Virginia529 Risk Model Review

Virginia Joint Legislative Audit and Review Commission (JLARC)

August 2024

Project Overview

Background

Aon Investments USA, Inc. (“Aon”) was retained by the Joint Legislative Audit & Review Commission to perform a review of Virginia529’s Risk Based Capital (“RBC”) risk management approach for the defined benefit college savings fund. Our review will focus on the efficacy of utilizing an RBC approach for a Prepaid 529 Program, potential alternatives, and guidance on the appropriate level of surplus.

Purpose

Assess whether it is reasonable and appropriate to use an RBC framework to assess the actuarial and financial health of a defined benefit college savings program

Advise on alternative risk models that may enhance reviews of the actuarial and financial health of the DB529 Fund, in addition to an actuarial valuation.

Process used

- Interviewed involved parties to understand circumstances behind RBC model and perspectives of the model’s use
- Collected data from Virginia 529 and program actuary to conduct analysis
- Reviewed relevant “industry practices”
- Identified and evaluated alternative risk model approaches
- Prepared illustrations of key results
- Report conclusions

Project Overview (continued)

Analysis performed

Aon's review includes four potential risk models for Virginia 529:

1. Actuarial Valuation Model
2. Risk Based Capital Model
3. Liability-Driven Investment Model
4. Stochastic Simulation Model

For each model, Aon's evaluation includes:

- Key model features
- Model characteristics relative to Aon's criteria for an effective risk model
- Results under different investment portfolios to determine how each model responds to higher and lower risk/return assets
- Advantages and disadvantages of using the model

Limitations of this review

In preparing this review, Aon relied on existing analysis and established models developed by outside parties, particularly the program actuary. Additional review of the program liabilities, including the impact of variations in actuarial assumptions and experience relative to those assumptions, is outside the scope of this review. As a result, the illustrations of projected surplus and ratios presented herein should be considered illustrative and exist solely for the purpose of comparing various risk models.

Scope of Aon's Study- 4 Risk Models

4 risk models typically used by institutional investment programs

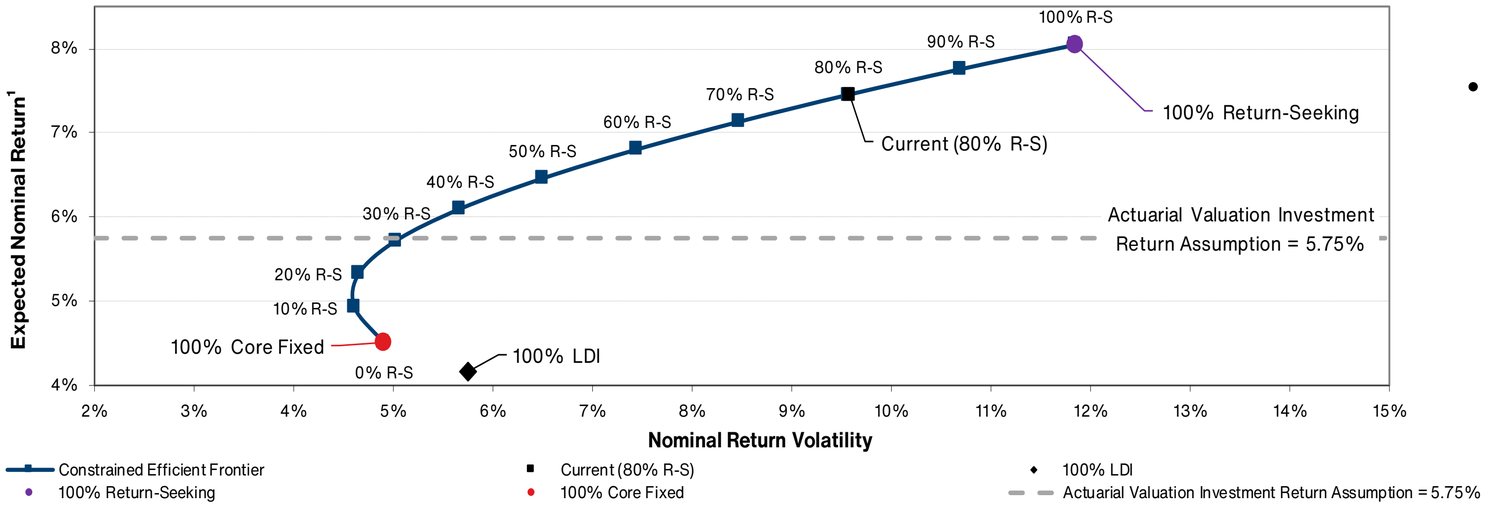
1. **Actuarial Valuation Model:** determine whether funds have sufficient assets to cover the actuarially estimated value of the tuition obligations and expenses using "best estimate" assumptions
2. **Risk Based Capital Model:** adds a risk-based charge to the actuarial liabilities and measures the degree to which the surplus covers the charge
3. **Liability-Driven Investment Model:** uses high quality investment grade bond yields as the discount rate for the liability for added security; assets may be invested in similar high-quality assets to insulate the surplus from market changes
4. **Stochastic Simulation Model:** projects asses, liabilities, and surplus under many economic scenarios over a relevant time period, and assigns probabilities to various outcomes

All analysis performed excludes the $500mm already allocated to access/affordability initiatives

Key Takeaway – Aon evaluated 4 commonly used approaches to risk management.

Scope of Aon's Study- 4 Investment Portfolios

4 investment portfolios to demonstrate the impact of asset allocation on each risk model



- The 4 investment portfolios shown were selected to demonstrate the impact of asset allocation on each risk model

Key Takeaway – Different asset allocations may affect different risk models in different ways. To highlight this, our analysis utilizes the 4 portfolios outlined to the left, including higher and lower risk portfolios.

	Measures of Risk and Return					Return-Seeking (R-S) Assets						Risk-Reducing (Investment Grade Bonds)		
	Expected Nominal Return[1]	Nominal Return Volatility	Surplus Volatility (LDI Basis)[2]	RBC Charge (NAIC)	RBC Charge (Virginia 529)[3]	Public Equity	Private Equity	Liquid R-S Fixed	Illiquid R-S Fixed	Core Real Estate	Non-Core Real	Cash & Short Duration Bonds	Core Bonds	Liability-Hedging Treasury Strips
Current (80% R-S)	7.4%	9.6%	11.2%	14.2%	7.6%	21%	16%	21%	13%	6%	2%	1%	18%	0%
100% LDI	4.2%	5.8%	3.2%	0.1%	0.0%	0%	0%	0%	0%	0%	0%	19%	0%	82%
100% Return-Seeking	8.0%	11.9%	13.6%	17.5%	9.4%	26%	20%	27%	16%	8%	3%	0%	0%	0%
100% Core Fixed	4.5%	4.9%	3.6%	0.6%	0.3%	0%	0%	0%	0%	0%	0%	0%	100%	0%

[1] Expected returns are using Aon Q1 2024 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Investment advisory fee of $90,000 was included in the net return. Your actual returns may differ from model returns presented based on your plan's individual fees/expenses. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

[2] Surplus Volatility defined as the variability in surplus (expressed as a percentage of liabilities) assuming a one standard deviation event over a one-year period

[3] Per Milliman: reduced the RBC factors used in model relative to the unadjusted NAIC factors to make them more suitable and reflective of historical experience– particularly those for equity, low credit quality preferred stock, and low quality fixed income. To approximate these adjustments, Aon reduced equity and fixed income factors by half to match Milliman's RBC model results.

Scope of Aon's Study- 1,000 Economic Scenarios

1,000 simulations over 10 years, including a base case and a very pessimistic scenario

- The Aon Asset Model and Economic Scenario Generator (ESG) creates 1,000 simulations of key economic variables and total returns
- We believe the model is complete and consistent. All the major markets and asset classes are modeled within a consistent framework allowing for the interactions between them to be properly taken into account
- It is arbitrage free and captures the fact that extreme market events occur more frequently than would be predicted by simpler statistical models
- The ESG models the full yield curve as this allows for accurate treatment of liabilities and realistic modeling of the future distribution of interest rates and inflation. This allows us to assess the sensitivities of assets and liabilities to changes in interest and inflation rates
- The model is calibrated to Aon's globally-consistent Capital Market assumptions every quarter
- Examples shown of a base case scenario vs. severe "dark skies" scenario reflecting a deep recession followed by a long period of stagnant growth (~10-years)

Key Takeaway – Our analysis includes various economic scenarios, including a very extreme (1%) poor economic outcome.

Returns from 31 December 2023
Source: Aon*

The opinions referenced are as of the date of publication and are subject to change due to changes in the market or economic conditions and may not necessarily come to pass. Information contained herein is for informational purposes only and should not be considered investment advice.
*Expected returns are using Aon Q1 2024 10-year Capital Market Assumptions (CMAs) as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. AIUSA's advisory fees are described in Part 2A of AIUSA's Form ADV. Not a guarantee of future results. Investment Advisory fees are assumed to be 0.5% for all portfolios.

Scope of Aon's Study- Stochastic Simulation

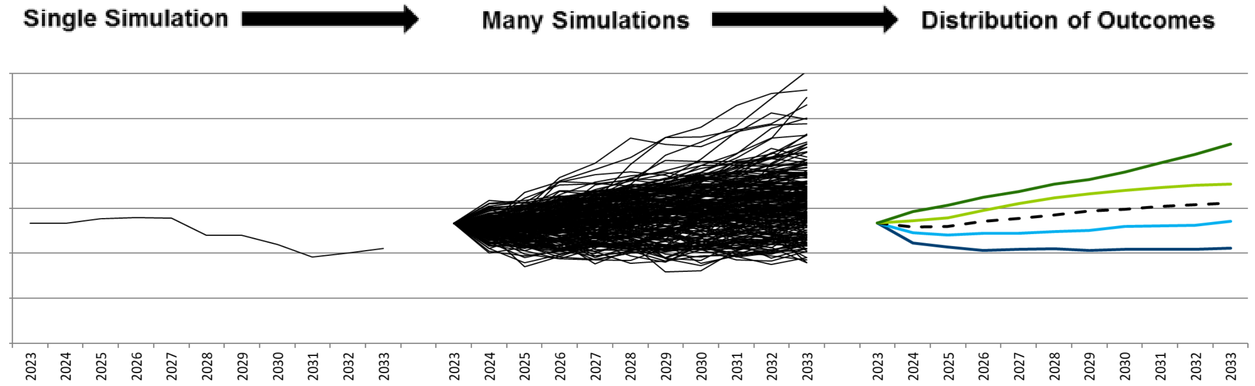
What is a Stochastic Simulation Model?

Monte Carlo asset-liability simulation with 1,000 future economic scenarios over a 10-year period using Aon's expected returns, standard deviations, correlations, and experience for various asset classes and inflation as of December 31, 2023

Asset and liability modeling integrated in single platform with flexibility in modeling parameters and output to Virginia 529's preferences

Range of scenarios evaluated at various confidence levels

- **Very Optimistic scenario** - expect 95% of the results to lie below it (i.e., a 1 in 20 chance of the result being as good as this or better)
- **Optimistic scenario** - expect 75% of the results to lie below it (i.e., a 1 in 4 chance of the result being as good as this or better)
- **Expected scenario** - the central result, so that half the results are expected to be better and half worse
- **Pessimistic scenario** - expect 75% of the results to lie above it (i.e., a 1 in 4 chance of the result being as bad as this or worse)
- **Very Pessimistic scenario** - expect 95% of the results to lie above it (i.e., a 1 in 20 chance of the result being as bad as this or worse)
- **Extremely Pessimistic scenario** - expect 99% of the results to lie above it (i.e., a 1 in 100 chance of the result being as bad as this or worse)



Key Takeaway – Stochastic analysis represents the many scenarios that can be expected to occur over time (middle chart), summarized by their probability (far right chart).

Study Results- Comparison of Risk Model Attributes

Stochastic Simulation Model addresses many of the key criteria in risk model review

Criteria	Description	(1) Actuarial Valuation	(2) Risk Based Capital	(3) Liability-Driven Investment	(4) Stochastic Simulation
Conservative	High probability (>50%) that assumptions are realized so as not to be detrimental to the surplus		☑	☑	☑
Reflects investment risk	Captures potential surplus volatility from risky investments		☑	☑	☑
Reflects future trends	Reflects changes that may occur over time, rather than using a point-in-time measurement				☑
Comprehensive	Includes a wide range of possible scenarios (including some randomness) and reduces reliance on manually selected assumptions				☑
Output is easy to use by decision makers	Results communicated in terms of key metrics, like $ surplus, and probabilities of risky outcomes	☑		☑	☑
Low additional cost/resources needed to produce	Either already produced, or low additional cost to produce	☑	☑	☑	

Key Takeaway – Actuarial Valuation is the industry approach for assessing defined benefit college savings plans and provides the foundation for other risk models. Stochastic Simulation Model addresses all but one of the key criteria for risk models, but is more resource intensive to produce.

