

Inflation Scenario Analysis EXT, SRE, RSR & Basic

DISCUSSION DRAFT

MPI Asset Liability Study

May 2022

Angelo DiNoto
Principal

Mariusz Wielocha
Principal

Introduction

- Inflation Scenarios:
 - Financial Repression
 - Pandemic Stagflation
 - Overheat
- Asset mixes (based on efficient frontier of current asset classes) reviewed for Extension (EXT), Special Risk Extension (SRE) & Rate Stabilization Reserve (RSR):
 - Current
 - Lower Risk
 - Midpoint
 - Higher Return
- Conclusions
- Appendices
 - Capital Market Assumptions
- Asset mixes (based on midpoint mix for the following efficient frontiers) reviewed for Basic – Long:
 - Current
 - Add RRB
 - Add Mortgages and Real Estate
 - Add 3X and Equities

Inflation Scenarios



Scenarios of how economies and markets could behave under different conditions

Scenario	Description
Financial Repression	The financial repression scenario shares similarities with the 10 years following World War II, the last time government debt was at today's level. In both cases, an adverse external event (war and pandemic) required large government outlays. Rather than repaying the debt with higher taxes, it is monetized by central banks holding rates low in spite of sustained high inflation, which supports overall growth.
Pandemic Stagflation	The severe bear case that captures the most worrisome inflation impact is pandemic stagflation. Here, we have a scenario in which the COVID-19 situation deteriorates again because of waning vaccine efficiency and/or vaccine-resistant strains. New lockdowns lead to another growth collapse and simultaneously compound the already-severe supply chain stress, driving inflation higher — the nightmare scenario of simultaneous recession and high inflation.
Overheat	The overheat scenario incorporates the classic reaction function of central banks tightening policy preemptively to avoid runaway inflation, which has often triggered recessions in the past.

Analysis by Portfolio



Asset mixes reviewed – EXT

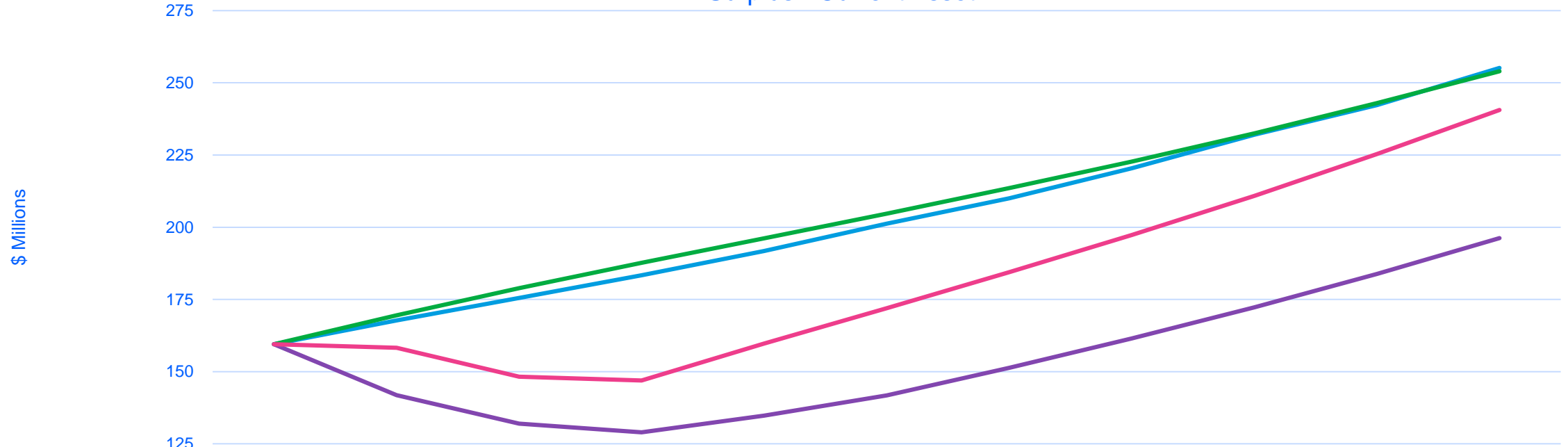
	Liability Benchmark	Current (A)	Higher Return (B)	Lower Risk (C)	Midpoint (D)
Fixed Income	100%	30%	18%	24%	21%
Treasury Bills	62%	---	---	---	---
Provincial short-term bonds	38%	10%	18%	24%	21%
Provincial mid-term bonds	---	10%	---	---	---
Overall Corporate	---	10%	---	---	---
Public Equities	--	35%	32%	26%	29%
Canadian equity (large cap.)	---	10%	---	---	---
Canadian equity (small cap.)	---	2%	11%	9%	10%
Global equity (large cap.)	---	13%	---	---	---
Global equity (small cap.)	---	---	---	---	---
Global low vol equity	---	10%	21%	17%	19%
Alternatives	--	35%	50%	50%	50%
Commercial mortgages	---	---	---	---	---
Private Debt IG (Universe)	---	20%	18%	24%	21%
Private debt non-investment grade	---	---	---	---	---
Multi-asset credit	---	---	---	---	---
Infrastructure	---	5%	15%	11%	14%
Core Canadian Real Estate	---	10%	17%	15%	15%
Return Metrics					
Median return - 10 year	1.26%	4.74%	5.19%	4.77%	4.98%
Probability of positive real return - 10 year		88%	90%	90%	90%
Risk Metrics					
Expected excess return - 10 year		3.66%	4.11%	3.64%	3.87%
Surplus volatility		6.78%	6.71%	5.70%	6.19%
Information Ratio (Excess Return/Risk)		0.54	0.61	0.64	0.63
5% Value at Risk		19.7 M	19.6 M	16.9 M	18.2 M
Probability of deficit - 10 year		0%	0%	0%	0%
Other Metrics					
Minimum Capital Required		33.6 M	39.2 M	32.2 M	35.9 M
Interest Rate Metrics					
Duration	1.3	3.0	1.8	2.3	2.1
Hedge Ratio (100% Funded)	100%	243%	140%	187%	164%

10 year annualized returns under alternative mixes - EXT

Asset Mix	10 year return (p.a)			
	Median	Financial Recession	Pandemic Stagflation	Overheat
Current (A)	4.7%	4.6%	2.4%	4.3%
Higher Return (B)	5.2%	5.3%	2.8%	4.9%
Lower Risk (C)	4.8%	4.6%	3.0%	4.5%
Midpoint (D)	5.0%	5.0%	2.9%	4.7%

