Answers and Opportunities: Investing in Today’s Uncertain Environment

GFOAT Fall Conference, San Antonio
November 3, 2017
I. Interest Rates – Current Market and Outlook

• Historically, inflation and economic growth were the primary drivers of interest rates.

• Today, there are multiple factors influencing market interest rates ...many of these are unique.

...and the jury is still out on the ultimate direction
Key Factors Influencing Rates

The argument for *higher* future rates

- Fed policy (monetary policy)
- Fiscal policy
- Bond supply

The argument for *lower* future rates

- Weak economic growth and slowing inflationary pressure
- The growing national debt ...and containing debt service costs
- Extraordinarily low *global* yields (massive quantitative easing in Europe and Japan)
The Fed’s Monetary Policy

• The Fed directly controls only the overnight fed funds rate.

• In 2007, the overnight target was 5.25%; In 2000, it was 6.50%; In 1989, it was 9.75%; In 1981, it was 20%.

• In December 2007, the Fed effectively cut the funds target to zero, and held it in a range of 0.00% to 0.25% for seven long years. Since then, it’s been a challenge to “normalize.” …no one is really sure what normal looks like anymore.

• Four 25 bp increases have boosted the overnight target to a range of 1.00% to 1.25%.

• Historically, inflation and economic growth were the primary drivers of Fed rate policy. …excessive growth sparks inflation, so the Fed raises interest rates to slow growth and in doing so, slows inflation. …but GDP growth has been mediocre at best and (traditional) inflation has fallen below target.
The current “recovery,” at 100 months, is the third longest on record. (The average post-war recovery is 58 months.) But, this one has been unusually weak, averaging just +2.1% growth.

Because the recovery has been so weak, it hasn’t generated excess demand, and as a result, there is very little inflation.
The Fed’s *Conundrum*

• Neither low core inflation nor slow economic growth argue for rate hikes.

• But, the Fed would feel more comfortable with higher rates as a starting point *...in the event that they have to cut rates to combat a financial crisis.*

• By raising rates preemptively (or prematurely), some fear the Fed may help *create* this financial crisis.
The Fed’s Current *Monetary* Policy Plan

• Upward bias – targeting a 2.75% terminal funds rate by 2020.

• Reducing the Fed’s $4.5 trillion balance sheet

• But, *how high can rates rise without crippling the budget?*
The Federal Government’s Debt Service Cost

2000
National Debt: $5.7 Trillion
Interest Expense: $225 Billion

2017
National Debt: $20.2 Trillion
Interest Expense: $269 Billion
The National Debt and the Cost to Service

www.usdebtclock.org
Fiscal Policy

• The prevailing thought when Trump was elected was that *fiscal policy would replace monetary policy* as the primary driver of economic growth.
  o Tax reform
  o Infrastructure spending
  o Deregulation

• This hasn’t happened yet, but the markets and the Fed are acting as if it’s just a matter of time before it does. Confidence is soaring ...from consumers and small businesses, to home builders and purchasing managers.

• But, confidence hasn’t translated into action ...everyone seems to be waiting for the passage of major legislation.
Low Global Yields

• Massive quantitative easing programs and zero interest rate policies exist all around the world.

• By late September 2017, $8.5 T in government bonds around the globe were trading at negative yields

<table>
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<tr>
<th>Sovereign Debt</th>
<th>2-Year</th>
<th>5-Year</th>
<th>10-Year</th>
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<tbody>
<tr>
<td>USA</td>
<td>1.43%</td>
<td>1.86%</td>
<td>2.25%</td>
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<tr>
<td>Canada</td>
<td>1.57%</td>
<td>1.80%</td>
<td>2.10%</td>
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<tr>
<td>United Kingdom</td>
<td>0.44%</td>
<td>0.77%</td>
<td>1.37%</td>
</tr>
<tr>
<td>France</td>
<td>-0.49%</td>
<td>-0.16%</td>
<td>0.73%</td>
</tr>
<tr>
<td>Germany</td>
<td>-0.69%</td>
<td>-0.26%</td>
<td>0.45%</td>
</tr>
<tr>
<td>Italy</td>
<td>-0.23%</td>
<td>0.70%</td>
<td>2.09%</td>
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<tr>
<td>Switzerland</td>
<td>-0.92%</td>
<td>-0.55%</td>
<td>-0.10%</td>
</tr>
<tr>
<td>Japan</td>
<td>-0.13%</td>
<td>-0.11%</td>
<td>0.01%</td>
</tr>
</tbody>
</table>

• This exerts downward pressure on U.S. bond yields
Why are global yields so low?

