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*Variable Rate Muni Bank Loan vs. LOC Rates*

# What Happens in a Rising Interest/Falling Tax Rate Environment?

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## What Happens in a Rising Interest/Falling Tax Rate Environment?

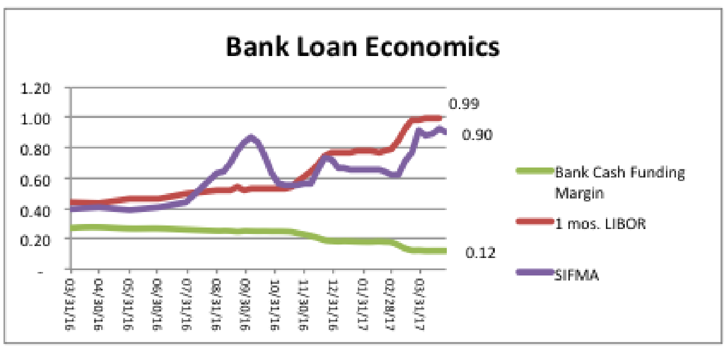
### Background

In this post, we (a) update the graph on a Bank's cost of carry for municipal variable rate loans, (b) develop a methodology showing potential tax equivalent yields (TEQ) on municipal loans and (c) compare the loan and LOC returns.

### Bank Cost of Carry Update

Figure 1 below is an updated version of our last post[1] illustrating how rising interest rates are decreasing the positive carry on variable rate bank loans (aka: Bank Cash Funding Margin). The primary variables being 1 month LIBOR, the 72% tax-exempt rate adjustment and the 0.40% credit spread.

*Figure 1 - Bank Loan Economics*




CFM= ((1MLIBOR*72%) +CS)-1MLIBOR, Credit Spread (CS) =0.40%

### Loan TEQ Methodology

We assume that a bank can choose to extend variable rate credit either by a tax-exempt LIBOR-based loan or by supporting a SIFMA-based VRDO with either a letter of credit (LOC) or liquidity facility. For the loan we gross up the Bank Fee (tax exempt rate + credit spread) by 1-tax rate to have a tax equivalent rate comparable to the LOC Fee.

Under recent bank regulations (ie : Basel III) , unfunded contingent liabilities such as LOCs are required to have liquid assets held against the potential for drawing. The most significant regulation is the liquidity coverage ratio (LCR). Under the LCR, the liquid asset hold is 30% of the notional amount of the LOC. As a proxy for the LCR cost, (assuming a five year term) we use the

*Figure 2 – Bank Liquidity Cost*

| | | |
|---|---|---|
| **Date** | | 3/10/17 |
| **Issue Size** | $ | 100,000,000 |
| **Liquidty Coverage %** | | 30% |
| **Liquidty Coverage $** | $ | 30,000,000 |
| **5 yr Treasury** | | 2.10% |
| **5 yr LIBOR** | | 2.20% |
| **Funding Cost %** | | 0.10% |
| **Funding Cost $** | $ | 30,000 |

Bank Liquidity Cost=(5 yr Fixed LIBOR Swap Rate-5 yr Treasury rate)*30% of $ deal size)/$ deal size

[1] Is the Tide Changing in the Municipal Variable Rate Market?

negative carry between the five year US Treasury and a 5 year LIBOR borrowing on 30% of the LOC. For simplicity's sake we maintain the UST and LIBOR spread as a constant. Figure 2 illustrates the 0.10% cost of liquidity.

**Results**

The matrix in Figure 3 below demonstrates under rising interest rate and falling tax rate scenarios (a) the bank cash funding margin and (b) tax equivalent returns for muni loans and LOCs .

*Figure 3 – Loan vs. LOC Returns*

| 1 Mos LIBOR | Bank Cash Funding Margin | Bank Fee | TEQ Return (35% Rate) | TEQ Return (25% Rate) | TEQ Return (15% Rate) | Bank LOC Fee | Bank Liquidity Cost | Net LOC TEQ Return |
|---|---|---|---|---|---|---|---|---|
| 0.5% | 0.26% | 0.76% | 0.67% | 0.51% | 0.39% | 0.40% | 0.10% | 0.30% |
| 1.00% | 0.12% | 1.12% | 0.72% | 0.49% | 0.32% | 0.40% | 0.10% | 0.30% |
| 1.25% | 0.05% | 1.30% | 0.75% | 0.48% | 0.28% | 0.40% | 0.10% | 0.30% |
| 1.50% | -0.02% | 1.48% | 0.78% | 0.47% | 0.24% | 0.40% | 0.10% | 0.30% |
| 1.75% | -0.09% | 1.66% | 0.80% | 0.46% | 0.20% | 0.40% | 0.10% | 0.30% |

Tax Equivalent Yield (TEQ)=Bank Fee/(1-tax rate)

Figure 4

| Shaded Area | Cost of Carry | TEQ>LOC |
|---|---|---|
| RED | negative | negative |
| GREEN | positive | positive |
| YELLOW | negative | positive |

At a glance, Figure 4 demonstrates at what interest and tax rates a loan compares with a LOC in terms of cost of carry and tax equivalent yield.

**Summary**

In speaking with bankers, we find no clear determination as to an industry perspective on the appetite for transactions with negative cash carry but a TEQ greater than a LOC. However, one participant noted that on a portfolio basis this dichotomy is understood but it's getting harder to stomach on an individual customer basis. It is interesting to note that prior to the ultra-low rates in 2008, banks were not large providers of municipal variable rate loans with the current tax structure. We are curious if something has changed that would induce banks to act differently as rates rise assuming no change in tax rates.

Each bank has its own perspective as to which profitability and risk metrics it desires to optimize. Such variables include fee income, interest income, revenue, ROE. Balancing these variables is typically a dynamic process requiring a response to changing pressures on a bank's capital, liquidity, leverage etc.

Should the Fed continue its current rate hike trajectory and the corporate tax rate fall to 15%, loan rates will be squarely in the red zone. In that scenario, for municipal loans to remain competitive to LOCs (strictly on a bank return basis), loan rates would need to increase to equal the negative delta between the two products. Bank loans (as with most products) have a yield equivalency clause. Such a clause could be utilized by banks to increase an existing loan margin due to a decrease in tax rates.

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