Surplus projections under current asset mix - EXT

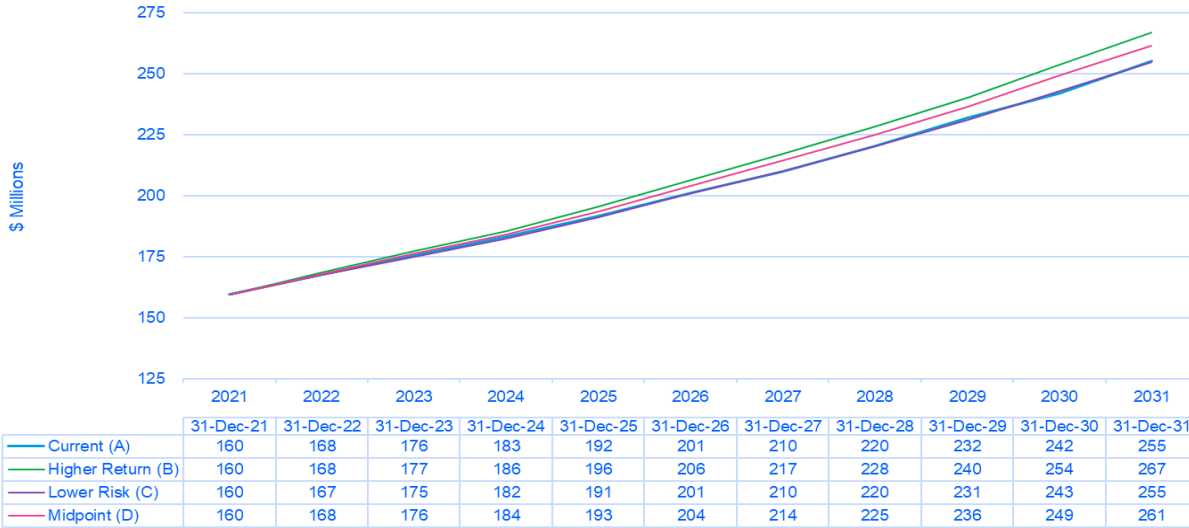
Surplus - Current Asset Mix



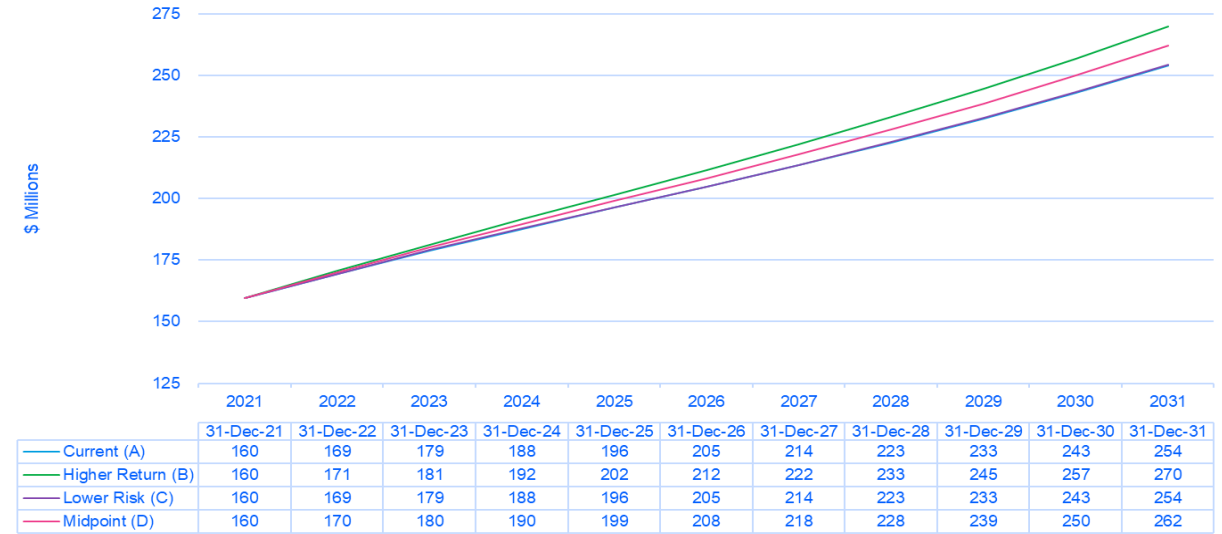
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
	31-Dec-21	31-Dec-22	31-Dec-23	31-Dec-24	31-Dec-25	31-Dec-26	31-Dec-27	31-Dec-28	31-Dec-29	31-Dec-30	31-Dec-31
Median	160	168	176	183	192	201	210	220	232	242	255
Financial Repression	160	169	179	188	196	205	214	223	233	243	254
Pandemic Stagflation	160	142	132	129	135	142	151	161	172	184	196
Overheat	160	158	148	147	160	172	184	197	211	225	241

