

Chicago Fed Letter

Tempestuous municipal debt markets: Oxymoron or new reality?

by Gene Amromin, senior financial economist, and Anna Paulson, vice president and director of financial research

Municipal bonds (munis) are issued by states, cities, or other local government agencies. They may be general obligations of the issuer or secured by specified revenues, like fees paid by tollway users. The interest on municipal bonds is usually exempt from federal income taxes. Investors have long regarded these bonds as a relatively safe investment. Not coincidentally, holdings of municipal securities (or munis) have been heavily concentrated among household investors, who own about two-thirds of the \$2.9 trillion market.¹

In the fall of 2010, the sense of complacency that had surrounded these investments was shaken by deteriorating fiscal conditions of state and local bond issuers.

The concerns about issuers' ability to honor their existing debts were amplified by high-profile media interviews that, for the first time, raised the specter of "hundreds of billions of dollars in defaults."² Investors headed for the exits en masse. In just five weeks, a record \$16.5 billion was withdrawn from muni mutual funds. By late January of this year, the yields on the highest-rated (AAA) issues of 20-year municipal debt had jumped by nearly 100 basis points (figure 1) and new

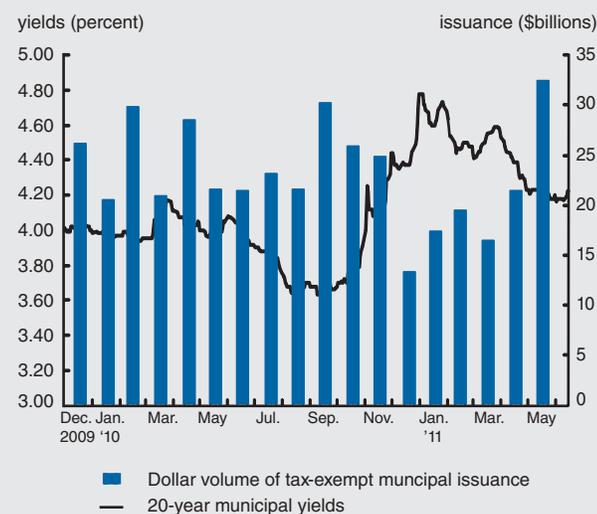
lines. In this *Chicago Fed Letter*, we describe how municipal markets are responding to changing conditions and new investor concerns.³

What happens when local governments go bankrupt?

This, in essence, was the question asked by retail and professional investors alike in the wake of dramatic statements about the impending tide of state and municipal issuer defaults. Within days, the popular and financial press carried numerous stories on this subject. In late January, the U.S. Senate reportedly considered introducing legislation to allow states to declare bankruptcy. This action only increased investor unease as bankruptcy is not typically an option for sovereign borrowers like states. The states, in turn, registered their strong opposition to this legislative idea, for fear of further undermining investor confidence.⁴

The bankruptcy process for municipalities is governed by Chapter 9 of the U.S. Bankruptcy Code, which allows local governments to voluntarily seek bankruptcy protection in the federal courts.⁵ However, since municipalities are instrumentalities of states that retain certain sovereign rights under the Tenth Amendment, their eligibility for Chapter 9

1. Long-term muni yields and tax-exempt issuance volume

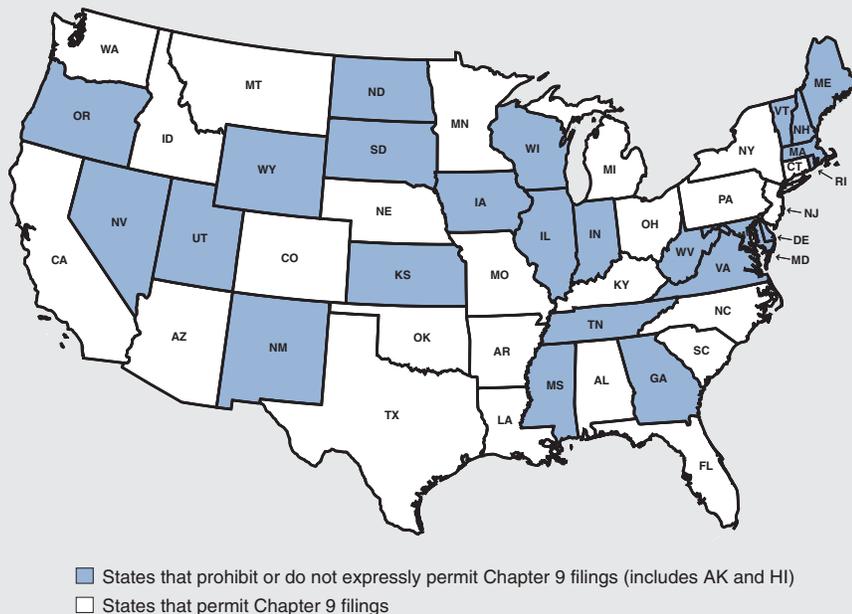


SOURCE: Municipal Market Advisors, median AAA general obligation yields data, available at www.mma-research.com.

bond issuance had slowed to a trickle.

