RBC Global Asset Management
PH&N Institutional

Attachment 1

ONE Investment

Portfolio Modeling

Presented by

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OCIO - Who does what?

Spanning policy, investments, operations and reporting

		ONE JIB	PH&N Institutional
Strategy	**Overall Program Governance**	✓	Ongoing Support
Strategy	**Investment Policy** • Define investment objectives • Establish strategic asset mix policy	✓	Strategic Advice
Operational Services	**Implementation** • Portfolio construction • Rebalancing and tactical shifts • Cash flow management and trade execution • Risk management • On-going research and innovation	Delegated to PH&N Institutional	✓
Operational Services	**Monitoring** • Total Portfolio Performance & Compliance	Delegated to PH&N Institutional	✓
Operational Services	**Reporting** • Written and in-person reporting of results • Economic and capital market environment • Fiduciary education	Delegated to PH&N Institutional	✓

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Model Portfolios

Overview

Objective: to establish model portfolios with varying amounts of risk

Portfolio modeling: Efficient frontier analysis to optimize the trade-off between the portfolio's long-term expected return and short-term downside risk

Inputs:

- Capital market assumptions effective Q2, 2024
- Asset classes corresponding to the approved list of 34 pooled funds

Modelling constraints

The constraints listed on the following slide were used:

- To provide diversification and avoid overly concentrated portfolios
- To provide portfolio liquidity by specifying maximum limits in illiquid assets
- To ensure that the resulting portfolio is reasonable from a practical standpoint
- To reduce sensitivity to the input parameters and assumptions, especially expected returns

The sizing of the constraints:

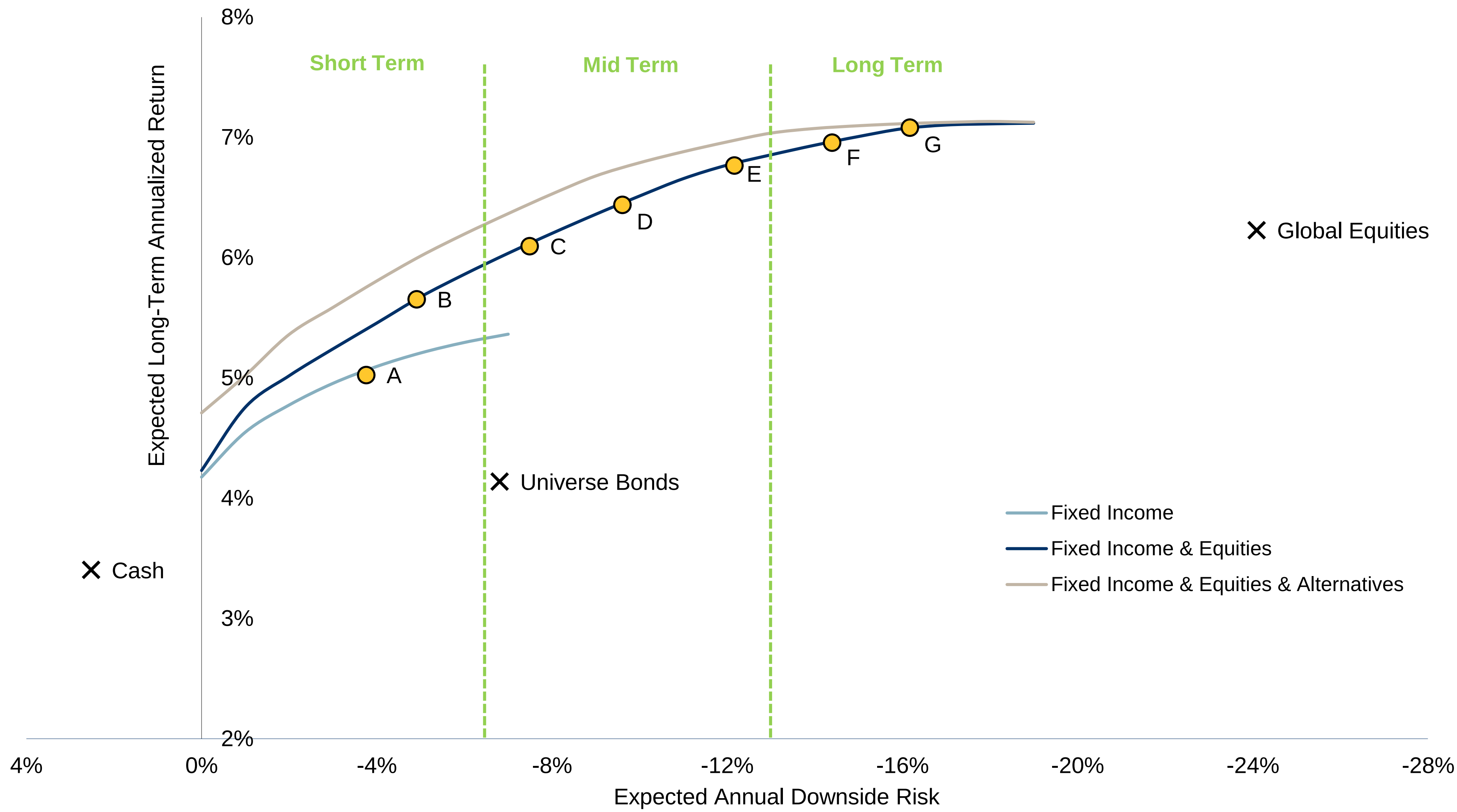
- Depends on beliefs on the level of diversification & liquidity and comfort with various asset classes
- Can be changed on further discussion
- Is based on our experience and intended to produce portfolios for further discussion.
- We provide sensitivity testing on the constraints on slides 11-13