Surplus projections under alternative asset mixes - EXT

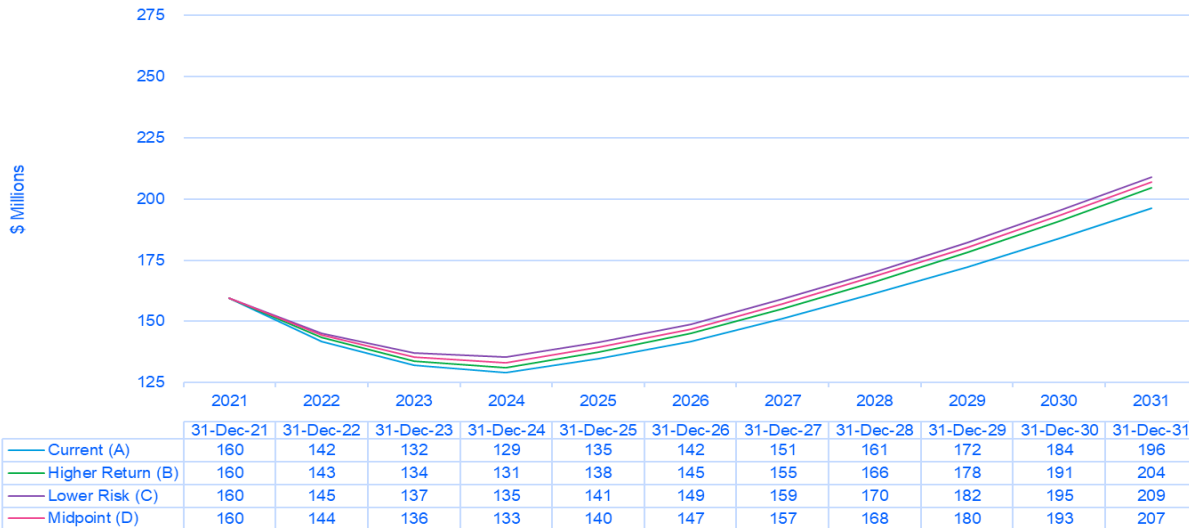
Surplus - Median Scenario



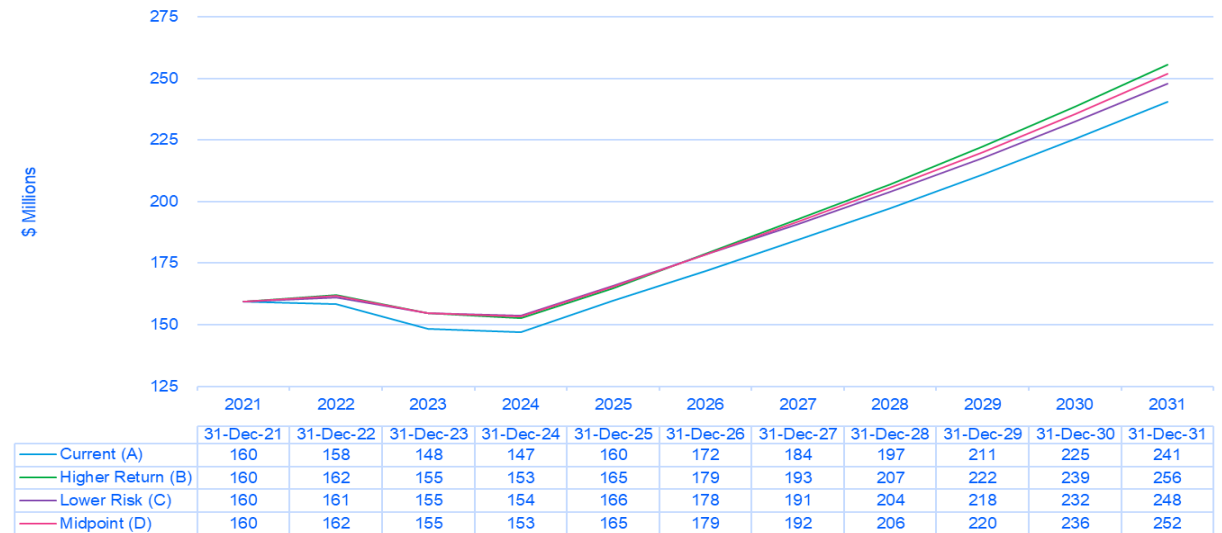
Surplus - Financial Repression Scenario



Surplus - Pandemic Stagflation Scenario



Surplus - Overheat Scenario



Asset mixes reviewed – SRE

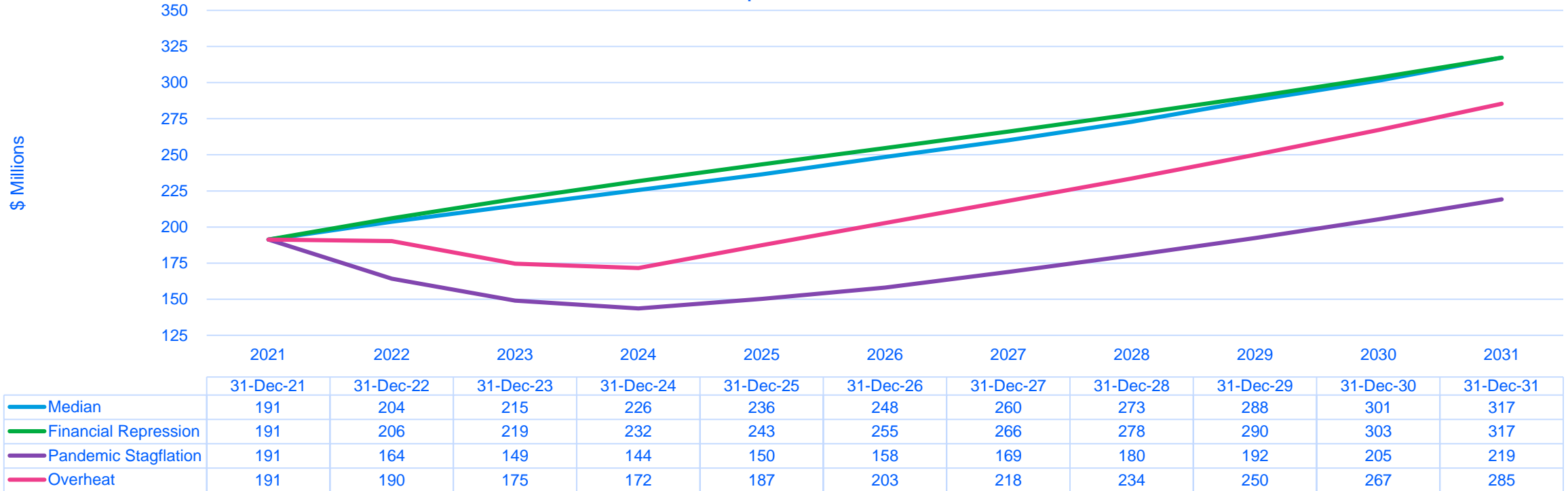
	Liability Benchmark	Current (A)	Higher Return (B)	Lower Risk (C)	Midpoint (D)
Fixed Income	100%	30%	27%	33%	30%
Treasury Bills	16%	---	---	---	---
Provincial short-term bonds	84%	10%	---	11%	2%
Provincial mid-term bonds	---	10%	27%	22%	28%
Overall Corporate	---	10%	---	---	---
Public Equities	--	35%	33%	27%	30%
Canadian equity (large cap.)	---	10%	---	---	---
Canadian equity (small cap.)	---	2%	11%	9%	10%
Global equity (large cap.)	---	13%	---	---	---
Global equity (small cap.)	---	---	---	---	---
Global low vol equity	---	10%	22%	18%	20%
Alternatives	--	35%	40%	40%	40%
Commercial mortgages	---	---	---	---	---
Private Debt IG (Universe)	---	20%	7%	13%	10%
Private debt non-investment grade	---	---	---	---	---
Multi-asset credit	---	---	---	---	---
Infrastructure	---	5%	19%	15%	17%
Core Canadian Real Estate	---	10%	14%	12%	13%
Return Metrics					
Median return - 10 year	1.73%	4.74%	5.17%	4.74%	4.97%
Probability of positive real return - 10 year		88%	89%	89%	89%
Risk Metrics					
Expected excess return - 10 year		3.16%	3.62%	3.13%	3.39%
Surplus volatility		7.13%	7.13%	6.02%	6.61%
Information Ratio (Excess Return/Risk)		0.44	0.51	0.52	0.51
5% Value at Risk		32.0 M	33.1 M	28.2 M	30.9 M
Probability of deficit - 10 year		0%	0%	0%	0%
Other Metrics					
Minimum Capital Required		53.9 M	65.0 M	53.7 M	59.3 M
Interest Rate Metrics					
Duration	2.5	3.0	2.3	2.7	2.7
Hedge Ratio (100% Funded)	100%	123%	95%	111%	109%

10 year annualized returns under alternative mixes - SRE

Asset Mix	10 year return (p.a)			
	Median	Financial Recession	Pandemic Stagflation	Overheat
Current (A)	4.7%	4.6%	2.4%	4.3%
Higher Return (B)	5.2%	5.4%	2.6%	4.9%
Lower Risk (C)	4.7%	4.7%	2.8%	4.5%
Midpoint (D)	5.0%	5.0%	2.7%	4.7%

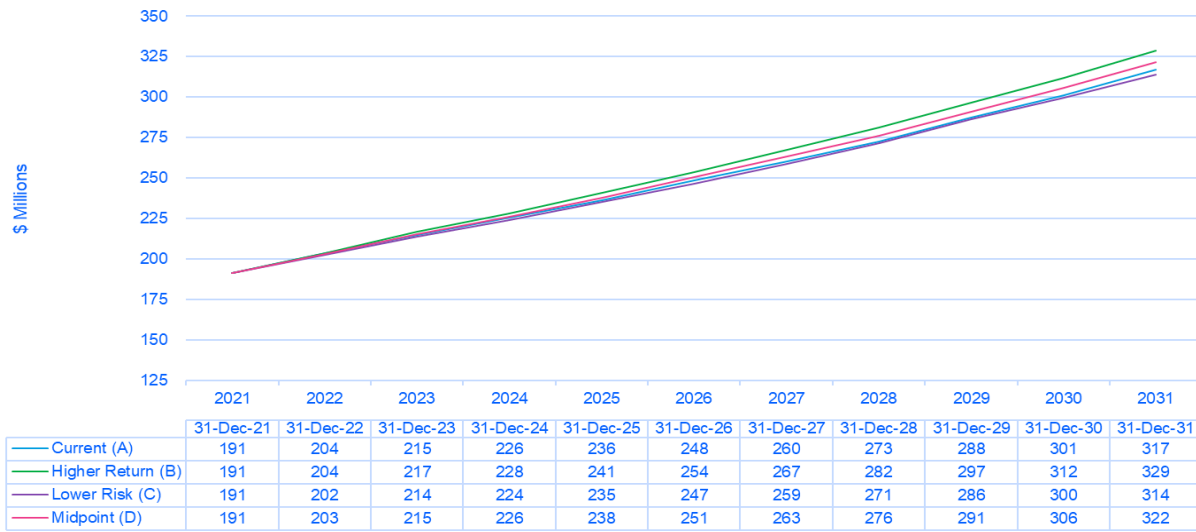
Surplus projections under current asset mix - SRE