In recent months, municipal bond markets have calmed considerably. Still, this episode provides a number of useful insights into their structure, as well as highlighting some of their potential fault

2. Municipal eligibility for Chapter 9 filings, by state



SOURCE: The map is based on data from H. Slayton Dabney, Jr., Patrick Darby, Daniel G. Egan, Marc A. Levinson, and George B. South III, 2010, *Municipalities in Peril: The ABI Guide to Chapter 9*, American Bankruptcy Institute: Alexandria VA.

protection is controlled exclusively by each state. Presently, Chapter 9 filings are either prohibited or not expressly permitted in 26 states (see figure 2). Many of the remaining states further restrict eligibility by requiring explicit authorization by various elected or appointed bodies. For instance, Louisiana requires the governor and the attorney general to pre-approve a bankruptcy petition, while in New Jersey such approval must be granted by a municipal finance commission.

Chapter 9 filings are also substantially different from the more familiar corporate bankruptcy proceedings. The municipality cannot be forced to declare bankruptcy by its creditors. While the municipality is able to restructure its contracts, its assets cannot be liquidated. Furthermore, only the municipality, and not its creditors, can propose an exit plan. The bankruptcy court has very limited authority to force any specific restructuring changes. In fact, unlike with corporate bankruptcies, the court for the most part is a passive observer of the Chapter 9 process. After the initial determination of eligibility to file is made, the main remaining function of the court is to confirm an exit plan.

Municipal bankruptcies do not generally result in any losses for *bond investors*. In each of the approximately 300 Chapter 9 filings over the past 40 years, bond investors were repaid in full, if sometimes late. In some cases, the payments were made not by the issuers but by financial institutions that had provided letters of credit or bond insurance. An important reason why municipal bondholders are typically repaid even when a local government defaults is that debt service costs are usually small, averaging just over 4% of revenue flows. In addition, many municipal bonds are backed by dedicated revenue sources, such as toll roads or sewer systems. These sources are considered secured assets in bankruptcy, severely limiting issuers' ability to divert their cash flows away from repaying bondholders. While municipalities do have the ability to stop interest payments on general obligation (unsecured) bonds, doing so provides a relatively small savings at a very high cost. A municipality that has defaulted on its debt will face a significant hurdle in raising capital in the future.

Responding to investors' concerns

Municipal bond issuers responded to investor concerns primarily by launching an intensive educational campaign

intended to clarify the extent of investor protections munis offer. These efforts were aimed not just at individual investors, but also at lawmakers and institutional money managers.

Not surprisingly, given their broad powers over municipal issuers, the states took the lead in this effort. Some states clarified their stance on municipal defaults. For instance, Michigan passed a law enabling the state to intervene earlier in financially stressed municipalities and to grant additional restructuring powers to state-appointed emergency managers in an effort to avoid Chapter 9 filings. Other states toughened existing bankruptcy laws. For example, Rhode Island's legislature passed a law requiring municipalities to guarantee lenders first rights to property tax and general revenues in the event of a bankruptcy. The states and their advocates also successfully lobbied Congress to drop its effort to expand Chapter 9.

Institutional money managers renewed their interest in munis, helping to absorb the excess supply of bonds from mutual fund redemptions. As muni investors digested the new information, the market calmed down, with yields declining to early 2010 levels and issuance bouncing back in June (see figure 1).

Understanding muni market risk

Experience in the municipal markets in recent months shows how even a temporary loss of *investor confidence* can disrupt state and local governments' access to financing. It also highlights a specific channel for transmitting risk between municipalities and their financial intermediaries.

A sizable share of long-term municipal debt is funded in variable-rate markets with daily or weekly interest rate resets. A common contract feature of these variable-rate debt obligations (VRDOs) is that investors have the right to return the obligation to the issuer with short advance notice. In other words, an investor can refuse to roll over a VRDO at any given reset date and demand that the issuer buy it back. This clearly presents a significant *rollover risk* for the VRDO issuer that is mitigated by obtaining external liquidity support.⁶ In practice,

such support typically takes the form of a liquidity facility provided by a bank. Issuers with lower credit ratings often combine such a facility with an insurance wrapper in the form of a letter of credit. Under the terms of such facilities, existing bondholders that refuse to roll over a VRDO get paid back in full by new investors or, if the bank is unable to sell the bonds to new investors, by the bank itself. In the event that a VRDO cannot be rolled over or sold to new investors, it automatically converts into a bank-owned bond that accrues interest at a significantly higher penalty rate and that amortizes on an accelerated schedule, typically over two to five years—a very costly development for the issuer.