Modelling constraints

- Minimum allocation to core fixed income and money market securities of 20%
- Maximum 25% allocation to any one of money market securities, universe corporate bonds and global sovereign bonds
- Maximum 15% allocation to any one of high yield bonds, emerging market debt, multi-asset global credit
- Maximum 5% allocation to any one of private placement corporate debt and commercial mortgages when 100% fixed income
- Maximum 10% allocation to any one of private placement corporate debt and commercial mortgages when including equities and alternatives
- Maximum 50% allocation to domestic equities (as a % of total equities)
- Maximum 50% allocation to low volatility equities (as a % of traditional equity counterpart)
- Maximum 5% allocation to any one of real estate and infrastructure

Efficient Frontier Analysis

With model portfolios – no allocation to Alternatives



Modeled portfolios – modelled risk & return[1]

No allocation to Alternatives

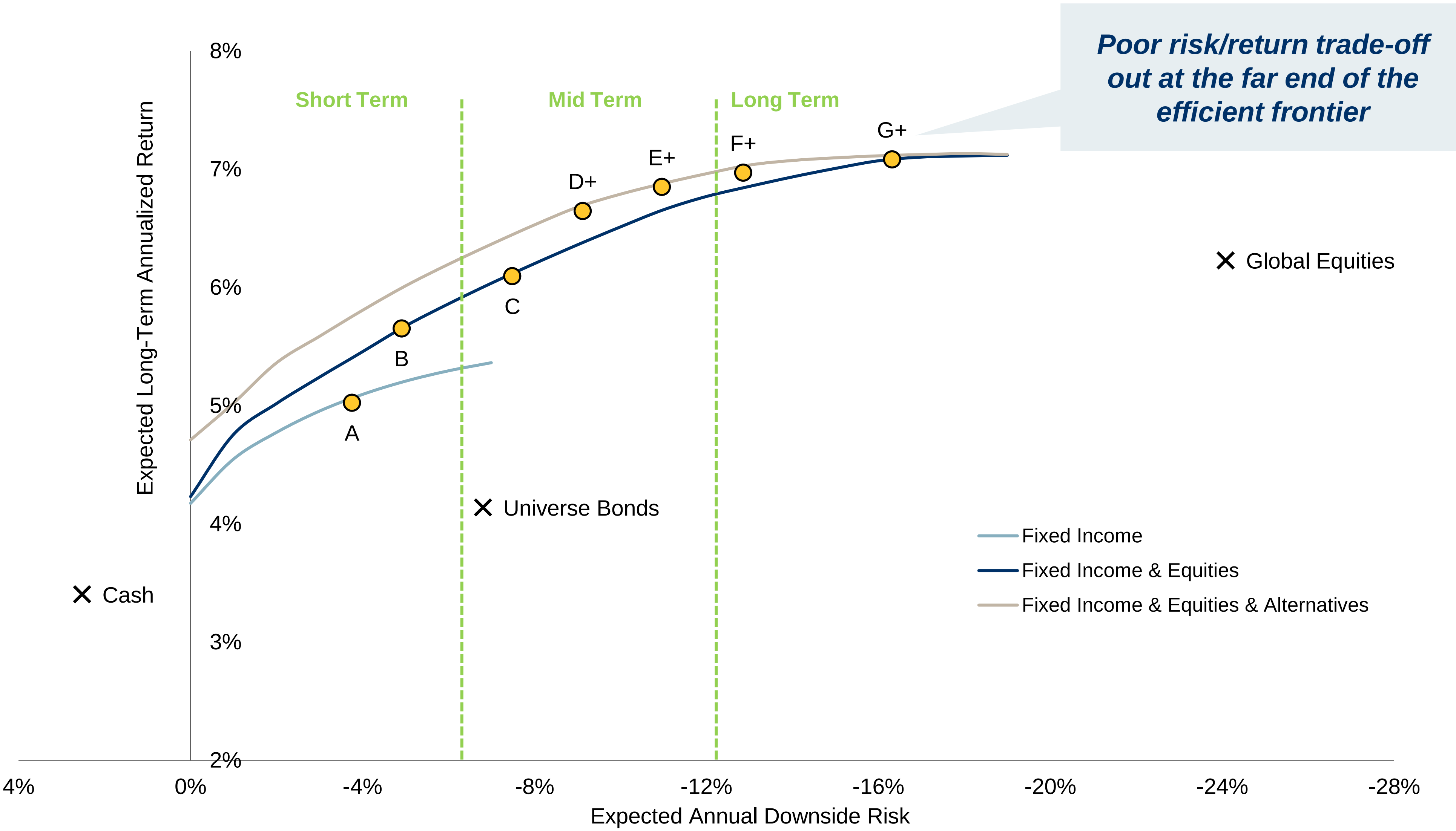
Modeled Expectations[1]	A	B	C	D	E	F	G
Long-Term Return	5.0%	5.7%	6.1%	6.4%	6.8%	7.0%	7.1%
Annual Downside Risk[2]	-3.8%	-4.9%	-7.5%	-9.6%	-12.2%	-14.4%	-16.2%
Annual Volatility	3.3%	4.0%	5.2%	6.3%	7.6%	8.9%	10.0%
Sharpe Ratio	0.49	0.57	0.51	0.48	0.44	0.40	0.37

Fixed Income	**100%**	**80%**	**70%**	**60%**	**50%**	**40%**	**30%**
Canadian Money Market	0%	0%	0%	0%	0%	0%	0%
Short-Term Bonds and Mortgages	50%	50%	35%	25%	20%	20%	20%
Corporate Bonds	20%	0%	0%	0%	0%	0%	0%
Private Placement Corporate Debt	5%	10%	10%	10%	5%	0%	0%
Commercial Mortgages*	5%	10%	10%	10%	10%	10%	10%
High Yield Bonds	5%	0%	0%	0%	0%	0%	0%
Global Multi-Asset Credit	15%	10%	15%	15%	15%	10%	0%
Equities	**0%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**
Canadian Equities	0%	5%	7%	10%	15%	25%	35%
Canadian Low Volatility Equities	0%	5%	7%	10%	10%	5%	0%
U.S. Equities	0%	2%	4%	5%	5%	6%	7%
U.S. Low Volatility Equities	0%	2%	4%	5%	5%	6%	7%
International Equities	0%	6%	8%	10%	15%	18%	21%
Alternatives	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Canadian Core Real Estate*	0%	0%	0%	0%	0%	0%	0%
Global Infrastructure*	0%	0%	0%	0%	0%	0%	0%