Surplus - Current Asset Mix

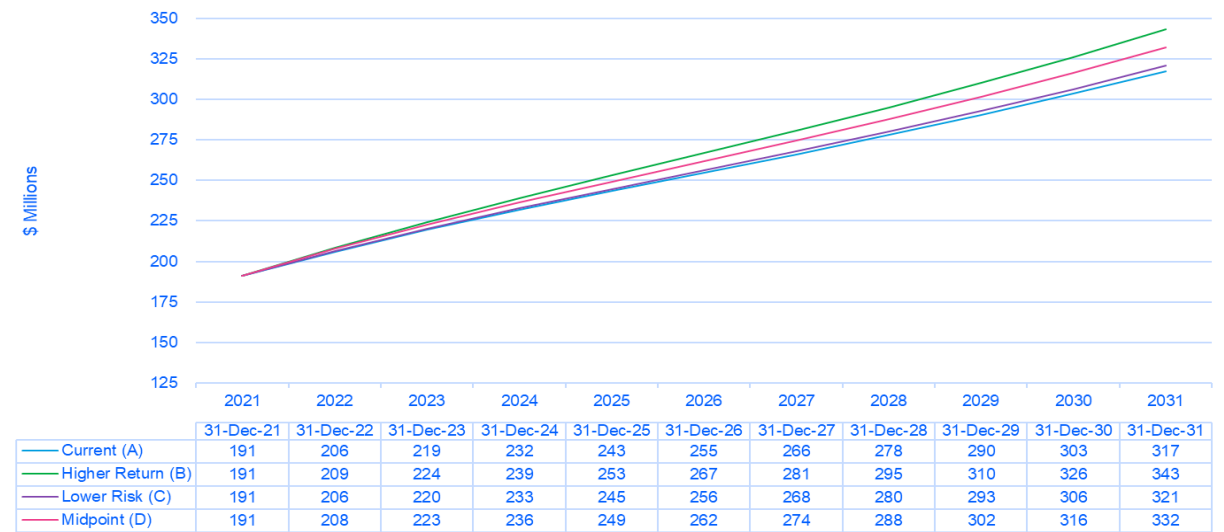


Surplus projections under alternative asset mixes - SRE

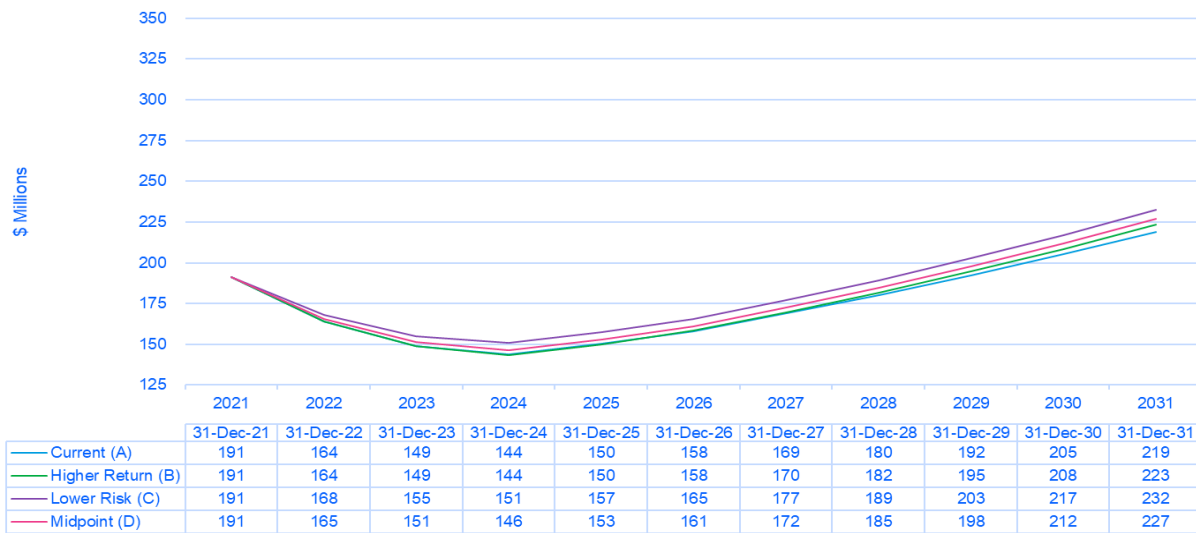
Surplus - Median Scenario



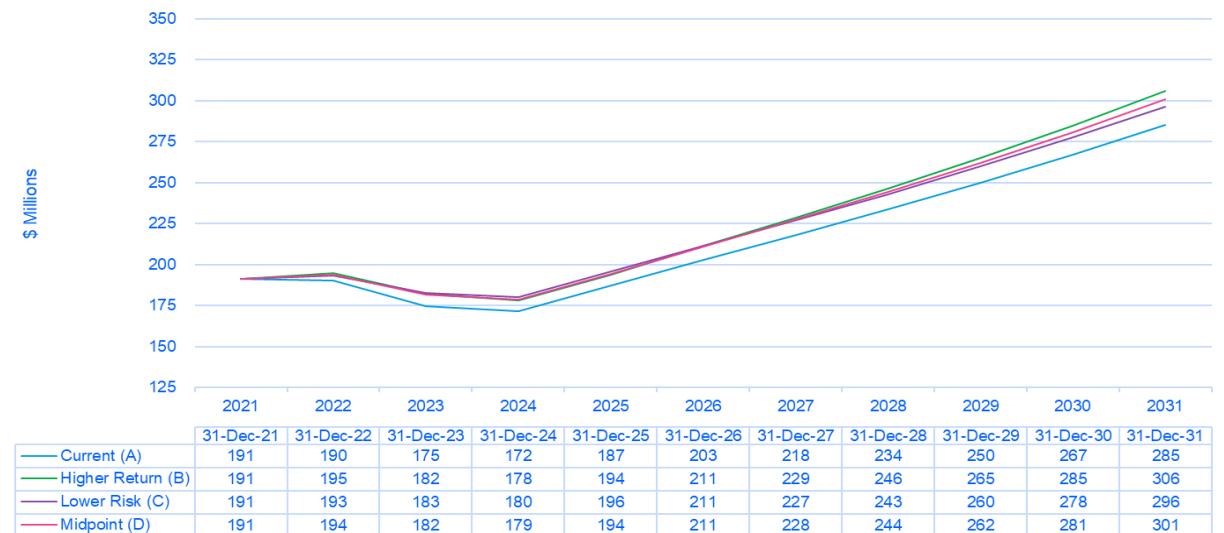
Surplus - Financial Repression Scenario



Surplus - Pandemic Stagflation Scenario



Surplus - Overheat Scenario



Asset mixes reviewed – RSR

	Current (A)	Higher Return (B)	Lower Risk (C)	Midpoint (D)
Fixed Income	30%	15%	21%	18%
Provincial short-term bonds	10%	8%	21%	14%
Provincial mid-term bonds	10%	---	---	---
Overall Corporate	10%	7%	---	4%
Public Equities	35%	35%	29%	32%
Canadian equity (large cap.)	10%	---	---	---
Canadian equity (small cap.)	2%	14%	12%	13%
Global equity (large cap.)	13%	---	---	---
Global equity (small cap.)	---	---	---	---
Global low vol equity	10%	21%	17%	19%
Alternatives	35%	50%	50%	50%
Commercial mortgages	---	20%	27%	24%
Private Debt IG (Universe)	20%	---	---	---
Private debt non-investment grade	---	---	---	---
Multi-asset credit	---	---	---	---
Infrastructure	5%	13%	8%	10%
Core Canadian Real Estate	10%	17%	15%	16%
Return Metrics				
Median return - 10 year	4.74%	5.30%	4.77%	5.03%
Probability of positive real return - 10 year	91%	95%	96%	95%
Risk Metrics				
Expected excess return - 10 year	4.06%	4.63%	4.03%	4.32%
Return volatility (1-year)	6.45%	6.49%	5.15%	5.79%
Information Ratio (Excess Return/Risk)	0.63	0.71	0.78	0.75

10 year annualized returns under alternative mixes - RSR

Asset Mix	10 year return (p.a)			
	Median	Financial Repression	Pandemic Stagflation	Overheat
Current (A)	4.7%	4.6%	2.4%	4.3%
Higher Return (B)	5.3%	5.6%	2.6%	5.0%
Lower Risk (C)	4.8%	4.9%	2.8%	4.7%
Midpoint (D)	5.0%	5.2%	2.7%	4.8%

Asset mixes reviewed – Basic Long

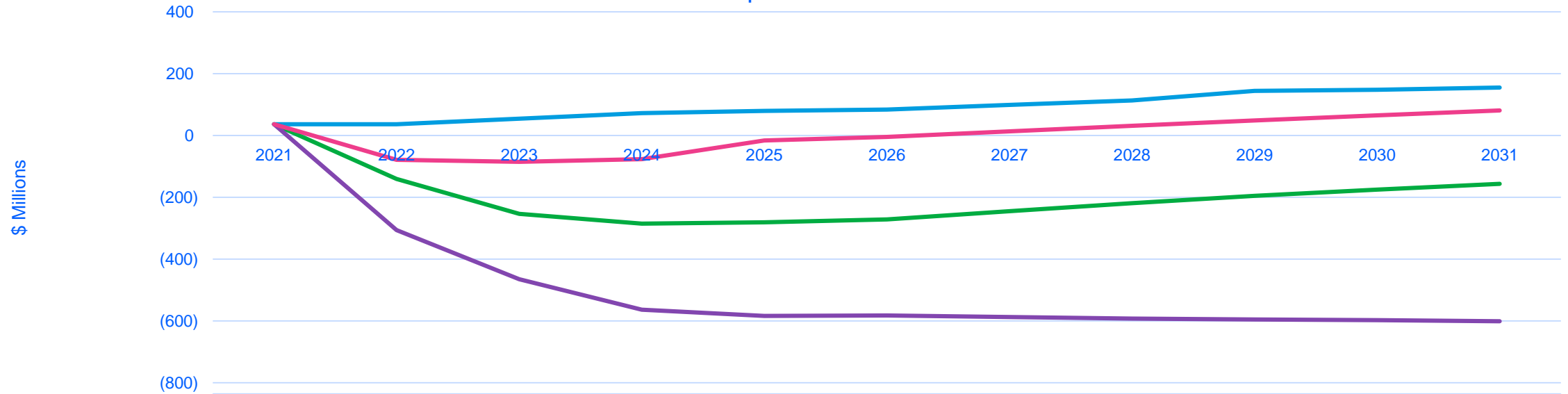
			Adding RRBs	Adding Mortgages and Real Estate	Adding 3x and Equities
	Liability Benchmark	Current (A)	Midpoint (D)	Midpoint (D)	Midpoint (D)
Fixed Income	100%	100%	100%	85%	75%
3x Real Return Bonds	---	---	---	---	12%
Real return bonds	62%	---	22%	34%	---
3x Long Provincial Bonds	---	---	---	---	---
Provincial short-term bonds	36%	---	---	---	---
Provincial mid-term bonds	2%	33%	6%	3%	43%
Provincial long-term bonds	---	27%	---	---	---
Corporate mid-term bonds	---	9%	30%	11%	---
Corporate long-term bonds	---	11%	22%	17%	---
MUSH Bonds	---	20%	20%	20%	20%
Public Equities	--	--	--	--	10%
Canadian equity (large cap.)	---	---	---	---	10%
All Country World Equity	---	---	---	---	---
Alternatives	--	--	--	15%	15%
Commercial mortgages	---	---	---	5%	9%
Core Canadian Real Estate	---	---	---	10%	6%
Return Metrics					
Median return - 10 year	1.85%	2.48%	2.63%	2.92%	3.24%
Probability of positive real return - 10 year		63%	71%	76%	79%
Risk Metrics					
Expected excess return - 10 year		0.72%	0.84%	1.09%	1.53%
Surplus volatility		3.65%	3.09%	2.43%	2.41%
Information Ratio (Excess Return/Risk)		0.20	0.27	0.45	0.63
5% Value at Risk		124.0 M	108.6 M	95.8 M	74.7 M
Probability of deficit - 10 year		26%	16%	13%	11%
Other Metrics					
Minimum Capital Required		15.6 M	40.9 M	72.4 M	103.3 M
Interest Rate Metrics					
Duration	10.9	11.1	11.0	10.9	11.1
Hedge Ratio	100%	101%	100%	100%	101%

10 year annualized returns under alternative mixes - Basic Long

Asset Mix	10 year return (p.a)			
	Median	Financial Recession	Pandemic Stagflation	Overheat
Current (A)	2.5%	1.6%	1.6%	2.1%
Add RRB (Midpoint D)	2.6%	2.1%	2.9%	2.3%
Add Mort/RE (Midpoint D)	2.9%	2.4%	2.7%	2.2%
Add 3x/Eq (Midpoint D)	3.2%	3.0%	2.5%	2.2%