Study Results- Comparison of Risk Model Output

Stochastic Simulation Model builds upon point-in-time models like RBC

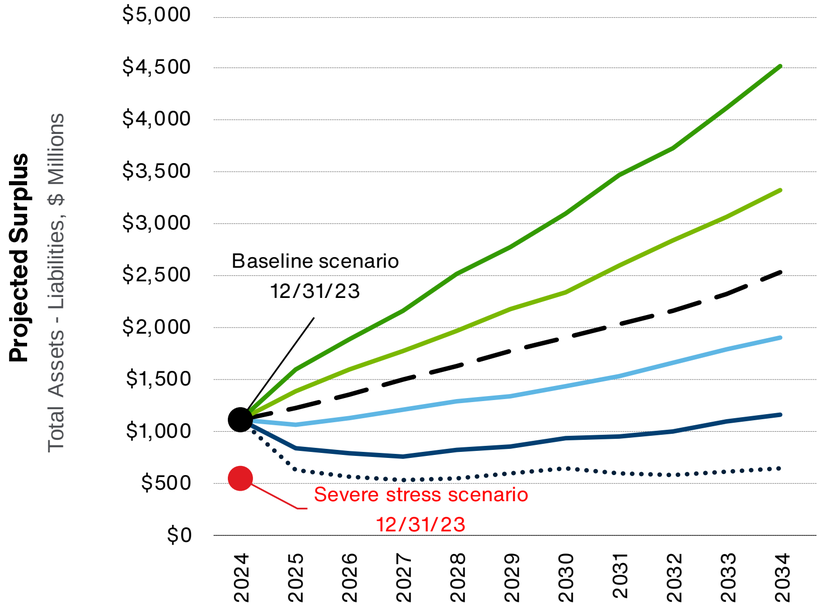
Summary of Model Results $ millions	**(1) Actuarial Valuation**	**(2) Risk Based Capital**		**(3) Liability-Driven Investment**	**(4) Stochastic Simulation (1 Year)**		
		Baseline	**Severe Stress**		**Expected** **(50th Percentile)**	**Very Pessimistic** **(5th Percentile)**	**Extremely Pessimistic** **(1st Percentile)**
(1) Liability[1]	$1,351	$1,351	$1,434	$1,473	Varies[3]	Varies[3]	Varies[3]
(2) Assets[2]	$2,418	$2,418	$1,995	$2,479	Varies[3]	Varies[3]	Varies[3]
(3) Surplus **= (2) – (1)**	**$1,128**	**$1,128**	**$561**	**$1,006**	**$1,239,** trending **higher**	**$848,** trending **higher**	**$638,** trending **roughly level**
(4) Risk Charge[2] = (2) x Investment Risk Factor	-	$184	$147	$278	-	-	-
(5) Surplus less Risk Charge = (3) – (4)	N/A	$944	$414	$728	N/A	N/A	N/A
(6) Coverage Ratio **= (3) / (4)** *How many times over can surplus pay for the risk charge? Lower ratios (e.g., <200%) indicate surplus may be at risk. Higher ratios (e.g., >400%) indicate surplus may be excessive relative to risks.*	N/A	**613%**	**382%**	**362%**	N/A	N/A	N/A

Key Takeaway – Point-in-time models like RBC apply a risk charge to estimate the impact of future stress on surplus; In contrast, Stochastic Simulation directly incorporates risks into surplus projections under many potential scenarios.

[1] For Models (1) and (2), based on December 31, 2023 actuarial valuation by Milliman. For Model (3), based on the net present value of the projected cash flows using Aon Treasury STRIPS yield curve. For Model (4), actuarial liabilities are projected based on 1,000 simulation trials using preliminary projections of market scenarios and plan circumstances. Not a guarantee of future results.
[2] Assets provided by Virginia 529; For Model (2), Severe Stress assets and RBC charge developed by Milliman in December 31, 2023 DB529 Risk Model Valuation and Stress Test Results. For Model (3), risk charge developed by Aon based on expected volatility of surplus under a one standard deviation event over a one year period.
[3] Stochastic projection of assets and liabilities vary over 1,000 trials. Surplus at various confidence levels may result from different combinations of higher/lower assets and higher/lower liabilities.
Expected returns are using Aon Q1 2024 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Investment advisory fee of $90,000 was included in the net return. Your actual returns may differ from model returns presented based on your plan's individual fees/expenses. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

Study Results- Stochastic Simulation Model Results

Summary of results: 10-year projections of surplus under various economic scenarios



95th Percentile

75th Percentile

50th Percentile

25th Percentile

5th Percentile

1st Percentile

Actuarially determined surplus is **projected to grow** except under the very pessimistic and extremely pessimistic scenarios

Simulation analysis demonstrates **99% confidence of >$500 million surplus** over the next 10 years (in addition to the $500 million already allocated to access/affordability initiatives)

- This result is similar to the “severe stress” scenario in the RBC model

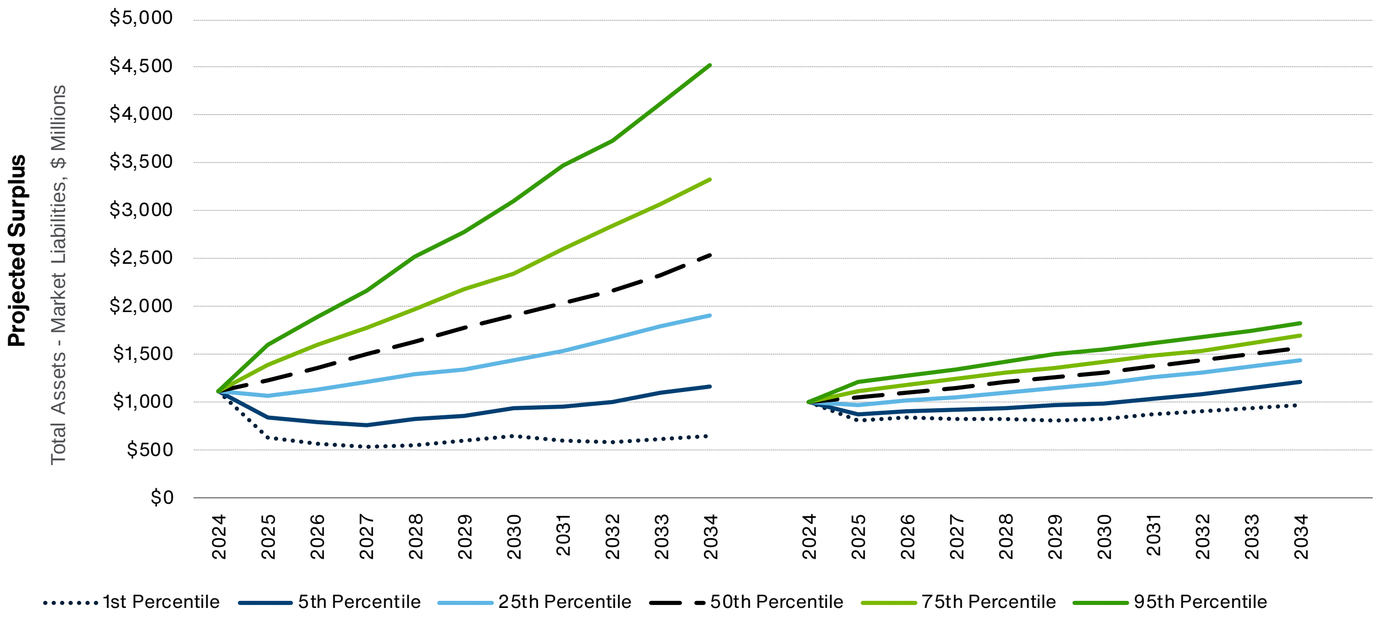
Scenario	Current 80% R-S		
Year	2025	2029	2034
Prob. of Full Funding	>99%	>99%	>99%
Surplus at 50th Pctile, $ M	$1,239	$1,782	$2,533
Surplus at 5th Pctile, $ M	$848	$856	$1,162
Surplus at 1st Pctile, $ M	$638	$606	$658

Key Takeaway – After removing the $500 million already allocated to access/affordability initiatives, there is 99% modeled probability of an additional surplus of $500 million over the next 10 years. In baseline and optimistic market scenarios, the surplus may be much higher.

Based on 1,000 simulation trials. Illustrative charts based on preliminary projections of market scenarios and plan circumstances. Not a guarantee of future results.

Study Results- Impact of Asset Allocation on Projected Surplus

Summary of results: 10-year projections of surplus, current portfolio vs. 100% LDI



Scenario	Current (80% R-S)		100% LDI	
Year	2029	2034	2029	2034
Prob. of Full Funding	>99%	>99%	>99%	>99%
Surplus at 50th Pctile, $	$1,782	$2,533	$1,266	$1,573
Surplus at 1st Pctile, $ M	$606	$658	$809	$973

Selection of asset allocation affects projected dispersion of surplus

Using an LDI approach can provide a high degree of certainty in the projected surplus if the assets can be invested in liability-hedging bonds

- Under the 100% LDI approach, projected surplus exceeds $800 million in 99% of the scenarios modeled

Key Takeaway – Different asset allocations have different projected surplus trendlines and variability.

Based on 1,000 simulation trials. Illustrative charts based on preliminary projections of market scenarios and plan circumstances. Not a guarantee of future results.

Study Results- RBC Model Review

Summary of results: Evaluation of key RBC model assumptions

If using an RBC model, consider ongoing review of the following key parameters (additional detail on pages 48-51):

Key Assumption	Current Basis	Rationale	Aon Initial Analysis	Rationale
Actuarial Discount Rate	5.75%	Investment return assumption	7.40%[1]	Expected return from Aon CMAs
"Severe Stress" Scenarios	+6.1% liabilities -20.0% assets	Actuary's assessment of short-term shocks	+6.1% liabilities -17.3% assets	Liabilities: continue to use actuary's assessment; Assets: Based on 1st percentile value-at-risk from stochastic simulation of 1-year asset return
RBC Ratio Thresholds	400%-700%	Cited as similar to those used by insurance companies	200%-400%	Based on stochastic simulation of surplus under baseline and severe stress conditions. Lower ratios (e.g., <200%) indicate surplus may be at risk. Higher ratios (e.g., >400%) indicate surplus may be excessive relative to risks
RBC Charge Factor	7.6%	Derived from NAIC investment risk factors, with adjustment	4.3%	Based on 1st percentile value-at-risk from stochastic simulation of 10-year surplus return (asset return less liability return)

Key Takeaway – Current basis assumptions used in RBC model appear more conservative than we would expect.

[1] Expected returns are using Aon Q1 2024 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Investment advisory fee of $90,000 was included in the net return. Your actual returns may differ from model returns presented based on your plan's individual fees/expenses. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

Study Results- Summary of Key Findings

Conclusions and next steps

Aon suggests consideration of a **stochastic simulation** risk model for evaluating the projected surplus under various economic conditions, as it provides rich, customized data that can be useful in making decisions about surplus use

- Point-in-time risk models, like RBC, are generally simpler to produce, but provide limited information about potential future trends that can affect the projected surplus

Illustrative modeling suggests there is a very high likelihood (~99%) of maintaining a **surplus in excess of $500mm** even in the most pessimistic market scenario

- **All analysis performed excludes the $500mm already earmarked for access/affordability initiatives**

If preserving surplus is the main concern, using an **LDI approach** can provide the highest degree of certainty in the projected surplus if the assets can be invested in liability-hedging bonds

If using an RBC model, consider ongoing review of the following key parameters:

- **Actuarial discount rate**
- **RBC ratio thresholds**
- **Asset and liability stress scenarios**
- **RBC charge factors**

Based on 1,000 simulation trials. Illustrative charts based on preliminary projections of market scenarios and plan circumstances. Not a guarantee of future results.

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Actuarial Valuation Model

Actuarial Valuation

Overview

Defined benefit programs conduct periodic actuarial valuations to determine whether the defined benefit program has sufficient assets to cover the actuarially estimated value of the tuition obligations and expenses

Best estimate assumptions generally provide for 50% probability that realized results could be higher or lower (i.e. 100% funded means there is ~50% probability of meeting the obligation)

Stress tests are used to determine sensitivity of actuarial valuation of surplus to changes in key assumptions, such as tuition inflation and investment portfolio return

Key Takeaway – An Actuarial Valuation is performed for nearly all defined benefit plans, and the report is commonly used by stakeholders to understand the current health of a defined benefit plan. It is the foundation for many risk models.

Actuarial Valuation

Methodology

All results are based on “December 31, 2023 DB529 Risk Model Valuation and Stress Test Results” issued February 28, 2024 by Milliman

Key Takeaway – Actuarial Valuation information on the following slides is based on the report produced by the Plan’s actuary.

Actuarial Valuation

Summary of results as of December 31, 2023

$ millions	Actuarial Valuation
(1) Liability = Present Value of Tuition Obligations and Expenses	$1,351
(2) Invested Assets = Total Market Value of Investments[1]	$2,418
(3) Present Value of Installment Contract Receivables	$61
(4) Total Assets = (2) + (3)	$2,479
(5) Surplus **= (4) – (1)**	**$1,128**
(6) Funded Status = (4) / (1)	183%

Key Takeaway – The Actuarial Valuation suggests the “best estimate” of the surplus. The Plan has $1.83 for every $1.00 of projected liability. All analysis excludes the $500mm already earmarked for access/affordability initiatives.

Assets provided by Virginia 529; Liabilities based on December 31, 2023 actuarial valuation by Milliman

[1] Reduced by $500,000 for A&A

Actuarial Valuation

Additional results as of December 31, 2023: Expected surplus growth

$ millions	Value	%
(1) Liability	$1,351	
(2) Total Assets	$2,479	
(3) Liability Interest Cost = 5.75% x (1)	$78	5.75%
(4) Total "Hurdle Rate" = (3) / (2)	**$78**	**3.2%**
(5) Expected Return on Assets[1]	$180	7.4%
(6) Surplus/(Deficit) Growth = (5) – (4)	**$102**	**4.2%**

- 5.75% is the actuarial valuation discount rate used to discount future obligations to current dollars
- Each passing year, future obligations are one year closer to being due. As a result, the actuarial liabilities will grow by 5.75%, assuming all other assumptions are realized
- In order to keep pace with 5.75% expected liability growth *on a dollar basis*, assets need to grow by 3.2%
- The expected return of the portfolio is 7.4% using Aon CMAs[1]
- 7.4% exceeds actuarial discount rate of 5.75%
- As a result, surplus is expected to grow by $102mm or 4.2% per year

Key Takeaway – The surplus is expected to increase by $102mm per year because the Program is overfunded (earnings on the overfunding), and assets are expected to grow (investment returns) faster than liabilities.