Historically, variable-rate obligations accounted for about 14% of all new municipal debt issuance.⁷ At the height of the financial crisis in 2008, as other sources of variable-rate financing dried up, VRDO issuance shot up to more than 30% of all new municipal debt. Although variable-rate issuance has slowed down dramatically since then, there was about \$380 billion in VRDOs outstanding at the end of the first quarter of 2011.⁸

Do VRDOs pose a material risk to banks providing liquidity support? Although several dozen financial institutions currently provide liquidity facilities for VRDOs, the market is rather heavily concentrated, with the top five providers accounting for nearly 50% of support.⁹ Nearly all of these banks, however, are large, well-diversified financial institutions. The proposed Basel III liquidity framework will likely result in higher provisioning for potential draws on liquidity facilities, limiting their availability and leading to higher prices. In particular, in computing the liquidity coverage ratio, a bank will have to assume a net cash outflow of 100% of its VRDO commitment, but may at best be able to count only a fraction of the resulting bank-owned bonds as high-quality liquid assets. Put differently, VRDO facilities (especially those supporting lower-rated issues) will deplete the bank liquidity coverage ratio.

The composition of liquidity providers has changed markedly over the past few years. At the peak of VRDO issuance, the market had attracted a number of

specialized lenders willing to extend support at very aggressive prices. Many of these lenders were based in Europe and their expansion into the U.S. municipal market was rather rapid. By some estimates, by the fall of 2008, lenders like Depfa, Dexia, Allied Irish, and various German *landesbanken* (state-owned banks) accounted for about \$90 billion in liquidity support. Most of these financial institutions have been winding down their facilities at a brisk pace, so that by the first quarter of 2011 their commitments had fallen by about one-third. This has been especially true for institutions that found themselves in financial distress.¹⁰ Their market share has largely been absorbed by the large U.S. banks.

VRDO risk cocktail

In addition to rollover risk, reliance on VRDOs exposed state and local issuers to a bevy of risks more typically encountered by sophisticated financial institutions. Like those institutions, municipalities have had to reevaluate their ability to manage these risks during the financial crisis and its aftermath.

The most obvious of these risks stems from fluctuations in interest rates, which may increase substantially over the life of a variable-rate loan. A traditional way of managing this risk has been through *interest rate swaps*, where a VRDO issuer agrees to receive variable-rate payments from a bank counterparty in exchange for making fixed-interest-rate payments itself. The swap agreement protects the issuer from an unexpected rise in interest rates. Of course, the flip side of this arrangement is that issuers incur substantial costs if interest rates decline unexpectedly.

The second risk comes from the *maturity mismatch* between the bond obligation itself and the liquidity agreements that support it. Variable-rate municipal bonds typically have maturities between ten and 30 years, but their underlying liquidity facilities seldom extend beyond three years. Consequently, VRDO issuers take on the risk of failing to renew their facilities or having to do so at higher rates because of general market conditions (e.g., different competitive environment) or issuer-specific concerns (e.g., lower credit ratings).

The final and, perhaps, least appreciated type of risk is *counterparty risk*. Counterparty risk reflects the concern that the liquidity provider will either not be able to honor its obligations or, more likely, that the liquidity provider experiences financial distress that in turn impacts the issuer's borrowing costs. Counterparty risk can exacerbate other risks for the issuer. For example, a distressed bank may not be a credible source of liquidity and this could lead bondholders to refuse to roll over VRDOs or to demand higher interest rates.

Recent experience in managing these risks

Many municipal issuers managed their interest rate exposure through swaps. Since interest rates have declined substantially over the past several years, these arrangements ended up losing money for the issuers. In several extreme cases, payments on swaps-related transactions were big enough to create solvency problems.¹¹

Most of the liquidity facilities associated with the wave of VRDO issuance in 2008 are coming up for renewal. The resulting renewal risk has generated numerous headlines, given the sheer size of

Charles L. Evans, *President*; Daniel G. Sullivan, *Executive Vice President and Director of Research*; Spencer Krane, *Senior Vice President and Economic Advisor*; David Marshall, *Senior Vice President, financial markets group*; Daniel Aaronson, *Vice President, microeconomic policy research*; Jonas D. M. Fisher, *Vice President, macroeconomic policy research*; Richard Heckinger, *Vice President, markets team*; Anna L. Paulson, *Vice President, finance team*; William A. Testa, *Vice President, regional programs, and Economics Editor*; Helen O'D. Koshy and Han Y. Choi, *Editors*; Rita Molloy and Julia Baker, *Production Editors*; Sheila A. Mangler, *Editorial Assistant*.

Chicago Fed Letter is published by the Economic Research Department of the Federal Reserve Bank of Chicago. The views expressed are the authors' and do not necessarily reflect the views of the Federal Reserve Bank of Chicago or the Federal Reserve System.