[1] Refer to appendix for modeling assumptions and disclosures.
[2] CVaR95 which represents the expected loss during the worst 5% of return outcomes.
Hypothetical performance analyses are for illustrative purposes only and there is no guarantee that hypothetical returns or projections will be realized

Efficient Frontier Analysis

With model portfolios



Modeled portfolios – modelled risk & return[1]

Detailed allocations and risk/return metrics

Modeled Expectations[1]	A	B	C	D+	E+	F+	G+
Long-Term Return	5.0%	5.7%	6.1%	6.6%	6.9%	7.0%	7.1%
Annual Downside Risk[2]	-3.8%	-4.9%	-7.5%	-9.1%	-11.0%	-12.9%	-16.3%
Annual Volatility	3.3%	4.0%	5.2%	6.3%	7.3%	8.3%	10.3%
Sharpe Ratio	0.49	0.57	0.51	0.52	0.47	0.43	0.36

Fixed Income	**100%**	**80%**	**70%**	**50%**	**40%**	**30%**	**20%**
Canadian Money Market	0%	0%	0%	0%	0%	0%	0%
Short-Term Bonds and Mortgages	50%	50%	35%	20%	20%	20%	20%
Corporate Bonds	20%	0%	0%	0%	0%	0%	0%
Private Placement Corporate Debt	5%	10%	10%	5%	0%	0%	0%
Commercial Mortgages*	5%	10%	10%	10%	10%	10%	0%
High Yield Bonds	5%	0%	0%	0%	0%	0%	0%
Global Multi-Asset Credit	15%	10%	15%	15%	10%	0%	0%
Equities	**0%**	**20%**	**30%**	**40%**	**50%**	**60%**	**70%**
Canadian Equities	0%	5%	7%	10%	15%	20%	35%
Canadian Low Volatility Equities	0%	5%	7%	10%	10%	10%	0%
U.S. Equities	0%	2%	4%	5%	5%	12%	15%
U.S. Low Volatility Equities	0%	2%	4%	5%	5%	0%	0%
International Equities	0%	6%	8%	10%	15%	18%	20%
Alternatives	**0%**	**0%**	**0%**	**10%**	**10%**	**10%**	**10%**
Canadian Core Real Estate*	0%	0%	0%	5%	5%	5%	5%
Global Infrastructure*	0%	0%	0%	5%	5%	5%	5%

[1] Refer to appendix for modeling assumptions and disclosures.
[2] CVaR95 which represents the expected loss during the worst 5% of return outcomes.
Hypothetical performance analyses are for illustrative purposes only and there is no guarantee that hypothetical returns or projections will be realized

Constraints – sensitivity testing

- The following constraints were tested (~~original~~ / **new**):
  - Maximum ~~10%~~ **/ 20%** allocation to any one of private placement corporate debt and commercial mortgages when including equities and alternatives
  - Maximum ~~50%~~ / **100%** allocation to domestic equities (as a % of total equities)
  - Maximum ~~60%~~ **/ 100%** allocation to U.S. equities (as a % of total foreign equities)
  - Maximum ~~50%~~ **/ 100%** allocation to low volatility equities (as a % of traditional equity counterpart)
  - Maximum ~~5%~~ / **20%** allocation to any one of real estate and infrastructure

- On the following two slides, we compare portfolios with the original constraints to similar portfolios using the new constraints:
  - We have highlighted allocations in the new portfolios that are likely to be considered unreasonable, with concentrated positions in private placements, mortgages, Canadian equities and/or infrastructure.

Constraints – sensitivity testing

Comparison of portfolios (including Alternatives)

Modeled Expectations[1]	D+	D+*	E+	E+*	F+	F+*
Long-Term Return	6.6%	7.3%	6.9%	7.4%	7.0%	7.5%
Annual Downside Risk[2]	-9.1%	-9.0%	-11.0%	-11.1%	-12.9%	-12.8%
Annual Volatility	6.3%	7.3%	7.3%	8.5%	8.3%	9.6%
Sharpe Ratio	0.52	0.53	0.47	0.47	0.43	0.42
Fixed Income	**50%**	**37%**	**40%**	**32%**	**30%**	**25%**
Canadian Money Market	0%	0%	0%	0%	0%	0%
Short-Term Bonds and Mortgages	20%	20%	20%	20%	20%	20%
Corporate Bonds	0%	0%	0%	0%	0%	0%
Private Placement Corporate Debt	5%	0%	0%	0%	0%	0%
Commercial Mortgages*	10%	17%	10%	12%	10%	5%
High Yield Bonds	0%	0%	0%	0%	0%	0%
Global Multi-Asset Credit	15%	0%	10%	0%	0%	0%
Equities	**40%**	**40%**	**50%**	**48%**	**60%**	**55%**
Canadian Equities	10%	40%	15%	48%	20%	55%
Canadian Low Volatility Equities	10%	0%	10%	0%	10%	0%
U.S. Equities	5%	0%	5%	0%	12%	0%
U.S. Low Volatility Equities	5%	0%	5%	0%	0%	0%
International Equities	10%	0%	15%	0%	18%	0%
Alternatives	**10%**	**23%**	**10%**	**20%**	**10%**	**20%**
Canadian Core Real Estate*	5%	3%	5%	0%	5%	0%
Global Infrastructure*	5%	20%	5%	20%	5%	20%

[1] Refer to appendix for modeling assumptions and disclosures.
[2] CVaR95 which represents the expected loss during the worst 5% of return outcomes.
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Constraints – sensitivity testing