[1] Expected returns are using Aon Q1 2024 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Investment advisory fee of $90,000 was included in the net return. Your actual returns may differ from model returns presented based on your plan's individual fees/expenses. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

Actuarial Valuation

Impact of asset allocation

$ millions	Current	100% Return Seeking	100% Core Fixed Income
Actuarial Discount Rate[1]	5.75%	6.35%	2.81%
(1) Liability	$1,351	$1,312	$1,556
(2) Total Assets	$2,479	$2,479	$2,479
(3) Surplus = (2) – (1)	**$1,128**	**$1,167**	**$923**
(4) Funded Status = (2) / (1)	183%	189%	159%

- Different asset allocations may affect the actuarial discount rate used
- As a result, the actuarial valuation surplus can be higher for portfolios with higher expected rates of return

Key Takeaway – Different asset allocations have different actuarial surpluses due to higher/lower actuarial discount rates used to determine the liability.

[1] Based on Aon's expected return less 1.69% (= 5.75% actuarial assumed rate - 7.44% Aon's expected return using 12/31/23 asset allocation)
Expected returns are using Aon Q1 2024 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Investment advisory fee of $90,000 was included in the net return. Your actual returns may differ from model returns presented based on your plan's individual fees/expenses. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

Actuarial Valuation

Key observations

Actuarial Valuation Model Actuarial Valuation is the industry approach for assessing defined benefit college savings plans and provides the foundation for other risk models.	
Advantages	**Disadvantages**
Output is easy to use by decision makers: provides a single headline measure of program health based on expert assessment of valuation assumptions and methods	**Lack of conservatism:** median “best estimate” assumptions may not be conservative enough for reserving; conservatism is warranted due to uncertainty associated with additional funding and tuition growth
Low additional cost/resources needed to produce : actuarial valuations are produced annually and are the foundation for other risk models	**Does not reflect future trends:** point-in-time measurement does not directly identify potential future trends in program health over a relevant time horizon- for example, surplus growth over 10 years
	Does not reflect investment risk: using higher risk/return investments can produce a lower liability and higher surplus, without any penalty for the additional risk
	Less comprehensive: limited stress testing of key assumptions

2

Risk Based Capital (RBC) Model

Risk Based Capital

Overview

Regulated insurance companies are required to keep reserves at a certain level of capital and surplus above the statutorily determined liability, known as the Risk Based Capital Charge

Risk Based Capital Charge accounts for asset risk through a series of charges, varying by asset class and credit quality, which apply to the company's invested assets

RBC Ratio measures the degree to which the surplus covers the Risk Based Capital Charge; 400%-700% coverage ratios are typical in the insurance industry

Stress Scenarios use more conservative assumptions than those used in the annual actuarial valuation; include a "moderate" and "severe" shock applied to the assets and liabilities

Key Takeaway – Risk Based Capital is a risk management approach commonly used by insurance companies that specifies minimum regulatory capital requirements in proportion to companies' risks.

Risk Based Capital
Methodology

Based on National Association of Insurance Commissioners ("NAIC") RBC charge factors (pre-tax life insurance applications)

- Factors approximate 1-year simulated value-at-risk for various assets (*i.e. how much could be lost in a bad market scenario*)
- Factors range from 0.16% (for the highest quality, lowest risk assets) to 30% (for the lowest quality and/or highest risk assets, including some equities)
- Factors applied to the company's market value for each investment fund, with additional analysis of individual security listings for fixed income funds, as provided by the Program
- The calculated RBC charge was adjusted to match Milliman's reported result of 7.6% as of December 31, 2023 (page 26)
    - Tracking the RBC charge over time will be critical in understanding and monitoring the surplus, as changes to this charge can have meaningful impact
    - The NAIC charge is currently 14.2% vs the 7.6% adjusted charge

Milliman conducted a valuation for the December 31, 2023 mid-year reporting date based on the following scenarios specified by Virginia529:

Baseline scenario:
- No adjustments to the best estimate assumptions and methods used in the annual actuarial valuation

Moderate stress scenario shocks:
- 10.5% tuition increase
- 10% asset loss

Severe stress scenario shocks:
- 22.1% tuition increase
- 20% asset loss

All other assumptions and methods are consistent with those described in the actuarial valuation model

Key Takeaway – RBC applies various stresses to assets and liabilities in order to evaluate risk to the surplus.

Risk Based Capital

Summary of results as of December 31, 2023

$ millions	Baseline	Severe Stress	Comments ("Severe Stress" Impact)
(1) Liability = Present Value of Tuition Obligations and Expenses	$1,351	$1,434	Liability is increased to reflect uncertainty in the projected value
(2) RBC Charge = 7.6% x Invested Assets[1]	$184	$147	RBC charge decreases due to reduced assets
(3) Total Asset Requirement = (1) + (2)	$1,535	$1,581	Increased Asset Requirement due to higher projected liability
(4) Invested Assets = Total Market Value of Investments[2]	$2,418	$1,934	20% reduction in Invested Asset value to reflect potential asset losses
(5) Present Value of Installment Contract Receivables	$61	$61	
(6) Total Assets = (4) + (5)	$2,479	$1,995	
(7) Surplus incl. RBC Charge = (6) – (3)	**$944**	**$414**	"Severe Stress" has decreased surplus
(8) Surplus excl. RBC Charge = (6) – (1)	$1,128	$561	
(9) RBC Ratio = (8) / (2)	**613%**	**382%**	RBC Ratio is expected to be lower in the "Severe Stress" scenario, given the adjustments made

Key Takeaway – RBC adjusts assets and liabilities, and provides a coverage ratio for how much protection the surplus offers against investment risks. Different scenarios are provided without probabilities assigned.

Assets provided by Virginia 529; Liabilities based on December 31, 2023 actuarial valuation by Milliman

[1] RBC charge developed by Milliman in December 31, 2023 DB529 Risk Model Valuation and Stress Test Results

[2] Reduced by $500,000 for A&A

Risk Based Capital

Additional results as of December 31, 2023: NAIC and adjusted RBC charge factors

Illustrative charge factors derived from NAIC factors and calibrated to current RBC model

Asset Class	Investment RBC Category	$ Allocation	% Allocation	NAIC RBC Charge Factor	Adjusted Virginia 529 RBC Charge Factor[1]
Global Public Equity	Common Stock	614,497,999	21%	30.0	15.0
Private Equity	Other Investments	477,902,342	16%	30.0	15.0
Core Real Estate	Real Estate	186,655,070	6%	13.0	13.0
Non-Core Real Estate	Real Estate	67,097,835	2%	13.0	13.0
Multi-Asset Credit	Non-Core Fixed Income (Holdings-Based)[2]	624,686,382	21%	5.0	2.5
Private Debt	Non-Core Fixed Income (Holdings-Based) [2]	379,235,169	13%	5.0	2.5
Core Fixed Income	Core Fixed Income (Holdings-Based)[2]	537,063,490	18%	0.6	0.3
Cash	Money Market	43,006,234	1%	0.4	0.4
Total		**2,930,144,521**	**100%**	**14.2%**	**7.6%**

Key Takeaway – The RBC charge factor is a roll-up of factors that vary by asset class. For Virginia 529, the factors are derived from NAIC factors and are adjusted by the actuary to make them more suitable for a 529 Plan.

[1]Per Milliman: reduced the RBC factors used in model relative to the unadjusted NAIC factors to make them more suitable and reflective of historical experience– particularly those for equity, low credit quality preferred stock, and low quality fixed income. To approximate these adjustments, Aon reduced equity and fixed income factors by half to match Milliman's RBC model results.
[2]RBC charge factor developed by applying NAIC factors for bonds of various credit qualities to individual securities rated by S&P within the fixed income funds

Risk Based Capital

Impact of asset allocation

$ millions	Current Asset Allocation	100% Return Seeking	100% Core Fixed Income
(1) Liability	$1,351	$1,313	$1,556
(2) RBC Charge	$184	$227	$7
(3) Total Asset Requirement = (1) + (2)	$1,535	$1,540	$1,563
(4) Total Assets	$2,479	$2,479	$2,479
(5) Surplus incl. RBC Charge = (4) – (3)	**$944**	**$940**	**$917**
(6) Surplus excl. RBC Charge = (4) – (1)	$1,128	$1,167	$923
(7) RBC Ratio = (6) / (2)	**613%**	**513%**	**13,967%**

- Different asset allocations affect the RBC charge used
- As a result, the RBC ratio can be lower for higher risk portfolios, and vice-versa

Key Takeaway – Different asset allocations have different RBC ratios. RBC ratio is lower (higher) for higher (lower) risk asset allocations.

Risk Based Capital

Key observations

Risk Based Capital (RBC) Model Risk Based Capital is a risk management approach commonly used by insurance companies that specifies minimum regulatory capital requirements in proportion to companies' risks.	
Advantages	**Disadvantages**
Conservative: reflects an insurance industry convention for conservative handling of surplus reserves; conservatism is warranted due to uncertainty associated with additional funding and tuition growth	**Does not reflect future trends:** does not directly identify potential future trends in program health over a relevant time horizon- for example, surplus growth over 10 years
Reflects investment risk: reflects investment risk in RBC charge and ratio; RBC ratio is lower (higher) for higher- (lower-) risk investment	**Less comprehensive:** deterministic model includes some stress testing, but is highly sensitive to key inputs like discount rate, stress scenarios used, RBC ratio thresholds desired, and RBC charge factors
Low additional cost/resources needed to produce : already being produced semiannually	**Output may be difficult to use:** multiple scenarios are provided without probabilities assigned; no consistent understanding of key thresholds among stakeholders unlike the insurance industry, there are no standard assumptions (e.g., charge factors or RBC ratio thresholds) for using RBC with a 529 plan because the model is not typically used with 529 plans

Risk Based Capital
Additional considerations

If using an RBC model, consider ongoing review of the following key parameters:

Key Assumption	Current Basis	Rationale	Aon Initial Analysis	Rationale
Actuarial Discount Rate	5.75%	Investment return assumption	7.40%[1]	Expected return from Aon CMAs
"Severe Stress" Scenarios	+6.1% liabilities -20.0% assets	Actuary's assessment of short-term shocks	+6.1% liabilities -17.3% assets	Liabilities: continue to use actuary's assessment; Assets: Based on 1st percentile value-at-risk from stochastic simulation of 1-year asset return
RBC Ratio Thresholds	400%-700%	Cited as similar to those used by insurance companies	200%-400%	Based on stochastic simulation of surplus under baseline and severe stress conditions. Lower ratios (e.g., <200%) indicate surplus may be at risk. Higher ratios (e.g., >400%) indicate surplus may be excessive relative to risks
RBC Charge Factor	7.6%	Derived from NAIC investment risk factors, with adjustment	4.3%	Based on 1st percentile value-at-risk from stochastic simulation of 10-year surplus return (asset return less liability return)

Key Takeaway – Current basis assumptions used in RBC model appear more conservative than we would expect.

[1] Expected returns are using Aon Q1 2024 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Investment advisory fee of $90,000 was included in the net return. Your actual returns may differ from model returns presented based on your plan's individual fees/expenses. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

3

Liability Driven Investment (LDI) Model

Liability Driven Investment

Overview

Many organizations concerned with asset/liability risk use Liability Driven Investment (“LDI”) programs to secure their surplus/reserves, including the Florida Prepaid Tuition Program

Liability valuations in an LDI context will typically use high quality investment grade bond yields as the discount rate for determining the present value of future obligations as a measure of added security

Investment of assets can be made in similar high-quality bonds to help insulate the surplus from market changes (assets can be invested in any manner)

Key Takeaway – LDI is a risk management approach commonly used by insurance companies, corporate pension funds, and many other DB investors, particularly when there is a desire to protect the surplus.

Liability Driven Investment
Methodology

Liabilities

Developed a “market value” of program liabilities by discounting the actuarial projected cash flows using market yields on US Treasuries with the same maturity as the cash flows

- Underlying securities used to price the obligation are backed by the full faith and credit of the US government
- Provides a “risk-free” basis for measuring surplus if assets can be invested in the same securities

Assets

Assets can be invested in US Treasuries that match the characteristics of the program liabilities (described above)

- Asset duration matches liability duration so that assets and liabilities move in lockstep as interest rates change
- As a result, surplus would be more predictable

Note: Assets do not need to be invested in this manner, and could be invested in any manner desired. Asset performance can be measured against an investable benchmark of US Treasuries to estimate surplus volatility.

All other assumptions and methods are consistent with those described in the actuarial valuation model

Key Takeaway – LDI uses a conservative definition of liabilities based on treasury bonds with similar maturities as the program liabilities. On this basis, the volatility of the surplus will be driven by differences in the assets held vs. the treasury bonds that would secure the liabilities.

Liability Driven Investment

Summary of results as of December 31, 2023

$ millions	Baseline, 5.75% Discount Rate	LDI, Risk-Free Discount Rate[2]
(1) Liability = Present Value of Tuition Obligations and Expenses	$1,351	$1,473
(2) Invested Assets = Total Market Value of Investments[1]	$2,418	$2,418
(3) Present Value of Installment Contract Receivables	$61	$61
(4) Total Assets = (2) + (3)	$2,479	$2,479
(5) Surplus = (4) – (1)	**$1,128**	**$1,006**
(6) Funded Status = (4) / (1)	183%	168%

Key Takeaway – LDI uses a higher, more conservative liability ($1,473) than the Actuarial Valuation ($1,351). This results in lower surplus and funded ratio.

