MFABC

Municipal Finance Authority of BC

MEMORANDUM

DATE: July 12, 2018

TO: Municipal Finance Authority Members & Clients

RE: Investing in the MFA Intermediate & Bond Funds in a Rising Interest Rate Environment

Recently, some MFA Pooled Fund investors have expressed concerns about holding the MFA Intermediate and MFA Bond pooled funds in a rising interest rate environment. This memo responds to these concerns, including those raised by some BC-based investment advisors who have not been providing local government investors with a balanced point of view.

We have listed below several concerns raised and prudent investing guidelines that should be considered by investors before making rash decisions based on short-term results:

1. "..investing in the MFA Bond Fund is risky in a low and rising interest rate environment… when interest rates rise, bond prices fall…"

It is true that when general interest rates rise, bond prices will fall, all else being equal. However, more often than not, a flight to cash and short-term term deposits by fixed income investors results in underperformance compared to holding longer-term, fixed income investments throughout the cycle.

While one may experience short-term unrealized capital losses by holding bonds, rising interest rates are beneficial to bond investors in the long run because the income they generate in the form of coupon payments reinvested at new, higher, interest rates serve to offset short-term unrealized capital losses.

An illustration provided by Phillips, Hager & North (PH&N), the investment manager for the 3 MFA Pooled Funds, illustrates this principle below. In the two scenarios presented, the yield at the time of initial investment is 2.0%. Immediately following the initial investment, the effects of a rise in general interest rates is presented, demonstrating the impact on the investment's total annualized return over a multi-year time horizon.

Effects of Rate Changes on Bond Returns
Your Time Horizon Should Meet or Exceed Fund's Duration

MFA Bond Fund: yield 2.0%, duration 2.4 years

Annualized Return (Total Period)

As of May 31, 2018	1Yr	2 Yr	3 Yr	4 Yr	5 Yr	6 Yr	7 Yr	8 Yr	9 Yr	10 Yr
0.5% increase over first year	1.1%	1.8%	**2.0%**	2.2%	2.2%	2.3%	2.3%	2.4%	2.4%	2.4%
1% increase over first year	0.1%	1.6%	**2.0%**	2.3%	2.4%	2.5%	2.6%	2.7%	2.7%	2.7%
2% increase over first year	-1.9%	1.1%	**2.0%**	2.5%	2.8%	3.0%	3.2%	3.3%	3.4%	3.4%

Important steps for investors:

1. Choose bond fund for which your time horizon equals or exceeds fund's duration.
2. After step #1 completed, pray for interest rates to go up!
3. Don't panic and sell when they do.

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Following an interest rate hike, the income is reinvested at a higher yield, making up for the initial price loss and eventually offsetting it. By year three in these illustrations, the portfolio's return has not only caught up to the initial portfolio's return but exceeds its growth in market value and grows faster into the future. This underscores the benefits of long-term investment planning and the importance of not making rash decisions and changing strategy when the short-term returns of a given longer-term investment come under pressure. A second example below shows that the higher and faster interest rates move up, the higher the future growth.

Does it Matter How Quickly Rates Change?

Rapidly Rising Interest Rates are GOOD for Long Term Investors

MFA Bond Fund: yield 2%, duration 2.4 years

Annualized Return (Total Period)

As of May 31, 2018	1 Yr	2 Yr	3 Yr	4 Yr	5 Yr	6 Yr	7 Yr	8 Yr	9 Yr	10 Yr
3% in Year 1	-3.8%	0.5%	**2.0%**	2.8%	3.2%	3.5%	3.7%	3.9%	4.0%	4.1%
0.5% in each of Years 1-6	1.1%	1.3%	1.6%	1.8%	**2.1%**	2.3%	2.7%	3.0%	3.2%	3.4%

(Amended) Important steps for investors:

1. Choose bond fund for which your time horizon equals or exceeds fund's duration.
2. After step #1 completed, pray for interest rates to go up, **AND GO UP FAST**!!
3. Don't panic and sell when they do.

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Not only are investors who sell immediately after an interest rate hike forgoing the future outperformance, but they also are crystalizing what was merely a loss on paper.

The performance comments above are particularly true for the MFA Intermediate and MFA Bond funds, as these maintain duration profiles that are quite short. For example, the MFA Intermediate and MFA Bond fund have average terms of 1 year and 2.6 years, respectively. These two MFA pooled funds were designed to provide the opportunity to recoup small unrealized capital losses due to the rise of general interest rates. This goal aligns with the return objective of most local governments that need options to invest their permanent reserves over longer-term horizons while remaining within the regulatory constraints under which they operate.

2. "…the Bond Fund 3-year annualized performance is below the MFA Intermediate Fund and the MFA Money Market Fund…"

If your investment time horizon is longer than the duration of the MFA Bond fund, rising rates should ultimately benefit you no matter how large the rate increase. Because the MFA Bond

Fund has a longer-term duration than the MFA Intermediate and MFA Money Market Funds, higher price volatility is expected. This can lead to short-term situations where the total return of the MFA Bond Fund is below the two other funds. However, this situation is expected and most often temporary. As shown in the second illustration above, longer-term time horizons enjoy a greater probability that longer-duration fixed income will achieve higher returns. These higher returns reflect the reward that is commensurate with accepting greater interest rate risk in a fair and efficient capital market.