Comparison of portfolios (excluding Alternatives)

Modeled Expectations[1]	B	B*	D	D*	F	F*
Long-Term Return	5.7%	6.1%	6.4%	7.0%	7.0%	7.4%
Annual Downside Risk[2]	-4.9%	-5.0%	-9.6%	-10.0%	-14.4%	-15.0%
Annual Volatility	4.0%	4.5%	6.3%	7.3%	8.9%	10.2%
Sharpe Ratio	0.57	0.62	0.48	0.49	0.40	0.39
Fixed Income	**80%**	**71%**	**60%**	**47%**	**40%**	**40%**
Canadian Money Market	0%	0%	0%	0%	0%	0%
Short-Term Bonds and Mortgages	50%	31%	25%	20%	20%	20%
Corporate Bonds	0%	0%	0%	0%	0%	0%
Private Placement Corporate Debt	10%	20%	10%	7%	0%	0%
Commercial Mortgages*	10%	20%	10%	20%	10%	20%
High Yield Bonds	0%	0%	0%	0%	0%	0%
Global Multi-Asset Credit	10%	0%	15%	0%	10%	0%
Equities	**20%**	**29%**	**40%**	**53%**	**60%**	**60%**
Canadian Equities	5%	4%	10%	23%	25%	60%
Canadian Low Volatility Equities	5%	25%	10%	30%	5%	0%
U.S. Equities	2%	0%	5%	0%	6%	0%
U.S. Low Volatility Equities	2%	0%	5%	0%	6%	0%
International Equities	6%	0%	10%	0%	18%	0%
Alternatives	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
Canadian Core Real Estate*	0%	0%	0%	0%	0%	0%
Global Infrastructure*	0%	0%	0%	0%	0%	0%

[1] Refer to appendix for modeling assumptions and disclosures.
[2] CVaR95 which represents the expected loss during the worst 5% of return outcomes.
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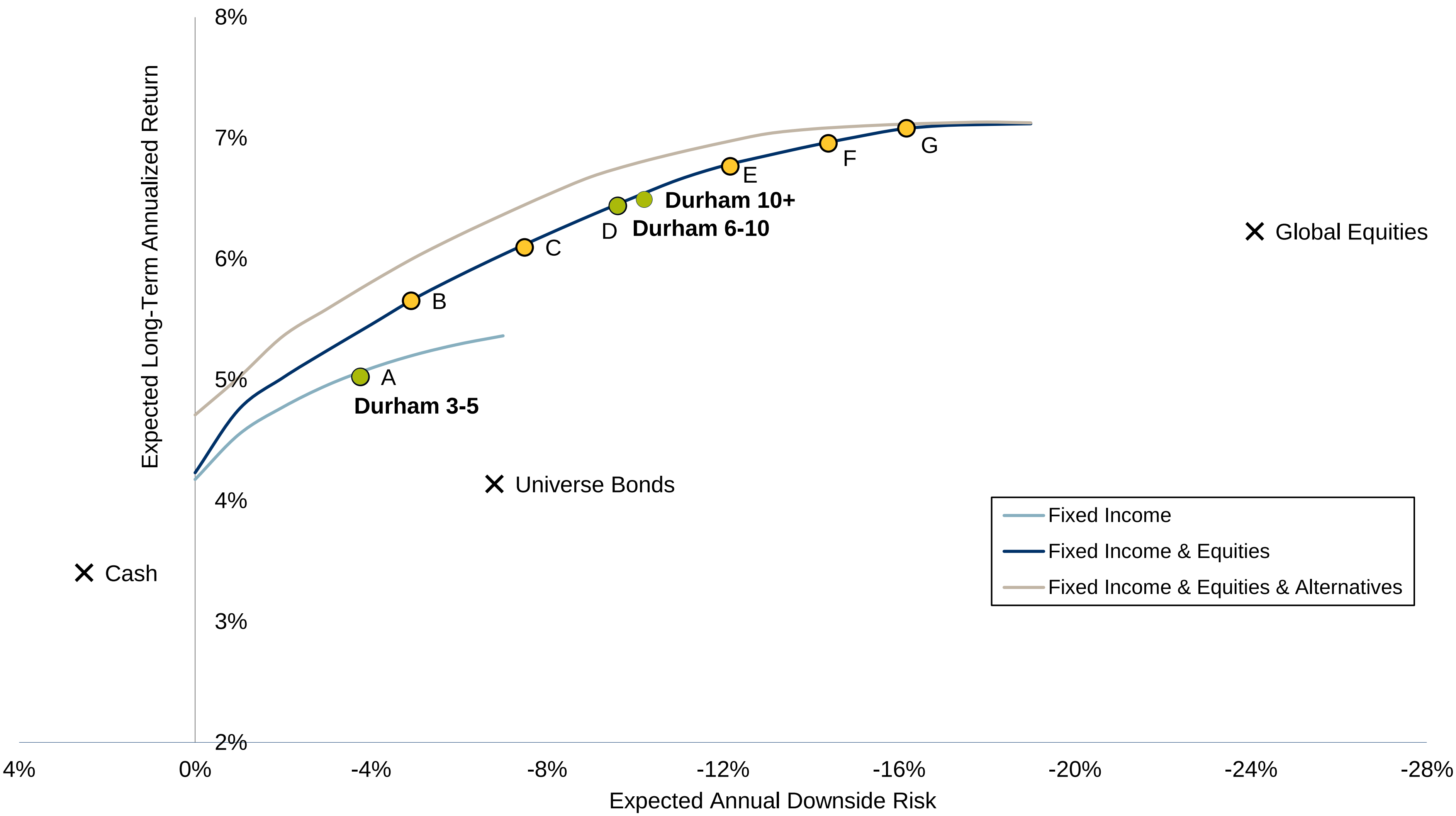
Comparison vs. Durham portfolios