Assets provided by Virginia 529; Liabilities based on December 31, 2023 actuarial valuation by Milliman
[1] Reduced by $500,000 for A&A
[2] Based on a discount rate of 4.05% using Aon Treasury STRIPS yield curve

Liability Driven Investment

Additional results as of December 31, 2023: Custom portfolio of liability-hedging assets

Liability-Hedging Asset Allocation			Key Portfolio Metrics			Key Rate Durations and Hedge Ratios					Interest Rate Sensitivity Analysis	
Index	**% Alloc**	**$ Alloc**	**YTM**	**Duration**	**Hedge Ratio**	**0-5**	**5-10**	**10-15**	**15-20**	**20+**	**+1% Shock**	**-1% Shock**
US Treasury Bills 1-3 Months	18.5%	$273	5.26%	0.2	1%	0.2	0.0	0.0	0.0	0.0	$272	$273
US Treasury STRIPS 0-5 yr	36.0%	$530	4.31%	2.3	16%	2.1	0.2	0.0	0.0	0.0	$517	$542
US Treasury STRIPS 5-10 yr	28.5%	$420	3.95%	7.2	39%	0.3	6.5	0.4	0.0	0.0	$390	$450
US Treasury STRIPS 10-15 yr	13.0%	$192	4.09%	12.2	30%	0.0	0.5	11.0	0.6	0.0	$168	$215
US Treasury STRIPS 15-20 yr	3.7%	$54	4.27%	17.3	12%	0.0	0.0	0.6	15.4	1.3	$44	$63
US Treasury STRIPS 20-30 yr	0.4%	$6	4.20%	24.9	2%	0.0	0.0	0.0	0.4	24.5	$4	$7
Subtotal Custom STRIPS	100.0%	$1,473	4.10%	5.2	100%	0.9	2.0	1.6	0.6	0.1	$1,396	$1,550
Total Asset Exposure		**$1,473**	**4.10%**	**5.2**	**100%**	**0.9**	**2.0**	**1.6**	**0.6**	**0.1**	**$1,396**	**$1,550**
Total Liability Exposure		**$1,473**	**4.05%**	**5.2**		**0.9**	**2.0**	**1.6**	**0.6**	**0.1**	**$1,396**	**$1,550**
						Key Rate Duration Hedge Ratios						
Net Funded Status Exposure		**$0**	**0.05%**	**0.0**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**$0**	**$0**

Key Takeaway – A benefit of LDI is that the assets could be transitioned to the portfolio above, and the assets will begin moving in a manner very similar to the liability (i.e., the liability is investable). However, the assets could be invested in any manner that is desired, and performance could be measured against this investable benchmark.

Sources: Bloomberg, Factset, Aon
All data as of December 31, 2023

LDI Valuation

Impact of asset allocation

$ millions	Current	100% Return Seeking	100% Core Fixed Income	100% LDI
Actuarial Discount Rate[1]	4.05%	4.05%	4.05%	4.05%
(1) Liability	$1,473	$1,473	$1,473	$1,473
(2) Total Assets	$2,479	$2,479	$2,479	$2,479
(3) Surplus = (2) – (1)	**$1,006**	**$1,006**	**$1,006**	**$1,006**
(4) Funded Status = (2) / (1)	168%	168%	168%	168%
(5) Surplus Volatility %[2]	11.2%	13.6%	3.6%	3.2%
(6) Surplus Volatility $ = (5) x (2)	$278	$337	$89	$79
(7) Coverage Ratio = (3) / (6)	362%	299%	1,130%	1,273%

- By definition, the surplus under an LDI approach is not affected by the asset allocation
- Some volatility remains even for a 100% LDI portfolio of assets due to potential changes in liabilities, such as unexpected tuition inflation

Key Takeaway – LDI provides a consistent basis for defining the liabilities and measuring asset risk. Different asset allocations will affect the surplus over time as investment returns vary relative to the liabilities. Higher (lower) risk asset allocations will have higher (lower) surplus volatilities.

[1] Based on a discount rate of 4.05% using Aon Treasury STRIPS yield curve
[2] Surplus Volatility defined as the variability in surplus (expressed as a percentage of liabilities) assuming a one standard deviation event over a one-year period

Liability Driven Investment

Key observations

Liability Driven Investment (LDI) Model LDI is a risk management approach commonly used by insurance companies, corporate pension funds, and many other DB investors, particularly when there is a desire to protect the surplus.	
Advantages	**Disadvantages**
Reflects investment risk: surplus volatility is higher (lower) for higher- (lower-) risk investments; can obtain a high degree of certainty by using liability-matching assets, if fund fiduciaries choose to do so	**Does not reflect future trends:** does not directly identify potential future trends in program health over a relevant time horizon- for example, surplus growth over 10 years
Conservative: uses a higher, “risk-free” discount rate, which results in higher, more stable program liabilities; conservatism is warranted due to uncertainty associated with additional funding and tuition growth	**Less comprehensive:** difficult to capture uncertainty in liabilities from non-market factors- like tuition inflation and contract usage- which may limit effectiveness of LDI*
Output is easy to use by decision makers: provides an investable benchmark for program liabilities; asset performance differing from the liability benchmark should be the primary driver of changes in surplus	
Low additional cost/resources needed to produce : mostly derived from output already being produced in actuarial valuation	

* This impacts all the models, but is potentially more impactful to an LDI approach given the additional focus on the liability sensitivity to market vs. non-market factors

4

Stochastic Simulation Model

Stochastic Simulation

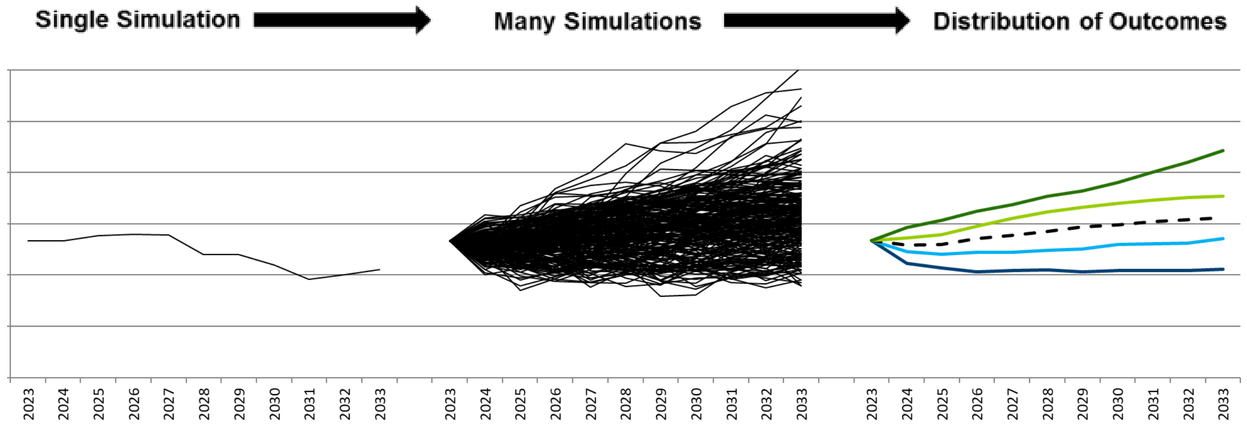
Overview

Monte Carlo asset-liability simulation with 1,000 future economic scenarios over a 10-year period using Aon's expected returns, standard deviations, correlations, and experience for various asset classes and inflation as of December 31, 2023

Asset and liability modeling integrated in single platform with flexibility in modeling parameters and output to Virginia 529's preferences

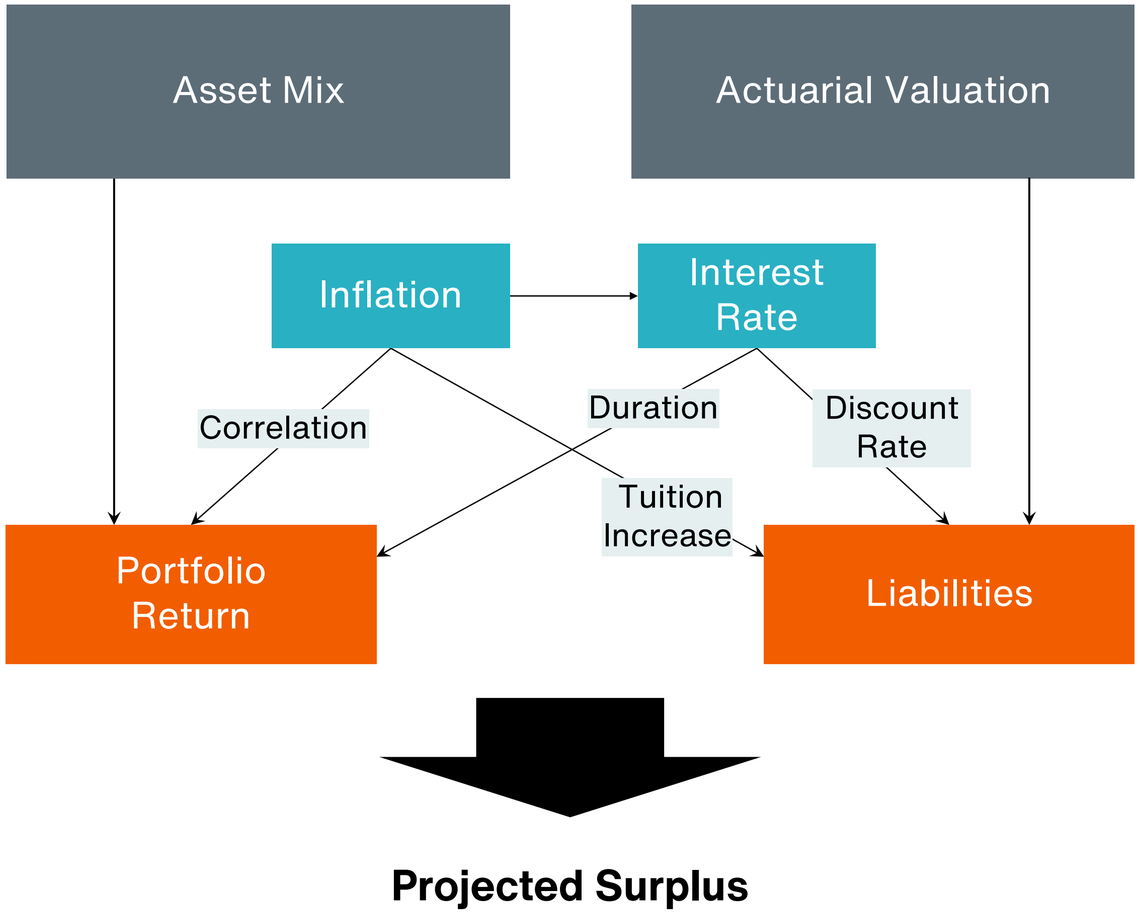
Range of scenarios evaluated at various confidence levels

- **Very Optimistic scenario** - expect 95% of the results to lie below it (i.e., a 1 in 20 chance of the result being as good as this or better)
- **Optimistic scenario** - expect 75% of the results to lie below it (i.e., a 1 in 4 chance of the result being as good as this or better)
- **Expected scenario** - the central result, so that half the results are expected to be better and half worse
- **Pessimistic scenario** - expect 75% of the results to lie above it (i.e., a 1 in 4 chance of the result being as bad as this or worse)
- **Very Pessimistic scenario** - expect 95% of the results to lie above it (i.e., a 1 in 20 chance of the result being as bad as this or worse)
- **Extremely Pessimistic scenario** - expect 99% of the results to lie above it (i.e., a 1 in 100 chance of the result being as bad as this or worse)



Key Takeaway – Stochastic analysis represents the many scenarios that can be expected to occur over time (middle chart), summarized by their probability (far right chart).

Stochastic Simulation
Methodology



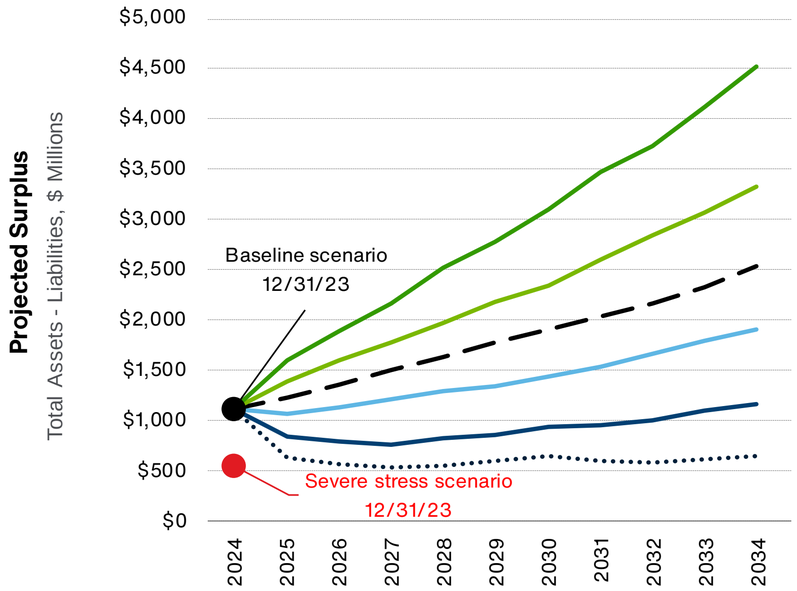
For projection purposes, Aon made the following assumptions:

- Tuition increases are correlated with general price inflation such that a 1% increase in inflation (~1 standard deviation) corresponds with a moderate stress scenario, and a 2% increase in inflation (~2 standard deviations) corresponds with a severe stress scenario
- Liabilities are subject to an additional 2% annual volatility using a random noise factor to represent other factors uncorrelated with price inflation
- Investment returns and inflation are forecasted using Aon Q1 2024 Capital Market Assumptions

Key Takeaway – Stochastic analysis considers the interactions of several important (economic) factors that affect assets, liabilities, and surplus.

