Investments

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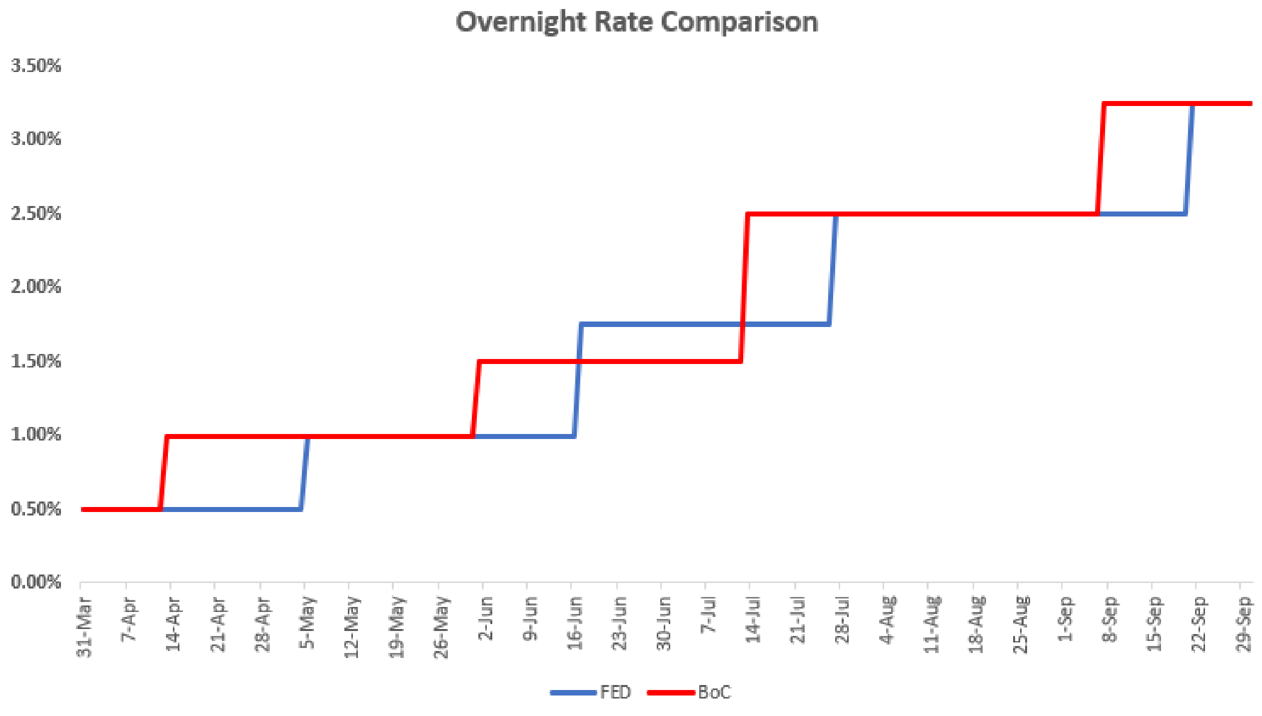
Agenda

1) Economic Update & Portfolio Performance
2) Investment Objectives
3) Actual vs. Target Asset Allocation
4) ALM Update (improvements, interest rate impacts & current study)
5) Interest Rate Forecast