Efficient Frontier Analysis

Custom modeled portfolios for Durham



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Recommended Fund Fulfillment

Fund fulfillment

Risk exposure	Approved Fund(s)	Characteristics	Target
Fixed Income			
Canadian Money Market	PH&N Canadian Money Market Fund	Money market	
Canadian Short-Term Bonds	PH&N Short Term Bond & Mortgage Fund RBC Vision Fossil Fuel Free Short Term Bond Fund	Short-term fixed income Short-term fixed income ex. fossil fuel	100% 0%
Canadian Universe Bonds	PH&N Bond Fund RBC Vision Bond Fund RBC Vision Fossil Fuel Free Bond Fund PH&N Enhanced Total Return Bond Fund	Canadian universe bonds Canadian universe bonds w/ ESG focus Canadian universe bonds ex. fossil fuel Canadian universe bonds w/ HY, Mtgs.	
Canadian Corporate Bonds	PH&N Corporate Bond Trust	Investment grade corporate bonds	
Private Placement Corporate Debt	PH&N Private Placement Corporate Debt Fund	Private credit	100%
Commercial Mortgages	PH&N Mortgage Pension Trust*	Conventional	0%
	RBC Commercial Mortgage Fund	Conventional Conventional plus High yield	100%
High Yield Bonds	RBC High Yield Bond Fund	U.S focus	50%
	PH&N High Yield Bond Fund	Canadian focus	50%
Global Multi-Asset Credit	BlueBay Total Return Credit Fund	Global high yield, financial capital bonds, structured credit, global convertible bonds, EM hard currency debt, EM local currency debt, opportunistic, investment grade bonds.	100%
Global Bonds	RBC Global Bond Fund	Investment grade global bonds	
Emerging Market Bonds	RBC Emerging Markets Bond Fund	Emerging market bonds	

Fund fulfillment

Risk exposure	Approved Fund(s)	Characteristics	Target
Equities			
Canadian Equities	PH&N Canadian Equity Value Fund PH&N Canadian Equity Fund RBC QUBE Canadian Equity Fund RBC Vision Canadian Equity Fund	Value Growth Quantitative ESG tilt (exclusions)	33% 33% 33% 0%
Canadian Low Volatility Equities	RBC QUBE Low Volatility Canadian Equity Fund RBC Vision QUBE Fossil Fuel Free Low Volatility Canadian Equity Fund	Quantitative low volatility Quantitative low volatility excl. fossil fuel	100% 0%
U.S. Equities	PH&N U.S. Equity Fund RBC QUBE U.S. Equity Fund	Core Quantitative	50% 50%
U.S. Low Volatility Equities	RBC QUBE Low Volatility U.S. Equity Fund	Quantitative low volatility	100%
International Equities	RBC International Equity Fund PH&N Overseas Equity Fund	Core Concentrated	50% 50%
Global Equities	RBC Global Equity Focus Fund RBC Global Equity Leaders Fund RBC Vision Global Equity Fund RBC Vision Fossil Fuel Free Global Equity Fund RBC QUBE Low Volatility Global Equity Fund RBC QUBE Global Equity Fund	Concentrated Concentrated (large cap focus) ESG tilt (exclusions) Concentrated excl. fossil fuel Quantitative low volatility Quantitative	
Alternatives			
Real Estate	RBC Canadian Core Real Estate Fund	Canadian commercial real estate	100%
Infrastructure	RBC Global Infrastructure Fund	Global infrastructure	100%

