

A Note on Liquidity

■ **by Nicholas Venditti,**
Fixed Income Research Analyst

Recent turmoil in the municipal market has led to a flurry of media articles addressing issues from potential defaults to outflows from municipal bond funds. The Thornburg bond desk has devoted a substantial amount of time, in various venues, addressing what we believe are overblown fears of a municipal credit disaster. There has, however, been little written regarding the large outflows out of municipal bond funds and the potential ramifications for shareholders.

As money leaves municipal funds, it opens investors to liquidity risk. Essentially, as investors pull money out, funds are forced to liquidate their bonds to produce the cash. If the bonds in the portfolio are illiquid, the fund may ultimately be required to sell the bonds at a price lower than the estimated valuation, adversely affecting overall performance.

Before delving into how Thornburg addresses and manages liquidity in our bond funds on a daily basis, it is important to understand how to measure potential liquidity. The most important measurement of liquidity in any market is the bid-ask spread (the difference in price between the highest price a buyer is willing to pay and the lowest price in which a seller is willing to sell). The wider the bid-ask spread, the more likely

an investor will be forced to sell below the estimated value.

Unfortunately, for individual investors it is often difficult to obtain information on bid-ask spreads. This lack of information has led to alternate methods of measuring liquidity using data that is more readily available. Although the alternate methods do not directly measure liquidity, the results serve as a proxy for the bid-ask spread. As an example, in the equity market an analysis of liquidity will often focus on trading volume and frequency. The analysis would conclude that a stock that trades frequently and in size is liquid. In essence, stocks exhibiting those trading characteristics will generally have narrow bid-ask spreads.

A similar analysis is inappropriate in the municipal market. Trading volume in the municipal market is insufficient (both in size and frequency) and does not accurately reflect the bid-ask spread for any given bond. In fact, in 2004

the Securities and Exchange Commission (SEC) undertook a study¹ of municipal liquidity with several interesting findings:

- The median size of all municipal securities trades was \$30,000.
- One-third of issuers had no trades in their securities between December 12, 1999 and November 5, 2000. Two percent of issuers accounted for two-thirds of transaction activity during the period.
- About 70% of municipal securities did not trade between December 12, 1999 and November 5, 2000. Less than 1% of securities accounted for half of transaction activity during this period.
- Those Municipal CUSIP numbers that do trade, trade on average 1.5 times per year.

As the data shows, the municipal market is primarily a “buy and hold” market. Municipal bond investors typically do not view the securities as trading positions, rather as a vehicle for obtaining a tax-exempt dividend. This point can be further emphasized with a breakdown in the ownership of municipal securities. The table in *figure 1* outlines the “retail” ownership of four fixed income markets. Retail owners are classic “buy and hold” investors as they have neither the time nor the resources necessary to execute frequent trades. As you can see, “retail” ownership in the municipal market is between 2.3 and 4.2 times that of the other markets (as measured by a percent of the market).

Based on the above facts it is clear that relying on the trade history of municipal bonds as a proxy for liquidity would be misleading and inaccurate. To accurately measure liquidity in a municipal bond fund requires a more sophisticated, multi-faceted approach.

Figure 1. Retail Ownership of the Municipal Market²
For Q4 2010

	Treasury Market	Agency and GSE Backed	Corporate and Foreign Bonds	Municipal Market
Household Sector	1078.7	77.9	1918.6	1095.9
Money Market Mutual Funds	335.4	402.8	154.2	334.4
Mutual Funds	352	786.7	1388.3	614.4
Direct and Indirect “Retail Ownership”	1766.1	1267.4	3461.1	2044.7
Total Market	9361.5	7569.3	11440.4	2925.2
Direct and Indirect “Retail Ownership” as % of Market	18.87%	16.74%	30.25%	69.90%

¹ Securities and Exchange Commission. “Report on Transactions in Municipal Securities,” July 1, 2004

² Federal Reserve Statistical Release. “Flow of Funds Accounts of the United States,” December 9, 2010

To constantly ensure liquidity in the Thornburg funds, the bond team primarily relies on three aspects: the laddered strategy, the credit quality of the funds and our bid-ask spreads. The remainder of this piece will demonstrate how the bond team manages these three aspects to ensure adequate liquidity to serve the needs of our investors.

