FIERA CAPITAL

Understanding IFRS 17:
Solving for New Challenges

> For the last 10 years Fiera Capital has partnered with the Canadian Institute of Actuaries (CIA) to produce a monthly CIA Method Accounting Discount Rate Curve, enabling pension plan sponsors to select the appropriate accounting discount rate to value pension and other post-employment benefit plan liabilities. With the IFRS 17 Discount Curves, we will strengthen our relationship with the CIA and continue to simplify the work of our clients and the broader actuarial community, making it easier for CIA members and insurance practitioners to meet IFRS 17 requirements. We believe this expanded agreement exemplifies the best of Fiera Capital – our global capabilities, cutting-edge solutions and insights. We look forward to leveraging our experience in insurance asset management services to provide the industry with critical information and meet their larger business objectives.

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Global President and Chief Operating
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Fiera Capital's Long History of Providing Solutions to Liability-Aware Clients

Fiera Capital has a long history of managing portfolios for insurers. Our actuarial and investment expertise for insurance entities goes back more than 30 years and today Fiera is responsible for managing more than $24 billion in assets[1] for insurance clients. The long-standing and recently enhanced partnership with the CIA confirms Fiera Capital's solid leadership position within the Canadian actuarial industry. Fiera's clients benefit from the deeply rooted actuarial expertise within the firm in the management of their fixed income, liability-driven and multi-asset portfolios.

Fiera Capital's combined deep understanding of insurance standards and investment expertise lends support to insurance practitioners for the upcoming standardization of liability assessment for insurance contracts under IFRS 17. Building on the existing 10-year partnership between Fiera Capital and the CIA, Fiera Capital now has an expanded mandate to provide discount rate curves under IFRS 17 accounting to CIA members. Fiera Capital's CIA IFRS 17 Market Curves and Reference Curves will enable actuaries in life, health, and property and casualty insurance to use fair value and market-consistent approaches to the liability valuations of insurance contracts. We believe our approach to providing insurance solutions and enduring collaboration with the CIA will greatly assist insurance practitioners as they transition to valuing insurance contract liabilities under IFRS 17.

Introduction of IFRS 17

IFRS 17 is the new accounting standard for insurance contracts that will replace IFRS 4 for fiscal years starting on or after January 1, 2023. Under IFRS 4 insurance contract liabilities could be valued using a wide variety of approaches across the globe. The introduction of IFRS 17 establishes principles for the recognition, measurement, presentation, and disclosure of insurance contracts with an objective to standardize the methodology for liability calculations globally. This change aims to improve the comparability and increase the transparency of insurance contract liabilities across insurance entities worldwide. IFRS 17 applies to insurance contracts issued, to all reinsurance contracts (held and assumed) and to investment contracts with discretionary participating features if an entity also issues insurance contracts.

The current framework, Canadian Asset Liability Method (CALM) applied under IFRS 4, considers both assets and liability cashflows in the calculation of the liability. Under the new IFRS 17 principles, there is a fundamental shift whereby only cashflows of the insurance contract will be considered in establishing the discount rate curve. The discount rate assumption, which is a key factor to derive the present value of expected future liability cashflows of insurance contracts, has a significant impact on an entity's financial results. IFRS 17 principles will transition the valuation process from theoretical to practical by requiring discount rates to be reflective of actual market conditions. Under CALM, multiple interest rate scenarios were considered, with less reliance on marked-to-market valuations relative to IFRS 17 standard. In other words, there is a delinking between the assets and liabilities under the new standard.

Under IFRS 17, the discount rates applied to the estimates of future cash flows shall:

i. Reflect the time value of money, the characteristics of the cash flows and the liquidity characteristics of the insurance contracts; ii. Be consistent with observable current market prices (if any) for financial instruments with cash flows whose characteristics are consistent with those of the insurance contracts, in terms of, for example, timing, currency and liquidity; and iii. Exclude the effect of factors that influence such observable market prices but do not affect the future cash flows of the insurance contracts.

In Canada, consensus is that observable and reliable market prices are available for fixed-income securities with maturities up to 30 years, referred to as the **observable period**. The discount rate assumption for cashflows greater than 30 years, referred to as the **unobservable period**, require estimations by the entity. An unobservable ultimate rate is defined and applied at the right end of the curve, referred to as the **ultimate period**.

