Maximizing Yield and Maintaining Liquidity

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Managing Liquidity

• What is liquidity?
  • Cash balances or short-term investments that can be “easily” converted to cash.
• Aren’t all securities liquid?
• Actively traded short maturity issues
  • U.S. Treasury Bills and Notes
  • Federal agency issues (DNs and bullets/callables)
  • Direct issue commercial paper
  • Dealer offered CP and negotiable CDs
Managing Liquidity

**How much liquidity?**

- Identifying the amount of funds (either cash or short-maturity investments) needed to meet near-term operating expenses is one of the most important factors in the management of public funds.
- Cash flow “forecasting”
  - Model recurring receipts/expenses
- Expected (or potential) changes to this schedule
  - Employee buyouts/conversion of leave
  - Insurance premiums
  - Operating levy passage/failure

**Why outline and monitor expected liquidity requirements?**

- Proactive approach to preparing annual and longer-term budgets
  - Including, but not limited to, investment income projections
- Identify the total amount of funds available for investment
  - Investing to meet short-term obligations?
  - Investing for the “long-term”?
    - Higher investment income
    - Growth of principal over time
Managing Liquidity

Developing an accurate cash flow model can prevent:

• Higher than necessary cash balances vs. investment balances, which is expensive, given today's market yields.
• An over-investment in short-maturity securities (< 1-year) which can also negatively affect investment income over the long-term.
• An over-investment in longer-maturity securities which could lead to higher investment income, but could also result in realized portfolio losses, if these securities need to be sold prior to maturity. (Selling investment assets before maturity is subject to current market prices)

Investment Objectives
Order of Priority

Investment policies clearly state the following order of priority:

• Preservation of principal
  • Protecting the principal from loss
  • Mitigating unrealized losses in a rising rate market

• Maintenance of Liquidity
  • Meeting operating needs and other obligations without interruption

• Yield (return)
  • Investing public entity funds to generate a market yield over time
Establishing the Cash Position

• Cash position: The average daily cash balance, net of revenues and disbursements, that may be used to meet current obligations (operating needs) without any liquidations of the investment portfolio (core investments).

• Investment of cash balances (options): STAROHIO, bank money market accounts/sweep balances, other bank deposit accounts that may be liquidated without penalty. All invested cash balances should be invested in short-term investment alternatives that provide a minimum of liquidity within 7 - 10 days.

Track Revenues vs. Expenses

• Identify the net cash balance each day or week; identify high points and low points throughout the fiscal year - establish reliable monthly averages in order to meet any scheduled or unscheduled liquidity needs.

• Communicate with your bank to determine ending daily balances. Refer to the bank account analysis reports as a resource.
Methods of Establishing Liquidity Balances

Liquidity Percentage Method:

(a) Maintain a minimum balance in STAR (or other short-term investments) as a percentage of average invested funds so that any cash demands can be met at all times. By using a percentage of the total invested funds as a cushion, the core portfolio can be managed without having to sell securities to meet any unexpected cash needs.

(b) Examples of short-term maturity investments include STAROHIO, STAR PLUS and other short-maturity securities such as federal agency discount notes, various bank deposit accounts, repurchase agreements, commercial paper.

(c) This method can be utilized once you know your minimum cash position (liquidity percentage) in order to buy securities with longer maturities.
Methods of Establishing Liquidity Balances

**Asset-liability method:**

On the basis of a cash flow analysis, match the maturities of short-term investments with projected monthly cash outflows.

1. The choice of investment is based upon market yields at the time of purchase.

2. Purchase securities to mature prior to an expected disbursement; increase the amount of maturities prior to those dates in which periodic disbursements may be required (i.e., payroll dates, insurance or debt service payment dates, capital expenditures (if not managed via a separate bond proceeds portfolio).