Stochastic Simulation

Summary of results: 10-year projections of surplus under various economic scenarios



95th Percentile

75th Percentile

50th Percentile

25th Percentile

5th Percentile

1st Percentile

Actuarially determined surplus is **projected to grow** except under the very pessimistic and extremely pessimistic scenarios

Simulation analysis demonstrates **99% confidence of >$500 million surplus** over the next 10 years (in addition to the $500 million already allocated to access/affordability initiatives)

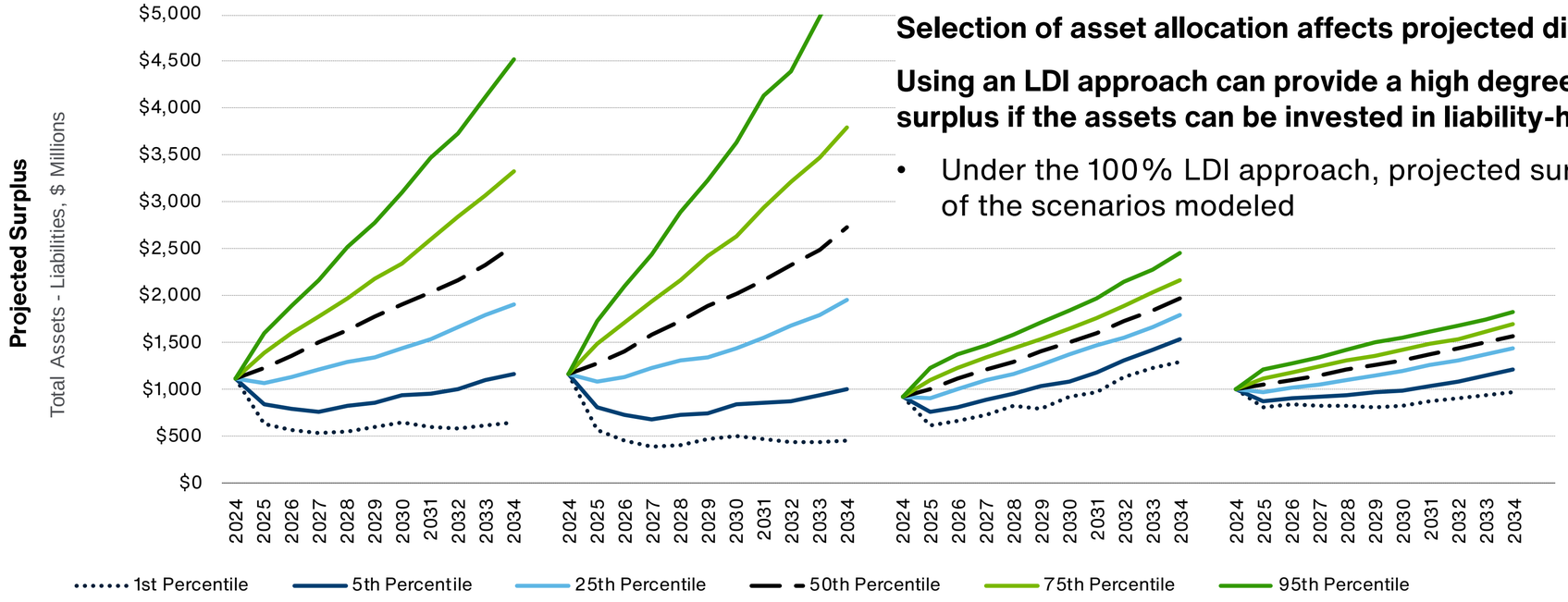
- This result is similar to the “severe stress” scenario in the RBC model

Scenario	Current 80% R-S		
Year	2025	2029	2034
Prob. of Full Funding	>99%	>99%	>99%
Surplus at 50th Pctile, $ M	$1,239	$1,782	$2,533
Surplus at 5th Pctile, $ M	$848	$856	$1,162
Surplus at 1st Pctile, $ M	$638	$606	$658

Key Takeaway – After removing the $500 million already allocated to access/affordability initiatives, there is 99% modeled probability of an additional surplus of $500 million over the next 10 years. In baseline and optimistic market scenarios, the surplus may be much higher.

Stochastic Simulation

Impact of asset allocation



Selection of asset allocation affects projected dispersion of surplus

Using an LDI approach can provide a high degree of certainty in the projected surplus if the assets can be invested in liability-hedging bonds

- Under the 100% LDI approach, projected surplus exceeds $800 million in 99% of the scenarios modeled

Strategy	Current (80% R-S)		100% Return-Seeking Assets		100% Core Fixed Income		100% LDI	
Year	2029	2034	2029	2034	2029	2034	2029	2034
Prob. of Full Funding	>99%	>99%	>99%	>99%	>99%	>99%	>99%	>99%
Surplus at 50th Pctile, $ M	$1,782	$2,533	$1,896	$2,732	$1,407	$1,984	$1,266	$1,573
Surplus at 1st Pctile, $ M	$606	$658	$475	$464	$805	$1,290	$809	$973

Key Takeaway – Different asset allocations have different projected surplus trendlines and variability.

Based on 1,000 simulation trials. Illustrative charts based on preliminary projections of market scenarios and plan circumstances. Not a guarantee of future results.

Stochastic Simulation

Additional results: Probabilities of surplus exceeding key levels

Simulated probability of projected surplus >$500mm, by year	Current	100% Return Seeking	100% Core Fixed Income	100% LDI
2025	>99%	>99%	>99%	>99%
2026	>99%	98%	>99%	>99%
2027	>99%	98%	>99%	>99%
2028	>99%	98%	>99%	>99%
2029	>99%	99%	>99%	>99%
2030	>99%	>99%	>99%	>99%
2031	>99%	99%	>99%	>99%
2032	>99%	98%	>99%	>99%
2033	>99%	99%	>99%	>99%
2034	>99%	99%	>99%	>99%

Simulated probability of projected surplus >$1,000mm, by year	Current	100% Return Seeking	100% Core Fixed Income	100% LDI
2025	82%	82%	53%	68%
2026	83%	82%	76%	79%
2027	84%	83%	85%	84%
2028	88%	86%	92%	88%
2029	89%	87%	96%	91%
2030	93%	90%	97%	95%
2031	94%	91%	99%	96%
2032	95%	92%	>99%	97%
2033	96%	94%	>99%	98%
2034	96%	95%	>99%	99%

- Simulated probabilities of surplus >$500mm are near 99% for most asset allocations studied
- Simulated probabilities of surplus >$1,000mm are more sensitive to asset allocation

Key Takeaway –
Simulated probabilities of surplus >$500 million (top table) are very high, generally over 99%.

Simulated probabilities of surplus >$1 billion (bottom table) are lower in the near term but increase over time.

These amounts are in addition to the $500 million already allocated to access/affordability initiatives.

Based on 1,000 simulation trials. Illustrative charts based on preliminary projections of market scenarios and plan circumstances. Not a guarantee of future results.

Stochastic Simulation

Key observations

Stochastic Simulation Model Stochastic analysis considers the interactions of several important factors that affect assets, liabilities, and surplus over many scenarios, summarized by their probability.	
Advantages	**Disadvantages**
Reflects investment risk: surplus volatility is higher (lower) for higher- (lower-) risk investments	**Additional cost/resources needed to produce:** model can be more resource intensive than other models to produce
Reflects future trends: reflects trends in surplus growth and other key factors which may change over time	
Conservative: varies many key assumptions; captures "fat tails"[1]- the tendency of returns to exhibit more small and large magnitude events ("black swans") than implied by other probabilistic models (e.g., lognormal distributions)	
More comprehensive: deterministic models (like RBC) use fixed assumptions and may not address sensitivity of results to changes in inputs; in contrast, stochastic models include a wide range of possible scenarios (including some randomness) and reduce reliance on manually selected assumptions	
Output is easy to use by decision makers: output can be tailored to desired objectives- for example, X% probability of maintaining $Y surplus; not highly sensitive to key assumptions that may not be transparent to stakeholders	

5

Conclusions

Comparison of Risk Model Attributes

Stochastic Simulation Model addresses many of the key criteria in risk model review

Criteria	Description	(1) Actuarial Valuation	(2) Risk Based Capital	(3) Liability-Driven Investment	(4) Stochastic Simulation
Conservative	High probability (>50%) that assumptions are realized so as not to be detrimental to the surplus		☑	☑	☑
Reflects investment risk	Captures potential surplus volatility from risky investments		☑	☑	☑
Reflects future trends	Reflects changes that may occur over time, rather than using a point-in-time measurement				☑
Comprehensive	Includes a wide range of possible scenarios (including some randomness) and reduces reliance on manually selected assumptions				☑
Output is easy to use by decision makers	Results communicated in terms of key metrics, like $ surplus, and probabilities of risky outcomes	☑		☑	☑
Low additional cost/resources needed to produce	Either already produced, or low additional cost to produce	☑	☑	☑	

Key Takeaway – Actuarial Valuation is the industry approach for assessing defined benefit college savings plans and provides the foundation for other risk models. Stochastic Simulation Model addresses all but one of the key criteria for risk models, but is more resource intensive to produce.

Comparison of Risk Model Output

Stochastic Simulation Model builds upon point-in-time models like RBC

Summary of Model Results $ millions	**(1) Actuarial Valuation**	**(2) Risk Based Capital**		**(3) Liability-Driven Investment**	**(4) Stochastic Simulation (1 Year)**		
		Baseline	**Severe Stress**		**Expected** **(50th Percentile)**	**Very Pessimistic** **(5th Percentile)**	**Extremely Pessimistic** **(1st Percentile)**
(1) Liability[1]	$1,351	$1,351	$1,434	$1,473	Varies[3]	Varies[3]	Varies[3]
(2) Assets[2]	$2,418	$2,418	$1,995	$2,479	Varies[3]	Varies[3]	Varies[3]
(3) Surplus **= (2) – (1)**	**$1,128**	**$1,128**	**$561**	**$1,006**	**$1,239,** trending **higher**	**$848,** trending **higher**	**$638,** trending **roughly level**
(4) Risk Charge[2] = (2) x Investment Risk Factor	-	$184	$147	$278	-	-	-
(5) Surplus less Risk Charge = (3) – (4)	N/A	$944	$414	$728	N/A	N/A	N/A
(6) Coverage Ratio **= (3) / (4)** *How many times over can surplus pay for the risk charge? Lower ratios (e.g., <200%) indicate surplus may be at risk. Higher ratios (e.g., >400%) indicate surplus may be excessive relative to risks.*	N/A	**613%**	**382%**	**362%**	N/A	N/A	N/A

Key Takeaway – Point-in-time models like RBC apply a risk charge to estimate the impact of future stress on surplus; In contrast, Stochastic Simulation directly incorporates risks into surplus projections under many potential scenarios.

[1] For Models (1) and (2), based on December 31, 2023 actuarial valuation by Milliman. For Model (3), based on the net present value of the projected cash flows using Aon Treasury STRIPS yield curve. For Model (4), actuarial liabilities are projected based on 1,000 simulation trials using preliminary projections of market scenarios and plan circumstances. Not a guarantee of future results.
[2] Assets provided by Virginia 529; For Model (2), Severe Stress assets and RBC charge developed by Milliman in December 31, 2023 DB529 Risk Model Valuation and Stress Test Results. For Model (3), risk charge developed by Aon based on expected volatility of surplus under a one standard deviation event over a one year period.
[3] Stochastic projection of assets and liabilities vary over 1,000 trials. Surplus at various confidence levels may result from different combinations of higher/lower assets and higher/lower liabilities.
Expected returns are using Aon Q1 2024 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Investment advisory fee of $90,000 was included in the net return. Your actual returns may differ from model returns presented based on your plan's individual fees/expenses. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

Risk Model Review
Conclusions

Aon suggests consideration of a **stochastic simulation** risk model for evaluating the projected surplus under various economic conditions, as it provides rich, customized data that can be useful in making decisions about surplus use

- Point-in-time risk models, like RBC, are generally simpler to produce, but provide limited information about potential future trends that can affect the projected surplus

Illustrative modeling suggests there is a very high likelihood (~99%) of maintaining a **surplus in excess of $500mm** even in the most pessimistic market scenario

- **All analysis performed excludes the $500mm already earmarked for access/affordability initiatives**

If preserving surplus is the main concern, using an **LDI approach** can provide the highest degree of certainty in the projected surplus if the assets can be invested in liability-hedging bonds

If using an RBC model, consider ongoing review of the following key parameters:

- **Actuarial discount rate**
- **RBC ratio thresholds**
- **Asset and liability stress scenarios**
- **RBC charge factors**

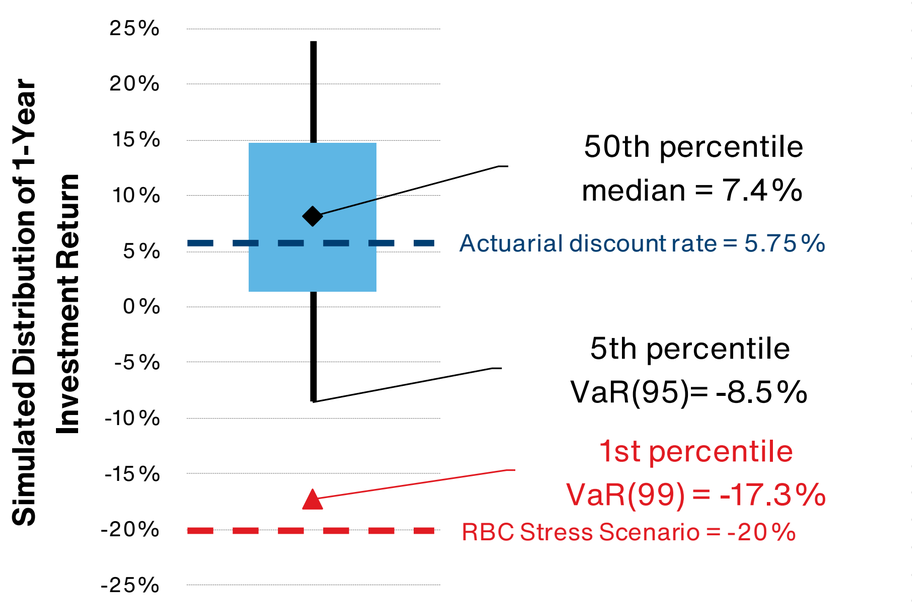
Based on 1,000 simulation trials. Illustrative charts based on preliminary projections of market scenarios and plan circumstances. Not a guarantee of future results.