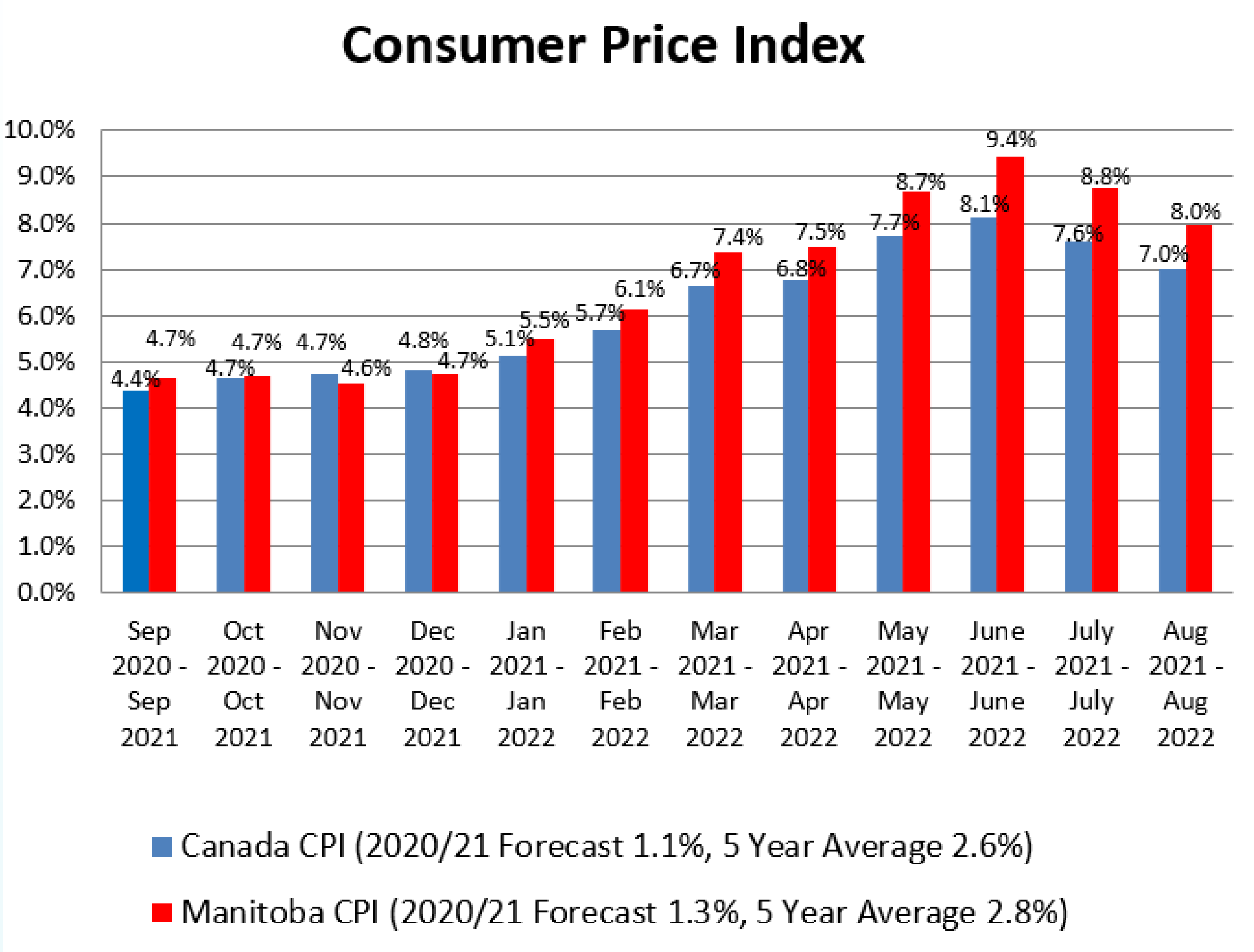
Inflation & Interest Rates Rising

- Pandemic related supply chain issues, conflict in Ukraine and unprecedented monetary & fiscal stimulus increased demand and negatively impacted supply for many goods
- Unemployment fell to all time low in July 2022 (3.5% in Manitoba)
- Inflation hit highest level in 40 years in June 2022 (9.4 in Manitoba)
- Central banks (BoC & Fed) have responded with rapid increases to the overnight rate (+2.75% since March)



Inflation

Canadian CPI increased from 4.4% to 8.1%.



Actual vs. Benchmark Returns

Basic Claims, RSR & EFB outperformed over 12 months ended at March 31, 2022.

	Basic Claims*	RSR	EFB
Portfolio	-2.8%	4.8%	6.2%
Transitional Benchmark	-4.8%	3.8%	4.7%
Value Added	2.0%	1.0%	1.5%

*MUSH bond returns calculated using implied market values.