IFRS 17 does not prescribe a specific estimation technique for determining the long-term unobservable rates, but highlights key principles to be followed:

❯ Maximize the use of observable inputs, reflect current market conditions and develop unobservable inputs using the best information available in the circumstances;

❯ Develop unobservable inputs using the best information available in the circumstances and the entity may lace greater weight on long-term estimates than on short-term fluctuations.

This may prove to be a challenging exercise, particularly for insurance entities lacking the necessary resources, investment expertise and market access to establish reliable inputs into the liability assessment process.

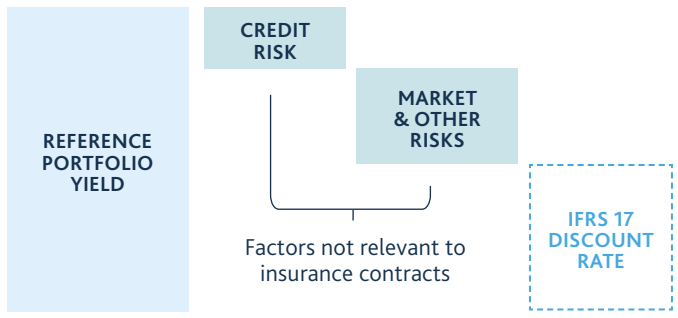### Discount Rate Curve Example (Yield %)
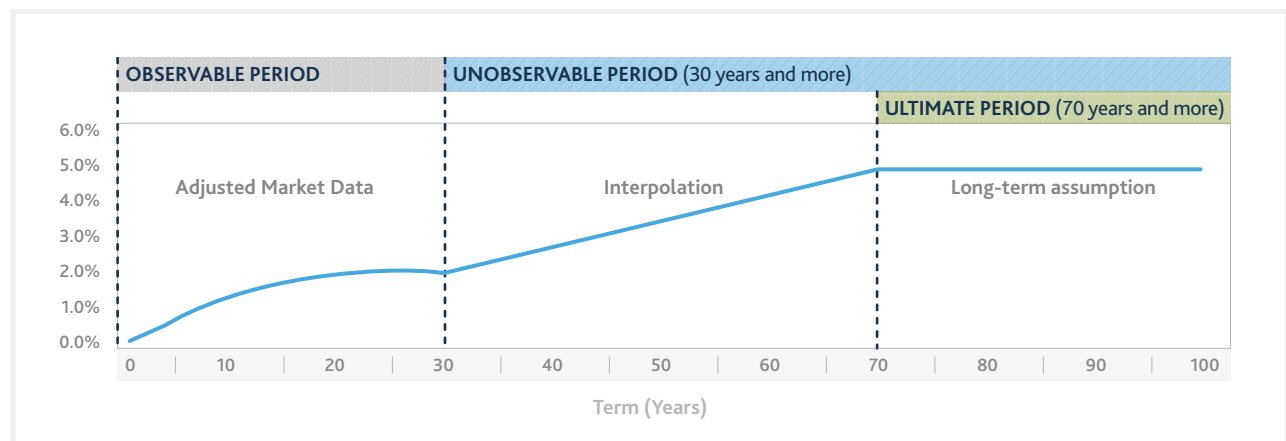
Source: Fiera Capital Corporation

To compare and contrast the establishment of the discount curve components in the observable period versus the unobservable period, below we provide a few appropriate methods to derive the risk-free rate.

OBSERVABLE PERIOD	ULTIMATE PERIOD
Government of Canada yield curve	Rolling average of historical long-term nominal Government bonds
	Rolling average of GDP Growth **+** Bank of Canada CPI target (2%)
	Rolling average of real return bonds **+** Bank of Canada CPI target (2%)
	EMA^2 short-term real rate **+** EMA^2 term premium **+** Bank of Canada CPI target (2%)

2 Exponential moving average

IFRS 17 allows entities to use either a bottom-up or top-down approach to determine the discount rates (DR):

A BOTTOM-UP APPROACH	A TOP-DOWN APPROACH
A liquidity premium reflecting the characteristics of the insurance contracts is added to a risk-free yield.	A reference portfolio yield curve is adjusted to eliminate any factors that are not relevant to insurance contracts. (credit risk, market risk, etc.)
DR = Risk-free **+** Liquidity Premium	**DR =** Reference Portfolio Yield **-** Credit Risk **-** Market Risk

There is potential complexity in both approaches, as either an explicit liquidity premium or a credit and market risk premium must be derived. These premiums are not explicitly provided by the market and require estimation with various assumptions.