• Foreign Central Banks have bought up virtually all of the existing and new supply of eligible bonds in order to:
  
  o stimulate economic growth
  
  o Increase price pressure (inflation)
  
  o Contain debt service costs
The U.S. Bond Supply

*Ultimately, it’s the supply/demand relationship that drives yields*

- The agency market is shrinking
  - Fannie, Freddie, FHLB and FFCB debt outstanding was $3 T in 2008, now down to $1.5 T
- Treasury issuance has slowed as the federal deficit declined *likely to change*
- Recent money market fund reform has resulted in increased demand for short government securities (and reduced available supply)
- Continued healthy *global demand* for U.S. bonds
- Will there be a future flight-to-quality?
Where do we go from here?

Bloomberg Economist Survey Forecasts

<table>
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<tr>
<th>Survey date 9/8/17</th>
<th>Q3 17</th>
<th>Q4 17</th>
<th>Q1 18</th>
<th>Q2 18</th>
<th>Q3 18</th>
<th>Q4 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Fed Funds (Upper)</td>
<td>1.25%</td>
<td>1.25%</td>
<td>1.50%</td>
<td>1.50%</td>
<td>1.75%</td>
<td>2.00%</td>
</tr>
<tr>
<td>Median Fed Funds (Lower)</td>
<td>1.00%</td>
<td>1.00%</td>
<td>1.25%</td>
<td>1.375%</td>
<td>1.50%</td>
<td>1.75%</td>
</tr>
</tbody>
</table>

| Avg. 2-Yr T-note yield | 1.31% | 1.41% | 1.60% | 1.77% | 1.95% | 2.11% |
| Avg. 10-Yr T-note yield | 2.21% | 2.28% | 2.47% | 2.60% | 2.72% | 2.82% |

Take these projections with a grain of salt. They were calculated with then prevailing data ...which changes every minute.
• The current recovery is the third longest on record; a recession is out there somewhere, and a mistake in Fed policy could usher it in.

• The near-term direction for short interest rates is upward, but the ceiling is likely to be much lower than history would indicate.

• The Fed would like to raise rates now, so they have capacity to lower them later.

• Federal debt service costs are a very real problem that no one’s talking about.

• Significant change in fiscal policy isn’t a given.

• Global bond yields are likely to continue to be very low for a long time.

• Bond supply in the market is on the verge of a major increase.
II. PFIA Permitted Investments

- Treasuries: *When does it make sense to buy?*
- The agencies: *Is there a need to worry?*
- Commercial paper: *Know your issuers!*
- Municipal debt: *Hidden value*
- CDARS and other shared CD programs ...Plus insured savings accounts
- Pools – CP vs government
- Money market funds – “Prime funds” vs governments funds
- Repurchase Agreements “Repos”
- New PFIA choices
- Remnants: Sec Lending, BA’s, bond mutual funds
Getting Started – Basic Thoughts

• The financial markets are unpredictable. The best way to protect financial assets against the unknown is to diversify. The only way to avoid market risk is to hold fully liquid investments, but keeping all your money in pools can incur significant opportunity costs.

• Look for the low-lying fruit first.
  • Are you maximizing your cash?
  • What will your depository bank pay on liquid deposit accounts? CDs?
  • Is the earnings credit rate (ECR) fair?

• Discuss proposed strategy with your governing body.

• Make sure you have a written policy and trade procedures in place.

• Make gradual moves. Don’t reach too far. Yield is still secondary.

• Remember - You’re not spending your money; you’re investing it.
U.S. Treasuries

- Bills, notes, bonds and strips
- *Full-Faith-and-Credit* guarantee
- High liquidity
- Typically lower yields in comparison to other investment options
- S&P downgraded U.S. Treasury long-term debt in August 2010 to AA+; Moody’s and Fitch still maintain Aaa / AAA.
- The “Safe Harbor” of the U.S. Treasury market
- The upcoming supply increase
Federal “Agencies” …*actually instrumentalities*

• General term used to describe the four most common Government-Sponsored Enterprises (GSEs) – Freddie Mac, Fannie Mae, FHLB, and FFCB.