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Market Yields and the Yield Curve

- What is the market “giving” you?
  - STAR Ohio: 1.02% (as of 05-04-17)
    - Compare to 9-month agency discount note yields
    - Compare to 60-day commercial paper yields
    - Daily liquidity (without daily transactions)

- What is the market outlook?
  - Last rate hike in March (to 0.75% to 1.00%)
  - Next Fed funds rate increase seen in June (to 1.00% - 1.25%)
  - Third 2017 rate hike in December?
  - 2018?

- Analysis of forward rates
  - 6-months @ 1.00% vs. 1-year @ 1.10%
  - Give up 10 bps for 6-months = Need +10 bps for next 6-months
  - Will 6-month rates be 20 bps higher by October 2017?
Market Yields and the Yield Curve

• Be familiar with current market yields and spreads between asset classes when attempting to match maturities with disbursements.

• The focus is to generate higher market yields vs. cash yields within the context of meeting liquidity needs.

• Understanding the yield curve will help you develop an investment strategy that (1) meets short-term obligations with maturing securities and (2) generates additional investment income.
Direct Issue CP Postings

Dealer CP Offerings
FHLB DN Postings

This screen does not constitute an offer to sell or a solicitation of an offer to buy any securities.

FNMA DN Postings
FHLMC DN Postings

FFCB DN Postings
What about Bills?

Matching Monthly Obligations

- Laddering Maturities (a basic method)
  - Purchase 2-year maturities each month so that 23 months later the maturities will be used each month to meet some or all liquidity needs (determine par value you are able to add without straining your current cash position).
- Ignores incremental yield spreads along the curve
- Ignores market expectations for changes in the level of interest rates and/or yield spreads
Matching Monthly Obligations

If it is difficult to start with 2-yr. maturities, purchase shorter maturities that will “fill” the earlier months inside of the two year period.

**Less aggressive portfolio structures can include:**

- Federal agency discount notes or U.S. Treasury Bills of various maturities.
- Commercial paper maturing in 3 month, 6 month, and 9 month increments.
- The shape of the yield curve and spreads between asset classes should be considered when selecting a particular investment option.

Matching Monthly Obligations

**Before considering investment options:**

1. Know your expected liabilities.
2. Know the shape of the yield curve and yield spreads in order to understand current market prices.
3. Compare investment options (agency discount notes, CP, bank deposits, STAR, etc.)
4. Compare the “offerings” of more than one broker/dealer before executing the purchase.
Investment of the Core Portfolio

Once you have established a minimum liquidity percentage, and you are confident that liquidity needs will be met at all times, then investing core funds based upon more technical factors may be implemented.

- The shape of the yield curve (flat, positively sloped, inverted).
- Spreads between asset classes.
- Investing in declining and rising rate markets.
- Average duration (average maturity) and its affect upon:
  1. market value
  2. return
  3. cash flow

Why not just add a “liquidity component” to the core portfolio?

- This can have a significant impact on:
  - Average portfolio maturity/duration
  - Average portfolio yield
  - Future portfolio performance

- Separate portfolios can be managed with specific investment objectives:
  - Immediate cash needs
  - Near-term expected cash flow requirements
  - Longer-term portfolio return objectives and growth of principal

- Is the portfolio being compared to the proper benchmark?
  - Liquidity portfolio vs. short maturity market rates
  - Core portfolio vs. market index (without a “cash” component)
Market Yields and the Yield Curve

U.S. Treasury Yields

Market Yields and Yield Spreads

2-Yr USTN vs. 5-Yr USTN Yields
### U.S. Treasury Active Issues

#### Table: U.S. Treasury Active Issues

<table>
<thead>
<tr>
<th>Date</th>
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### Agency Off-the-Run Issues

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**Note:** The data provided is an excerpt from the document and represents the active and off-the-run issues for U.S. Treasury and Agency securities as of June 14th, 2017.
Market Yields and Yield Spreads

Current U.S. Treasury vs. Federal Agency Yields

Federal Agency New Issues