3. "…investors are better off utilizing fixed term GICs, which show a higher current yield than the MFA Bond Fund…"

The primary issue with fixed term GICs is one of credit risk of the issuer. In finance, there is no such thing as a 'free lunch'. Higher yields are most often indicative of higher investment risk. This higher risk may or may not be rewarded depending on the credit strength of the issuer and on future unknown and unknowable events.

Typically, higher GIC yields are offered by financial institutions who have a higher credit risk profile. These could be smaller financial institutions with concentrated business lines, weaker balance sheets, and low or limited ability to raise money efficiently and at low cost in the capital markets. It is important to keep credit quality in mind when comparing single issuer-backed GIC rates compared to a diversified pool of marketable fixed income investments. The latter offers investors significant diversification and credit-risk protection while the former does not.

While some unscrupulous investment advisors will talk about a "diversified" portfolio of GICs, keep in mind that the health of smaller Canadian financial institutions is very sensitive to interest rate levels and Canadian housing prices and so will often experience credit deterioration in unison. Granted, one can diversify geographically across Canada, but this diversification is far inferior to buying a large diversified portfolio of corporate and government investment-grade issuers who operate varied businesses, in many cases on a global scale. It is also worth remembering that a local government's revenue streams are very much tied to the local economy and housing market, factors that are among the biggest determinants of a local credit union's ability to repay its own debts.

More alarmingly, BC credit unions are often misjudged as having "no credit risk" due to the perceived notion that the province of BC "guarantees" BC Credit Union deposits in full. In fact, the relationship is more complex than is commonly understood. The *Financial Institutions Act*

(British Columbia) provides in section 271(5) that if the deposit insurance fund established and administered by the Credit Union Deposit Insurance Corporation of British Columbia (CUDIC) is impaired, the Lieutenant Governor in Council (commonly referred to as the Cabinet) **may direct** the BC Minister of Finance to repair the fund. In other words, there is clearly no explicit guarantee by the Province of BC to meet the obligations of CUDIC.

Worse still, in the post financial crisis era, Governments around the world are less likely to bail-out financial institutions in the future as evidenced by increased regulatory scrutiny and the newly introduced "bail-in" regime for banks. It should also be noted that like any insurance entity, CUDIC does not hold reserves, dollar for dollar, to cover 100% of the risks for which it provides insurance. The reality is that if an economic crisis materializes, the financial demands on CUDIC could easily outstrip its ability to protect BC credit union deposits. In fact, there have been many instances around the world where deposit insurance has been insufficient to meet liquidity needs of depository institutions during a crisis. While central governments have at times bailed out deposit insurance programs to help retail depositors, it is common for institutional depositors to have experienced significant losses and receive no government relief. This makes sense as institutional depositors are deemed to not require additional extraordinary protection from a government, given their higher level of sophistication relative to a retail depositor.

Summary

The MFA Intermediate and Bond pooled funds are well designed for the needs of BC local government investors. They are intended for those investors with longer time horizons. They allow easy access to a low-cost, diversified, and professionally managed portfolio of corporate and government bonds. Maximizing returns for the longer term while using these funds, however, requires sticking to a plan, remembering the objectives and time horizons of one's portfolio, and to not get unduly influenced by short term results by selling and crystalizing short term losses.

GIC investments will always play an important role in any local government's portfolio. They are good yield enhancing tools relative to other investment options, but need to be assessed critically considering the material credit risks inherent to the sector. One goal of local government investors is to maximize risk-adjusted returns (not just returns!) and having a well-constructed, diversified portfolio (by geography and sector) that includes deposits, GICs, governments and corporate bonds is a great way to achieve that goal.

To address the needs of MFA clients with very short time horizons, in addition to the MFA Money Market fund, we have also recently negotiated very attractive terms for our customers for new Pooled High Interest Savings Accounts (PHISAs) with two major Canadian banks. These PHISAs are intended to provide higher-yielding options to BC local governments while investing in larger, diversified global financial institutions, thus addressing the diversification and credit risk management issues of concentrating too much of one's portfolio in riskier credit union GICs.

Should you have questions regarding this information, or about your own investment portfolio, please contact the MFA at mfa@mfa.bc.ca or 250-383-1181 and we will put you in touch with the professional Investment Portfolio Managers at PH&N.

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For almost 50 years, the MFA's mandate has been to provide financial solutions to BC's Local Governments. Our team of dedicated local government finance specialists provide programs and services specifically designed to meet the legislative and operational requirements of our clients. Our non-profit organization is unique in Canada, and prides itself on our professionalism, contributions to education and leadership, and cost-savings for all BC communities and their tax payers.