Surplus projections under current asset mix – Basic Long

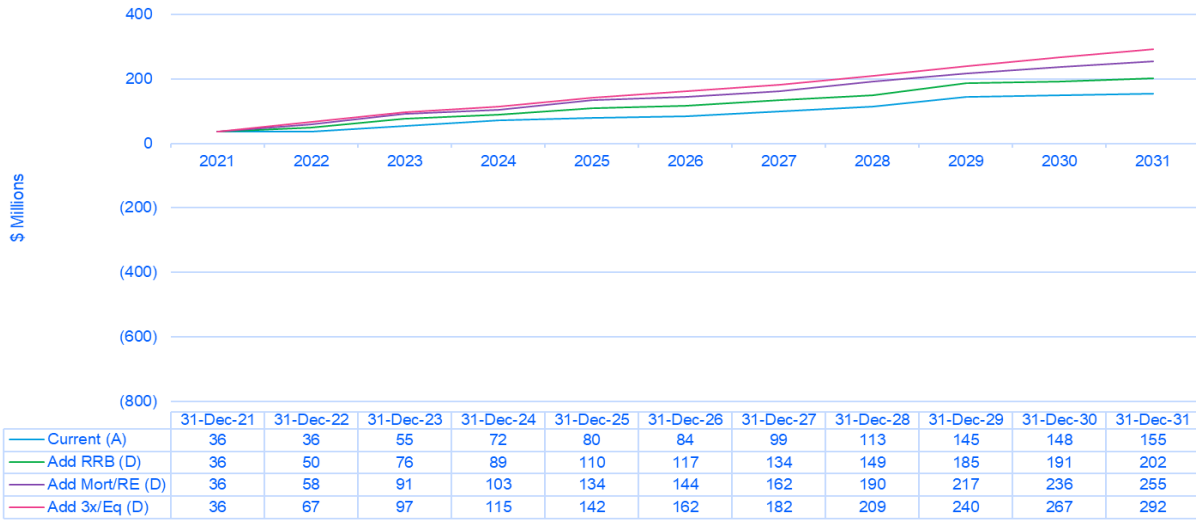
Surplus - Current Asset Mix



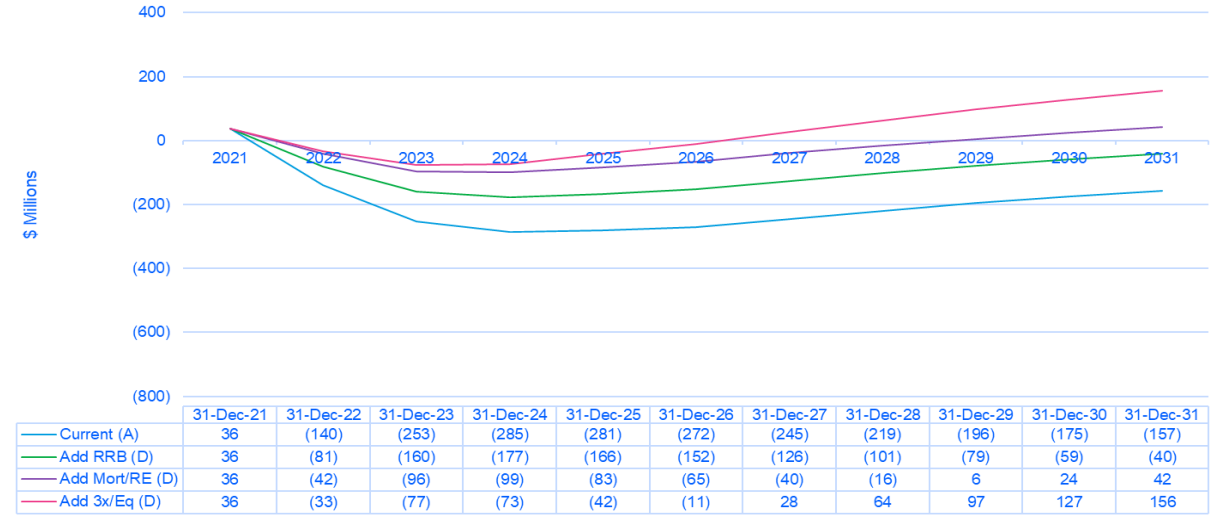
	31-Dec-21	31-Dec-22	31-Dec-23	31-Dec-24	31-Dec-25	31-Dec-26	31-Dec-27	31-Dec-28	31-Dec-29	31-Dec-30	31-Dec-31
Median	36	36	55	72	80	84	99	113	145	148	155
Financial Repression	36	(140)	(253)	(285)	(281)	(272)	(245)	(219)	(196)	(175)	(157)
Pandemic Stagflation	36	(306)	(465)	(564)	(584)	(583)	(587)	(593)	(595)	(597)	(601)
Overheat	36	(79)	(85)	(77)	(16)	(5)	14	31	48	65	81

Surplus projections under alternative asset mixes – Basic Long

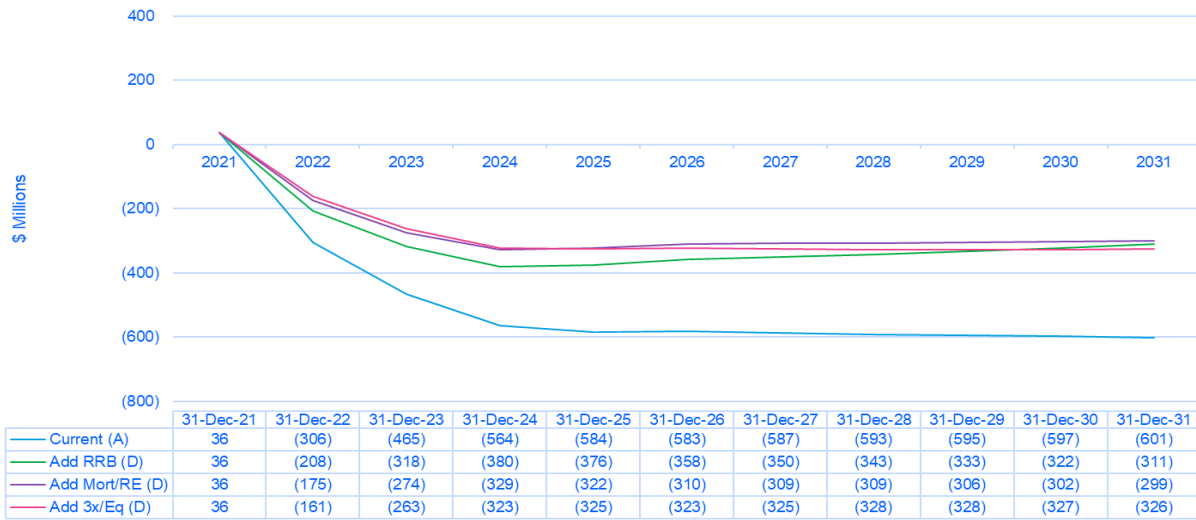
Surplus - Median Scenario



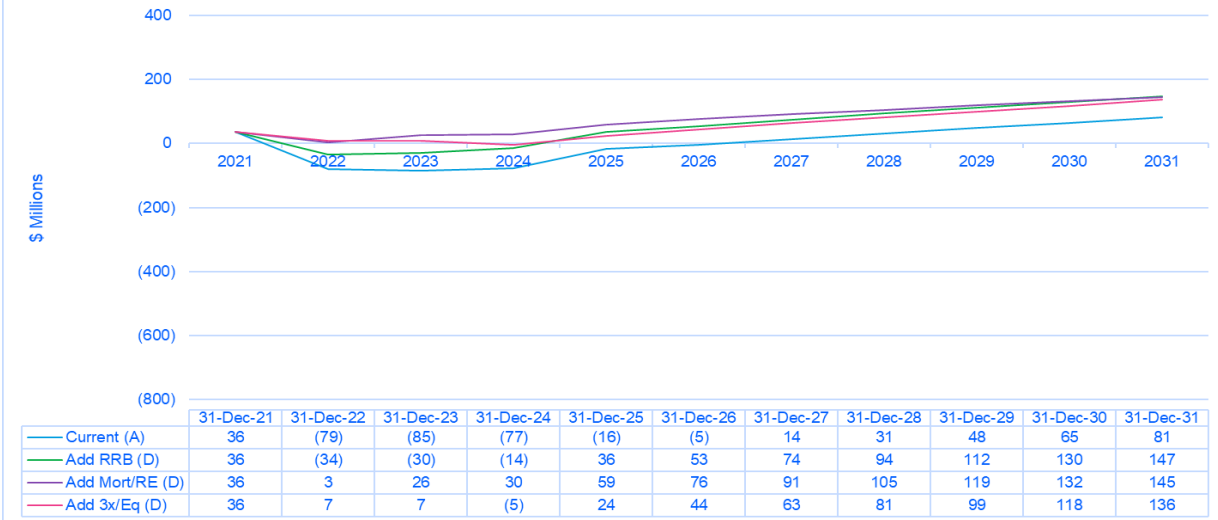
Surplus - Financial Repression Scenario



Surplus - Pandemic Stagflation Scenario



Surplus - Overheat Scenario



Conclusion



Conclusions

- Inflation is not a homogenous phenomenon — it can manifest in different ways, and the risk posed by different scenarios evolves over time
- There is no ‘silver bullet’ asset class which protects against all scenarios, as different asset classes fare better under different inflation scenarios
- Of the scenarios reviewed, the **Pandemic Stagflation** scenario presents the most significant risk to the portfolios