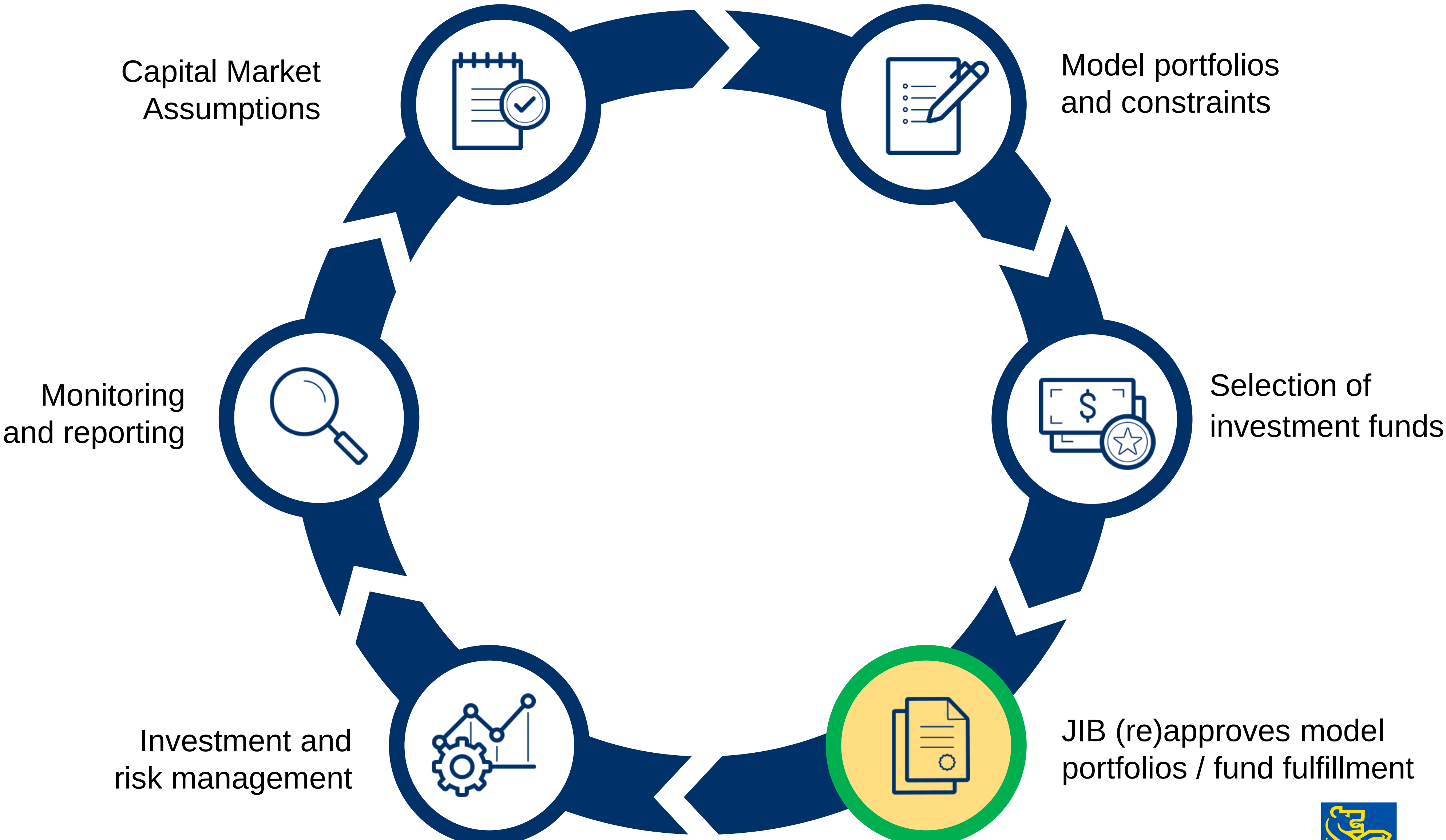
Rebalancing process

- For each asset class, a range will be defined based on size of target allocation:
  - Allocations greater than or equal to 30%: +/- 2.0%
  - Allocations greater than or equal to 15%: +/- 1.5%
  - Allocations less than 15%: +/- 1.0%
- When the range is breached, the asset mix will be rebalanced back to target as shown in the example below:

			Example		
Portfolio A	**Target Mix**	**Range +/-%**	**Pre-trade**	**Trade**	**Post-trade**
Short-Term Bonds and Mortgages	50%	2.0%	**47.5%**	2.5%	**50%**
Corporate Bonds	20%	1.5%	**21.0%**	-1.0%	**20%**
Private Placement Corporate Debt	5%	1.0%	**4.5%**	0.5%	**5%**
Commercial Mortgages	5%	1.0%	**5.0%**	0.0%	**5%**
High Yield Bonds	5%	1.0%	**6.0%**	-1.0%	**5%**
Global Multi-Asset Credit	15%	1.5%	**16.0%**	-1.0%	**15%**
Total	**100%**		**100.0%**	**0.0%**	**100%**

- Appropriate substitutes will be established for funds that do not have daily liquidity.
- Subscriptions and redemptions will be used to rebalance towards the target mix.
- Rebalancing will crystallize realized gains or losses.

Quarterly governance cycle



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Capital market assumptions – Q2 2024

Capital market assumptions – Q2 2024

Expected risk and return

Asset Classes	Representative Data Series	Expected Long-Term Return	Expected Annual Volatility	Expected Annual Downside Risk
Cash	FTSE Canada 30 Day TBill Index	3.4%	0.4%	2.5%
Universe Bonds	FTSE Canada Universe Bond Index	4.1%	5.0%	-6.8%
Canadian Money Market	PH&N Canadian Money Market Strategy	3.5%	0.9%	1.7%
Short-Term Bonds and Mortgages	Custom Index[1]	4.2%	2.4%	-0.9%
Enhanced Universe Bond Strategy	Custom Index[2]	4.6%	5.2%	-7.2%
Corporate Bonds	Custom Index[3]	4.7%	4.5%	-5.8%
Private Placement Corporate Debt	Custom Index[4]	5.7%	5.5%	-7.8%
Commercial Mortgages*	Custom Index[5]	7.0%	3.1%	-5.0%
Global Sovereign Bonds	Custom Index[6]	3.8%	4.1%	-4.7%
High Yield Bonds	ICE BofA US High Yield Master II (CAD-Hedged)	5.9%	9.8%	-16.2%
Broad EMD	Custom Index[7]	5.7%	10.5%	-14.2%
Global Multi-Asset Credit	Custom Index[8]	6.8%	8.4%	-16.2%
Canadian Equities	S&P/TSX Composite Index	8.2%	16.9%	-26.1%
Canadian Low Volatility Equities	RBC QUBE Low Volatility Canadian Equity Strategy	7.4%	11.7%	-15.1%
U.S. Equities	S&P 500 Index (CAD)	5.5%	14.8%	-23.4%
U.S. Low Volatility Equities	RBC QUBE Low Volatility U.S. Equity Strategy (CAD)	4.9%	12.8%	-15.8%
International Equities	MSCI EAFE Index (CAD)	7.6%	16.5%	-28.5%
Global Equities	MSCI World Index (CAD)	6.2%	14.4%	-24.1%
Canadian Core Real Estate*	RBC Canadian Core Real Estate Strategy	6.3%	9.6%	-13.1%
Global Infrastructure*	EDHEC Infra 300 Index (Local)	6.7%	12.2%	-17.7%
Inflation	Canadian CPI (Non-Seasonally Adjusted)	2.3%	1.5%	N/A

Please see disclosures on the following slide.

Capital market assumptions – Q2 2024

Disclosures

Capital market assumptions represent the views of PH&N Institutional for the purposes of illustrating and understanding the potential risk-reward trade-off of different portfolio decisions and are established by considering a variety of qualitative and quantitative sources of information including: different forecasting models; internal and external research; existing and implied future conditions as priced by capital markets; and internal views of our fund managers. Expected long term annualized returns are for a 10-year forecast time horizon. Volatilities, downside risk and correlations are estimated from historical data and adjusted as required to reflect future market conditions. Investors should be aware of the limitations using forward-looking assumptions in that there is absolutely no guarantee that future performance will occur according to any ex-ante expectation.
Expected return net of fees

[1] 49% FTSE Canada Short Term Government Bond Index, 45% FTSE Canada Short Term Corporate Bond Index and 6% PH&N Mortgage Strategy.