© 2011 Federal Reserve Bank of Chicago
Chicago Fed Letter articles may be reproduced in whole or in part, provided the articles are not reproduced or distributed for commercial gain and provided the source is appropriately credited. Prior written permission must be obtained for any other reproduction, distribution, republication, or creation of derivative works of *Chicago Fed Letter* articles. To request permission, please contact Helen Koshy, senior editor, at 312-322-5830 or email Helen.Koshy@chi.frb.org. *Chicago Fed Letter* and other Bank publications are available at www.chicagofed.org.

ISSN 0895-0164

renewing facilities and the exit of European banks from the market. The early results, however, have been reassuring. According to a recent Moody's report, nearly all of the existing facilities have been renewed, albeit at somewhat higher prices.¹² On the other hand, the ability of issuers to refinance their VRDOs in the fixed rate market has been somewhat curtailed by their past use of interest rate swaps. Since the issuers are deeply underwater on their swaps, their counterparties are not willing to let them out of the arrangements without substantial cancellation fees. Keeping the swap and refinancing into a fixed term bond would make even less financial sense. An alternative solution to address renewal risk is to replace VRDOs with floating-rate notes that are remarketed every three years. Their interest rates still reset monthly, so they can serve as the reference contract for existing swaps.

The ongoing reshuffling of VRDO liquidity provision toward larger, well-diversified financial institutions has lessened the counterparty risk somewhat. Still, we have recently had a potent reminder of how important such risks still are. The Greek debt crisis spurred downgrades in the credit outlook for some European banks with large direct exposure to Greece. Some of these banks, like Dexia, also happen to provide liquidity facilities to U.S. municipal issuers. Thus, when VRDOs backed by Dexia came due for repricing in June 2011, investors demanded sharply higher rates of

return. In some cases, they refused to reprice altogether, causing Dexia to take back the VRDOs, convert them to bank-owned bonds, and reset loan terms to the issuers. Some small U.S. towns and municipal agencies thus ended up bearing some of the costs of the European sovereign debt crisis, without ever having participated directly in those markets.

Conclusion

Municipal markets have been buffeted by concerns about issuer quality, investor protection, reliance on short-term funding sources, and exposure to unstable liquidity guarantors. Various market participants have responded to address these fears in a number of ways, whether by clarifying existing arrangements, modifying them, or developing new ways to mitigate risks. Although the long-term fiscal condition of municipal issuers remains a concern, they have largely managed to retain their ability to access capital markets, reflecting a recovery of investor confidence in assessing and pricing the risks associated with these investments.

¹ According to the latest figures from the Federal Reserve flow of funds accounts (table L.211), the household sector directly owned 37% of the municipal securities market, while holding an additional 29% through mutual fund and money market accounts as of March 31, 2011.

² Meredith Whitney, 2010, interview with Steve Kroft, *60 Minutes*, CBS, December 19.

³ We thank Lisa Washburn and Thomas Doe of Municipal Market Advisors for improving our understanding of numerous intricacies of municipal bond markets.

⁴ Mary Williams Walsh, 2011, "A path is sought for states to escape their debt burdens," *New York Times*, January 20.

⁵ An excellent analysis of Chapter 9 is provided by Henry C. Kevane, 2011, "Chapter 9 municipal bankruptcy: The new 'new thing?,' parts I and II," *Business Law Today*, Vol. 20, May and June. The summary in this section draws extensively on Kevane's article.

⁶ Some issuers (e.g., the state of Texas) choose to provide liquidity support themselves; such arrangements, however, are very uncommon.

⁷ Securities Industry and Financial Markets Association (SIFMA) data, available at www.sifma.org/research/statistics.aspx.

⁸ SIFMA, 2011, "US municipal bond credit report," report, First Quarter, April 20, available at www.sifma.org/research/item.aspx?id=24909.

⁹ Thomson Reuters' league tables currently assign the top five spots to JPMorgan Chase, Bank of America, Wells Fargo, Dexia, and US Bank.

¹⁰ The prime example of a distressed liquidity facility provider is Depfa Bank PLC, which specializes in public sector financial services. After running into funding difficulties in the fall of 2008, Depfa was bailed out by the German government. Depfa's VRDO facilities plummeted from a peak of about \$20 billion to less than \$8 billion.

¹¹ The financing arrangements for sewer system improvements in Jefferson County, Alabama, are the most prominent example. The county has defaulted on its bond obligations, partly as a result of losses incurred in its interest rate swaps and warrant deals.

¹² Moody's Investors Service, 2011, "So far so good: Market absorbing high volume of U.S. public finance sector bank facility expirations," special report, May 9, available at www.nhhefa.com/documents/moodysSoFarSoGood.pdf.