INVESTING IN A CHANGING RATE ENVIRONMENT

Presented to the League of Wisconsin Municipalities Clerks, Treasurers and Finance Officers Institute

Eau Claire, WI

JUNE 6, 2019
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Senior Portfolio Manager
Prudent Man Advisors, LLC

SARA SCHNOOR
Associate Vice President, Investment Solutions
PMA Financial Network, LLC | PMA Securities, LLC
• Serving the Public Sector for 35 Years
  o PMA Financial Network has been a leading provider of financial services to public entities since 1984

• The PMA companies (*operate under common ownership*)
  o PMA Financial Network, LLC
  o Prudent Man Advisors, LLC (*SEC registered investment advisor*)
  o PMA Securities, LLC (*Registered broker-dealer and municipal advisor member (FINRA and SIPC]*)

• PMA Statistics
  o Work almost exclusively with public funds
  o Collectively, the PMA companies serve over 2,500 public entities in 11 states:
    ▪ FL, IA, IL, MI, MN, MO, NY, OK, PA, SD, WI
  o The PMA companies collectively have 130+ employees to meet the ongoing needs of our clients
  o More than $25.2 billion of Assets Under Administration as of 3/31/2019*

*Total assets under administration include both money market pool assets for which the PMA Companies serve as fund administrator/accountant, marketer/distributor, fixed income program provider (brokerage services), and/or investment advisory, or separate institutional accounts.
✓ Current economic outlook and key financial indicators
✓ Investment option overview
✓ Strategies and guiding principles in decision-making
✓ Best practices for investing bond proceeds
Contributions to % Change in Real GDP

Source: Bloomberg
U.S Economic Outlook

- LEI provides early signals
- Current levels are positive
- Trend shows some weakness
- Yield curve signals slower future growth
- Slower growth is likely

### Leading Economic Indicator

<table>
<thead>
<tr>
<th>Leading Economic Indicator</th>
<th>Level</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leading Economic Index</td>
<td>Strong</td>
<td>Worsening</td>
</tr>
<tr>
<td>Average Workweek</td>
<td>Fair</td>
<td>Worsening</td>
</tr>
<tr>
<td>Unemployment Claims</td>
<td>Strong</td>
<td>Stable</td>
</tr>
<tr>
<td>New Orders: Consumer Goods and Materials</td>
<td>Strong</td>
<td>Stable</td>
</tr>
<tr>
<td>ISM New Orders Index</td>
<td>Strong</td>
<td>Worsening</td>
</tr>
<tr>
<td>New Orders: Nondefense Capital Goods excl. Aircraft</td>
<td>Strong</td>
<td>Stable</td>
</tr>
<tr>
<td>Building Permits</td>
<td>Fair</td>
<td>Worsening</td>
</tr>
<tr>
<td>S&amp;P 500</td>
<td>Fair</td>
<td>Stable</td>
</tr>
<tr>
<td>Leading Credit Index</td>
<td>Strong</td>
<td>Improving</td>
</tr>
<tr>
<td>Yield Curve (10yr Treasury - 30-day T-Bill)</td>
<td>Weak</td>
<td>Worsening</td>
</tr>
<tr>
<td>Consumer Expectations for Business Conditions</td>
<td>Fair</td>
<td>Worsening</td>
</tr>
</tbody>
</table>

Source: Bloomberg and OECD
LABOR MARKET REMAINS TIGHT

**Job Openings and Hires**

- Thousand

<table>
<thead>
<tr>
<th>Year</th>
<th>Feb-08</th>
<th>Feb-09</th>
<th>Feb-10</th>
<th>Feb-11</th>
<th>Feb-12</th>
<th>Feb-13</th>
<th>Feb-14</th>
<th>Feb-15</th>
<th>Feb-16</th>
<th>Feb-17</th>
<th>Feb-18</th>
<th>Feb-19</th>
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<tbody>
<tr>
<td>U.S. Total Job Openings</td>
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<tr>
<td>U.S. Hires</td>
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**Unemployed Persons per Opening**

- Recession

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<tr>
<th>Year</th>
<th>Feb-08</th>
<th>Feb-09</th>
<th>Feb-10</th>
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<th>Feb-18</th>
<th>Feb-19</th>
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<td>U.S. Hires</td>
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</table>