[2] 12.5% FTSE Canada Federal Bond Index, 32.5% FTSE Canada Provincial Bond Index, 45% FTSE Canada All Corporate Bond Index, 7.5% PH&N Mortgage Strategy and 2.5% ICE BofA US High Yield Master II (CAD-H).
3 25% FTSE Canada Corporate AA+ Bond Index , 25% FTSE Canada Corporate A Bond Index and 50% FTSE Canada Corporate BBB Bond Index.

[4] 98% FTSE Canada Mid Term Federal and 2% FTSE Canada Long Term Federal Bond Index + 50% FTSE Canada Short Term Corporate Bond Index (spread) and 50% FTSE Canada Mid Term Corporate Bond Index (spread).
[5] 45% PH&N Mortgage Strategy and 55% PH&N High Yield Mortgage Strategy.
[6] 90% ICE BofA Global Government Index (CAD-H), 3% ICE BofA US High Yield Master II (CAD-H), 2.5% J.P. Morgan Emerging Market Bond Index (CAD-H), 2.5% J.P. Morgan Corporate Emerging Markets Bond Index (CAD-H) and 2% RBC Emerging Markets Foreign Exchange Strategy.
[7] 25% J.P. Morgan Emerging Market Bond Index (CAD-H), 19% J.P. Morgan Corporate Emerging Markets Bond Index (CAD-H) and 56% J.P. Morgan Government Bond Index-Emerging Markets (GBI-EM) (CAD-H) (weights according to the market capitalization of each individual index as at March 31, 2024).

[8] 7.5% ICE BofA 3 Month US T-Bills (CAD-H), 35% ICE BofA Global High Yield Index (CAD-H), 11.25% J.P. Morgan Emerging Market Bond Index (CAD-H), 11.25% J.P. Morgan Corporate Emerging Markets Bond Index (CAD-H), 7.5% J.P. Morgan Government Bond Index-Emerging Markets (GBI-EM) (CAD-H), 7.5% Credit Suisse Leveraged Loan Index (CAD-H) and 20% Thomson Reuters Convertible Global Focus Index (CAD-H)

Capital market assumptions – Q2 2024

Correlations

Correlations	Cash	Universe Bonds	Canadian Money Market	Short-Term Bonds and Mortgages	Enhanced Universe Bond Strategy	Corporate Bonds	Private Placement Corporate Debt	Commercial Mortgages	Global Sovereign Bonds	High Yield Bonds	Broad EMD	Global Multi-Asset Credit	Canadian Equities	Canadian Low Volatility Equities	U.S. Equities	U.S. Low Volatility Equities	International Equities	Global Equities	Canadian Core Real Estate	Global Infrastructure	Inflation
Cash	**1**																				
Universe Bonds	0.1	**1**																			
Canadian Money Market	1.0	0.1	**1**																		
Short-Term Bonds and Mortgages	0.2	0.9	0.2	**1**																	
Enhanced Universe Bond Strategy	0.1	1.0	0.1	0.9	**1**																
Corporate Bonds	0.1	0.9	0.1	0.8	1.0	**1**															
Private Placement Corporate Debt	0.1	1.0	0.1	0.9	1.0	1.0	**1**														
Commercial Mortgages	0.2	0.7	0.1	0.8	0.7	0.7	0.8	**1**													
Global Sovereign Bonds	0.1	0.9	0.1	0.8	0.8	0.7	0.8	0.7	**1**												
High Yield Bonds	-0.1	0.3	-0.1	0.2	0.4	0.5	0.4	0.2	0.2	**1**											
Broad EMD	0.0	0.4	0.0	0.3	0.5	0.5	0.5	0.3	0.4	0.8	**1**										
Global Multi-Asset Credit	0.0	0.3	0.0	0.3	0.5	0.5	0.4	0.2	0.3	0.9	0.9	**1**									
Canadian Equities	-0.1	0.1	-0.1	0.0	0.2	0.3	0.2	0.1	0.0	0.7	0.6	0.8	**1**								
Canadian Low Volatility Equities	-0.1	0.2	-0.1	0.1	0.3	0.4	0.3	0.2	0.2	0.6	0.5	0.6	0.8	**1**							
U.S. Equities	-0.1	0.2	-0.1	0.1	0.2	0.3	0.2	0.1	0.0	0.5	0.3	0.4	0.6	0.6	**1**						
U.S. Low Volatility Equities	-0.1	0.3	-0.1	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.2	0.4	0.5	0.8	**1**					
International Equities	0.0	0.2	-0.1	0.2	0.3	0.3	0.3	0.2	0.1	0.6	0.5	0.6	0.7	0.5	0.8	0.5	**1**				
Global Equities	-0.1	0.2	-0.1	0.1	0.3	0.3	0.2	0.1	0.0	0.5	0.4	0.5	0.7	0.6	1.0	0.7	0.9	**1**			
Canadian Core Real Estate	0.1	-0.2	0.0	-0.2	-0.2	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0.0	-0.1	0.0	0.0	-0.1	**1**		
Global Infrastructure	0.0	0.4	0.0	0.3	0.4	0.3	0.4	0.4	0.5	0.0	0.2	0.1	0.0	0.3	0.0	0.3	0.1	0.0	0.3	1.0	
Inflation	-0.1	-0.2	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.1	0.1	0.0	-0.1	0.0	0.0	0.0	-0.3	**1**

Capital market assumptions represent the views of PH&N Institutional for the purposes of illustrating and understanding the potential risk-reward trade-off of different portfolio decisions and are established by considering a variety of qualitative and quantitative sources of information including: different forecasting models; internal and external research; existing and implied future conditions as priced by capital markets; and internal views of our fund managers. Expected long term annualized returns are for a 10 year forecast time horizon. Volatilities, downside risk and correlations are estimated from historical data and adjusted as required to reflect future market conditions. Investors should be aware of the limitations using forward-looking assumptions in that there is absolutely no guarantee that future performance will occur according to any ex-ante expectation.