Impact on Public Equity Portfolio

- Canadian equity portfolio was up 26.3% in 2021/22, global equities up 8.7%.
- No write downs of equities in 2021/22
- Equity markets have declined sharply in 2022. TSX: -15% since April, MSCI World: -22% since January, S&P500: -25% since January
- Fiscal YTD (March 31 – August 31) equity portfolio has decreased by 6.9%

Impact on Private Equity Portfolio

Impact on Private Equity Portfolio

- Real estate and infrastructure investments less impacted by market volatility than publicly listed equities for the following reasons:
    - Assets less economically sensitive.[1]
    - Private assets also valued infrequently (appear less volatile).
    - Industrial & multi-family residential sectors driving real estate returns.

Over the 12 months ended at March 31, 2022

- Infrastructure portfolio increased by 2.9%.
- Pooled real estate fund increased by 16.8%.

Fiscal YTD ending at August 31, 2022

- Infrastructure portfolio increased by 0.1%.
- Real estate pooled fund increased by 8.7%.

[1] Generally having long-term contracted or regulated revenue streams that are less impacted by short-term changes in demand or usage.

Interest Rates Rising Sharply

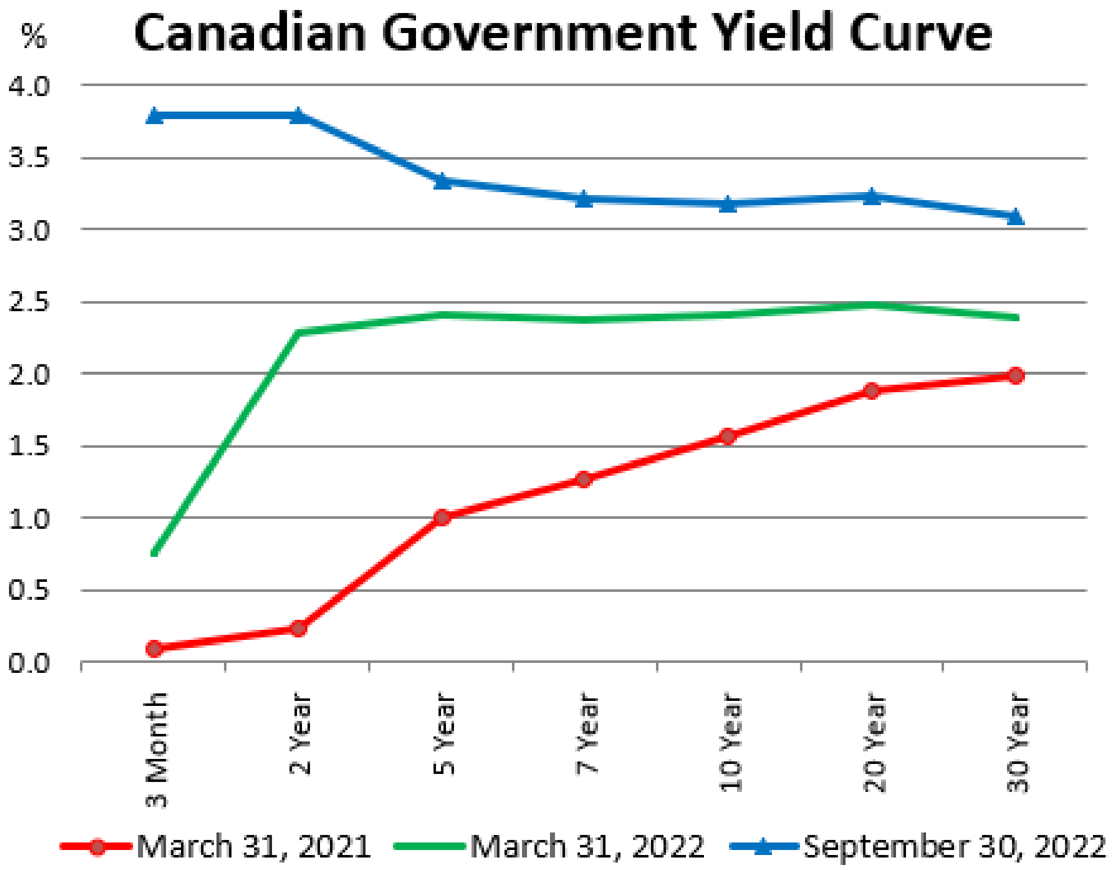
Government of Canada 10-Year, Corporate and Provincial Bond Yields:

Bond Type	Yield at March 31, 2021	Yield at March 31, 2022	Change since March '21	Yield at August 31, 2022	Change since March '22
Corporate BBB	2.59%	4.07%	1.48%	5.23%	1.16%
Corporate A	2.13%	3.62%	1.49%	4.79%	1.17%
Provincial	2.06%	3.05%	0.99%	3.94%	0.89%
GCAN 10 Year	1.56%	2.41%	0.85%	3.12%	0.71%

Source: FTSE Russell-Debt Market Indices

Impact on Fixed Income Portfolio

- Inverted yield curve points towards recession
- Spreads increased in 2021/22
- MPI’s corporate & provincial bonds declined by 4.6% & 5.6% in 2021/22
- At March 31, 2022, MPI wrote-down $29.2M of fixed income assets in the EFB & RSR portfolios (corporate bonds, provincial bonds & private debt).



Impact to the Forecast – Limited So Far

Public Equity

The equity market sell-off since January 2022 does not change the forecasted return for equities.

- Because the forecast is based on the long-term historical average return for the asset class.
- Starting values in the financial model reflect the reduced market values at March 31, 2022.

Private Equity

- Real estate and infrastructure returns are based on forecasted inflation plus a fixed spread of 4% and 5%, respectively.

Fixed Income

The forecast of bond yields is based on two components: (1) GoC 10 year bond yield and (2) spreads.

- The forecast of the GoC 10 year bond yield is based on the actual yield[1] at March 31st.
- The forecasted spreads are based on actual spreads[2] at March 31st.

[1] Which is 85 bps higher than the yield at March 31, 2021 (2.41% vs 1.56%)
[2] Which is 24 bps higher than the spreads in the 2022 GRA (117 bps vs. 93 bps)

Investment Objectives

Investment Objectives of MPI's Board and Government

- Rate stability for customers.
- Directly match investments to liabilities.
- Ensure that capital is available to pay claims when necessary.
- Appropriate levels of risk for each portfolio driven by the purpose of each portfolio (as set out in the IPS and determined by the Board).