• GSE credit is *not explicitly* backed by the U.S. government

• Note that **Freddie** and **Fannie** have been in government conservatorship since September 2008. *The U.S. government effectively owns and manages both companies.*

• **The GSE credit ratings mirror the U.S. Treasury** – AA+ / Aaa / AAA.

• Agency bonds include:
  • Discount notes or “discos”
  • Non-callable or “bullet” bonds
  • Callables
  • Step-ups
  • Mortgage-backed securities (frequently used as collateral)
“Fannie” and “Freddie”

• From the perspective of the bond investor, Fannie and Freddie are now safe investments. Not only are they both profitable companies, but the quality of their retained portfolios has significantly improved along with the overall quality of loans in the market.

• The two mortgage giants have now returned a combined $218.7 billion in return for $187.5 billion in assistance received while under conservatorship.

• All profits generated are transferred to the U.S. Treasury.

• Discussions continue on how the two government-owned and operated companies can be transitioned to the private sector.

• If and when this happens, Fannie and Freddie will eventually stop issuing agency bonds.

• Another consideration is that both essentially have no retained capital. Any future losses will require government support. This might be a headline risk in the event of a severe recession.
Agency Callable Notes

• Bonds with embedded call options giving the issuer the *right* to call bonds away prior to maturity.

• Callables should always have higher yields than non-callable bonds

• Unique call structures determine value from one callable bond to the next

• *Don’t purchase callables with the expectation that they will be called away.* Plan to hold until maturity.

• In theory, callable bonds are most effective when rates are stable or increasing.

• The “roll-down” effect
Agency **Step-up Notes**

- Callable investments with coupon rates that increase based on a predetermined schedule as the bond moves closer to maturity.
- Step-ups generally have higher yields than bullets to comparable maturity points, but typically lower than callables.
- Provide some protection against rising rates
- Like straight callables, structure is key
Step-Up Examples

• 3-year FHLMC Step, 1.50% initial coupon for year 1, steps to 1.75% for year 2, and 2.00% for year 3. Callable in Nov 2018, and quarterly thereafter. Blended - 1.75% YTM

• 3½-year FHLB Step, 1.60% initial coupon for years 1-2, then steps every six months – 2.0%, 2.125%, and 2.25%. Callable starting in March 2018 and quarterly thereafter. Blended - 1.83% YTM

• 5-year FNMA Step, 1.75% initial coupon for years 1-3, then steps every six months – 2.0%, 3.0%, 4.0%, and 5.0%, Callable starting in May 2018 and quarterly thereafter. Blended – 2.45% YTM
Some Less Common Agencies

- Ginnie Mae (Mortgage-backed Securities only)
  - Full-faith-and-credit
- Federal Housing Authority (FHA)
  - Full-faith-and-credit
- Small Business Administration (SBA)
  - Full-faith-and-credit
- Housing and Urban Development (HUD)
  - Full-faith-and-credit
- Farmer Mac (Unrated GSE – by choice)
- Tennessee Valley Authority (TVA) – Backed by project revenues
- Export / Import Bank
- Sallie Mae (Gave up its GSE status and privatized in 1997)
Commercial Paper

• Unsecured promissory note, with maturities ranging from 1-270 days, issued by corporations, financial institutions or local governments as a source of working capital, or to provide for other short-term financing needs.

• CP is generally exempt from SEC registration due to its short maturity.

• Direct or indirect investment (through pools and money market funds)
  o Direct investment requires due diligence / risk is still present in indirect investment

• The supply of available high quality issues has dropped in recent years.

• Not particularly liquid – buy and hold

• Program types - 3(a)3; 3(a)2; 3(a)7 vs. Private Placement 4(2) 144A
Discussion of Private Placement 4(a)(2) / Rule 144A

• Most CP is issued under one of two exemptions from the registration requirements of the Securities Act of 1933:

  ▪ **Section 3(a)3** – Provides an exemption for securities where “…the proceeds of which have been or are to be used for current transactions, and which has a maturity at the time of issuance of not exceeding nine months…”
  
  ▪ **Section 4(2)** – Provides an exemption if securities are not a public offering (i.e. they are a private placement). These sales are governed by Regulation D, which would allow an exemption based on the nature of purchasers that have “…such knowledge and experience in financial and business matters that he is capable of evaluating the merits and risks…”

Any resale or secondary transaction of securities issued under a 4(2) exemption are governed by Rule 144A

  ▪ Rule 144A restricts the resale of 4(2) paper to Qualified Institutional Buyers (QIBs)
  
  ▪ Rule 144A provides specific guidance for who meets the definition of a QIB, and local governments are NOT included. Thus, **local governments cannot be considered QIBs and cannot purchase securities which are subject to Rule 144A**
Commercial Paper in Investment Portfolios

• Verify whether CP is permitted in your investment policy, and determine whether you have the time/ability/expertise to properly evaluate and monitor issuers.