For example, to isolate the credit risk, it might be required to determine the probability of default of the issuers and apply this probability over the maturity of their bonds along with the expected loss given a default.

CIA IFRS 17 Reference Curves

While IFRS 17 provides a set of principles, the CIA provides practical guidance on Canadian-specific issues relating to discounting estimates of future cashflows under IFRS 17 for insurance companies. Insurance entities must define their own discount curve and use the curves published by Fiera in collaboration with the CIA as a reference point.

Actuaries are required to compare the present value of the estimates of future cashflows obtained using the company's own curve and the present value obtained when using the reference curve parameters for the unobservable period, as well as the company's own curve parameters in the observable period. Therefore, the CIA reference curve will act as a floor for the liability cashflows above 30 years.

The CIA methodology uses a hybrid approach to construct the reference curve with some components derived using a bottom-up approach and others a top-down approach. Since the discount rate curve must also reflect the liquidity profile of the insurance contracts, the CIA has defined an appropriate yield curve for liquid products and for illiquid products.

Below is a summary of the parameters selected by the CIA as at July 30, 2021:

	LIQUID CURVE	ILLIQUID CURVE
A Top-Down Approach		
Risk-free rate	GoC market curve	GoC market curve
Liquidity spread	90% of provincial spread	70% of corporate spread
Additional liquidity premium constant	0.0%	0.5%

	LIQUID CURVE	ILLIQUID CURVE
Unobservable Period		
Long-term risk-free rate (Ultimate period)	Exponential moving average (EMA) with N=25 years (3.65%)	Exponential moving average (EMA) with N=25 years (3.65%)
Ultimate rate timing	70 years and more	70 years and more
Ultimate liquidity premium	0.7%	1.5%
Interpolation methodology	Linear	Linear

All the details can also be found in the
CIA draft educational notes >
and its update >

Impact of IFRS 17 for Insurance Companies

Investment Strategy and Asset Allocation

With any change in framework linked to the assets, a review of the asset allocation and the investment strategy is crucial. Insurers should review their investment policy to ensure they maximize return and capital ratio, while minimizing the volatility between assets and liabilities. In order to mitigate risks and achieve their financial results objectives, insurers must closely manage the volatility between the discount curve and the return of assets with an awareness that IFRS 17 liability calculations are intentionally sensitive to market conditions. An appropriate selection of discount rate curves and asset mix allows for a reduction of financial results volatility.

Many factors will affect the analysis such as:

> the liability profile (estimated future cash flow timing);

> the discount curve assumptions and its level of stability (especially for the unobservable period);

> the asset allocation;

> the inclusion of non-fixed income assets; and

> the use of derivatives.

Discount Curve vs Real Portfolio

While there is an official delinking between the assets and liabilities under the new standard, insurers objective to limit financial results volatility should lead to the selected discount curves being fairly reflective of insurers real portfolios. A high degree of matching between assets and liabilities can only be achieved if both sides of the balance sheet are sensitive to similar market changes. As an example, an insurer investing a significant amount in corporate bonds should ensure its discount rate curve is similarly comprised of a high allocation to corporate bonds while still reflecting the liquidity characteristics of the insurance contracts. Although Canadian provincial and corporate spreads tend to exhibit a high degree of correlation, the magnitude of spread changes tends to be larger in corporate bonds versus provincial bonds. This tends to be exacerbated in times of market stress, where spreads can move in different directions.