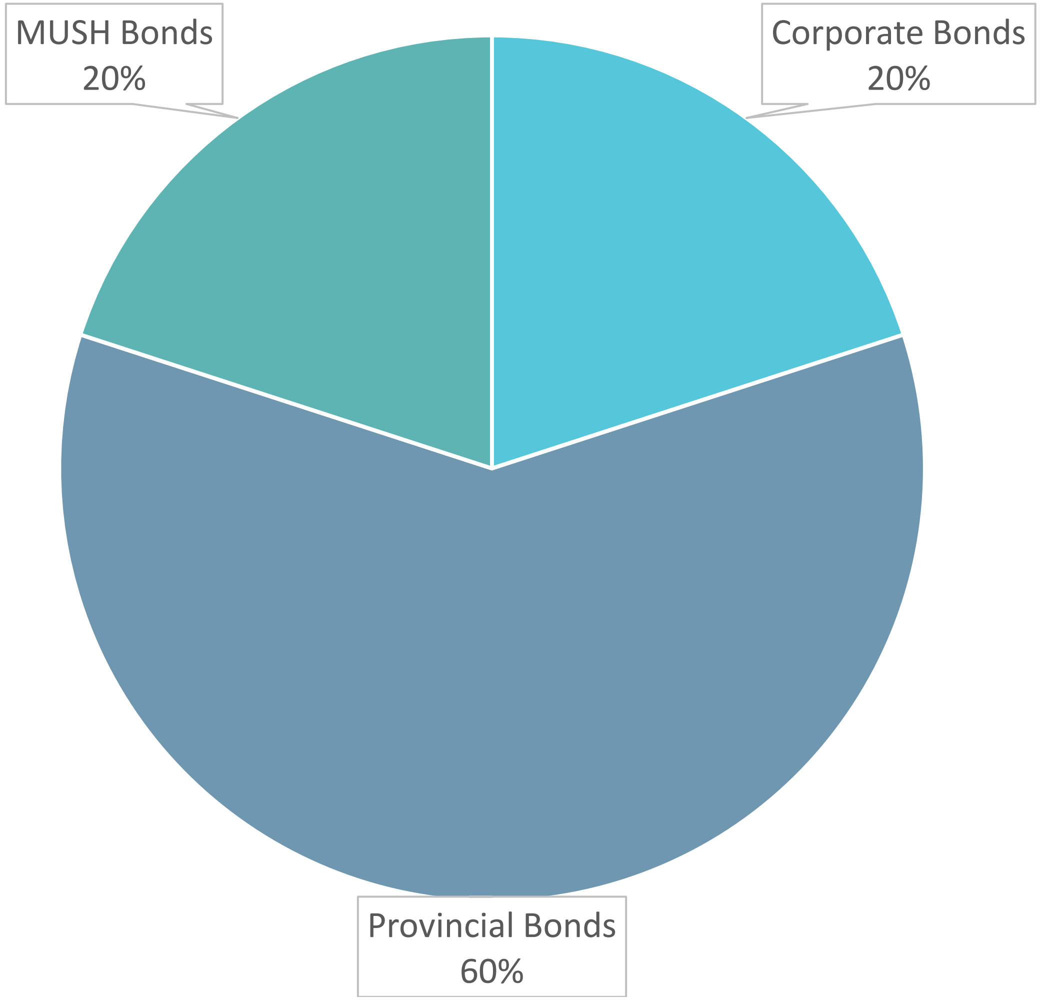
Actual vs. Target Asset Allocation

Asset Allocation Targets