• Limit all purchases to “Prime” credit ratings (A-1, P-1, F-1 or better)

• Determine if the incremental earnings justify the additional risk

• Establish a short, pre-approved list of CP programs

• Establish percentage limits/diversify by industry sector, commercial paper type, maturity and issuer

• Develop purchase procedures

• Maintain information on file for all issuers in the portfolio

• Monitor ratings and outlook on a frequent basis

• Conduct ongoing financial reviews
Municipal Debt

- Direct obligations of the state or local governments or state agencies
  - Commercial paper and short bonds (most muni bond maturities are long)
- Historical default rate on muni debt is very low, but this is a new environment ...so be careful. Due diligence is required. Be familiar with your issuers.
- GO debt is usually a safer bet than revenue debt
- PFIA allows A or better ...but AA or better is preferred
- Muni CP should follow the CP ratings guidelines - A1/P1 or better
- EMMA to monitor
Resource
Certificates of Deposit (CDs)

• Deposits must be secured one way or another
  o FDIC insurance
  o FHLB LOCs
  o Surety Bonds
    o Permitted security collateral

• Liquidity issues

• Brokered CDs

• What is the CDARS program?
CDARS ...and other shared CD programs
Plus, insured savings accounts

- The Certificate of Deposit Account Registry Service (CDARS) is an investment option that takes in your deposit and breaks it up into multiple FDIC-insured bank CDs across the nation in increments of less than $250k.

- There are other shared CD programs using the same concept

- The shared CD idea has evolved to include more liquidity. The insured saving account is essentially the same thing – deposits are divided amongst banks within a network, but funds can be withdrawn weekly or in some cases daily without penalty.
Investment Pools

- Government pools vs Commercial Paper pools
  - Classic risk/reward decision
- Understand what’s in the underlying portfolios
- Using multiple pools isn’t a good example of diversification; pools are mostly homogeneous
Money Market Funds

• Money market funds are investment pools with higher fee structures.

• “Prime” money market funds include commercial paper and other riskier and less liquid security types. As a result, the SEC now requires floating net asset value reporting, and has instituted liquidity fees and redemption gates.

• Government money market funds retained constant dollar reporting and are not subject to the additional fees and restrictions.

• There has been a massive exodus from Prime into Government funds after SEC changes
Similarities and Differences:
Investment Pool and Money Market Funds

• Investment pool and money market fund portfolio compositions are frequently identical.

• The primary difference is the fee structure - pools charge much lower fees

• Investment pools were unaffected by SEC reform
Repurchase Agreements ("Repos")

• What is a repo?
• Almost all local governments invest *indirectly* in repos through pools
• Secured by Treasury/Agency obligations.
• The Flex Repo option for bond proceeds
• POV: Repo vs. Reverse Repo
New PFIA Choices

• Insured deposit accounts - PFIA simply clarifies that FDIC-insured savings accounts are legal. Local governments have invested in them for years.

• Ultra-short bond funds - Jury is still out; now that they’re permitted by law, we’ll need to evaluate the product itself. Not clear how significant the yield advantage will be.

• Commodities hedging – PFIA clarifies that commodities hedging is permitted; what isn’t clear is whether this is something that belongs in your policy.
PFIA Remnants

• Banker’s Acceptances (BAs) - *Thin market with little or no yield advantage*

• Securities Lending - *Only open to the largest of public entities*

• Bond mutual funds - *Better to buy the underlying securities directly*
Investment Costs and Trade-offs

• Treasuries offer “full faith and credit” *but* at the cost of spread loss to Government Agencies, municipal and corporate securities, etc.

• Commercial paper relative value waxes and wanes. If CP is authorized, it still may not make sense to buy if the spread isn’t attractive.