Appendix

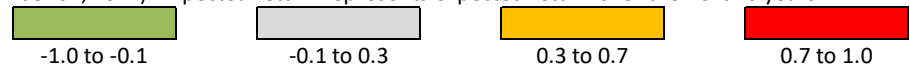
Capital Market Assumptions

Capital Market Assumptions

As at December 31, 2021

Asset Class	Median 10 year return	Standard deviation	Correlations																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 Treasury Bills	0.9%	1.5%	1.00	(0.05)	0.33	0.11	(0.00)	0.09	(0.17)	(0.23)	(0.08)	(0.26)	(0.24)	(0.21)	(0.30)	(0.05)	0.07	0.31	0.17	(0.29)	(0.33)
2 Real return bonds	1.7%	7.5%	(0.05)	1.00	0.40	0.67	0.76	0.53	0.66	0.70	0.26	0.06	0.15	0.28	0.08	0.28	0.35	0.01	0.41	0.03	0.32
3 Provincial short-term bonds	1.9%	3.5%	0.33	0.40	1.00	0.88	0.61	0.75	0.45	0.29	(0.40)	(0.27)	0.04	(0.37)	(0.30)	(0.23)	0.19	(0.21)	0.56	(0.33)	0.21
4 Provincial mid-term bonds	2.2%	6.5%	0.11	0.67	0.88	1.00	0.88	0.75	0.68	0.62	(0.23)	(0.13)	0.27	(0.21)	(0.16)	(0.09)	0.25	(0.13)	0.45	(0.12)	0.35
5 Provincial long-term bonds	2.3%	8.5%	(0.00)	0.76	0.61	0.88	1.00	0.58	0.70	0.79	0.00	0.09	0.39	0.01	0.02	0.11	0.24	(0.01)	0.28	0.04	0.36
6 Corporate short-term bonds	2.5%	3.5%	0.09	0.53	0.75	0.75	0.58	1.00	0.86	0.65	0.09	0.07	0.20	0.15	0.10	0.21	0.24	(0.29)	0.65	0.17	0.48
7 Corporate mid-term bonds	3.0%	6.5%	(0.17)	0.66	0.45	0.68	0.70	0.86	1.00	0.92	0.31	0.24	0.39	0.34	0.28	0.37	0.22	(0.19)	0.45	0.42	0.59
8 Corporate long-term bonds	3.3%	8.5%	(0.23)	0.70	0.29	0.62	0.79	0.65	0.92	1.00	0.35	0.28	0.43	0.36	0.30	0.41	0.19	(0.07)	0.25	0.46	0.54
9 Canadian equity (large cap.)	5.7%	19.5%	(0.08)	0.26	(0.40)	(0.23)	0.00	0.09	0.31	0.35	1.00	0.68	0.31	0.90	0.73	0.78	0.21	0.16	0.01	0.62	0.14
10 Global equity (large cap.)	5.7%	16.1%	(0.26)	0.06	(0.27)	(0.13)	0.09	0.07	0.24	0.28	0.68	1.00	0.77	0.63	0.95	0.71	0.29	0.23	(0.10)	0.74	0.40
11 Global low vol equity	5.2%	13.0%	(0.24)	0.15	0.04	0.27	0.39	0.20	0.39	0.43	0.31	0.77	1.00	0.24	0.69	0.37	0.25	0.17	(0.11)	0.64	0.55
12 Canadian equity (small cap.)	6.2%	21.5%	(0.21)	0.28	(0.37)	(0.21)	0.01	0.15	0.34	0.36	0.90	0.63	0.24	1.00	0.72	0.74	0.22	0.08	(0.00)	0.57	0.10
13 Global equity (small cap.)	6.2%	17.6%	(0.30)	0.08	(0.30)	(0.16)	0.02	0.10	0.28	0.30	0.73	0.95	0.69	0.72	1.00	0.71	0.25	0.19	(0.05)	0.77	0.41
14 Emerging equity	7.3%	25.0%	(0.05)	0.28	(0.23)	(0.09)	0.11	0.21	0.37	0.41	0.78	0.71	0.37	0.74	0.71	1.00	0.38	0.20	0.08	0.55	0.26
15 Infrastructure	5.9%	13.0%	0.07	0.35	0.19	0.25	0.24	0.24	0.22	0.19	0.21	0.29	0.25	0.22	0.25	0.38	1.00	0.20	0.28	0.15	0.20
16 Core real estate (30% leverage)	5.9%	16.1%	0.31	0.01	(0.21)	(0.13)	(0.01)	(0.29)	(0.19)	(0.07)	0.16	0.23	0.17	0.08	0.19	0.20	0.20	1.00	(0.28)	0.14	(0.06)
17 Commercial mortgages	3.3%	3.5%	0.17	0.41	0.56	0.45	0.28	0.65	0.45	0.25	0.01	(0.10)	(0.11)	(0.00)	(0.05)	0.08	0.28	(0.28)	1.00	(0.18)	0.31
18 Private debt non-investment grade	6.0%	14.5%	(0.29)	0.03	(0.33)	(0.12)	0.04	0.17	0.42	0.46	0.62	0.74	0.64	0.57	0.77	0.55	0.15	0.14	(0.18)	1.00	0.47
19 Multi-asset credit	3.3%	7.9%	(0.33)	0.32	0.21	0.35	0.36	0.48	0.59	0.54	0.14	0.40	0.55	0.10	0.41	0.26	0.20	(0.06)	0.31	0.47	1.00

Source: Mercer's Canadian long-term capital market assumptions (December 31, 2021). Expected return represents expected return over the next 10 years.



Custom asset classes:

3x Long Provincial Bonds = 300% Provincial long-term bonds plus -200% Treasury Bills less leverage cost of 0.5%

3x Real Return Bonds = 300% Real return bonds plus -200% Treasury Bills less leverage cost of 0.5%

Non-Marketable Bonds = 21% Provincial short-term bonds plus 27% Provincial mid-term bonds plus 52% Provincial long-term bonds

Private Debt IG (Universe) = 46% Corporate short-term bonds plus 24% Corporate mid-term bonds plus 30% Corporate long-term bonds plus 0.75% illiquidity premium

Private Debt IG (Long) = 100% Overall long-term bonds plus 0.5% illiquidity premium

All Country World Equity = 85% Global equity (large cap.) plus 15% Emerging equity

- Inflation is assumed to be 2% per annum (consistent with the Bank of Canada target) with standard deviation of 2.6%.

• Health inflation is assumed to be CPI plus 4% per annum with standard deviation of 6.0%.

Capital Market Assumptions – Financial Repression

As at December 31, 2021

Yield to maturity

	Tbills	Fed LT	RRBs	Prov ST	Prov MT	Prov LT	Corp ST	Corp MT	Corp LT	Overall ST	Overall MT	Overall LT
31-Dec-21	0.2%	1.7%	-0.3%	1.3%	1.9%	2.5%	1.9%	2.6%	3.3%	1.4%	1.9%	2.5%
31-Dec-22	0.9%	1.5%	-1.1%	1.5%	1.7%	2.2%	2.0%	2.4%	3.0%	1.5%	1.8%	2.3%
31-Dec-23	0.9%	1.4%	-1.5%	1.2%	1.6%	2.2%	1.8%	2.3%	2.9%	1.3%	1.7%	2.2%
31-Dec-24	0.3%	1.4%	-1.7%	1.1%	1.7%	2.1%	1.7%	2.3%	2.9%	1.2%	1.7%	2.1%
31-Dec-25	0.5%	1.6%	-1.5%	1.3%	1.9%	2.4%	1.8%	2.5%	3.1%	1.3%	1.9%	2.3%
31-Dec-26	0.6%	1.9%	-1.3%	1.5%	2.1%	2.6%	2.0%	2.7%	3.3%	1.5%	2.1%	2.6%
31-Dec-27	0.8%	2.1%	-1.1%	1.6%	2.3%	2.8%	2.2%	2.9%	3.5%	1.7%	2.3%	2.8%
31-Dec-28	0.9%	2.3%	-0.8%	1.8%	2.5%	3.0%	2.3%	3.1%	3.7%	1.8%	2.5%	3.0%
31-Dec-29	1.0%	2.6%	-0.5%	1.9%	2.7%	3.3%	2.5%	3.3%	4.0%	1.9%	2.7%	3.2%
31-Dec-30	1.1%	2.8%	-0.3%	2.1%	2.9%	3.5%	2.6%	3.5%	4.2%	2.1%	2.9%	3.5%
31-Dec-31	1.2%	3.0%	0.0%	2.2%	3.1%	3.7%	2.8%	3.7%	4.4%	2.2%	3.1%	3.7%