The two largest funds, the Thornburg Limited Term Municipal Fund and the Thornburg Intermediate Municipal Fund, have liquidity built in by virtue of the laddered strategy. *Figure 2* below shows the approximate percentage of the portfolios maturing in the next three years:

Figure 2. Percent of Portfolio Maturing in Next Three Years

Fund	2011	2012	2013	Total
Thornburg Limited Term Municipal Fund	4.0%	3.3%	4.6%	11.9%
Thornburg Intermediate Municipal Fund	8.5%	7.7%	8.8%	25.1%

Fund data as of 2/9/11

As the table demonstrates, the laddered strategy provides a constant source of liquidity through the natural run-off of the portfolio. This built in liquidity provided by the ladder allows the Thornburg bond team to meet investor needs and the flexibility to constantly reinvest proceeds along the most attractive parts of the yield curve.

While the structure of the portfolio allows for natural liquidity, the bond team also closely monitors the credit quality of the portfolios. While not 100% correlated, credit quality can be used as a proxy for the bid-ask spread. *Figure 3* gives a breakdown of the credit quality in the Intermediate and Limited Term Municipal Funds. Note that over 50% of the Limited Term Municipal Fund and over 40% of the Intermediate Municipal Fund is rated AA or above.

While *figure 3* provides anecdotal evidence to the liquidity in the funds, we would caution that credit ratings do not in and of themselves drive bid-ask spreads. More important than rating (although much less easy to display) is the fundamental credit quality of the issuer. Thornburg prides itself on doing bottom-up credit work. We concentrate on buying structurally solid bonds at low prices. Bonds with strong legal provisions protecting their revenue streams will typically trade with narrow bid-ask spreads regardless of the rating. An easy example to point to is the State of California. Despite media hype, California General Obligation (GO) bonds have virtually no credit risk due to

their strong legal protection. Although they are rated A-, the California State GO's are extremely liquid.

Lastly, the bond team pays a great deal of attention to our bid-ask spreads. The Thornburg strategy is primarily "buy and hold." During the most recent fiscal year, the portfolio turnover rate of the Thornburg Limited Term Municipal

Figure 3. Credit Quality

As of 12/31/10	Thornburg Limited Term Municipal Fund	Thornburg Intermediate Municipal Fund
AAA	9.2%	6.2%
AA	42.5%	36.0%
A	31.6%	29.6%
BBB	14.6%	20.9%
NR	1.5%	6.3%
Below Invst. Grade	0.6%	1.0%
Total AA and above	51.7%	42.2%

and Intermediate Municipal Funds were 12.57% and 9.87%, respectively. The bond desk has no interest in generating unnecessary capital gains for our investors by engaging in excessive trading. Our focus is to provide our investors with a durable, stable dividend stream. While we don't trade in and out of positions often, there have been enough sell trades in the past 10 years to provide a glimpse into the liquidity of the portfolios.

Every bond in the Thornburg portfolio has an estimated price, provided to us by an independent third party. We monitor those prices daily to ensure they reflect the current market. *Figure 4* provides summary statistics of every sell

Figure 4. 10-Yr Sell History

Fund	# of Sell Trades	Average Variance From Est. Value
Thornburg Limited Term Municipal Fund	716	0.03%
Thornburg Intermediate Municipal Fund	568	-0.22%

Fund data as of 2/9/11

trade out of the Limited Term and Intermediate Funds over a 10-year period. The table compares the estimated value of the bonds versus the actual amount Thornburg received on the sale, effectively providing a bid-ask spread. In the Limited Term Fund there were 716 sell trades over the period and on average the bonds received a price 0.03% higher than the estimated value. In the Intermediate Fund 568

sell trades were executed over the period and on average the bonds received a price 0.22% lower than the estimated value.

These results are important for two reasons. First, they verify the liquidity of the funds over a long history. Second, they provide strong evidence that the estimated value of the fund is by and large correct. At first glance, it seems like the larger the positive variance from the estimated value the better. In actuality, the closer the bonds trade to the estimated value the better. If there were large variances (positive or negative) it would imply that the estimated values were incorrect, making that a useless tool for gauging liquidity.

While often overlooked by investors, liquidity risk is an important issue and is of paramount importance to the Thornburg bond team. It is essential that we have the ability to meet the needs of our investors and have the capital available to buy when opportunities arise. Thornburg has a track record of over 25 years of excellent liquidity and the bond team is committed to continuing this trend. ■

The laddering strategy does not assure or guarantee better performance than a non-laddered portfolio and cannot eliminate the risk of investment losses. The views expressed by the Portfolio Managers reflect their professional opinions and are subject to change.