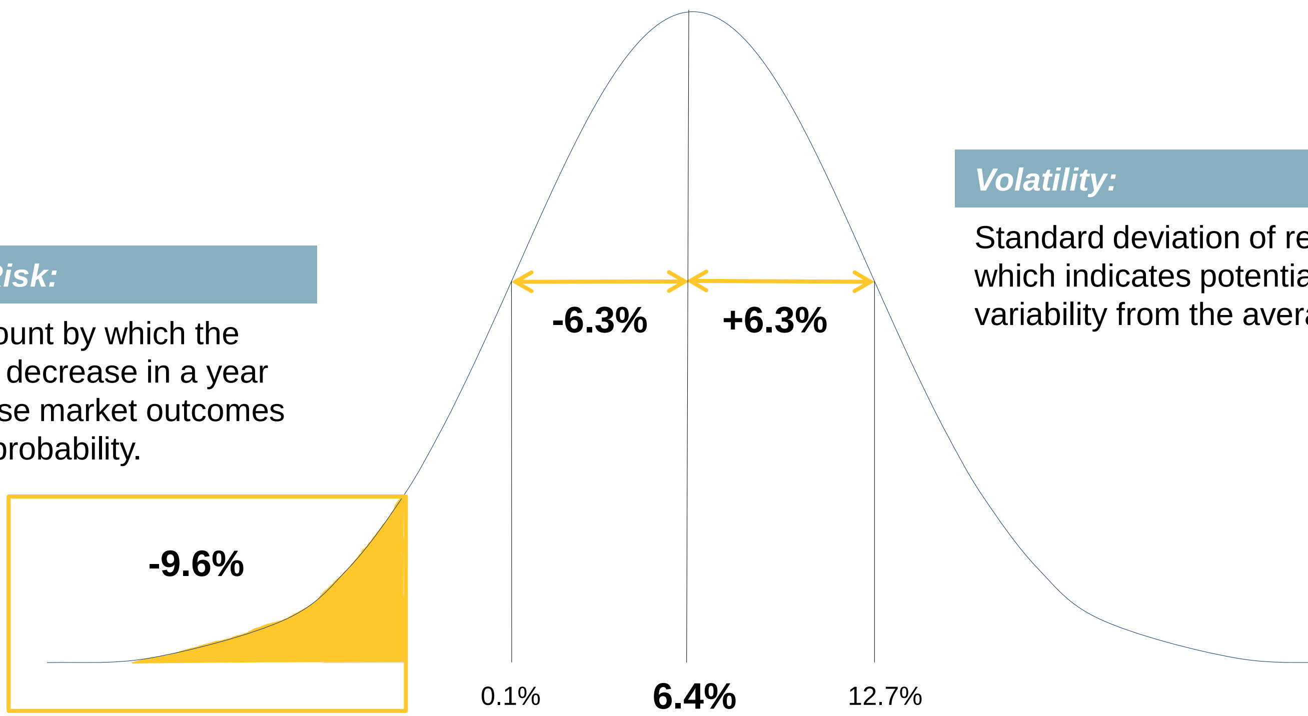
Capital market assumptions - background

Understanding the statistics

Example – Portfolio D

Current Portfolio	
Expected Return	6.4%
Downside Risk	-9.6%
Volatility	6.3%

Return Distribution



Downside Risk:

Average amount by which the assets could decrease in a year during adverse market outcomes with 1 in 20 probability.

Volatility:

Standard deviation of returns which indicates potential variability from the average.

Expected Return:

The average amount by which assets are expected to grow in a year.

Source: RBC GAM.

Long-term assumptions for strategic portfolio modeling

Overview

The RBC Global Asset Management Long-Term Expected Return (LTER) Committee, led by the CIO, is ultimately responsible for approving best estimate return assumptions

Capital market assumptions are established by considering a variety of qualitative and quantitative sources of information including:

- Different forecasting models
- Internal and external research
- Existing and implied future conditions as priced by capital markets
- Internal views of our fund managers

Volatilities, downside risk and correlations are estimated from historical data and adjusted as required to reflect future market conditions

Long-term assumptions for strategic portfolio modeling

Framework and methodology (return)

Systematic process with multiple sources of information

Expected returns

Fixed Income (IG, HY, EM)

Based on projected yield and spread movements

- Risk-free interest rates assumed to follow the applicable forward curve
- Credit spreads expected to mean revert with adjustments for structural market changes

Returns on bonds with credit risk are adjusted for expected default and recovery rates

Equities & Alternatives

Based on output of different forecasting models

- Fundamental Fair Value
- Valuation
- Cross-sectional
- Economic Forecasts

Final assumptions are the result of blending the output from the different models

The RBC Global Asset Management Long-Term Expected Return (LTER) Committee is ultimately responsible for approving best estimate return assumptions

Long-term assumptions for strategic portfolio modeling

Framework and methodology (risk)

Volatilities and correlations are estimated from historical data and adjusted as required to reflect expected future conditions

Volatilities

Calibrated using a dual-state regime switching lognormal model that better captures empirical characteristics and inherent asset class risk

Correlations

Calibrated from empirical distribution at monthly and/or quarterly frequencies

Model generated estimates of downside risk (i.e. CVaR 95) account for the influence of excess skewness and kurtosis

Long-term assumptions for strategic portfolio modeling

- The views of fund managers are incorporated throughout the process and adjustments are made when deemed necessary
- Most assumptions are for generic asset class representations (e.g. market indices)
  - No provision for explicit added value over a benchmark
  - No provision for specific manager investment style that may affect risk
- Expected structural biases and/or fund data are sometimes incorporated when modeling a specific strategy that does not have a sufficiently representative benchmark
- All alternatives are assumed to be net of IMFs (unless otherwise specified)

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