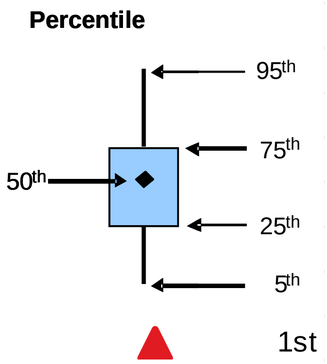
Additional Analysis: Evaluation of Key RBC Model Assumptions

Example of RBC asset stress scenario analysis

Example of "severe stress" factor based on current asset allocation and asset class assumptions

- The following analysis demonstrates potential stress cases for assets based on Aon's capital market assumptions[1]
- VaR = Value at risk – is a measure of the risk of loss in a set time period (1-year shown below)



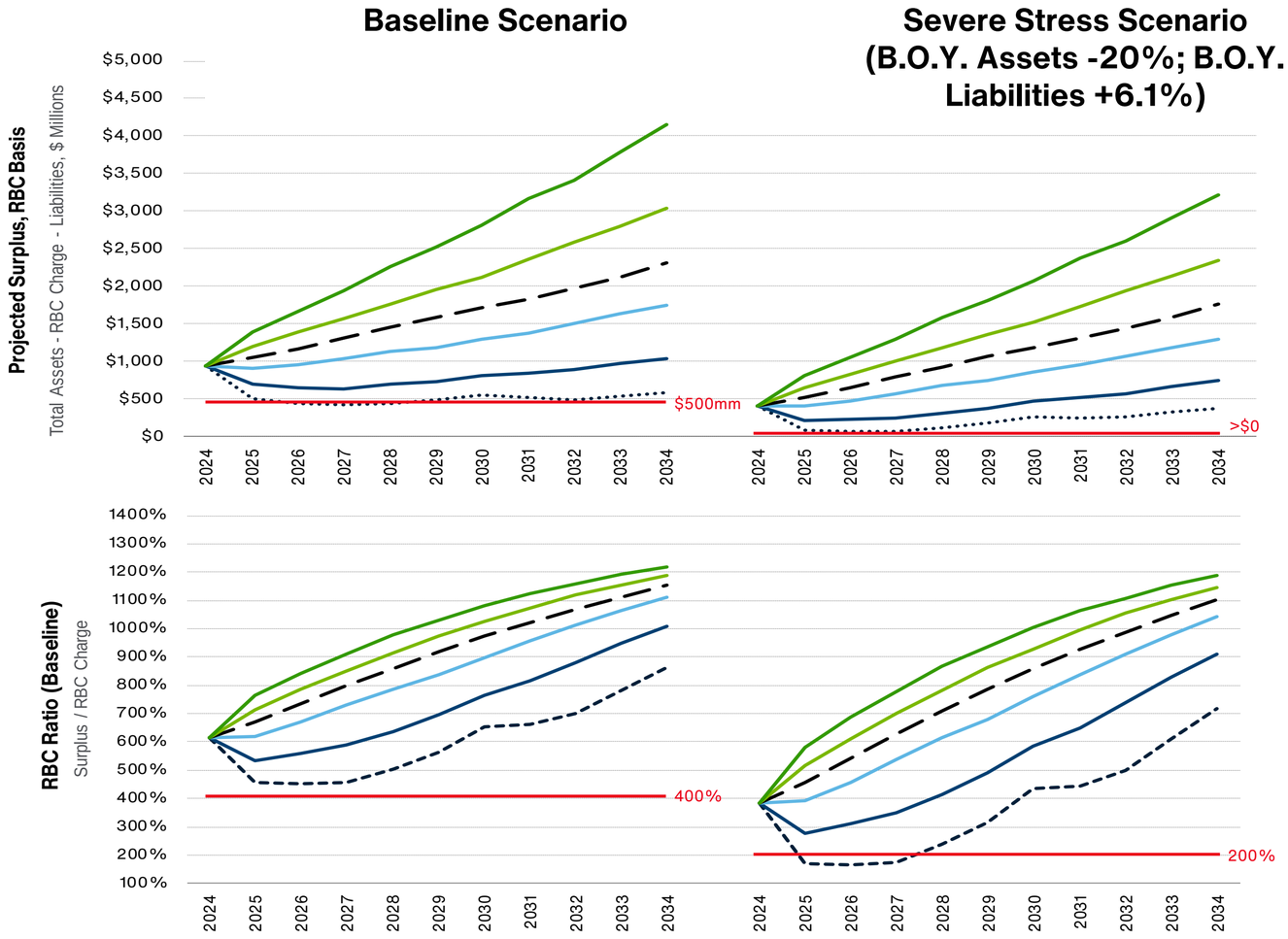


Key Takeaway – Severe stress to assets using 1st percentile outcome under Aon assumptions is -17.3% (compared to current 20.0%)

[1]Expected returns are using Aon Q1 2024 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Investment advisory fee of $90,000 was included in the net return. Your actual returns may differ from model returns presented based on your plan's individual fees/expenses. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

Additional Analysis: Evaluation of Key RBC Model Assumptions

Example of RBC ratio threshold analysis



Example of RBC ratio thresholds reflecting desired outcomes for surplus

- ~400% minimum RBC ratio corresponds to 99% probability of ~$500mm surplus in baseline scenario
- ~200% minimum RBC ratio corresponds to 99% probability of surplus in severe stress scenario
- Note: The severe stress scenario outcomes may "double count" the negative market impact by applying both a 20% reduction in asset value and a simulated stochastic stress

Key Takeaway – RBC ratios in the 200%-400% range coincide with 99% modeled probabilities of surplus in severe stress and baseline cases.

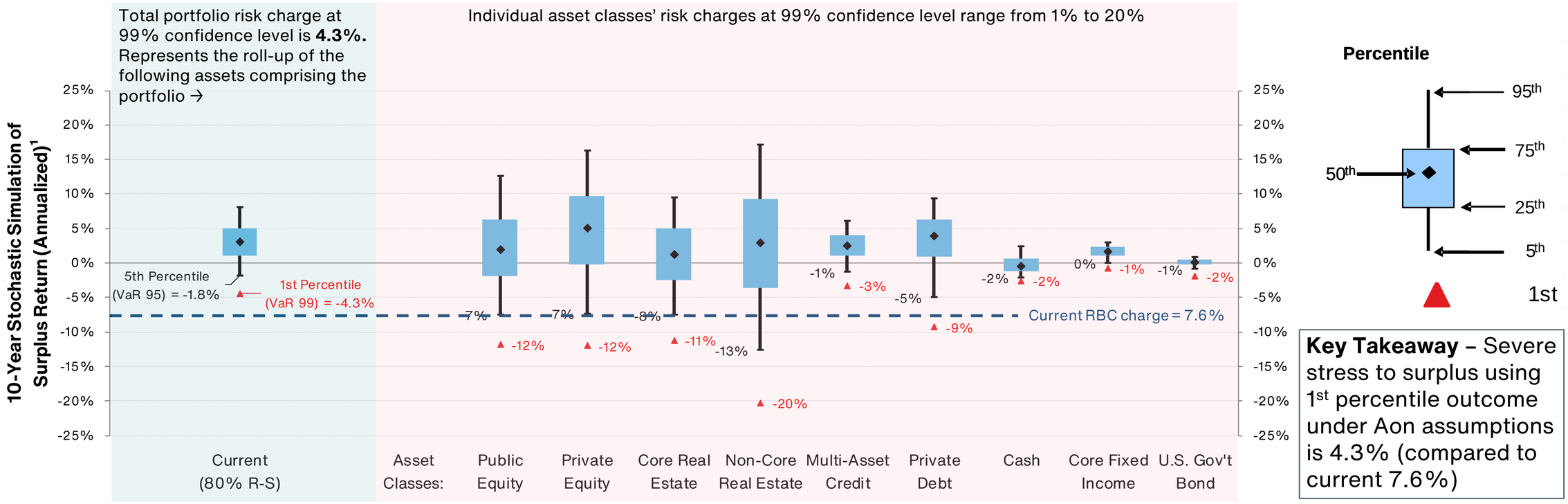
Based on 1,000 simulation trials. Illustrative charts based on preliminary projections of market scenarios and plan circumstances. Not a guarantee of future results.

Additional Analysis: Evaluation of Key RBC Model Assumptions

Example of RBC charge factor analysis

Example of RBC charge factors reflecting program-specific risks, time horizon, and asset classes

- The following analysis demonstrates potential factors based on Aon's capital markets model applied to the program



Key Takeaway – Severe stress to surplus using 1st percentile outcome under Aon assumptions is 4.3% (compared to current 7.6%)

[1]Expected returns are using Aon Q1 2024 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Investment advisory fee of $90,000 was included in the net return. Your actual returns may differ from model returns presented based on your plan's individual fees/expenses. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

Additional Analysis: Sensitivity to Key RBC Model Assumptions

Risk Based Capital Model Results using Alternative Assumptions

$ millions	Charge Factor = 7.6% (Current)	Charge Factor = 4.3% (Aon 10-Year 1st Percentile Drawdown)	Charge Factor = 14.2% (NAIC)
(1) Liability = Present Value of Tuition Obligations and Expenses	$1,351	$1,351	$1,351
(2) RBC Charge = Charge Factor % x Invested Assets[1]	$184	$104	$343
(3) Total Asset Requirement = (1) + (2)	$1,535	$1,455	$1,694
(4) Invested Assets = Total Market Value of Investments[2]	$2,418	$2,418	$2,418
(5) Present Value of Installment Contract Receivables	$61	$61	$61
(6) Total Assets = (4) + (5)	$2,479	$2,479	$2,479
(7) Surplus incl. RBC Charge = (6) – (3)	**$944**	**$1,024**	**$785**
(8) Surplus excl. RBC Charge = (6) – (1)	$1,128	$1,128	$1,128
(8) RBC Ratio = (8) / (2)	**613%**	**1,085%**	**329%**

Key Takeaway – RBC model is highly sensitive to changes in assumptions.

Assets provided by Virginia 529; Liabilities based on December 31, 2023 actuarial valuation by Milliman
[1] RBC charge developed by Milliman in December 31, 2023 DB529 Risk Model Valuation and Stress Test Results
[2] Reduced by $500,000 for A&A

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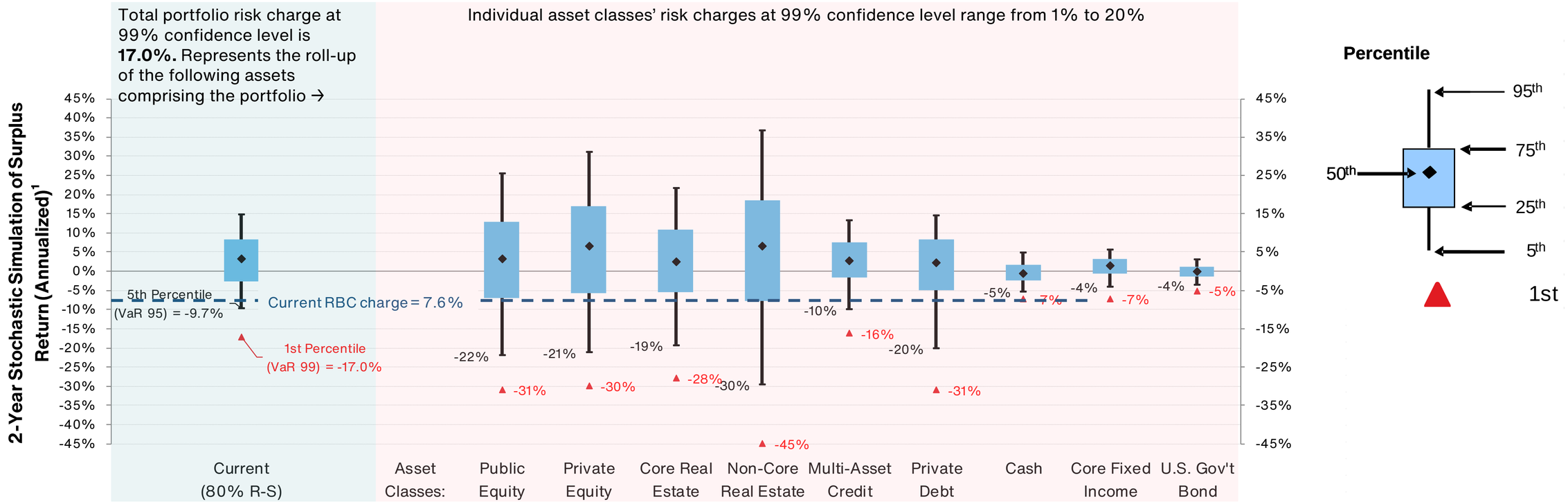
Appendix

Additional Analysis: Evaluation of Key RBC Model Assumptions

Example of Shorter-Term RBC charge factor analysis

Example of shorter-term RBC charge factors reflecting program-specific risks, time horizon, and asset classes

- The following analysis demonstrates potential factors based on Aon's capital markets model applied to the program



[1]Expected returns are using Aon Q1 2024 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Investment advisory fee of $90,000 was included in the net return. Your actual returns may differ from model returns presented based on your plan's individual fees/expenses. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. See appendix for capital market assumptions disclosure pages.

NAIC Investment Risk Based Capital Charges

NAIC RBC Investment Factors[1]

NAIC Designation	Pre-Tax RBC Factor
Common Stock	30.0
Bonds:	
US Gov't	0.0
Class 1 (A to AAA)	0.16-1.02
Class 2 (BBB)	1.26-2.17
Class 3 (BB)	3.15-6.02
Class 4 (B)	7.39-12.43
Class 5 (CCC)	16.94-30
Class 6 (D to CC)	30.0
Mortgage Loans	0.68
Money Market	0.4
Real Estate	13.0
Other Investments	30.0
Blended factors based on Virginia 529 Holdings	
Core Fixed Income (Holdings-Based)	0.6
Non-Core Fixed Income (Holdings-Based)	5.0

Source: NAIC
https://content.naic.org/sites/default/files/inline-files/committees_e_capad_investment_rbc_wg_related_irbc_factors.pdf

https://content.naic.org/sites/default/files/inline-files/2021-06-L%20RBC%20Proposal.pdf

https://content.naic.org/sites/default/files/inline-files/2021-11-L%20RBC%20Proposal.pdf

Capital Market Assumption Methodology

- The Aon Asset Model and Economic Scenario Generator (ESG) creates 5,000 simulations of key economic variables and total returns.
- We believe the model is complete and consistent. All the major markets and asset classes are modeled within a consistent framework allowing for the interactions between them to be properly taken into account.
- It is arbitrage free and captures the fact that extreme market events do occur more frequently than would be predicted by simpler statistical models.
- The ESG models the full yield curve as this allows for accurate treatment of liabilities and realistic modeling of the future distribution of interest rates and inflation. This allows us to assess the sensitivities of assets and liabilities to changes in interest and inflation rates.
- The model is calibrated to Aon's globally-consistent Capital Market assumptions every quarter.
- Nominal and real government interest rates are projected using an extended two factor Black-Karasinki model and a 2 factor Vasicek model respectively. The models are mean reverting starting with current yield curves and reverting towards our long-term fair values over the very long-term.
- Credit spreads are modeled stochastically using a Markov based model to determine the probabilities of transition between various credit rating and default, and a stochastic parameter reflecting the level of risk aversion in the market.
- Return seeking assets (including equities) are modeled using an individual asset class model with its own returns and volatilities but no correlations to other asset classes, and exposure to 6 other economic models to gain the correct correlation structures between returns for each asset class.