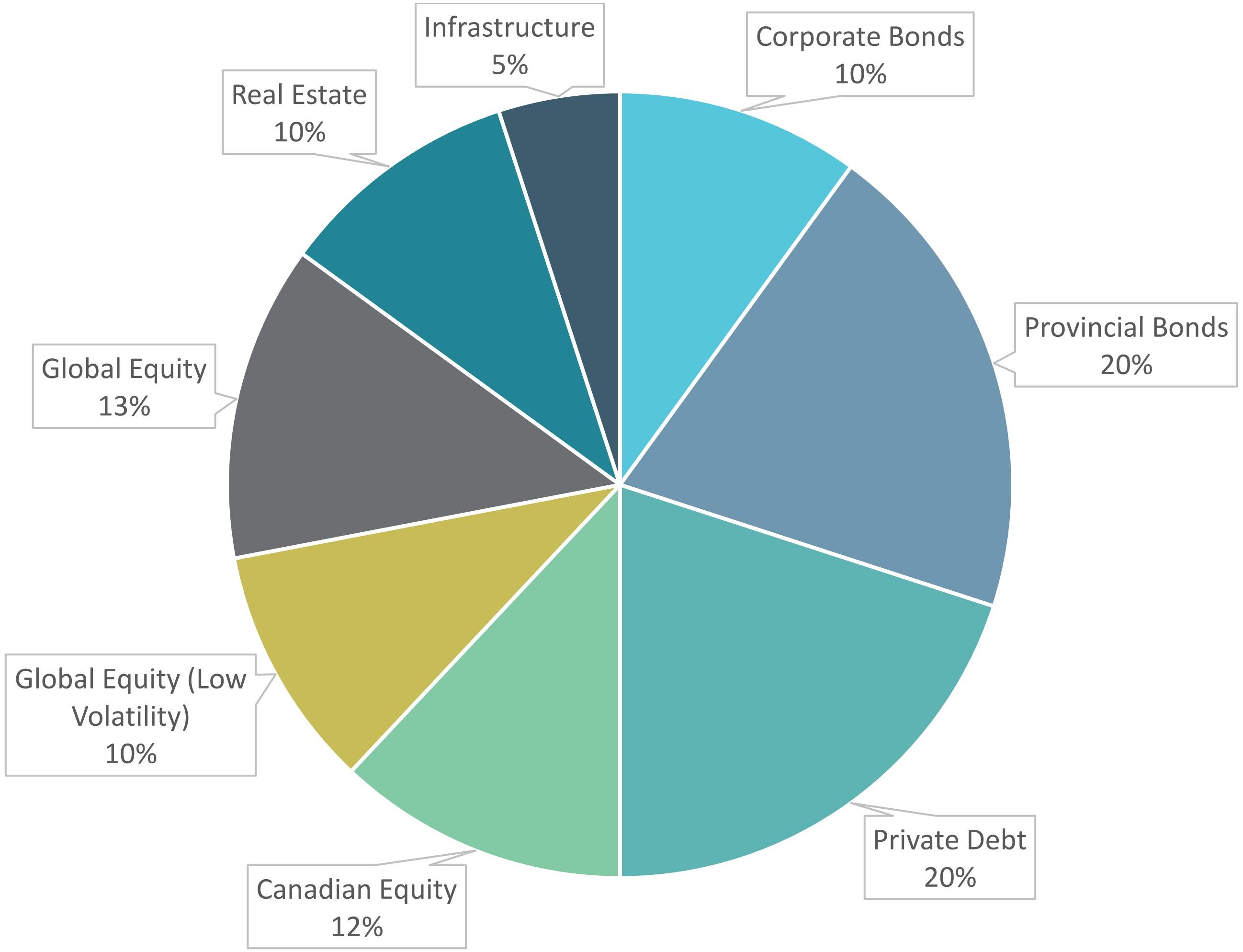
Figure INV- 11 Asset Mix Implemented on March 1, 2019

