of 2015.

- Many closed funds were state-specific. This means the impact of their closing is concentrated in states with multiple and large municipal debt issuers.

- Several major managers, including Deutsche Bank, Goldman Sachs and JP Morgan Chase, have significantly scaled back or exited the Tax-Exempt MMF business altogether.

Figure 6. Funds Closed in 2015-2016 or Closing in 2016

Fund Closures (Oct 2015 – Apr 2016)		
Fund	**Principal ($B)**	**Year Closed**
BofA T-E Reserves	3.70	2016
UBS RMA Tax-Free Fund	2.91	2016
UBS Select Tax-Free Capital Fund	1.54	2016
RBC T-F MMF	1.06	2016
BofA Municipal Reserves	1.05	2016
UBS RMA California Municipal Money Fund	1.02	2016
Putnam Tax-Exempt Fund	0.90	2016
UBS RMA New York Municipal Money Fund	0.75	2016
Reich & Tang CA Daily T-F	0.71	2015
Reich & Tang DIF Muni	0.63	2015
Western Asset Inst AMTFree Muni	0.62	2015
PNC Tax Exempt Money Market Fund	0.57	2016
Dreyfus NY AMT-Free Muni MMF	0.41	2015
BofA CA Tax-Exempt Reserves	0.40	2016
BofA NY Tax-Exempt Reserves	0.29	2016
State Street Instit T-F MMF	0.20	2015
Goldman Sachs FS Tax-Exempt CA	0.18	2016
Touchstone OH T-F MMF	0.17	2015
Alpine Municipal MMF	0.12	2015

BofA MA Muni Reserves	0.11	2016
Goldman Sachs FS Tax-Exempt NY	0.09	2016
Dreyfus BASIC NY Muni MMF	0.09	2015
Dreyfus NY AMT-Free MuniCashMgt	0.09	2015
Dreyfus BASIC Muni MMF	0.07	2015
BofA CT Muni Reserves	0.05	2016
BlackRock NC Muni MMP	0.05	2015
Putnam Tax-Exempt Money Market Fund	0.04	2016
Deutsche NY Tax Free Money Fund	0.03	2016
Touchstone T-F MMF	0.03	2015
BlackRock NJ Muni MMP	0.02	2015
BlackRock VA Muni MMP	0.02	2015
Western Asset CT Muni MMF	0.02	2015

Figure 7 highlights the impacts on individual issuers embedded in these TE MMF closings. For example:

- The Illinois Finance Authority and New York State Dormitory Authority are large issuers that provide low-cost financing to public agencies and non-profits. Each has issued $200M+ in debt that is being held by TE MMFs that are closing.

Figure 7. Largest Individual Issuers of Short-Term Municipal Debt Impacted by 2016 Fund Closings ($M)

Issuer	Principal ($M)
Illinois Finance Authority	267
New York State Dormitory Authority	219
New York City, NY Municipal Water Finance Authority	163
California Health Facilities Financing Authority	156
New York State Housing Finance Agency	154
City of Rochester, MN	145
California Statewide Communities Development Authority	142
City & County of Denver, CO	129
Missouri State Health & Educational Facilities Authority	113
New York City, NY Housing Development Corp.	109

Figure 8 highlights the impacts on specific states embedded in these TE MMF closings.

- New York, California, and Texas each have $1B+ in issues held in funds that are closing

Figure 8. States Most Impacted by 2016 Fund Closings – Top 12 States ($B) Source: CraneData.com, December 2015

