Economic Update and Investment Tips

Presented to:
Ohio Association of Public Treasurers
June 16, 2016

Agenda

• Current economic factors
• Portfolio right-sizing
• Municipal securities
• Brokered CDs
• Step-up agency bonds

Factors Impacting Investment Opportunities

Market Environment

What will determine when (or if) interest rates will rise again?

• Fed Policy
• Oil
• Global Slowdown Fears
Gross Domestic Product (GDP)

United States versus China

Source: International Monetary Fund, World Economic Outlook, October 2015

Shenzhen, 1980s – Pop: 31,000

Shenzhen, 1990s

Shenzhen, 2009 - Pop: 10.6 M
China used more cement in the last three years than the U.S. used in the entire 20th century.

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23% of bonds globally yield less than 0%, up from 13% at the beginning of the year.

History of Japan

Source: Bank of America-Merrill Lynch (BAML)

Source: Bank of Japan

Negative Rates Abroad

Source: Barron's 10/26/15

Source: Washington Post, 3/24/15

Negative Rates Abroad

Source: Barron's 10/26/15

Source: Bank of Japan
**Inflation**

![Inflation Chart]

**Unemployment**

![Unemployment Chart]

US Unemployment Rate increased to 5.0%, from 4.9% with the participation rate increasing from 62.9% to 63.0%.

**U.S. Treasury Yield Curve**

![U.S. Treasury Yield Curve]

**Portfolio Right-Sizing**

![Portfolio Right-Sizing]
Cash vs Core vs Project Funds

- Cash Management – “Cash” Portfolio
  › Operating needs for current year
  › Funds with uncertain time horizon

- Investment Management – “Core” Portfolio
  › Time horizon greater than one year
  › Apply investment strategy to maximize earnings

- Project funds – “Project” Portfolio
  › Defined time horizon
  › Match investments to anticipated expenditures

Cash vs. Core

Year-end Balances per CAFR

<table>
<thead>
<tr>
<th>Year</th>
<th>Governmental</th>
<th>Business Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>$30,000,000</td>
<td>$20,000,000</td>
</tr>
<tr>
<td>2011</td>
<td>$30,000,000</td>
<td>$20,000,000</td>
</tr>
<tr>
<td>2012</td>
<td>$30,000,000</td>
<td>$20,000,000</td>
</tr>
<tr>
<td>2013</td>
<td>$30,000,000</td>
<td>$20,000,000</td>
</tr>
<tr>
<td>2014</td>
<td>$30,000,000</td>
<td>$20,000,000</td>
</tr>
</tbody>
</table>

Cash vs. Core

Month-end Balances

<table>
<thead>
<tr>
<th>Month</th>
<th>Cash</th>
<th>Earning</th>
<th>Core</th>
<th>Earning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
<tr>
<td>Feb</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
<tr>
<td>Mar</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
<tr>
<td>Apr</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
<tr>
<td>May</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
<tr>
<td>Jun</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
<tr>
<td>Jul</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
<tr>
<td>Aug</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
<tr>
<td>Sep</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
<tr>
<td>Oct</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
<tr>
<td>Nov</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
<tr>
<td>Dec</td>
<td>$5.0 million</td>
<td>0.25%</td>
<td>$15.0 million</td>
<td>0.25%</td>
</tr>
</tbody>
</table>

Projected Additional Interest Income of $100,000

For illustration purposes only.
Project funds

Project Scope and Timeline
$40 million Building Improvement

Break Ground
Construction Underway
Project Completed
Engineering

15 Months

Projected Monthly Expenditures

$0
$200,000
$400,000
$600,000
$800,000
Month
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

Two Examples

1) Invest funds overnight at 0.25%
2) Build a portfolio matching investments to projected expenditures

Project Portfolio

<table>
<thead>
<tr>
<th>Period</th>
<th>Invested Dollars</th>
<th>Interest Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overnight</td>
<td>$750,000</td>
<td>0.25%</td>
</tr>
<tr>
<td>4-6 months</td>
<td>$2,000,000</td>
<td>0.50%</td>
</tr>
<tr>
<td>7-9 months</td>
<td>$4,500,000</td>
<td>0.75%</td>
</tr>
<tr>
<td>10-12 months</td>
<td>$10,000,000</td>
<td>0.90%</td>
</tr>
<tr>
<td>13-15 months</td>
<td>$17,500,000</td>
<td>0.75%</td>
</tr>
<tr>
<td>16-18 months</td>
<td>$5,250,000</td>
<td>0.80%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$40,000,000</td>
<td></td>
</tr>
</tbody>
</table>

Projected Additional Interest Income of $200,000

Cash vs Project Portfolio

Cumulative Interest Earnings

Projected funds
Two Examples
Projected Portfolio
Cash vs Project Portfolio
For illustration purposes only.
Municipal Securities

Ohio Revised Code 135.14

(4) Bonds and other obligations of this state, or the political subdivisions of this state, provided that, with respect to bonds or other obligations of political subdivisions, all of the following apply:

(a) The bonds or other obligations are payable from general revenues of the political subdivision and backed by the full faith and credit of the political subdivision.