Line No.	Target Weights	Basic Claims	RSR	Employee Future Benefits
1	Fixed Income			
2	Provincial Bonds	60.0%	20.0%	0.0%
3	Corporate Bonds	20.0%	10.0%	20.0%
4	MUSH	20.0%	0.0%	0.0%
5	Private Debt	0.0%	20.0%	20.0%
6	Total Fixed Income	**100.0%**	**50.0%**	**40.0%**
7	Public Equities			
8	Canadian Equities	0.0%	12.0%	10.0%
9	Global Equities	0.0%	13.0%	18.0%
10	Global Low Volatility	0.0%	10.0%	7.0%
11	Total Equities	**0.0%**	**35.0%**	**35.0%**
12	Alternatives			
13	Canadian Real Estate	0.0%	10.0%	15.0%
14	Infrastructure	0.0%	5.0%	10.0%
15	Total Alternatives	**0.0%**	**15.0%**	**25.0%**

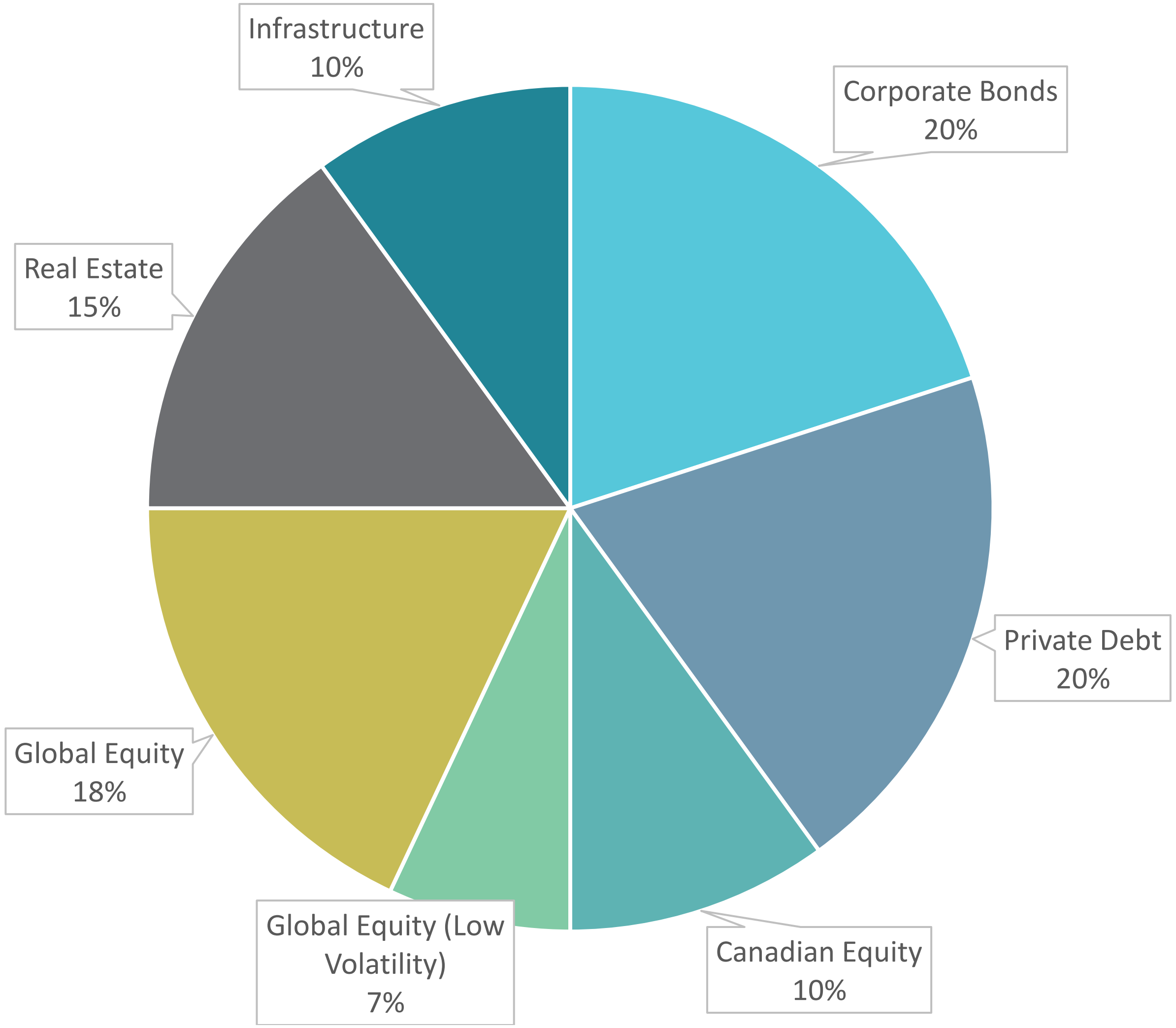
Basic Claims Target Asset Mix



RSR Target Asset Mix



EFB Target Asset Mix



Actual Asset Mix at August 31, 2022

Aug-22

(in $ Million)	Consolidated MV + AI		Total current	Basic current	RSR current	SRE current	EXT current	EFB current
Cash & Short Term	**$**	**28.2**	**0.8%**	**0.8%**	**1.4%**	**1.7%**	**0.5%**	**0.2%**
Fixed Income								
Provincial Bonds & FRNs	$	1,168.8	35.1%	52.2%	15.5%	17.3%	15.2%	
Corporate Bonds		596.4	17.9%	22.4%	7.1%	9.2%	8.9%	16.2%
Non-Marketable Bonds (***)		488.2	14.7%	24.6%				
Private Debt		246.9	7.4%		21.3%	19.4%	19.8%	15.2%
Total Debt	**$**	**2,500.3**	**75.1%**	**99.2%**	**43.9%**	**45.9%**	**43.9%**	**31.4%**
Public Equities								
Canadian		160.3	4.8%	0.0%	8.9%	13.0%	14.8%	12.3%
Global		194.3	5.8%	0.0%	9.9%	12.4%	14.1%	18.8%
Global Low Vol		113.5	3.4%	0.0%	7.2%	10.4%	10.5%	7.4%
Total Public Equities	**$**	**468.0**	**14.1%**	**0.0%**	**25.9%**	**35.8%**	**39.5%**	**38.5%**
Alternative Investments								
Canadian Real Estate (*)	$	221.6	6.7%	0.0%	20.6%	11.8%	10.4%	18.5%
Venture Capital		0.3	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Infrastructure (**)		112.2	3.4%	0.0%	8.2%	4.8%	5.7%	11.4%
Total Alternative Investments	**$**	**334.0**	**10.0%**	**0.0%**	**28.8%**	**16.7%**	**16.1%**	**29.9%**
Total Assets:	**$**	**3,330.6**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