**Labor Force**

- Million

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<thead>
<tr>
<th>Year</th>
<th>Apr-99</th>
<th>Apr-03</th>
<th>Apr-07</th>
<th>Apr-11</th>
<th>Apr-15</th>
<th>Apr-19</th>
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<tr>
<td>Civilian Labor Force (LHS)</td>
<td></td>
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<tr>
<td>Civilian Labor Force Annual Change</td>
<td></td>
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</tbody>
</table>

**Part Time for Economic Reasons**

- Percent

<table>
<thead>
<tr>
<th>Year</th>
<th>Apr-10</th>
<th>Apr-11</th>
<th>Apr-12</th>
<th>Apr-13</th>
<th>Apr-14</th>
<th>Apr-15</th>
<th>Apr-16</th>
<th>Apr-17</th>
<th>Apr-18</th>
<th>Apr-19</th>
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<tr>
<td>Percent</td>
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</table>

Source for all graphs above: Bloomberg
1Q19 ECONOMIC ACTIVITY – MIXED STORY

Chicago Fed National Activity Index

ISM Composite and GDP Growth (%)

Purchasing Managers' Indices

Source: Bloomberg

Source: Bloomberg

Source: Bloomberg
HOUSING MARKET STABLE

Housing Strength

Housing Market

Source: Bloomberg

Source: Bloomberg
ATTRACTIVE MORTGAGE RATES

U.S. 30YR Mortgage Rate

Source: Bankrate.com
Bond Market Outlook

- Short term rates may have peaked as the Fed is taking a pause.
- The market has already priced in multiple Fed cuts in the next year.
- Rates have fallen beyond 2 year maturities since last year.
- Treasury market projects little change in yields over the next year beyond two years.
- Short rates directly impacted by Fed Policy.
- Long rates based on long term growth and inflation expectations and may be impacted by the pause in Fed balance sheet wind-down.

*Projection based on Treasury Market as of 5/29/19
Source: Bloomberg*
Fed Funds currently 2.25 – 2.50%

FOMC projects no more hikes in 2019

Market says over 60% probability of a September cut

Fed projects little move through 2021

Bond market pricing in nearly 100 bps in cuts out the curve

Source: Bloomberg
Historical Rates – Fed Funds vs. 2Y UST

Source: Bloomberg; As of 5/29/19
### Corporate Spreads

<table>
<thead>
<tr>
<th></th>
<th>BB Barc AAA OAS</th>
<th>BB Barc AA OAS</th>
<th>BB Barc A OAS</th>
<th>BB Barc BBB OAS</th>
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</thead>
<tbody>
<tr>
<td><strong>CURRENT</strong></td>
<td>61</td>
<td>58</td>
<td>84</td>
<td>144</td>
</tr>
<tr>
<td><strong>AVG</strong></td>
<td>75</td>
<td>86</td>
<td>119</td>
<td>176</td>
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<tr>
<td><strong>STD DEV</strong></td>
<td>48</td>
<td>62</td>
<td>77</td>
<td>91</td>
</tr>
<tr>
<td><strong>WIDE</strong></td>
<td>412</td>
<td>483</td>
<td>588</td>
<td>705</td>
</tr>
<tr>
<td><strong>LOW</strong></td>
<td>31</td>
<td>31</td>
<td>47</td>
<td>72</td>
</tr>
</tbody>
</table>

Source: Bloomberg
STOCK MARKET REBOUNDS 2019

Volatility

Source: Bloomberg

S&P 500 vs. Volatility Index

Source: Bloomberg
### Current Market Yields as of 4/30/19

<table>
<thead>
<tr>
<th>Sector</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>10 Year</th>
<th>30 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Treasuries</td>
<td>2.38%</td>
<td>2.24%</td>
<td>2.28%</td>
<td>2.50%</td>
<td>2.93%</td>
</tr>
<tr>
<td>U.S. Agencies</td>
<td>2.39%</td>
<td>2.31%</td>
<td>2.35%</td>
<td>2.71%</td>
<td>3.05%</td>
</tr>
<tr>
<td>Agency MBS</td>
<td></td>
<td></td>
<td>2.59%</td>
<td>2.70%</td>
<td>3.20%</td>
</tr>
<tr>
<td>Municipal Bonds AA*</td>
<td>2.66%</td>
<td>2.61%</td>
<td>2.75%</td>
<td>3.17%</td>
<td></td>
</tr>
<tr>
<td>Investment Grade Bonds</td>
<td>2.70%</td>
<td>2.78%</td>
<td>2.95%</td>
<td>3.46%</td>
<td>4.03%</td>
</tr>
<tr>
<td>High Yield Bonds BB</td>
<td>3.60%</td>
<td>4.26%</td>
<td>4.73%</td>
<td>5.61%</td>
<td>6.50%</td>
</tr>
<tr>
<td>S&amp;P 500 Equities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.82%</td>
</tr>
</tbody>
</table>

Past performance is no indication of future performance. Changes to any prices, levels or assumptions will have a material impact on yield.