(b) The bonds or other obligations are rated at the time of purchase in the three highest classifications established by at least one nationally recognized standard rating service and purchased through a registered securities broker or dealer.

(c) The aggregate value of the bonds or other obligations does not exceed twenty per cent of interim moneys available for investment at the time of purchase.

(d) The treasurer or governing board is not the sole purchaser of the bonds or other obligations at original issuance.

No investment shall be made under division (B)(4) of this section unless the treasurer or governing board has completed additional training for making the investments authorized by division (B)(4) of this section. The type and amount of additional training shall be approved by the treasurer of state and may be conducted by or provided under the supervision of the treasurer of state.
Credit Risk

Brokered CDs

Certificates of Deposit

135.144 Investment of interim moneys in federally insured certificates of deposit.

(1) In addition to the authority provided in section 135.13 or 135.143 of the Revised Code, the treasurer of state or the treasurer or governing board of a political subdivision may invest interim moneys in certificates of deposit in accordance with all of the following:

(2) The interim moneys initially are deposited with an eligible public depository described in section 135.13 of the Revised Code and selected, pursuant to section 135.13 of the Revised Code, by the treasurer of state or the treasurer or governing board of a political subdivision, for interim moneys of the state or of the political subdivision.

(3) For the treasurer of state or the treasurer or governing board of the political subdivision depositing the interim moneys pursuant to division (A)(1) of this section, the eligible public depository selected pursuant to that division invests the interim moneys in certificates of deposit bought at $250,000.

CDs bought at $250,000

Account carried with National Financial Services LLC, Member NYSE, SIPC
Certificates of Deposit
Ohio Compliance Supplement

2014 Ohio Compliance Supplement
Indirect Laws & Statutorily Mandated Tests

- Any CD’s purchased by a broker must be held in the name of the government. Also, the broker cannot be in possession of cash at any time. If we believe a broker has held cash for any length of time, AOS auditors should refer the matter to the Center for Audit Excellence and AOS Legal division for further evaluation. A way to verify compliance is to request monthly statements provided by the public depository located in Ohio. Ohio Rev. Code §135.144[A] requires the initial public depository to provide public offices with a monthly account statement that includes the amount of its funds deposited and held at each bank, savings bank, or savings and loan association for which the public depository acts as a custodian pursuant to Ohio Rev. Code §135.144. If a public official does not have these statements, it may indicate that the money is being held by a broker-dealer in violation of Ohio Rev. Code §135.144.

Example

**Straight Callable:**
- FHLMC cusip #3134G8G45
- Issued 12/30/15
- Matures 12/30/20
- $1,000,000 purchased at par
- Callable 3 months from issue
- 2.10% Interest Rate

**Step-up Callable:**
- FHLMC cusip #3134G8FY0
- Issued 12/30/15
- Matures 12/30/20
- $1,000,000 purchased at par
- Callable 3 months from issue
- Rate rises from 1.125% to 5% per schedule

Yield to Maturity = 2.10%
Yield to Maturity = 2.62%

Step-up Agency Bonds

**Straight Callable vs. Step-up (Interest Rates)**
**Straight Callable vs. Step-up (Cumulative Interest)**

<table>
<thead>
<tr>
<th>Duration</th>
<th>Straight Callable</th>
<th>Step-up Callable</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Months</td>
<td>$5,250</td>
<td>$2,812</td>
<td>$2,438</td>
</tr>
<tr>
<td>6 Months</td>
<td>$10,500</td>
<td>$5,625</td>
<td>$4,875</td>
</tr>
<tr>
<td>1 Year</td>
<td>$21,000</td>
<td>$12,188</td>
<td>$8,812</td>
</tr>
<tr>
<td>2 Years</td>
<td>$42,000</td>
<td>$29,063</td>
<td>$12,937</td>
</tr>
<tr>
<td>3 Years</td>
<td>$63,000</td>
<td>$52,813</td>
<td>$10,187</td>
</tr>
<tr>
<td>4 Years</td>
<td>$84,000</td>
<td>$86,563</td>
<td>$(2,563)</td>
</tr>
<tr>
<td>5 Years</td>
<td>$105,000</td>
<td>$130,938</td>
<td>$(25,938)</td>
</tr>
</tbody>
</table>

**Cumulative Interest**

Thank You

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Disclosure

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Past performance does not guarantee future results. Opinions and forecasts are all subject to change at any time, based on market and other conditions, and should not be construed as a recommendation of any specific security. Investing in securities involves inherent risks, including the risk that you can lose the value of your investment. There is no assurance that the investment process will consistently lead to successful results. The investment return and principal value of an investment will fluctuate so an investor’s shares or units, when redeemed, may be worth more or less than their original cost.