Corporate vs Provincial Spreads
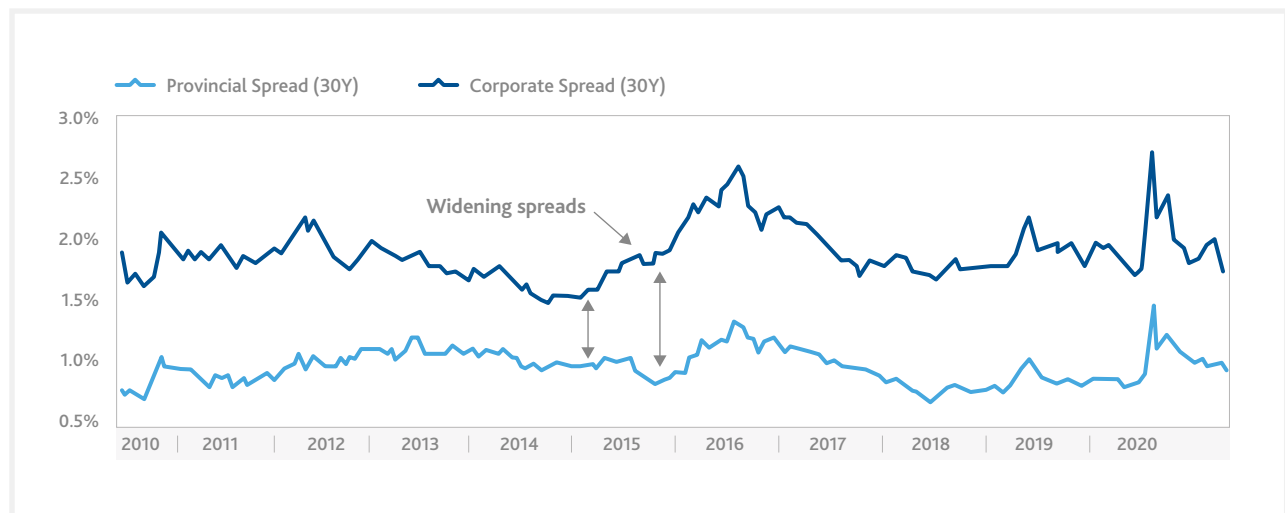
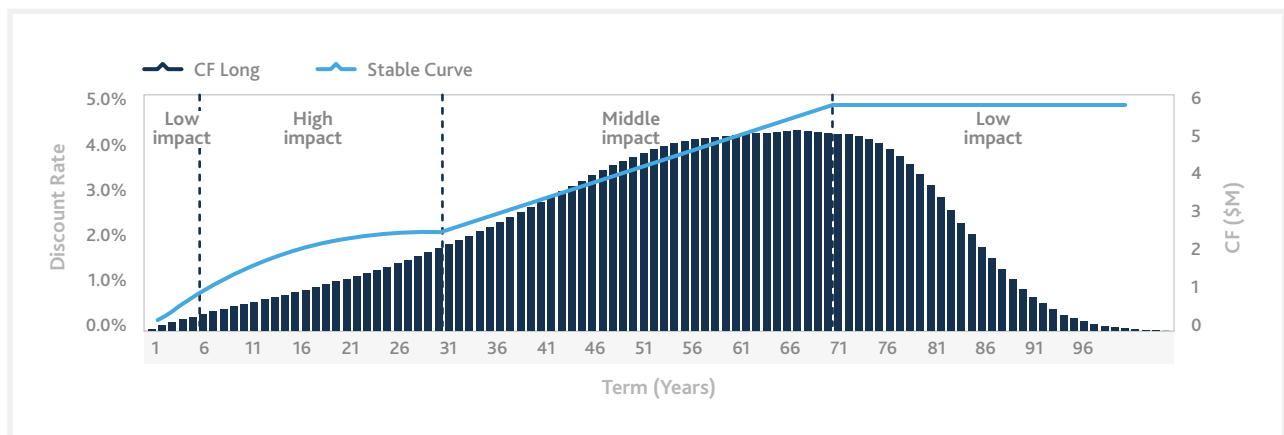

Source: Fiera Capital Corporation

Considerations for Unobservable Period Assumptions

An insurer decides on the long-term assumption level of stability through the establishment of the ultimate period assumptions. A stable long-term assumption will decrease the liability duration and will in most cases allow for a duration match between the assets and liabilities without the need for derivatives.

Given the long-term nature of the cashflows and the low volatility of the long-term assumptions, insurers can benefit from investing in low liquidity securities without much impact.

A proportion of the liability is not directly impacted by the market movements, and therefore could be invested in assets uncorrelated with interest rates. For example, private debt investments will not fluctuate much with the fixed income securities used to derive the curve. See the *Fixed Income Alternative investments with low correlation to interest rates* (Appendix) for more information on interesting potential asset class additions to an insurer portfolio.