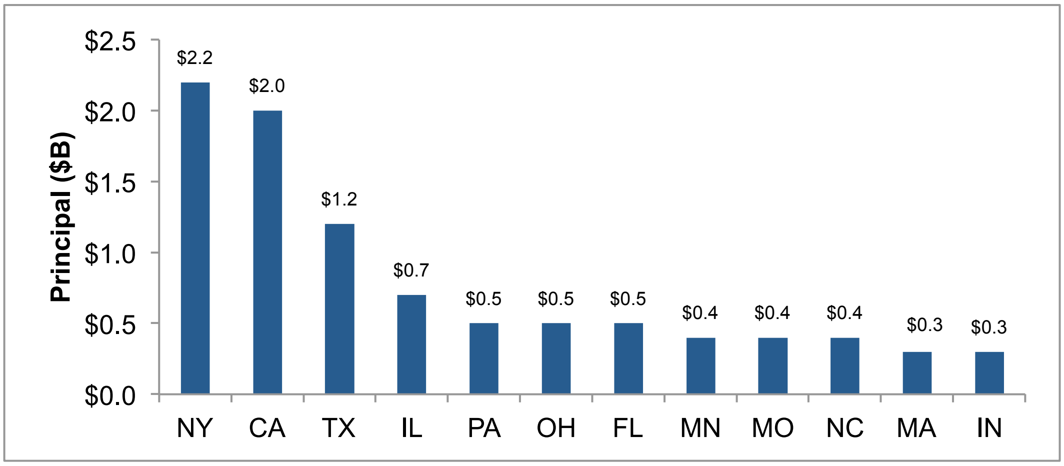
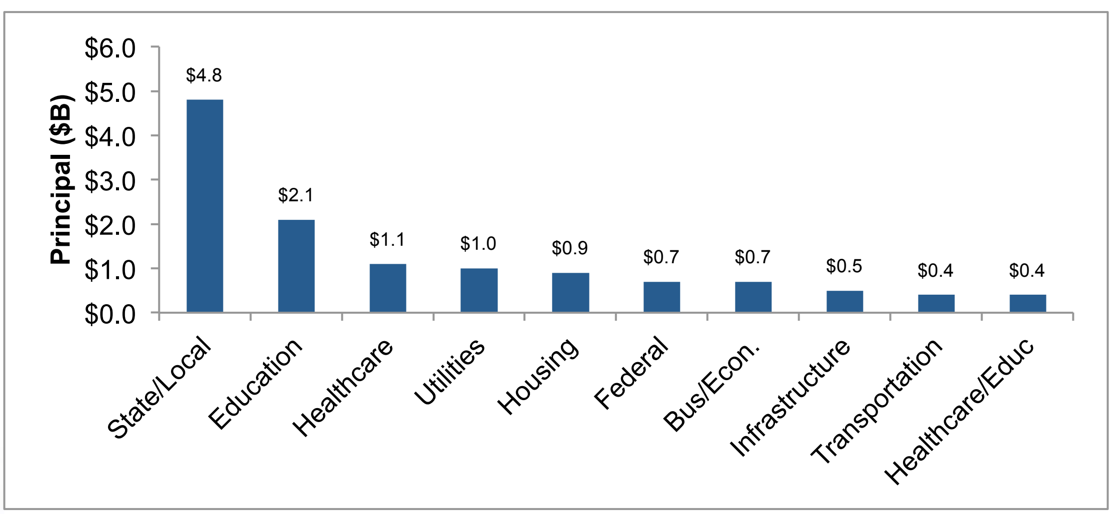


Figure 9 highlights the impacts on the sectors embedded in these TE MMF closings.

- Education, healthcare, utilities and housing sectors all have over $1B+ of issues in funds that are closing, nationwide

Figure 9. Industry Sectors Most Impacted by 2016 Fund Closings – Top 10 Sectors ($B) Source: CraneData.com, December 2015



Treasury Strategies
The Power of Experience®

III. TE MMFs are shortening portfolio maturities

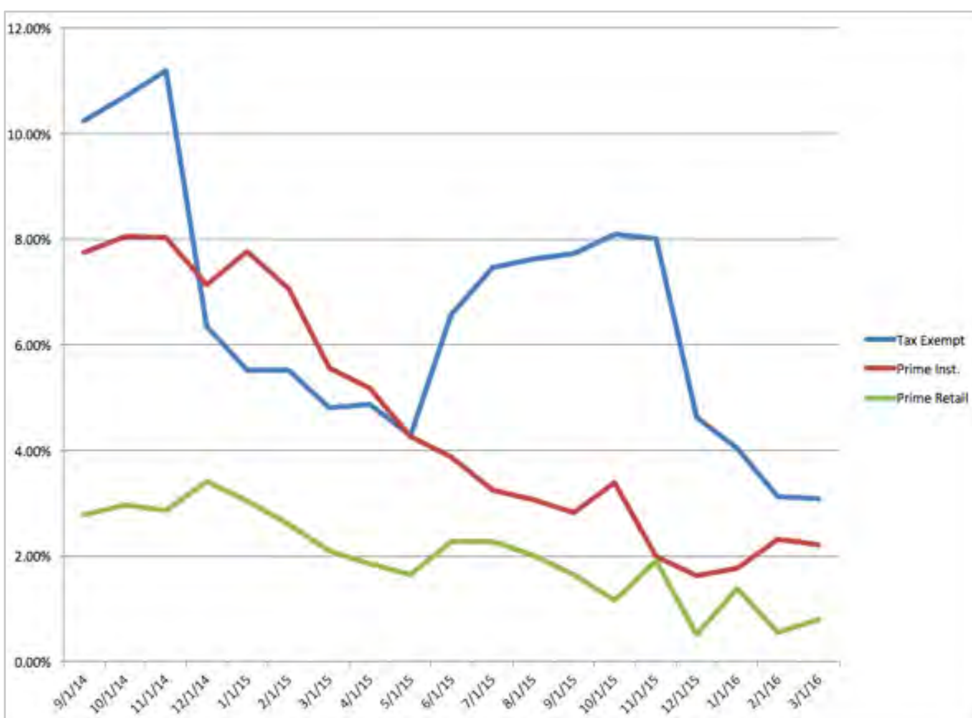
Fund companies are anticipating further investor redemptions as they approach the October 2016 rule implementation. To prepare for asset run-off, they are scaling back buying municipal debt in the all important six- to twelve-month maturity range.

