Understanding Bank Exposures in Municipal Money Market Funds

Municipal Money Market Funds (MMMFs) invest in a broad range of municipal securities with varying credit risks, including some risks which are often overlooked: specifically, exposure to domestic and international banks. Although MMMFs invest in direct obligations of both local and state municipalities, a large portion of all MMMF investments are supported in some way by banks. Understanding the specific nature of these investments is critical to gaining a more complete perspective of the risks inherent in MMMFs.

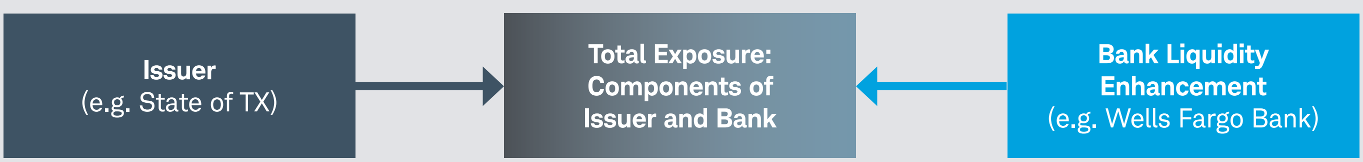
Key Points

- Credit and liquidity enhancements can help strengthen municipal offerings, but also add exposure to banks and financial institutions.
- MMMFs invest primarily in three types of securities:
  - Variable Rate Demand Notes (VRDNs)
  - Commercial Paper
  - Notes
- VRDNs generally represent the majority of holdings in MMMFs and include a subset of securities called Tender Option Bonds (TOBs).
- Most VRDNs and all TOBs have exposure to both an issuer and a second party, typically a bank, with the bank providing credit or liquidity enhancements.

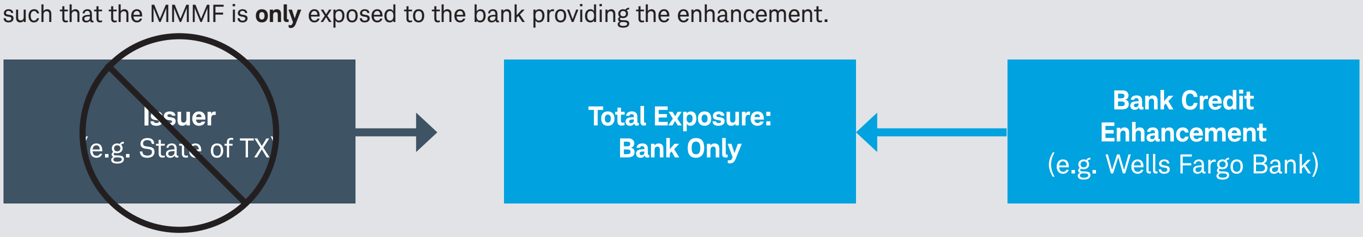
Understanding Exposure in Liquidity/Credit Enhancements

Two of the most common bank enhancements are depicted below:

Liquidity Enhancement: Liquidity enhancements alter a security so MMMFs are exposed to aspects of both the credit strength of the municipal issuer **and** the bank providing the enhancement.



Credit Enhancement: Credit enhancements represent a complete substitution of credit risk from the original municipal issuer such that the MMMF is **only** exposed to the bank providing the enhancement.



Note: The example above is hypothetical and provided for illustrative purposes only. It is not intended to represent a specific investment product.

The MMMF Market

The total U.S. MMMF market currently has approximately $128 billion in assets. As of April 30, 2017, Charles Schwab Investment Management (CSIM) managed $25 billion in MMMF assets, ranking 3rd in tax-free assets under management.*

In managing Schwab's Municipal Money Funds, CSIM focuses on preservation of capital first, liquidity second, and yield third.

* Source: iMoneyNet, as of 04/30/2017.

The Municipal Money Fund Market

MMMFs are mutual funds that aim to provide stability of capital, liquidity, and yield for investors. The interest income generated by MMMFs is exempt from Federal Income Taxes.[1] Investors wanting income that is exempt from income taxes in the state in which they reside typically invest in state-specific funds.

MMMFs invest in short-maturity securities in an effort to limit interest rate risk and preserve capital. These securities often take one of three general forms:

- **Variable Rate Demand Notes and Tender Option Bonds (VRDNs and TOBs):** These securities are issued to help finance a variety of projects like the construction of bridges, hospitals, or schools. They typically have long-term maturities, but the addition of credit or liquidity enhancements, most often provided by banks, can shorten the effective maturity to one or seven days.
- **Commercial Paper:** Issuers borrow money for a variety of projects for periods not to exceed 270 days but most often ranging between 30 and 120 days.
- **Notes:** Issuers use borrowed monies to help smooth cash flows—which can vary widely from month-to-month given governments' reliance on tax revenues received annually, like property and income taxes. These instruments have varying maturities, but are no longer than 13 months.

Because the majority of securities in MMMFs are invested in VRDNs and TOBs, it is important for investors to understand how these securities work, what their associated enhancements are designed to provide, and what potential risks they entail.

Liquidity Enhancements

A security is issued with a liquidity enhancement to allow a bondholder to sell the security at par on that day or with seven days notice. This feature is contingent on the issuer maintaining its credit quality above a predetermined threshold, typically above investment grade (BBB-/Baa3 or better). Erosion of the issuer's credit rating below this threshold terminates the contractual obligation of the liquidity enhancement provider to purchase the security from the MMMF. MMMF credit analysts closely monitor the credit strength of issuers to reduce the risk that a liquidity enhancement on a security held by the Fund terminates due to credit erosion. (See credit analysis discussion on page 4.)