Interest Sensitivity Break down

Source: Fiera Capital Corporation

Short End of the Yield Curve

Interest rate sensitivity is low in the short end of the curve (0-5 years to maturity). Insurers could consider investing the present value of these cashflows in non-traditional assets providing a higher return than traditional fixed income.

Tailoring Insurance Portfolios in the Wake of New Challenges

There is no one-size-fits-all insurance solution and the new IFRS 17 principles retain an element of flexibility in the assessment of liabilities. A thoughtful approach is required to optimize portfolios. Fiera's Insurance clients benefit from seasoned insurance investment professionals including portfolio managers, actuaries and solutions specialists with a deep understanding of designing and implementing customized portfolios for liability-aware clients. Fiera professionals have always valued an open dialogue and offer a high-touch level of service from a dedicated team of insurance professionals with strong knowledge of the Canadian regulatory landscape. Our team uses our comprehensive asset-liability management tools to analyze and quantify the impact of any potential trade on the actuarial reserves, capital requirements and regulatory solvency ratios. Fiera has a long and established history of delivering customized insurance solutions that meet the needs and address the complexities of insurance companies.

The following example demonstrates how a life insurance company with cashflows spread over a long period of time (0-80 years) can maximize the expected return of the investment portfolio while minimizing the volatility of its balance sheet by matching the assets and liabilities fluctuations over time.

Case Study:
Enhancing Returns and Limiting Financial Results Volatility

For simplicity, let's assume the insurance company only sells semi-liquid products and is applying a discount rate curve that is similar to an equal mix of the liquid and illiquid CIA IFRS 17 reference discount curves to derive the liabilities. As a reminder, the spread ratios to calculate the liquidity premiums are as follow:

	LIQUID CURVE	ILLIQUID CURVE
Observable period		
Liquidity spread	90% of provincial spread	70% of corporate spread

By simply understanding the mechanics of the CIA IFRS 17 reference discount curve, the entity can hedge the financial results volatility induced by the market; asset returns and discount rate changes. A key benefit of the discount curve behavior is the stability in the unobservable period. This stability reduces the overall effective duration of the liability and allows for duration matching with frequently traded traditional fixed income securities.

Assuming parallel movement in the market curves, the table below shows the recommended asset mix required to effectively hedge the interest rates movements:

Assets	Allocation	Expected Return
Corporate bonds	35%	3.40%
Provincial bonds	45%	2.60%
Government of Canada bonds	20%	1.80%
Total	**100%**	**2.72%**

ADDITIONAL PORTFOLIO METRICS	
Standard deviation of asset returns	10.8%
Return per unit of risk (to maximize)	25%

With the recommended asset mix, it is expected that the surplus/deficit generated after one year should be close to zero; The discount curve movements are hedged and the returns on investment are offset by the increase in liability due to the passage of time. While the volatility is minimized, it is unlikely that the insurer will be satisfied with the returns provided by these three asset classes. The following example will show the impact of introducing more credit exposure (provincials and corporate bonds) into the portfolio with the goal to enhance returns while being careful about the financial results volatility.

Scenario 1:
Enhancing yield with credit

Assuming the entity is willing to introduce some volatility in order to achieve a 3.00% expected return, an appropriate asset mix would be as follow:

Assets	Allocation	Expected Return
Corporate bonds	50%	3.40%
Provincial bonds	50%	2.60%
Total	**100%**	**3.00%**

Using stochastic simulations of interest rate movements and asset class returns to illustrate the volatility of the liability for a 1-year period produces the following results:

ADDITIONAL PORTFOLIO METRICS	
Standard deviation of asset returns	11.0%
Return per unit of risk (to maximize)	27%

Given the upward bias of the annual income provided by the additional credit exposure, it is expected that this asset mix will generate an annual surplus 58% of the time. While we introduced some volatility (1.5%) to the financial results with the additional credit component, we achieved to increase the expected yield from 2.72% to 3.00% and maximized the return per unit of risk.