A bond credit rating assesses the financial ability of a debt issuer to make timely payments of principal and interest. Ratings of AAA (the highest), AA, A, and BBB are investment-grade quality. Ratings of BB, B, CCC, CC, C and D (the lowest) are considered below investment grade, speculative grade, or junk bonds. Unless

otherwise noted, the ratings listed are from Municipal Market Data and are a combination of ratings from Standard and Poor's, Moody's Investors Service, and Fitch Ratings.

General Obligation Bond – A municipal bond backed by the credit and “taxing power” of the issuing jurisdiction rather than the revenue from a given project.

U.S. Treasury securities, such as bills, notes and bonds, are negotiable debt obligations of the U.S. government. These debt obligations are backed by the “full faith and credit” of the government and issued at various schedules and maturities. Income from Treasury securities is exempt from state and local, but not federal, taxes.

Agency Security – A debt obligation issued by government corporations or government sponsored enterprises. Agency securities are exempt from state and local taxes. They are not guaranteed by the U.S. government.

Government Sponsored Enterprises (GSE) – Privately held corporations with public purposes created by the U.S. Congress to reduce the cost of capital for certain borrowing sectors of the economy. Members of these sectors include students, farmers, and homeowners.

Performance as of December 31, 2010

	Average Annual Total Returns					Annual Operating Expense Ratios	
	1 Yr	3 Yrs	5 Yrs	10 Yrs	Since Inception	Subsidized	Total
Limited Term Municipal Fund							
Class A Shares (LTMFX Inception: 9/28/84)							
Without sales charge	3.00%	4.23%	3.92%	3.79%	5.49%		
With sales charge	1.46%	3.70%	3.60%	3.64%	5.43%	—	0.78%
Class C Shares (LTMCX Inception: 9/1/94)							
Without sales charge	2.72%	3.94%	3.65%	3.50%	3.78%		
With sales charge	2.22%	3.94%	3.65%	3.50%	3.78%	—	1.05%
Class I Shares (LTMIX Inception: 7/5/96)							
	3.27%	4.57%	4.27%	4.14%	4.43%	—	0.44%
Intermediate Municipal Fund							
Class A Shares (THIMX Inception: 7/22/91)							
Without sales charge	2.53%	3.80%	3.60%	4.05%	5.08%		
With sales charge	0.47%	3.09%	3.18%	3.83%	4.97%	—	0.97%
Class C Shares (THMCX Inception: 9/1/94)							
Without sales charge	2.25%	3.54%	3.32%	3.74%	4.12%		
With sales charge	1.65%	3.54%	3.32%	3.74%	4.12%	1.24%	1.33%
Class I Shares (THMIX Inception: 7/5/96)							
	2.94%	4.16%	3.94%	4.38%	4.64%	—	0.65%

Performance data shown represents past performance and is no guarantee of future results. Investment return and principal value will fluctuate so shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than quoted. For performance current to the most recent month end, visit thornburg.com or call 800.847.0200.

The Limited Term Municipal Fund has a maximum sales charge of 1.50% for the A shares and a 0.50% contingent deferred sales charge (CDSC) on the C shares for the first year only. The Intermediate Municipal Fund has a maximum sales charge of 2.00% for the A shares and a 0.60% CDSC on the C shares for the first year only. There is no up-front sales charge for I shares. Thornburg Investment Management and Thornburg Securities Corporation have contractually agreed to waive fees and reimburse expenses through at least February 1, 2012, so that actual expenses do not exceed the subsidized expense ratio above.

Before investing, carefully consider the Fund's investment goals, risks, charges, and expenses. For a prospectus containing this and other information, contact your financial advisor or visit thornburg.com. Read it carefully before investing.

Investments in the Funds carry risks, including possible loss of principal. Bond funds have the same interest rate, inflation, and credit risks that are associated with the underlying bonds. The principal value of a bond will fluctuate relative to changes in interest rates, decreasing when interest rates rise. Unlike bonds, bond funds have ongoing fees and expenses. Funds invested in mortgage backed securities may bear additional risk. Investments in the Funds are not FDIC insured, nor are they deposits of or guaranteed by a bank or any other entity.