While the inclusion of a liquidity enhancement benefits a MMMF by decreasing interest rate risk and increasing liquidity, the Fund is introduced to credit exposure from the financial institution providing the enhancement in addition to the credit risk of the original issuer of the security.

[1] Some income generated by MMMFs can be subject to the alternative minimum tax. Potential capital gains are not exempt from taxation. For information on a particular MMMF's tax implications, please refer to the fund's prospectus or contact your tax professional.

Disclosure of Enhancement Providers for MMMFs

Investments included in a MMMF portfolio are disclosed in fund annual and semiannual reports, as well as monthly portfolio holdings. Within these documents, investors can view the exposure funds have to individual municipal issuers, as well as any enhancement providers associated with a particular investment.

Sample Disclosure

In the example below, the issuer is Wisconsin Health & Educational Facilities Authority. The security has an LOC issued by JPMorgan Chase Bank, NA.

Portfolio Holdings (Unaudited) continued

Issuer Type of Security, Series	Footnotes	Rate	Effective Maturity	Maturity Date	Face Amount ($)	Value ($)
Wisconsin Health & Educational Facilities Authority						
RB (Univ of Wisconsin Medical Fdn) Series 2000 (LOC: JPMorgan Chase Bank, NA)		0.76%	06/08/17	07/01/23	10,000,000	10,000,000

- **Type of Enhancement (Letter of Credit)**
- **Enhancement provider (JPMorgan Chase Bank, NA)**

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Credit Enhancements

Credit-enhanced securities provide for full credit substitution, meaning the bank or financial institution providing the enhancement takes full responsibility for repaying the investor when the MMMF wants to sell the security, without regard to the credit quality of the issuer. With this type of enhancement, the MMMF's only exposure is to the financial institution providing the credit enhancement. The most frequently used types of credit enhancement are letters of credit (LOC) and guaranty agreement (GTY).

Risk Exposure Created by Liquidity/Credit Enhancements

The inclusion of Liquidity and Credit Enhancements to securities in a MMMF portfolio presents several benefits in the areas of interest rate and credit risk management and liquidity, but also introduces exposure to the financial institutions providing the enhancements to the MMMFs. Deterioration in the financial strength of these institutions, including ratings downgrades, could impact the credit and liquidity profile of the MMMF.

Although liquidity enhancements generally performed as expected during the stresses of the most recent financial crisis, the risk does exist that a bank under financial stress might not be able to honor its commitments. For this reason, evaluating the strength of the participating financial institutions is equally important as analyzing the municipal issuers themselves when considering securities for purchase into MMMFs.

Conclusion

Many securities included in MMMFs carry enhancements from banks and financial institutions. While these enhancements can benefit investors, they require additional credit analysis and expose investors to entities beyond state and local government issuers. While the structure of some MMMF securities differs from those of taxable money market fund securities, the goals of preservation of capital, liquidity, and yield are consistent across all money market funds.

Credit Analysis Process

At Charles Schwab Investment Management (CSIM), the portfolio management and credit analyst teams work independently. CSIM's credit team conducts independent analysis, assessing each issuer and security for credit quality, liquidity, and appropriateness for Schwab Money Funds.

Financial Institution Credit Analysis Process

Many credit analyst teams, including CSIM's, use a C-A-M-E-L-S methodology for evaluating financial institutions. In this process, 'C' is for capital adequacy, and evaluation of the firm's capital; 'A' is for the asset quality of the bank; 'M' is an evaluation of management quality; 'E' stands for earnings quality; 'L' is an evaluation of liquidity; and, 'S' refers to market sensitivity, or other exposure to interest rate risk or other market movements.

CSIM believes its credit analysis process is designed to continue to meet the goals of capital preservation and liquidity. Schwab Money Funds only invest in securities that CSIM credit analysts have independently deemed to be of minimal credit risk.

Municipal Credit Review Process

Prior to purchase, each security in a Schwab Municipal Money Fund is reviewed by a credit analyst to determine that it meets regulatory requirements for eligibility, as well as internal credit requirements. The specifics of the security (its ratings, maturity, and structure) are also reviewed. If the security includes a credit or liquidity enhancement, an analysis of the mechanics of the enhancement is conducted to ensure it meets regulatory and internal requirements.

Issuers may include a city, county, water system, hospital, museum, or other non-profit organizations. A CSIM credit analyst completes a full analysis of the issuer's financial capacity for repayment of debt that includes a review of local economic conditions, its revenue streams and on-going expenses, its capital needs and the amount and type of debt it already has outstanding, as well as the legal structure under which it issues debt. An internal rating is assigned to the security based on CSIM's assessment of the issuer's strength and the level of participation by any other entity (such as a bank or corporation).

Once held in the portfolio, a security is reviewed periodically to determine whether it continues to meet internal credit risk guidelines. This includes surveillance of its credit ratings, as well as the review of financial updates and pertinent news that may affect its credit quality.

You could lose money by investing in the fund. Although each Schwab Municipal Money Fund seeks to preserve the value of your investment at $1.00 per share, it cannot guarantee it will do so. The fund may impose a fee upon the sale of your shares or may temporarily suspend your ability to sell shares if the fund's liquidity falls below required minimums because of market conditions or other factors. An investment in the fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. The fund's sponsor has no legal obligation to provide financial support to the fund, and you should not expect that the sponsor will provide financial support to the fund at any time.

Investors should carefully consider information contained in the prospectus or, if available, the summary prospectus, including investment objectives, risks, charges, and expenses. Please read the prospectus carefully before investing. To review a prospectus for any of the Schwab Municipal Money Funds or just to learn more about the funds please visit CSIMFunds.com.

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