1-Year Simulation of Market Movements

Surplus/Deficit

Volatility: 1.5%
95th percentile: 2.72%
Median: 0.26%
5th percentile: -2.15%
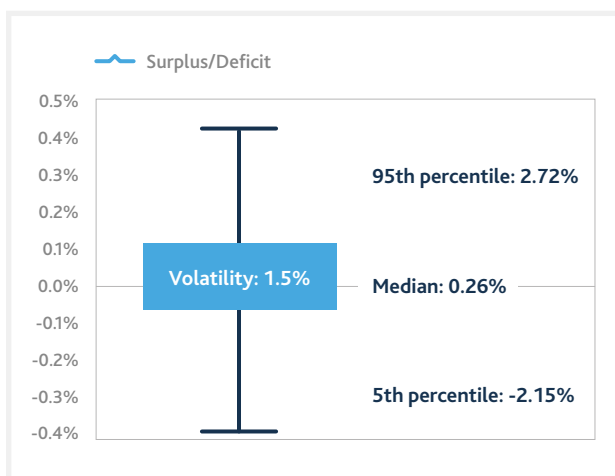
Source: Fiera Capital Corporation

Scenario 2:
Introducing Alternative investments

Assuming the entity wants to obtain an expected return of 3.25%, alternative fixed income asset classes can be added to the portfolio. These asset classes can help enhance yield while having low correlations to interest rates, making them an interesting addition to an insurer's portfolio, especially for cash flows in the short and long end of the curve. In the following example, we introduce high yield bonds into the allocation:

Assets	Allocation	Expected Return
Corporate bonds	60%	3.40%
Provincial bonds	30%	2.60%
High Yield bonds	10%	4.30%
Total	**100%**	**3.25%**

ADDITIONAL PORTFOLIO METRICS	
Standard deviation of asset returns	11.2%
Return per unit of risk (to maximize)	29%

By introducing alternative asset classes, we were able to achieve the 3.25% yield target and expect to generate a surplus 56% of the time. The return improvement over the initial scenario (3.25% vs 2.72%) is significant and it is up to the insurer to define the desired level of volatility.

1-Year Simulation of Market Movements

Surplus/Deficit

Volatility: 3.1%
95th percentile: 5.65%
Median: 0.55%
5th percentile: -4.64%
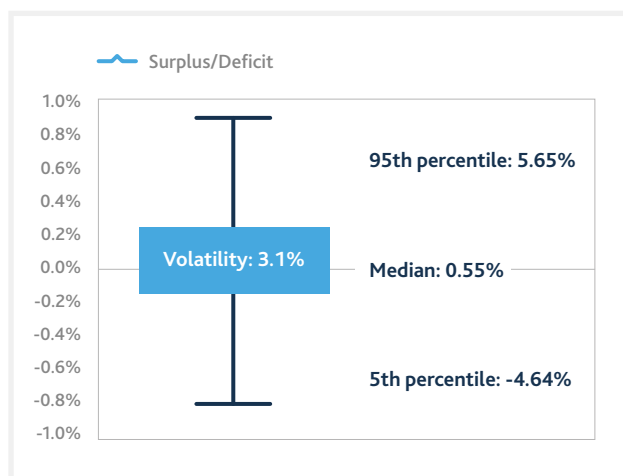
Source: Fiera Capital Corporation

The addition of alternative asset classes was mainly possible because we were able to match the duration with only a portion of the total capital. In scenarios where this is not possible, or in scenarios where the insurer wants to enhance returns further, derivatives can be used to free capital.

The table below shows a summary of the portfolios characteristics and simulation results:

Scenario	Asset Mix	ASSETS			FINANCIAL RESULTS		
		Expected Return	STD of asset returns	Return per unit of risk	5th percentile	Median	95th percentile
Initial	20% GoC 45% Prov 35% Corp	2.72%	10.8%	25.0%	0%[3]	0%[3]	0%[3]
Scenario 1	50% Prov 50% Corp	3.00%	11.0%	27.0%	-2.11%	0.28%	2.78%
Scenario 2	32.5% Prov 60% Corp 7.5% HY	3.25%	11.2%	29.0%	-4.52%	0.53%	5.76%

3 Assets moving in pair with the discount curve

Conclusion: Be pragmatic

IFRS 17 principles will require discount rates to be reflective of actual market conditions. The CIA has recently published practical guidance on Canadian-specific issues relating to discounting estimates of future cashflows under IFRS 17 for insurance companies. In collaboration with the CIA, Fiera Capital is publishing the CIA IFRS 17 reference curves along with a tool to help insurers derive their own discount curve. Insurers should carefully review their investment policy to ensure they maximize return and capital ratio, while minimizing the volatility between assets and liabilities. Fixed income alternative asset classes and derivatives can help achieve the optimal portfolio for insurers to meet their objectives. Insurance clients can benefit from a customized approach that takes their unique circumstances, risk tolerance and financial objectives into consideration when developing an investment solution.