In our consulting practice, we have encountered municipalities that have struggled to issue debt with longer than six-month maturity. Our direct experience includes a school district and a bridge commission. This supports the notion that funds want more liquidity on hand to redeem investors expected to exit Tax-Exempt MMFs as October 2016 approaches.

Portfolio holding data confirms the anecdotal evidence. Tax-Exempt MMF managers are shortening their portfolios around the implementation date. In March 2016, six-month or longer securities in TE MMFs were less than a third of September 2014 levels (3% vs. 10%).

This is more pointed when compared to Prime Retail or Prime Institutional funds, especially over the most recent four months. Not surprisingly, Prime Institutional funds, which are also impacted by the rules, saw a similar decline. Prime Retail funds – those least impacted by the new regulations – declined the least of these fund types.

Figure 10. Portion of MMF Portfolio Holdings with Six-Month or Longer Maturity



Treasury Strategies
The Power of Experience®

IV. Managers using TE funds on behalf of their customers are exiting

As they formulated the new MMF rules, regulators believed Tax-Exempt MMFs were held almost exclusively by retail investors. This was important because the new rules were aimed at what are commonly called institutional funds – those used by corporates, institutions and trusts (called non-natural persons). [1]

The thinking was that if these non-natural persons did not invest in Tax-Exempt MMFs, then TE funds would see little impact, and municipal finance would be unharmed. However, this key assumption is incorrect. Not only are **significant portions of Tax-Exempt MMFs held by non-natural persons**, but the business is already adjusting in ways that will hurt municipal borrowers.

To delve into this issue, we conducted a two-part examination:

- First, we had discussions with managers from six of the largest U.S. tax-exempt fund companies that collectively represent 60% of all such assets.

- Second, to validate those findings, we surveyed 21 financial intermediaries that invest in TE MMFs, including nine of the 50 largest U.S. banks.

Fund Managers
From discussions with fund managers, we have estimated that non-natural persons hold a material portion – at least 30% to 50% – of TE MMF assets. Only one manager thought its fund had less than 30% institutional ownership.

Fund managers tell us they expect that virtually all such non-natural person investors in Tax-Exempt funds to leave. Reasons given range from operational difficulties to investment policy restrictions, driven primarily by the new regulations. As the new rules force such investors to exit, Tax-Exempt MMF asset levels will shrink and many funds will close.

Figure 11. Estimated TE MMF Assets Held by Institutional Investors, Source: Treasury Strategies Interviews of Top Fund Managers, February 2016

Fund Manager	Estimated % of TE MMF Assets Owned by Institutional Investors
# 1	30%
# 2	35%
# 3	15%
# 4	45%
# 5	50%
# 6	30%

[1] Non-natural persons include entities such as partnerships, LLCs, irrevocable trusts, corporations, and institutions

Financial Intermediaries
Information from Financial Intermediaries (FIs), who direct customer investments into Tax-Exempt MMFs, also paints a troubling picture for the future of these funds. Tax-Exempt MMF usage by FIs is likely to plummet.

According to FIs, non-natural persons account for almost two-thirds of the assets that they place in Tax-Exempt MMFs. Many FIs plan to cease offering Tax-Exempt Funds to any client, due to the complexity, difficulty and risk of determining which clients are natural versus non-natural investors. For others, the new rules make it impossible to continue offering Tax-Exempt funds to customers as an option on their sweep platforms. Accordingly, FIs will fully or substantially eliminate their use of Tax-Exempt MMFs on behalf of their customers.

This is a double-edged sword for municipal finance. First, lower investment in Tax-Exempt MMFs translates directly to reduced outlets for municipal borrowing. Secondly, at these significant levels of asset reduction, many TE funds will fall below efficient operating levels, and will close entirely – a trend we have already noted is underway.

V. Conclusion

New SEC rules that change how MMFs function are having many unintended consequences. One such consequence now manifesting itself is a material reduction in the short-term credit available to municipal borrowers whose debt is held by Tax-Exempt MMFs.

As recently as mid-2015, Tax-Exempt MMF assets exceeded $250B. As market participants prepare for new regulations to become effective, TE funds are closing at an increasing rate, Financial Intermediaries are pulling customers out of TE funds, and sweep products are eliminating TE funds as an investment option.

30 - 50% of these assets, which is the portion originating from non-retail investors, are likely to run off. This level of run-off will profoundly reduce the short-term market for municipal debt. They will snowball into more fund closures and further tighten the municipal short-term debt market. Without Tax-Exempt MMFs, municipalities will be forced to seek higher cost borrowing like bank credit, or reduce their short-term capital consumption.

About Treasury Strategies, Inc.

Treasury Strategies, Inc. is the leading treasury consulting firm working with corporations and financial services providers. Our experience and thought leadership in treasury management, working capital management, liquidity and payments, combined with our comprehensive view of the market, rewards you with a unique perspective, unparalleled insights and actionable solutions.

www.TreasuryStrategies.com

Info@TreasuryStrategies.com

Treasury Strategies

The Power of Experience®