ALM Update

October 2022

Improvements to Current ALM Strategy

Moment Matching implemented in June 2021

- In addition to duration, convexity is now matched between Basic assets & Basic liabilities.
- Managed by Addenda on a daily basis.
- Provides better protection from non-parallel shifts in interest rates.
- Expected to reduce interest rate risk by approximately 40%.
- When IFRS 17 is adopted on April 1, 2023 liabilities will be discounted using a full yield curve (ie: unique rates at each tenor/term) in order to match how the asset portfolio is priced.

ALM Strategy is Working Well

Net impact of changes in interest rates from March 31, 2022 to August 31, 2022 on a Corporate wide basis = $9.5 million better than budget on total fixed income assets of $2.529 billion.

	Millions
Gain on Marketable Bonds	($128.4)
Increase in Claims Incurred due to Discount Rate Change	($128.2)
Net Impact of Interest Rate Changes	($0.2)
Budget	($9.7)
Actual Impact vs. Budget	$9.5

Implementation of Asset Mixes Developed in the Previous ALM Study

- All asset classes are fully funded.
- Real estate is slightly overweight in RSR & EFB, infrastructure is overweight in RSR; both will be corrected when new asset allocation targets developed as a result of the ALM study are implemented.

Current ALM Study is Complete

Phases 1, 2 & 3 are now complete

- All reports prepared by Mercer have been filed except for the Final Phase 2 Report
- Recommended asset mixes will be presented to MPI’s Investment Committee on November 10
- Not recommending the inclusion of equities or levered bonds in the Basic Claims portfolio
- Recommending current asset classes only for the non-Basic portfolios
- Detailed recommendations will be shared once approved by MPI’s Investment Committee

Interest Rate Forecast

August 2022

The Importance of Accurate Interest Rate Forecasts

- Interest rates are one of the key inputs into financial model, used to forecast revenues and expenses.
- Using an accurate forecast of future interest rates ensures customers are charged the correct premium.
- Updating forecasts with interest rates as of August 31, 2022 reduces time between making forecast and beginning to charge new rates to customers on April 1st, resulting in a more accurate forecast.
- Using Accepted Actuarial Practice (AAP) also reduces the impact of interest rates on premiums charged to customers.

Rationale for Naïve Interest Rate

Goal is to reduce pricing risk by using the most accurate forecast

- A “Naïve” forecast simply uses today’s actual interest rate as the forecast of future interest rates.
- Naïve interest rate provides a neutral, unbiased forecast.
  - Going forward, the GoC 10 year bond could increase, decrease or remain flat.
  - Naïve Forecast is a better predictor than the 50/50 or SIRF methodologies.
- Over the short term (1 to 1.5 years), the Bank of Canada overnight rate is not reliably predictive of the direction and magnitude of movements in the GoC 10 year bond rate.

Mercer Review of Forecasting Methodology

Suggested alternatives to Naïve Forecast of Interest Rates

- Forward Rates – point in time estimate, too volatile
- Equilibrium Yield Approach – requires significant judgement

Conclusion – Interest Rate Risk is Well Managed & ALM Study is Complete

- Unique investment strategies are better aligned to purpose and characteristics of associated liabilities.
- Investment strategy from prior ALM study is fully implemented.
- Improvements to current ALM strategy have reduced interest rate risk exposure, hedging strategy is working as the net impact of interest rates is zero.
- Next ALM study is now complete, but not yet approved by MPI's Investment Committee.