Expected Returns and Risks

12/31/2023 Assumptions (10-Year)

	10-yr	10-yr	10-yr
	Expected Real Return[1]	Expected Nominal Return[1]	Expected Volatility[1]
Equity			
Large Cap U.S. Equity	4.2%	6.5%	18.0%
Small Cap U.S. Equity	4.4%	6.7%	24.0%
Global Equity (Developed & Emerging)	4.4%	6.7%	18.2%
International (Non-U.S.) Equity (Developed)	4.2%	6.5%	19.2%
Emerging Markets Equity	4.5%	6.8%	22.0%
Fixed Income			
Cash (Gov't)	1.6%	3.8%	1.4%
Cash (LIBOR)	2.3%	4.5%	1.4%
TIPS	1.8%	4.0%	4.3%
Core U.S. Fixed Income (Market Duration)	2.3%	4.5%	4.9%
Long Duration Bonds – Gov't / Credit	2.8%	5.1%	9.8%
Long Duration Bonds – Credit	3.1%	5.4%	9.9%
Long Duration Bonds – Gov't	2.5%	4.8%	10.5%
High Yield Bonds	3.2%	5.5%	10.5%
Bank Loans	4.3%	6.6%	7.0%
Non-US Developed Bond (0% Hedged)	0.7%	2.9%	10.4%
Non-US Developed Bond (50% Hedged)	1.4%	3.6%	6.0%
Non-US Developed Bond (100% Hedged)	2.0%	4.2%	3.5%
Short Duration Bonds - Gov't	1.7%	3.9%	2.2%
Short Duration Bonds - Credit	2.0%	4.2%	2.4%
Intermediate Duration Bonds - Gov't	1.7%	3.9%	3.8%
Intermediate Duration Bonds - Credit	2.3%	4.5%	4.3%
Market Duration Bonds - Gov't (Model Portfolios)	1.7%	3.9%	4.6%
Core Plus - Fixed Income (Model Portfolios)	2.5%	4.8%	5.3%
STRIPS (25 Duration)	2.3%	4.5%	14.5%
Emerging Market Bonds (Sov. USD)	4.2%	6.5%	11.0%
Emerging Market Bonds (Corporate USD)	3.6%	5.9%	11.0%
Emerging Market Bonds (Sov. Local)	3.3%	5.6%	13.0%
Alternative Investments			
Hedge Funds - Direct (Median Manager)	3.0%	5.3%	5.2%
Hedge Funds - Direct (Institutional Quality)	4.5%	6.8%	5.2%
eLDI	3.4%	5.7%	5.5%
Private Real Estate (Core)	3.5%	5.8%	15.0%
Private Real Estate (Non-Core)	5.4%	7.7%	25.0%
U.S. REITs	4.1%	6.4%	18.5%
Infrastructure (Closed-End)	4.9%	7.2%	14.5%
Closed-End Real Assets (Model Portfolios)	5.8%	8.1%	15.7%
Private Equity	6.9%	9.3%	20.0%
Commodities	3.7%	6.0%	17.0%
Hedge Funds - Low Beta (Universe)	2.5%	4.8%	4.0%
Hedge Funds - High Beta (Universe)	3.5%	5.8%	8.0%
Hedge Funds - Low Beta (Institutional Quality)	3.5%	5.8%	4.0%
Hedge Funds - High Beta (Institutional Quality)	5.5%	7.8%	8.0%
Hedge Funds - Long/Short Equity (Universe)	3.5%	5.8%	10.0%
Hedge Funds - Long/Short Equity (Institutional Quality)	4.2%	6.5%	10.0%
Hedge Funds - CTA (Universe)	2.3%	4.6%	8.5%
Hedge Funds - CTA (Institutional Quality)	3.0%	5.3%	8.5%
Mortgage Backed Securities -- Agency	2.2%	4.4%	3.0%
Private Debt -- Direct Lending	5.9%	8.2%	16.6%
Timberland	2.4%	4.7%	12.0%
Farmland	3.1%	5.4%	15.0%
Multi-Asset Credit	4.6%	6.9%	8.8%
Insurance-Linked Securities (Catastrophe Bonds)	4.6%	6.9%	5.6%
65% US Equity/35% Non-US Equity	4.5%	6.8%	18.1%
Risk Parity (10% Volatility Target)	4.0%	6.3%	10.0%
7-10 Yr Capital Efficiency	0.5%	2.7%	24.7%
Long Treasury Capital Efficiency	1.4%	3.6%	30.2%
Inflation	0.0%	2.2%	1.7%

[1] Expected returns are using Aon 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results.