Returns

	Inflation	T-Bills return	Provincial short-term return	Provincial mid-term return	Provincial long-term return	Non-marketable bond return	Corporate short-term return	Corporate mid-term return	Corporate long-term return	Corporate overall return	Private debt investment-grade (Universe)	Private debt investment-grade (Long)	Mortgages	Real return bond returns	Direct lending	Canadian equity (large cap.)	Canadian equity (small cap.)	Global equity (large cap.)	Global low volatility equity	Global equity (small cap.)	Emerging equity	Multi-asset credit	Core Canadian real estate	Infrastructure
2022	3.8%	0.4%	1.4%	3.0%	6.1%	4.3%	2.0%	3.8%	6.8%	3.9%	3.9%	4.2%	2.8%	17.6%	5.9%	8.2%	9.2%	7.1%	7.4%	9.2%	9.3%	3.9%	8.4%	7.5%
2023	3.6%	0.9%	2.2%	2.7%	3.8%	3.2%	2.8%	3.4%	4.8%	3.5%	3.5%	3.6%	3.4%	9.7%	6.0%	8.1%	9.1%	7.0%	7.5%	9.1%	9.2%	3.8%	7.7%	7.2%
2024	3.6%	0.7%	1.7%	2.0%	2.7%	2.3%	2.3%	2.8%	3.6%	2.8%	2.8%	2.8%	2.9%	4.2%	5.4%	7.8%	8.8%	6.7%	7.2%	8.8%	8.9%	3.2%	7.0%	6.7%
2025	3.6%	0.4%	1.2%	0.9%	-1.5%	-0.3%	1.8%	1.7%	0.1%	1.3%	1.3%	0.8%	2.4%	-0.9%	5.1%	9.1%	9.6%	8.0%	7.9%	9.6%	10.2%	2.3%	6.2%	6.3%
2026	3.3%	0.5%	1.2%	1.1%	-1.2%	-0.1%	1.9%	1.9%	0.2%	1.4%	1.4%	1.0%	2.5%	-0.9%	5.3%	8.6%	9.1%	7.5%	7.6%	9.1%	9.7%	2.5%	5.8%	6.1%
2027	3.0%	0.7%	1.6%	1.4%	-0.9%	0.2%	2.2%	2.3%	0.4%	1.7%	1.7%	1.3%	2.8%	-2.1%	5.4%	8.2%	8.7%	7.1%	7.3%	8.7%	9.2%	2.8%	5.6%	6.0%
2028	2.8%	0.8%	1.7%	1.7%	-0.7%	0.5%	2.4%	2.5%	0.7%	1.9%	1.9%	1.5%	3.0%	-2.0%	5.5%	7.9%	8.4%	6.8%	7.1%	8.4%	9.0%	3.0%	5.5%	5.9%
2029	2.7%	0.9%	1.9%	1.9%	-0.4%	0.7%	2.5%	2.7%	0.9%	2.1%	2.1%	1.7%	3.2%	-1.8%	5.6%	7.8%	8.3%	6.7%	7.1%	8.3%	8.9%	3.3%	5.5%	6.0%
2030	2.7%	1.0%	2.1%	2.2%	-0.1%	1.0%	2.7%	3.0%	1.1%	2.3%	2.3%	1.9%	3.3%	-1.5%	5.7%	7.8%	8.3%	6.6%	7.0%	8.3%	8.8%	3.5%	5.6%	6.0%
2031	2.6%	1.1%	2.2%	2.4%	0.2%	1.2%	2.9%	3.2%	1.4%	2.5%	2.5%	2.1%	3.5%	-1.3%	5.8%	7.6%	8.1%	6.5%	7.0%	8.1%	8.7%	3.7%	5.6%	6.1%
10-yr		0.7%	1.7%	1.9%	0.8%	1.3%	2.3%	2.7%	2.0%	2.3%	2.3%	2.1%	3.0%	1.9%	5.6%	8.1%	8.8%	7.0%	7.3%	8.8%	9.2%	3.2%	6.3%	6.4%

Capital Market Assumptions – Pandemic Stagflation

As at December 31, 2021

Yields

	Tbills	Fed LT	RRBs	Prov ST	Prov MT	Prov LT	Corp ST	Corp MT	Corp LT	Overall ST	Overall MT	Overall LT
31-Dec-21	0.2%	1.7%	-0.3%	1.3%	1.9%	2.5%	1.9%	2.6%	3.3%	1.4%	1.9%	2.5%
31-Dec-22	1.0%	3.3%	-0.3%	1.7%	3.1%	4.2%	2.7%	4.2%	5.3%	1.9%	3.2%	4.4%
31-Dec-23	1.2%	4.2%	-0.4%	2.5%	4.0%	5.3%	3.8%	5.3%	6.7%	2.7%	4.0%	5.5%
31-Dec-24	1.6%	4.9%	-0.4%	3.4%	4.7%	6.0%	4.9%	6.2%	7.5%	3.6%	4.8%	6.2%
31-Dec-25	3.3%	5.2%	-0.3%	4.3%	5.5%	6.4%	5.7%	6.9%	7.8%	4.5%	5.6%	6.6%
31-Dec-26	4.2%	5.5%	-0.1%	5.3%	6.0%	6.6%	6.6%	7.3%	7.9%	5.4%	6.1%	6.7%
31-Dec-27	4.3%	5.7%	0.2%	5.4%	6.2%	6.8%	6.6%	7.4%	8.0%	5.5%	6.2%	6.8%
31-Dec-28	4.4%	5.9%	0.4%	5.5%	6.3%	6.9%	6.6%	7.4%	8.1%	5.6%	6.3%	7.0%
31-Dec-29	4.5%	6.0%	0.7%	5.6%	6.4%	7.0%	6.6%	7.5%	8.2%	5.6%	6.4%	7.1%
31-Dec-30	4.6%	6.2%	0.9%	5.7%	6.5%	7.2%	6.6%	7.5%	8.2%	5.7%	6.5%	7.2%
31-Dec-31	4.7%	6.4%	1.2%	5.8%	6.6%	7.3%	6.7%	7.6%	8.3%	5.8%	6.6%	7.3%

Returns

	Inflation	T-Bills return	Provincial short-term return	Provincial mid-term return	Provincial long-term return	Non-marketable bond return	Corporate short-term return	Corporate mid-term return	Corporate long-term return	Corporate overall return	Private debt investment-grade (Universe)	Private debt investment-grade (Long)	Mortgages	Real return bond returns	Direct lending	Canadian equity (large cap.)	Canadian equity (small cap.)	Global equity (large cap.)	Global low volatility equity	Global equity (small cap.)	Emerging equity	Multi-asset credit	Core Canadian real estate	Infrastructure
2022	4.1%	0.5%	1.0%	-4.5%	-21.4%	-12.1%	0.9%	-4.6%	-19.8%	-6.6%	-6.6%	-7.7%	-1.0%	4.7%	-4.7%	-16.2%	-19.9%	-17.4%	-11.4%	-19.9%	-22.7%	-4.9%	-9.4%	-7.6%
2023	5.1%	1.1%	0.9%	-0.9%	-10.2%	-5.4%	1.5%	-0.6%	-9.1%	-2.1%	-2.2%	-2.9%	-0.9%	6.2%	-2.4%	-14.3%	-17.7%	-15.5%	-9.8%	-17.7%	-20.4%	-2.2%	-5.9%	-5.0%
2024	5.8%	1.4%	1.6%	0.7%	-4.6%	-1.9%	2.9%	1.8%	-2.7%	1.0%	1.0%	0.0%	0.5%	6.6%	1.1%	-7.1%	-9.1%	-8.2%	-4.1%	-9.1%	-11.1%	0.1%	-1.2%	-0.9%
2025	6.3%	2.2%	2.2%	1.2%	1.5%	1.5%	4.3%	3.7%	4.4%	4.2%	4.2%	2.6%	1.6%	4.2%	6.4%	6.6%	7.6%	5.5%	6.9%	7.6%	7.7%	2.4%	4.1%	4.7%
2026	5.8%	3.7%	3.0%	3.5%	3.9%	3.6%	4.9%	5.7%	6.8%	5.7%	5.7%	4.4%	2.9%	2.9%	9.1%	6.0%	7.0%	4.9%	6.8%	7.0%	7.1%	5.0%	4.7%	5.6%
2027	5.5%	4.3%	5.6%	6.0%	4.7%	5.3%	7.3%	7.8%	7.4%	7.4%	7.5%	6.2%	6.0%	1.8%	10.2%	6.4%	7.4%	5.3%	7.2%	7.4%	7.5%	7.5%	7.5%	7.7%
2028	5.3%	4.4%	5.7%	6.2%	5.0%	5.4%	7.3%	7.9%	7.4%	7.5%	7.5%	6.4%	6.2%	1.9%	10.5%	6.3%	7.3%	5.2%	7.2%	7.3%	7.4%	7.9%	7.4%	7.6%
2029	4.8%	4.5%	5.8%	6.3%	5.2%	5.6%	7.3%	8.0%	7.5%	7.5%	7.5%	6.5%	6.6%	1.7%	11.1%	6.0%	7.0%	4.9%	7.0%	7.0%	7.1%	8.6%	7.5%	7.8%
2030	4.5%	4.5%	5.9%	6.5%	5.4%	5.8%	7.3%	8.1%	7.6%	7.6%	7.6%	6.6%	6.8%	1.7%	11.0%	5.9%	6.9%	4.8%	6.9%	6.9%	7.0%	8.7%	7.7%	7.9%
2031	4.3%	4.6%	6.1%	6.6%	5.6%	6.0%	7.3%	8.1%	7.6%	7.6%	7.6%	6.7%	6.9%	1.8%	10.9%	5.8%	6.8%	4.7%	6.8%	6.8%	6.9%	8.7%	7.7%	7.9%
10-yr		3.1%	3.8%	3.1%	-0.9%	1.2%	5.1%	4.5%	1.3%	3.9%	3.9%	2.8%	3.5%	3.3%	6.2%	0.1%	-0.3%	-1.0%	2.1%	-0.3%	-1.1%	4.1%	2.8%	3.4%

