Investing In A Rising Rate Environment
ICCCF0 FALL CONFERENCE

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• Gain insight into various investment strategies

• Learn how investment planning can help reduce risks

• Review examples from a CFO about how active management can improve investment income
## Probability Chart For Expectations of a Rate Hike

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Hike Prob</th>
<th>Cut Prob</th>
<th>2-2.25</th>
<th>2.25-2.5</th>
<th>2.5-2.75</th>
<th>2.75-3</th>
<th>3-3.25</th>
<th>3.25-3.5</th>
<th>3.5-3.75</th>
<th>Fwd Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/08/2018</td>
<td>0.0%</td>
<td>100.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.18</td>
</tr>
<tr>
<td>12/19/2018</td>
<td>77.5%</td>
<td>22.5%</td>
<td>77.5%</td>
<td>77.5%</td>
<td>77.5%</td>
<td>77.5%</td>
<td>77.5%</td>
<td>77.5%</td>
<td>77.5%</td>
<td>2.37</td>
</tr>
<tr>
<td>01/30/2019</td>
<td>78.9%</td>
<td>21.1%</td>
<td>74.1%</td>
<td>4.8%</td>
<td>0.0%</td>
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<td>0.0%</td>
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<td>0.0%</td>
<td>2.38</td>
</tr>
<tr>
<td>03/20/2019</td>
<td>90.8%</td>
<td>9.2%</td>
<td>44.2%</td>
<td>43.9%</td>
<td>2.7%</td>
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<td>0.0%</td>
<td>2.52</td>
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<tr>
<td>05/01/2019</td>
<td>92.1%</td>
<td>7.9%</td>
<td>39.2%</td>
<td>43.9%</td>
<td>8.7%</td>
<td>0.4%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.57</td>
</tr>
<tr>
<td>06/19/2019</td>
<td>95.7%</td>
<td>4.3%</td>
<td>25.1%</td>
<td>41.8%</td>
<td>24.6%</td>
<td>4.1%</td>
<td>0.2%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.69</td>
</tr>
<tr>
<td>07/31/2019</td>
<td>96.1%</td>
<td>3.9%</td>
<td>23.0%</td>
<td>40.1%</td>
<td>26.3%</td>
<td>6.2%</td>
<td>0.6%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.71</td>
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<tr>
<td>09/18/2019</td>
<td>97.1%</td>
<td>2.9%</td>
<td>18.2%</td>
<td>35.8%</td>
<td>29.7%</td>
<td>11.2%</td>
<td>2.0%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>2.77</td>
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<tr>
<td>10/30/2019</td>
<td>97.2%</td>
<td>2.8%</td>
<td>17.4%</td>
<td>34.9%</td>
<td>30.0%</td>
<td>12.1%</td>
<td>2.4%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>2.79</td>
</tr>
</tbody>
</table>
BOND MARKET OUTLOOK

- The market has already priced in multiple Fed increases for 2018 & 2019
  - Rates have risen significantly across the yield curve since last year
- Treasury futures markets project little additional increase in yields over the next year in the 2-10yr part of the curve
- Interest rates are more attractive than they have been in the past decade
- Short rates directly impacted by Fed Policy
- Long rates based on long term growth and inflation expectations and may be impacted by Fed balance sheet wind-down

*Projection based on Treasury Futures as of 9/26/18
Source: Bloomberg
GUIDING PRINCIPLES

• Safety
  o “The individual investor should act consistently as an investor and not as a speculator.” - Benjamin Graham
  o “Risk comes from not knowing what you’re doing.” - Warren Buffett

• Liquidity
  o “True liquidity is how easily you can sell an asset and at what price–when you’re forced to.” - Howard Marks

• Maximize Return Potential
  o “Far more money has been lost by investors preparing for corrections, or trying to anticipate corrections, than has been lost in corrections.” - Peter Lynch
DIFFERENTIATING INVESTMENTS

SHORT-TERM
Operating Reserves

INTERMEDIATE TERM
Mid-term Reserves, Bond Proceeds

LONG-TERM
Long-term Reserves, Debt Service Reserves, OPEB, Pension Funds

MATURITY /DURATION TARGET

RETURN TARGET

0-9 Months

9 - 24 Months

>24 Months
A SUCCESSFUL INVESTMENT PLAN ALIGNS STRATEGY TO PURPOSE

- **Operating Funds: (<12 months)**
  - Treasury Bills
  - Agency Discount Notes
  - CDs
  - LGIPs