### 10Y Annualized Return

Source: Bloomberg; Data as of 4/30/19
With an inverted yield curve, it can be a tough decision to buy longer at lower rates

Know that you will be glad you did if the market is right

Matching assets to your cash needs is best way to invest in any environment - it reduces risk

Even if your liability is long and rates rise, the present value of your liability will be discounted at a higher rate, reducing the size of that liability
Guiding Principles

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

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

- **Maximize Return Potential**
  - “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

GUIDING PRINCIPLES & INVESTMENT STRATEGY

RETURN TARGET

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

0-9 Months
9 - 24 Months
>24 Months

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GUIDING PRINCIPLES & INVESTMENT STRATEGY
A Successful Investment Plan Aligns Strategy to Purpose

- **Operating Funds:** (<12 months)
  - T-bills
  - Agency Discount Notes
  - CDs
  - LGIPs

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

- **Long-Term Reserves:** (>5 Years)
  - Treasury Notes
  - Agency Notes
  - Taxable Municipal Bonds
  - Agency Mortgage-Backed Securities
  - Corporate Bonds
Don’t Leave Money on the Table

Consider this:

• Why keep 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?
Government Investment Planning

- Cash Flow Investing
  - Match liabilities with an investment maturity
  - Extend investments to protect income if rates fall
  - Plan for cash shortfalls
  - Identify long-term investment potential
  - Maximize investment income

Sample Cash Flow Analysis

*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 at regular intervals over time
- Similar to dollar cost averaging in stocks
- Works in different rate environments
  - Rates Fall: Locked in higher yields in longer maturities
  - Rates Stable: Longer maturities will enhance yield
  - 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
  - Sell before maturity
    - Roll down the yield curve if curve is positively sloped
    - Sell security as it ages and rolls to a lower yield (higher price)
  - Evaluate Credit Quality
    - What has value today?
    - Determine if we are getting paid to take credit risk
    - At this point in the cycle, stay high quality
    - Diversify to minimize idiosyncratic risk
  - Optimize Duration/Curve positioning
    - Evaluate best duration fit for your objectives
    - Continuously evaluate yield curve for best return potential
Investing Long-term Reserves

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

1. Understand Goals
2. Model Cash Flows
3. Determine Portfolio Strategy
4. Select Benchmark
5. Active Management
Diversification Reduces Return Volatility

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<tbody>
<tr>
<td>Int'l Stocks</td>
<td>17.60%</td>
<td>S&amp;P 500 Stocks</td>
<td>32.39%</td>
<td>Taxable Municipal Bonds</td>
<td>16.29%</td>
<td>S&amp;P 500 Stocks</td>
<td>1.38%</td>
<td>High Yield Bonds BB</td>
</tr>
<tr>
<td>S&amp;P 500 Stocks</td>
<td>16.00%</td>
<td>Int'l Stocks</td>
<td>15.59%</td>
<td>S&amp;P 500 Stocks</td>
<td>13.69%</td>
<td>Taxable Municipal Bonds</td>
<td>0.93%</td>
<td>S&amp;P 500 Stocks</td>
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<tr>
<td>High Yield Bonds BB</td>
<td>14.36%</td>
<td>Portfolio Mix 13.53%</td>
<td>Portfolio Mix 9.51%</td>
<td>US Treasury Bonds</td>
<td>0.83%</td>
<td>Portfolio Mix 8.02%</td>
<td>Portfolio Mix 14.53%</td>
<td>Inv Grade Corp Bonds</td>
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<tr>
<td>Portfolio Mix 12.80%</td>
<td>High Yield Bonds BB</td>
<td>5.19%</td>
<td>Inv Grade Corp Bonds</td>
<td>7.51%</td>
<td>Portfolio Mix 0.09%</td>
<td>Inv Grade Corp Bonds</td>
<td>5.96%</td>
<td>Taxable Municipal Bonds</td>
</tr>
<tr>
<td>Taxable Municipal Bonds</td>
<td>11.08%</td>
<td>Inv Grade Corp Bonds</td>
<td>(1.46%)</td>
<td>US Treasury Bonds</td>
<td>6.02%</td>
<td>Inv Grade Corp Bonds</td>
<td>(0.63%)</td>
<td>Taxable Municipal Bonds</td>
</tr>
<tr>
<td>Inv Grade Corp Bonds</td>
<td>10.37%</td>
<td>US Treasury Bonds</td>
<td>(3.35%)</td>
<td>High Yield Bonds BB</td>
<td>5.34%</td>
<td>High Yield Bonds BB</td>
<td>(1.04%)</td>
<td>International Stocks</td>
</tr>
<tr>
<td>US Treasury Bonds</td>
<td>2.16%</td>
<td>Taxable Municipal Bonds</td>
<td>(5.42%)</td>
<td>International Stocks</td>
<td>(3.39%)</td>
<td>International Stocks</td>
<td>(4.29%)</td>
<td>US Treasury Bonds</td>
</tr>
</tbody>
</table>