Capital Market Assumptions – Overheat

As at December 31, 2021

Yield to maturity

	Tbills	Fed LT	RRBs	Prov ST	Prov MT	Prov LT	Corp ST	Corp MT	Corp LT	Overall ST	Overall MT	Overall LT
31-Dec-21	0.2%	1.7%	-0.3%	1.3%	1.9%	2.5%	1.9%	2.6%	3.3%	1.4%	1.9%	2.5%
31-Dec-22	1.6%	2.7%	0.1%	2.3%	3.0%	3.5%	3.0%	3.8%	4.4%	2.4%	3.0%	3.6%
31-Dec-23	3.9%	3.0%	0.3%	3.0%	3.7%	4.0%	4.3%	5.0%	5.4%	3.2%	3.8%	4.2%
31-Dec-24	3.9%	3.1%	0.3%	3.6%	4.1%	4.3%	5.0%	5.5%	5.7%	3.8%	4.2%	4.5%
31-Dec-25	2.6%	2.7%	0.3%	2.8%	3.5%	3.8%	4.1%	4.7%	5.1%	3.0%	3.5%	3.9%
31-Dec-26	2.7%	2.9%	0.4%	3.0%	3.6%	4.0%	4.1%	4.8%	5.2%	3.1%	3.7%	4.1%
31-Dec-27	2.7%	3.1%	0.7%	3.1%	3.7%	4.1%	4.1%	4.8%	5.2%	3.2%	3.7%	4.2%
31-Dec-28	2.6%	3.3%	0.9%	3.1%	3.8%	4.3%	4.0%	4.7%	5.2%	3.2%	3.8%	4.3%
31-Dec-29	2.6%	3.5%	1.1%	3.2%	3.9%	4.4%	4.0%	4.7%	5.3%	3.2%	3.9%	4.4%
31-Dec-30	2.5%	3.7%	1.3%	3.3%	4.0%	4.5%	3.9%	4.7%	5.3%	3.3%	4.0%	4.5%
31-Dec-31	2.4%	3.9%	1.5%	3.3%	4.0%	4.6%	3.9%	4.7%	5.3%	3.3%	4.0%	4.6%

Returns

	Inflation	T-Bills return	Provincial short-term return	Provincial mid-term return	Provincial long-term return	Non-marketable bond return	Corporate short-term return	Corporate mid-term return	Corporate long-term return	Corporate overall return	Private debt investment-grade (Universe)	Private debt investment-grade (Long)	Mortgages	Real return bond returns	Direct lending	Canadian equity (large cap.)	Canadian equity (small cap.)	Global equity (large cap.)	Global low volatility equity	Global equity (small cap.)	Emerging equity	Multi-asset credit	Core Canadian real estate	Infrastructure
2022	3.8%	0.7%	-0.1%	-4.1%	-12.6%	-7.7%	0.3%	-3.3%	-10.7%	-3.9%	-3.9%	-4.8%	2.5%	-1.8%	2.4%	0.7%	0.4%	-0.5%	1.7%	0.4%	-0.8%	-0.9%	6.2%	5.6%
2023	3.6%	2.5%	1.0%	-0.9%	-4.3%	-2.3%	1.0%	-1.6%	-6.7%	-1.9%	-1.9%	-1.3%	2.8%	1.3%	-0.7%	-16.6%	-20.7%	-17.7%	-11.2%	-20.7%	-23.8%	0.0%	2.1%	1.3%
2024	2.6%	3.9%	2.0%	2.1%	0.6%	1.3%	3.2%	3.0%	1.5%	2.6%	2.6%	2.2%	0.2%	1.8%	3.1%	-4.5%	-6.4%	-5.6%	-1.6%	-6.4%	-8.4%	2.1%	-3.7%	-1.3%
2025	2.0%	3.4%	5.5%	8.5%	11.8%	9.6%	7.2%	10.1%	13.6%	9.8%	9.8%	9.4%	4.3%	3.3%	7.4%	10.5%	11.5%	9.3%	9.8%	11.5%	11.5%	6.3%	4.8%	6.0%
2026	2.0%	2.6%	2.7%	3.0%	1.1%	2.0%	4.4%	4.9%	4.4%	4.5%	4.5%	3.2%	4.9%	-0.5%	8.5%	12.6%	13.6%	11.5%	11.2%	13.6%	13.7%	4.7%	10.1%	10.3%
2027	2.0%	2.7%	3.1%	3.6%	1.9%	2.7%	4.7%	5.4%	4.9%	4.9%	4.9%	3.7%	4.8%	-0.7%	9.5%	11.5%	12.5%	10.4%	10.4%	12.5%	12.6%	5.7%	8.3%	8.9%
2028	2.0%	2.7%	3.3%	3.8%	2.2%	2.8%	4.6%	5.4%	4.9%	4.9%	4.9%	3.8%	4.8%	-0.4%	9.7%	11.0%	12.0%	9.8%	10.0%	12.0%	12.0%	6.2%	7.6%	8.4%
2029	2.0%	2.6%	3.4%	3.9%	2.4%	3.0%	4.6%	5.5%	4.9%	4.9%	4.9%	3.9%	4.9%	-0.2%	9.5%	10.7%	11.7%	9.6%	9.8%	11.7%	11.8%	6.2%	7.5%	8.3%
2030	2.0%	2.5%	3.5%	4.1%	2.6%	3.2%	4.5%	5.5%	5.0%	4.9%	4.9%	4.0%	5.0%	0.1%	9.2%	10.5%	11.5%	9.4%	9.6%	11.5%	11.6%	6.1%	7.5%	8.2%
2031	2.0%	2.5%	3.6%	4.2%	2.8%	3.3%	4.5%	5.5%	5.0%	4.9%	4.9%	4.1%	5.1%	0.4%	8.9%	10.3%	11.3%	9.2%	9.4%	11.3%	11.3%	6.1%	7.5%	8.1%
10-yr		2.6%	2.8%	2.8%	0.7%	1.7%	3.9%	4.0%	2.5%	3.5%	3.5%	2.8%	3.9%	0.3%	6.7%	5.2%	5.1%	4.1%	5.7%	5.1%	4.4%	4.2%	5.7%	6.3%

Important Notices

© 2022 Mercer (Canada) Limited. All rights reserved. References to Mercer shall be construed to include Mercer LLC and/or its associated companies.

This contains confidential and proprietary information of Mercer and is intended for the exclusive use of the parties to whom it was provided by Mercer. Its content may not be modified, sold or otherwise provided, in whole or in part, to any other person or entity without Mercer's prior written permission.

Mercer does not provide tax or legal advice. You should contact your tax advisor, accountant and/or attorney before making any decisions with tax or legal implications. This does not constitute an offer to purchase or sell any securities. The findings, ratings and/or opinions expressed herein are the intellectual property of Mercer and are subject to change without notice. They are not intended to convey any guarantees as to the future performance of the investment products, asset classes or capital markets discussed. For Mercer's conflict of interest disclosures, contact your Mercer representative or see www.mercer.com/conflictsofinterest.

This does not contain investment advice relating to your particular circumstances. No investment decision should be made based on this information without first obtaining appropriate professional advice and considering your circumstances.

Information contained herein may have been obtained from a range of third party sources. While the information is believed to be reliable, Mercer has not sought to verify it independently. As such, Mercer makes no representations or warranties as to the accuracy of the third party information presented and takes no responsibility or liability (including for indirect, consequential, or incidental damages) for any error, omission or inaccuracy in the data supplied by any third party.

Investment management services for Canadian investors are provided by Mercer Global Investments Canada Limited. Investment consulting services for Canadian investors are provided by Mercer (Canada) Limited.