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Fixed Income Alternative investments with low correlation to interest rates

Preferred Shares

Preferred shares are often categorized as Fixed Income, however it is important to note that the Canadian preferred shares index currently has a negative duration and therefore a negative correlation with traditional bonds. Periodic adjustments made to their dividend payouts result in most preferred shares behaving differently than traditional fixed-income asset classes in response to changes in interest rates. When rates rise, bond prices fall. The opposite tends to be true for preferred shares. That's because more than 75% of Canadian preferred shares have rate-reset provisions, whereby their fixed payouts are adjusted at least every five years.

By actively investing in the preferred shares market, it is possible to create a portfolio where the preferred shares portfolio interest rate risk is minimized or even offsets the exposure of other investments.

Private Debt

Private debt offers higher expected returns than traditional bonds as the credit risk, including the illiquidity premium, represents a significant portion of total yield. This premium represents the additional compensation required by investors to conduct enhanced due diligence on issuers and the complexity of structuring non-standardized debt terms. Additionally, these private debt issues do not actively trade given the deal size and non-standardized terms resulting in an illiquidity premium. Private debt typically has low duration, which makes it a suitable candidate for an insurer's portfolio where interest rate exposure is to be limited.

High Yield Bonds

Similar to private debt, high yield bonds (bonds rated below BBB- or Baa3) generally have shorter maturities than higher quality corporate bonds and are therefore less sensitive to interest rate changes. High yield bonds typically provide high coupons and represent an interesting addition to diversify portfolios. High yield bonds generally have a low correlation with other classes in the Fixed Income space and have historically provided a return on investment similar to equities. When the various market risks are quantified and an appropriate allocation selected, high yield bonds represent a great return enhancing addition to an insurer portfolio.

Why invest in this strategy?

❯ Higher yielding asset class offering a significant source of income in a low-yielding environment

❯ Enhanced portfolio diversification with lower volatility

❯ Significant tax-efficient benefit for taxable clients

Why invest in this strategy?

❯ Predictable monthly income

❯ Higher rate of return and lower volatility than public market bonds

❯ Low return volatility and short duration

Why invest in this strategy?

❯ Historically equity-like returns and lower levels of volatility

❯ Higher yields than traditional fixed income

❯ Enhanced portfolio diversification

❯ Low to negative correlation to other asset classes

❯ Additional yield can be beneficial in rising rate environment

Determining the Market Curves

The Canadian market curves form the foundations of the CIA IFRS 17 reference curves. In addition to the reference curves, Fiera Capital also publishes the underlying market curves: Government of Canada yield curve (risk-free), provincial yield curve and corporate yield curve. Fiera's monthly publication provides full transparency on the reference curve calculations for all stakeholders and allows actuaries to easily create their own discount curve by applying other parameters to the underlying market curves provided.

Canadian actuaries can now benefit from Fiera Capital's investment expertise and market access to overcome the many challenges associated with deriving accurate market curves for valuations.

Fiera Capital has developed a pragmatic process to derive the market curves. It begins with defining an appropriate Fixed Income universe with reliable market pricing. There are many securities in the Canadian market where pricing data is unreliable due to infrequent trading. Our process therefore excludes highly illiquid securities, abnormally priced securities and securities containing particular characteristics that are not representative of the debt market.

Once outliers are excluded, Fiera Capital applies a proprietary parametric approach to derive the various market curves using the adjusted securities universe. Historical curves and more details on the Fiera methodology are available **here >**

Market Curves (Yield %)

- Adjusted Canada Bond subset
- Adjusted Corporate A-rated Bond subset
- Adjusted Provincial Bond subset
- Adjusted Corporate BBB-rated Bond subset
- Risk-free Market Curve
- Corporate Bond Market Curve
- Provincial Bond Market Curve

Tearm (Years)

Source: Fiera Capital Corporation

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