Portfolio Mix is a hypothetical portfolio with the allocation in each period as described in the chart below. This historical market data is provided for illustrative purposes.

YTD 2019 is as of 4/30/19
Arbitrage - General

- Arbitrage is the amount of excess earnings generated by investing bond proceeds above the yield on a bond issue.

- Complying with the arbitrage regulations is a condition of maintaining the tax-exempt status of a bond issue.

- Arbitrage code and regulations were created to eliminate the incentive to issue bonds for the purpose of earning arbitrage (overburdening the tax-exempt market).
Arbitrage – Common Exceptions to Rebate

• Small issuer exception
  o Bonds issued by governmental issuers with general taxing powers
  o $5 million tax-exempt limit per calendar year

• 2-year exception:
  o At least 75% of proceeds for construction of a project to be owned by a governmental unit or 501(c)(3) organization
  o Spending period schedule for available construction proceeds:
    ▪ At least 10% is spent within 6 months
    ▪ At least 45% is spent within 12 months
    ▪ At least 75% is spent within 18 months
    ▪ 100% is spent within 24 months
Strategies for Investing Bond Proceeds

• Analysis
  o Construction draw schedule review
  o Create investment plan to meet liabilities and comply with arbitrage and IRS regulations

• Investment Products
  o Liquid – cash and money market accounts
  o Medium-Term / Long-Term
    ▪ WISC LTD – diversified fixed income portfolio (intended for 6-9 month cash reserves)
    ▪ U.S. Treasuries / U.S. Government Agencies (Fixed rate investment with liquidity)
    ▪ Certificates of Deposit
    ▪ Separately Managed Account

• Report and Re-evaluate
  o Monthly analysis of construction draws and investment portfolio to identify reinvestment opportunities or need for additional liquidity
  o Monthly review of arbitrage rebate calculation
• Develop and comply with an investment policy
• Coordinate debt management and investment of bond proceeds activities
• Understand the SEC Municipal Advisor rule as it relates to investments
• Mark securities to market if longer than one year
• Specify an investment officer to manage and monitor drawdown, investments, custody, tax law, reporting
• Review legal requirements established by trusts, resolutions, fiscal agents, rating agencies, fiscal agents, etc. for compliance
• Understand fees and fee sharing agreements when working with brokers to eliminate conflicts of interest
• Seek competitive bids and maintain records
• Undertake competitive requests for proposals when working with outside professionals
Key Takeaways

- Yield ≠ Return
- Understand what you *know* versus what you *think you know*
- Market immediately prices in expected changes for interest rates
- Consider underlying risks of your total investment program:
  - Asset/Liability Mismatch – What is duration of my liability?
  - Callable Investments – Do I understand the value of the call option?
  - Diversification – Do I understand sector and credit risk?
  - Liquidity – How do I think about liquidity within my investment program?
  - Best execution – How broad is my market coverage?
- Consider using an Investment Advisor as appropriate
Some Additional Takeaways…

- Review and update your Investment Policy
- Analyze cash flow needs to maximize investment horizon
  - Resist the temptation to have liquidity in excess of what you need
  - Do my investments match my liabilities?
- Evaluate investment options including local financial institutions
- Understand collateral agreements
- Communicate with your Board and/or Finance Committee
- A stable balanced approach to laddering your investments typically works in any environment
- Stratify operating reserves across liquidity targets to match your liabilities
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