• Pools reflect a current market while the yield curve reflects expectations. Pools tend to outperform as rates rise, underperform as rates fall.
• To improve investment returns, start with the easy stuff – maximize earnings on cash

• You’re not *spending* your money; you’re investing it

• Buy Treasury issues if agencies with comparable maturities don’t offer a clear yield advantage

• Money market funds are just investment pools with higher fee structures

• Understand what’s in your chosen investment pool’s underlying portfolio

• Diversify!
III. The Risks

• Market Risk
• Credit Risk
• Liquidity Risk
• Event Risk
• Opportunity (cost)
Market Risk

Risk that your investments will lose value as a result of a decline in the overall market

*Remember: As market yields rise, portfolio values will fall.*

- Risk controlled by:
  - ✔ Shorter maturities
  - ✔ Floating or variable rate securities
  - ✔ Diversification/ laddering

- Not a problem if ...you plan to hold to maturity

- GASB 31 implications

- Securities affected: All ...but, the shorter the better.
1994: The Worst Year in Bond Market History

| 3-year T-note yield Jan 12, 1994 – 4.33% | 3-year T-note yield Dec 22, 1994 – 7.82% |

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<tbody>
<tr>
<td>01/03/1994</td>
<td>12/31/1994</td>
<td>4.33%</td>
<td>7.82%</td>
<td>8 point</td>
<td>$800,000 on a $10mm investment</td>
<td>Equates to an 8 point loss, or $800,000 on a $10mm investment</td>
<td></td>
</tr>
</tbody>
</table>

Equates to an 8 point loss, or $800,000 on a $10mm investment.
Credit Risk

• Risk of default or drop in security value due to conditions beyond investors control
  o Bankruptcy
  o Rating agency downgrades
  o Regulatory changes
Credit Risk: Exposure to Non-Treasury Issuers

• Investors receive higher yields when they purchase securities from lower rated issuers
  • Agencies vs. Treasuries
  • Corporates vs. Agencies
  • “A” vs. “AAA”

• Credit ratings change over time

• Yield spreads among different quality sectors vary over time
Suggested Procedures for Managing Credit Risk

- Establish a pre-approved issuer list – *know the issuer*
- Restrict investments to the familiar, domestic names
- Set concentration limits (issuer/sector/region/maturity)
- Understand the issuer’s intended use of funds
- Monitor ongoing financial condition of issuer
Liquidity Risk

Risk that your security cannot be quickly sold at or near fair market price

• Risk controlled by:
  ✓ Purchasing large, familiar issues with active markets

• Not a problem ...if you provide for liquidity through pools and money market funds or hold to maturity.

• Securities most affected: Callables, CP, CDs
Event Risk

Risk that an unanticipated event will negatively impact the price of a security held

• Risk controlled by:
  ✓ Diversification
  ✓ High Quality Investing
  ✓ Research

• Applies primarily to municipals, corporates, CP and some derivatives
Possible Market Reactions to Events

• **Flight to Quality** – The U.S. bond market is considered the safest and most liquid in the world. Thus, nervous investors might sell stocks and riskier investments during periods of panic or uncertainty and buy Government securities, driving Government bond prices higher and yields lower.

• **Extreme Volatility** - When investors are uncertain about how something will turn out bond prices and corresponding yields rise and fall more frequently and more dramatically.

• **Market Sell-off** - Some events or unexpectedly positive economic news may cause a market sell-off, driving bond prices lower yields higher.
Opportunity Risk (Cost)

Risk that you will not earn a competitive rate of interest as a result of not actively investing funds

• Risk controlled by:
  ✓ Diversification

• Not a problem ...if rates are rising or the curve is flat.

• Sometimes being too conservative is a sure-fire way to lose money!
Making Investment Decisions and Managing Risk

- Update investment policy
- Consider cash flow needs
- Determine risk tolerance
- Set target average maturity
- Analyze economic data
- Consider investment choices in historical perspective

- Understand credit risk
- Assess the relative value of each maturity and sector
- Shop among multiple brokers and dealers
- Determine benefit of selling before maturity vs. holding to maturity
• As market yields rise, prices on existing portfolio securities will fall

• The unrealized losses will generally increase in proportion to the maturity date

• Yields are always higher for riskier investments ...there are very few exceptions in the fixed income arena.

• Know your issuer!

• Sometimes being too conservative is a sure fire way to lose money.

• Internet resources – FINRA, EMMA and Bankrate.com
Questions?
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