- **Intermediate-Term Reserves: (1-5 Years)**
  - CDs
  - Treasury Notes
  - Agency Notes
  - Taxable Municipal Bonds
  - Agency Mortgage-Backed Securities
  - Corporate Notes

- **Long-Term Reserves: (>5 Years)**
  - Treasury Notes
  - Agency Notes
  - Taxable Municipal Bonds
  - Agency Mortgage-Backed Securities
  - Corporate Bonds
  - *Equity Securities*
  - Mutual Funds
  - *Exchange Traded Funds (ETFs)*
DON’T LEAVE MONEY ON THE TABLE

Consider this:

• Don’t pay for liquidity you don’t need

• Do my investments closely match my liabilities?

• Does my current investment strategy optimize results in different economic and market scenarios?
INVESTING STRATEGIES – OPERATING RESERVES

• Analysis
  o Cash flow review – analyze cash flow need dates to identify short- and long-term investment opportunities
  o Time in the market is more important than timing the market

Example:

<table>
<thead>
<tr>
<th>INVESTMENT AMOUNT</th>
<th>$ 10,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>INCOME</td>
<td></td>
</tr>
<tr>
<td>1-YEAR RATE</td>
<td>2.60%</td>
</tr>
<tr>
<td>6-MONTH RATE</td>
<td>2.35%</td>
</tr>
<tr>
<td>BREAKEVEN RATE</td>
<td>2.86%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
HOW CAN INVESTMENT PLANNING REDUCE RISKS?
INVESTMENT PLANNING

- Cash Flow Investing
  - Match all liabilities with an investment maturity
  - Extend investments to benefit from higher rates
  - Plan for cash shortfalls
  - Identify long-term investment potential
  - Maximize interest income

*The analysis or information presented here is based on hypothetical projections and/or past performance that have certain limitations. No representation is made that it is accurate or complete or that any results will be achieved.
POWER OF A LADDERED APPROACH

• Reinvest over time
• Similar to dollar cost averaging in stocks
• Works in different rate environments
  o Rates Fall: Locked in higher yields in longer maturities
  o Rates Stable: Longer maturities will enhance yield
  o Rates Rise: Reinvest at higher yields as bonds mature
• Invest with a PLAN
BUY AND HOLD VERSUS ACTIVE MANAGEMENT

- **Buy and Hold**: Hold to maturity investments such as CD’s.
- **Active Management**: Continuous review of best alternatives
  - Hold to maturity
  - Roll down the yield curve
    - Sell security as it ages and rolls to a lower yield (higher price)
  - Credit Quality
    - What has value today?
    - Determine if we are getting paid to take credit risk
    - Diversification
  - Duration/Curve positioning
    - Evaluate best duration fit for client objectives
    - Continuously evaluate yield curve for best return potential
INVESTING LONG-TERM RESERVES

- Strategically diversify across allowable fixed income sectors
- Maintain high quality portfolio aligned with State Statute, Investment Policy and portfolio goals & objectives
- Do not time the market

- Understand Goals
- Model Cash Flows
- Determine Portfolio Strategy
- Select Benchmark
- Active Management
OAKTON COMMUNITY COLLEGE EXAMPLE
CASH FLOW ANALYSIS

- Cash Flow Investing
  - Sufficient liquidity
  - Fund operating needs just in time
  - Go long-term as feasible
  - Use your advisor
  - Part of gap closing in FY2019 for operating
INVESTMENT PLANNING

• Why a mix of investment tools works for the College
  • Liquid deposit accounts, LGIPs, CDs, Treasury obligations, Agencies (GNMAs, FNMAks)
  • Diversified by investment type and time to maturity
  • Actively re-invest to increase returns
  • Investment policy follows the Investment Act (reviewed annually)
  • Capital improvement plan drives investments based on when dollars are needed
  • Investment results reported to our Board quarterly
In general, the economy is strong and economists project further growth.

Interest rates are the most attractive they have been in a decade.

The market projects additional rate hikes by the Federal Reserve.

Market immediately prices in these expected changes in interest rates.

Analyze cash flow needs to maximize investment horizon:
- Do my investments match my liabilities?
- Resist the temptation to have excess liquidity beyond cash flow needs.

Diversify your investment portfolio.
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