Expected Nominal Correlations

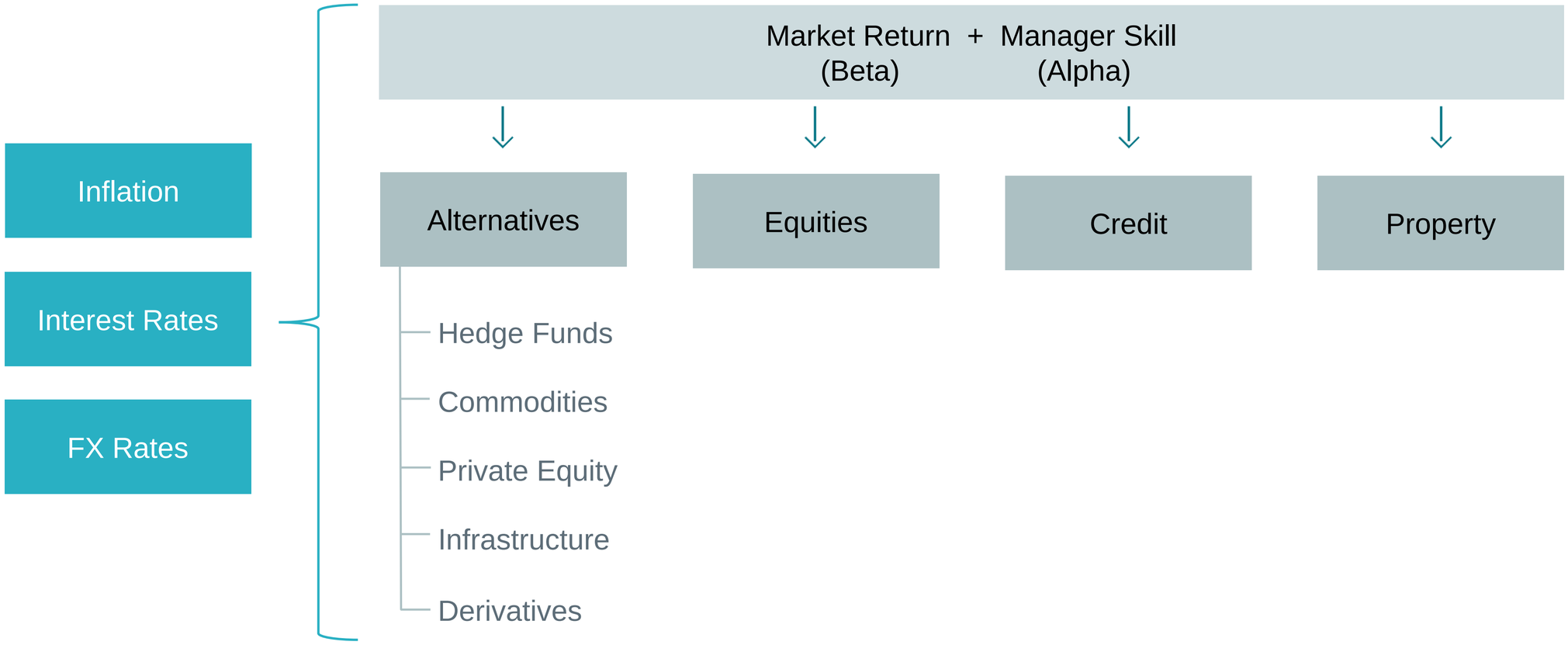
12/31/2023 Assumptions (10-Year)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
1 Large Cap U.S. Equity	1.00	0.93	0.98	0.79	0.73	0.10	0.09	-0.02	0.00	-0.06	0.04	-0.13	0.58	0.42	0.06	0.05	0.00	0.02	0.07	-0.06	0.03	-0.08	0.04	-0.13	0.43	0.42	0.59	0.75	0.75	0.14	0.35	0.46	0.69	0.35	0.52	0.62	0.47	0.40	0.79	0.40	0.79	0.79	0.79	0.13	0.13	-0.03	0.34	0.02	0.02	0.58	0.03	0.98	0.70	-0.14	-0.14	0.09
2 Small Cap U.S. Equity		1.00	0.93	0.74	0.69	0.08	0.08	-0.02	-0.01	-0.06	0.04	-0.12	0.55	0.40	0.05	0.04	-0.01	0.01	0.06	-0.06	0.02	-0.08	0.03	-0.12	0.40	0.39	0.53	0.70	0.70	0.13	0.33	0.44	0.64	0.34	0.50	0.60	0.41	0.37	0.74	0.37	0.74	0.74	0.74	0.12	0.12	-0.03	0.32	0.02	0.01	0.54	0.02	0.93	0.65	-0.13	-0.14	0.08
3 Global Equity (Developed & Emerging)			1.00	0.89	0.82	0.09	0.09	-0.02	-0.01	-0.07	0.04	-0.14	0.62	0.45	0.17	0.14	0.00	0.01	0.06	-0.07	0.02	-0.09	0.04	-0.13	0.46	0.45	0.63	0.74	0.74	0.15	0.36	0.48	0.68	0.35	0.54	0.63	0.49	0.41	0.78	0.41	0.78	0.79	0.79	0.12	0.12	-0.04	0.36	0.03	0.02	0.62	0.02	1.00	0.72	-0.15	-0.15	0.10
4 International (Non-U.S.) Equity (Developed)				1.00	0.75	0.05	0.05	-0.02	-0.02	-0.07	0.04	-0.13	0.57	0.42	0.43	0.36	-0.01	-0.01	0.04	-0.08	0.01	-0.09	0.03	-0.13	0.42	0.42	0.62	0.63	0.63	0.13	0.34	0.44	0.56	0.31	0.49	0.55	0.50	0.35	0.66	0.35	0.66	0.67	0.67	0.10	0.10	-0.05	0.34	0.03	0.02	0.58	0.01	0.90	0.67	-0.13	-0.14	0.11
5 Emerging Markets Equity					1.00	0.07	0.07	-0.02	0.00	-0.06	0.05	-0.12	0.63	0.45	0.19	0.16	0.00	0.00	0.06	-0.07	0.02	-0.08	0.04	-0.12	0.46	0.45	0.54	0.59	0.59	0.16	0.33	0.41	0.52	0.30	0.46	0.53	0.35	0.34	0.61	0.34	0.61	0.61	0.61	0.09	0.09	-0.04	0.36	0.02	0.01	0.60	0.02	0.81	0.58	-0.13	-0.14	0.09
6 Cash (Gov't)						1.00	0.99	0.47	0.44	0.24	0.24	0.23	0.13	-0.13	0.12	0.29	0.59	0.85	0.70	0.55	0.47	0.47	0.40	0.17	0.18	0.07	0.02	0.24	0.24	0.30	0.16	0.15	0.10	0.14	0.19	0.10	0.19	0.19	0.22	0.19	0.22	0.19	0.19	0.03	0.03	0.68	-0.23	0.10	0.07	0.05	0.28	0.09	0.23	0.09	0.08	0.42
7 Cash (LIBOR)							1.00	0.47	0.44	0.24	0.24	0.23	0.14	-0.11	0.11	0.28	0.58	0.84	0.70	0.54	0.47	0.46	0.40	0.16	0.19	0.07	0.03	0.24	0.24	0.31	0.16	0.15	0.10	0.14	0.18	0.10	0.19	0.20	0.22	0.20	0.22	0.18	0.18	0.03	0.03	0.67	-0.22	0.10	0.07	0.05	0.28	0.08	0.22	0.09	0.08	0.41
8 TIPS								1.00	0.55	0.48	0.44	0.47	0.07	-0.13	0.06	0.13	0.25	0.60	0.49	0.59	0.52	0.58	0.51	0.40	0.17	0.01	-0.02	0.06	0.06	0.43	0.05	0.04	0.00	0.05	0.05	-0.01	0.13	0.06	0.06	0.06	0.06	0.04	0.04	0.01	0.01	0.61	-0.17	0.06	0.04	0.00	0.13	-0.02	0.36	0.44	0.41	0.26
9 Core U.S. Fixed Income (Market Duration)									1.00	0.85	0.87	0.78	0.25	0.03	0.17	0.32	0.56	0.79	0.79	0.93	0.97	0.94	0.98	0.67	0.46	0.14	0.12	0.15	0.15	0.86	0.05	0.04	0.01	0.04	0.05	0.01	0.04	0.12	0.14	0.12	0.14	0.11	0.11	0.02	0.02	0.90	-0.03	0.01	0.00	0.20	0.13	-0.01	0.46	0.85	0.74	0.00
10 Long Duration Bonds - Gov't / Credit										1.00	0.93	0.97	0.06	-0.11	0.15	0.27	0.46	0.56	0.52	0.78	0.76	0.84	0.82	0.94	0.29	0.02	0.05	0.03	0.03	0.76	-0.01	-0.02	-0.04	-0.01	-0.02	-0.05	-0.03	0.02	0.03	0.02	0.03	0.01	0.01	0.01	0.01	0.71	-0.12	-0.02	-0.02	0.03	0.07	-0.07	0.47	0.90	0.96	-0.14
11 Long Duration Bonds - Credit											1.00	0.83	0.34	0.20	0.15	0.27	0.46	0.52	0.59	0.71	0.83	0.75	0.89	0.79	0.53	0.19	0.19	0.20	0.20	0.88	0.04	0.04	0.04	0.05	0.05	0.04	0.00	0.15	0.19	0.15	0.19	0.17	0.17	0.03	0.03	0.65	0.14	-0.02	-0.02	0.31	0.07	0.04	0.51	0.78	0.81	-0.11
12 Long Duration Bonds - Gov't												1.00	-0.13	-0.30	0.14	0.25	0.43	0.54	0.43	0.78	0.66	0.84	0.71	0.97	0.12	-0.09	-0.05	-0.08	-0.08	0.64	-0.04	-0.06	-0.08	-0.04	-0.06	-0.11	-0.04	-0.07	-0.07	-0.07	-0.07	-0.09	-0.09	0.00	0.00	0.70	-0.28	-0.03	-0.02	-0.15	0.06	-0.14	0.42	0.92	0.99	-0.16
13 High Yield Bonds													1.00	0.82	0.18	0.19	0.12	0.12	0.27	0.04	0.31	0.01	0.37	-0.17	0.80	0.60	0.60	0.66	0.66	0.49	0.25	0.32	0.41	0.26	0.37	0.44	0.37	0.46	0.64	0.46	0.64	0.64	0.64	0.07	0.07	0.07	0.66	0.04	0.02	0.92	0.04	0.62	0.55	-0.08	-0.15	0.17
14 Bank Loans														1.00	0.08	0.05	-0.06	-0.22	0.15	-0.27	0.17	-0.28	0.19	-0.29	0.58	0.56	0.46	0.53	0.53	0.35	0.16	0.21	0.29	0.17	0.25	0.33	0.21	0.39	0.50	0.39	0.50	0.52	0.52	0.05	0.05	-0.26	0.84	0.01	0.01	0.83	-0.03	0.45	0.28	-0.28	-0.29	0.06
15 Non-US Developed Bond (0% Hedged)															1.00	0.96	0.37	0.15	0.15	0.16	0.16	0.16	0.16	0.13	0.21	0.20	0.51	0.09	0.09	0.17	0.01	0.04	0.04	0.00	0.03	0.00	0.45	0.07	0.08	0.07	0.08	0.08	0.08	0.01	0.01	0.16	0.05	0.03	0.02	0.26	0.03	0.18	0.39	0.13	0.13	0.13
16 Non-US Developed Bond (50% Hedged)																1.00	0.63	0.33	0.31	0.31	0.31	0.30	0.31	0.23	0.25	0.20	0.47	0.12	0.12	0.29	0.02	0.05	0.03	0.02	0.05	0.00	0.41	0.10	0.10	0.10	0.10	0.09	0.09	0.01	0.01	0.33	0.00	0.04	0.03	0.25	0.08	0.15	0.41	0.23	0.22	0.17
17 Non-US Developed Bond (100% Hedged)																	1.00	0.65	0.59	0.57	0.56	0.55	0.54	0.38	0.25	0.09	0.13	0.14	0.14	0.46	0.06	0.05	0.01	0.05	0.06	0.00	0.10	0.12	0.12	0.12	0.12	0.09	0.09	0.02	0.02	0.62	-0.13	0.04	0.03	0.10	0.17	-0.01	0.25	0.37	0.35	0.18
18 Short Duration Bonds - Gov't																		1.00	0.82	0.90	0.77	0.84	0.73	0.41	0.26	0.06	0.02	0.15	0.15	0.57	0.11	0.10	0.04	0.09	0.12	0.03	0.14	0.12	0.14	0.12	0.14	0.10	0.10	0.02	0.02	0.96	-0.29	0.07	0.04	0.02	0.24	0.01	0.34	0.54	0.42	0.27
19 Short Duration Bonds - Credit																			1.00	0.73	0.89	0.68	0.81	0.32	0.42	0.16	0.11	0.26	0.26	0.68	0.12	0.11	0.07	0.10	0.13	0.07	0.12	0.21	0.24	0.21	0.24	0.21	0.21	0.03	0.03	0.79	0.03	0.06	0.04	0.24	0.20	0.06	0.33	0.43	0.33	0.22
20 Intermediate Duration Bonds - Gov't																				1.00	0.86	0.99	0.85	0.65	0.26	0.01	0.01	0.03	0.03	0.69	0.04	0.02	-0.03	0.02	0.03	-0.05	0.05	0.02	0.03	0.02	0.03	0.00	0.00	0.01	0.01	0.98	-0.29	0.02	0.01	-0.03	0.15	-0.07	0.40	0.85	0.71	0.06
21 Intermediate Duration Bonds - Credit																					1.00	0.85	0.98	0.55	0.51	0.18	0.15	0.21	0.21	0.86	0.07	0.06	0.03	0.06	0.07	0.03	0.06	0.17	0.19	0.17	0.19	0.17	0.17	0.03	0.03	0.84	0.07	0.02	0.01	0.27	0.14	0.02	0.43	0.73	0.60	0.05
22 Market Duration Bonds - Gov't (Model Portfolios)																						1.00	0.86	0.72	0.24	-0.01	0.00	0.00	0.00	0.71	0.02	0.00	-0.04	0.01	0.00	-0.07	0.03	0.00	0.01	0.00	0.01	-0.02	-0.02	0.01	0.01	0.96	-0.29	0.01	0.00	-0.05	0.13	-0.09	0.41	0.91	0.79	0.00
23 Core Plus - Fixed Income (Model Portfolios)																							1.00	0.61	0.56	0.21	0.18	0.22	0.22	0.90	0.06	0.06	0.04	0.06	0.08	0.04	0.04	0.18	0.20	0.18	0.20	0.18	0.18	0.03	0.03	0.82	0.11	0.01	0.00	0.32	0.12	0.04	0.47	0.78	0.67	0.00
24 STRIPS (25 Duration)																								1.00	0.07	-0.11	-0.06	-0.09	-0.09	0.57	-0.05	-0.07	-0.09	-0.05	-0.07	-0.11	-0.06	-0.08	-0.08	-0.08	-0.08	-0.10	-0.10	0.00	0.00	0.57	-0.26	-0.04	-0.03	-0.17	0.05	-0.13	0.39	0.84	0.97	-0.19
25 Emerging Market Bonds (Sov. USD)																									1.00	0.67	0.62	0.54	0.54	0.60	0.19	0.23	0.30	0.19	0.27	0.32	0.24	0.39	0.52	0.39	0.52	0.52	0.52	0.07	0.07	0.27	0.46	0.02	0.01	0.80	0.06	0.46	0.53	0.17	0.10	0.07
26 Emerging Market Bonds (Corporate USD)																										1.00	0.59	0.44	0.44	0.30	0.16	0.21	0.29	0.15	0.24	0.27	0.27	0.30	0.44	0.30	0.44	0.44	0.44	0.06	0.06	0.03	0.46	0.02	0.01	0.71	0.02	0.45	0.40	-0.06	-0.10	0.08
27 Emerging Market Bonds (Sov. Local)																											1.00	0.51	0.51	0.27	0.12	0.21	0.38	0.11	0.21	0.21	0.46	0.32	0.52	0.32	0.52	0.52	0.52	0.08	0.08	0.01	0.38	0.01	0.00	0.73	0.01	0.63	0.59	-0.03	-0.05	0.00
28 Hedge Funds - Direct (Median Manager)																												1.00	1.00	0.31	0.32	0.40	0.53	0.31	0.46	0.52	0.36	0.76	0.94	0.76	0.94	0.74	0.74	0.09	0.09	0.08	0.41	0.03	0.02	0.63	0.07	0.75	0.57	-0.11	-0.12	0.14
29 Hedge Funds - Direct (Institutional Quality)																													1.00	0.31	0.32	0.40	0.53	0.31	0.46	0.52	0.36	0.76	0.94	0.76	0.94	0.74	0.74	0.09	0.09	0.08	0.41	0.03	0.02	0.63	0.07	0.75	0.57	-0.11	-0.12	0.14
30 eLDI																														1.00	0.09	0.10	0.11	0.09	0.12	0.12	0.10	0.23	0.29	0.23	0.29	0.27	0.27	0.04	0.04	0.66	0.25	0.00	0.00	0.45	0.09	0.15	0.52	0.67	0.61	-0.01
31 Private Real Estate (Core)																															1.00	0.96	0.45	0.19	0.85	0.32	0.11	0.19	0.33	0.19	0.33	0.33	0.33	0.03	0.03	0.07	0.11	0.02	0.02	0.21	0.04	0.36	0.23	-0.06	-0.07	0.10
32 Private Real Estate (Non-Core)																																1.00	0.49	0.22	0.89	0.38	0.18	0.22	0.41	0.22	0.41	0.41	0.41	0.05	0.05	0.05	0.16	0.02	0.02	0.28	0.04	0.48	0.32	-0.07	-0.08	0.10
33 U.S. REITs																																	1.00	0.25	0.50	0.46	0.30	0.29	0.56	0.29	0.56	0.56	0.56	0.08	0.08	0.00	0.23	0.02	0.02	0.40	0.03	0.68	0.47	-0.10	-0.10	0.08
34 Infrastructure (Closed-End)																																		1.00	0.64	0.33	0.10	0.18	0.32	0.18	0.32	0.32	0.32	0.04	0.04	0.05	0.12	0.02	0.01	0.21	0.04	0.35	0.23	-0.06	-0.06	0.09
35 Closed-End Real Assets (Model Portfolios)																																			1.00	0.45	0.19	0.26	0.47	0.26	0.47	0.47	0.47	0.05	0.05	0.06	0.18	0.03	0.02	0.32	0.05	0.54	0.35	-0.09	-0.09	0.12
36 Private Equity																																				1.00	0.14	0.29	0.54	0.29	0.54	0.55	0.55	0.06	0.06	-0.02	0.26	0.02	0.01	0.38	0.03	0.63	0.36	-0.12	-0.13	0.08
37 Commodities																																					1.00	0.21	0.37	0.21	0.37	0.37	0.37	0.06	0.06	0.09	0.15	0.09	0.06	0.37	0.06	0.49	0.74	-0.06	-0.07	0.41
38 Hedge Funds - Low Beta (Universe)																																						1.00	0.50	1.00	0.50	0.43	0.43	0.06	0.06	0.06	0.30	0.02	0.01	0.44	0.06	0.41	0.31	-0.09	-0.10	0.11
39 Hedge Funds - High Beta (Universe)																																							1.00	0.50	1.00	0.76	0.76	0.10	0.10	0.08	0.39	0.03	0.02	0.62	0.06	0.78	0.59	-0.10	-0.11	0.13
40 Hedge Funds - Low Beta (Institutional Quality)																																								1.00	0.50	0.43	0.43	0.06	0.06	0.06	0.30	0.02	0.01	0.44	0.06	0.41	0.31	-0.09	-0.10	0.11
41 Hedge Funds - High Beta (Institutional Quality)																																									1.00	0.76	0.76	0.10	0.10	0.08	0.39	0.03	0.02	0.62	0.06	0.78	0.59	-0.10	-0.11	0.13
42 Hedge Funds - Long/Short Equity (Universe)																																										1.00	1.00	0.09	0.09	0.04	0.41	0.03	0.02	0.62	0.05	0.79	0.59	-0.11	-0.12	0.12
43 Hedge Funds - Long/Short Equity (Institutional Quality)																																											1.00	0.09	0.09	0.04	0.41	0.03	0.02	0.62	0.05	0.79	0.59	-0.11	-0.12	0.12
44 Hedge Funds - CTA (Universe)																																												1.00	1.00	0.02	0.04	0.00	-0.01	0.08	0.02	0.12	0.10	0.00	0.00	0.02
45 Hedge Funds - CTA (Institutional Quality)																																													1.00	0.02	0.04	0.00	-0.01	0.08	0.02	0.12	0.10	0.00	0.00	0.02
46 Mortgage Backed Securities -- Agency																																														1.00	-0.30	0.04	0.02	-0.01	0.19	-0.04	0.39	0.75	0.62	0.15
47 Private Debt -- Direct Lending																																															1.00	0.00	0.00	0.68	-0.06	0.36	0.20	-0.25	-0.25	0.00
48 Timberland																																																1.00	0.33	0.02	0.03	0.03	0.05	-0.04	-0.04	0.21
49 Farmland																																																	1.00	0.01	0.02	0.02	0.03	-0.03	-0.03	0.14
50 Multi-Asset Credit																																																		1.00	0.02	0.62	0.53	-0.11	-0.16	0.10
51 Insurance-Linked Securities (Catastrophe Bonds)																																																			1.00	0.02	0.06	0.03	0.02	0.12
52 65% US Equity/35% Non-US Equity																																																				1.00	0.72	-0.15	-0.15	0.10
53 Risk Parity (10% Volatility Target)																																																					1.00	0.38	0.39	0.18
54 7-10 Yr Capital Efficiency																																																						1.00	0.92	-0.20
55 Long Treasury Capital Efficiency																																																							1.00	-0.22
56 Inflation																																																								1.00

Expected returns are using Aon 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results. Correlations based on expected returns on previous page.

The opinions referenced are as of the date of publication and are subject to change due to changes in the market or economic conditions and may not necessarily come to pass. Information contained herein is for informational purposes only and should not be considered investment advice.

What Does Our Model Cover?



How Do We Set Assumptions

- Our global assumptions are Aon's asset class return, volatility and correlation assumptions. "Best estimate" asset class returns, i.e., 50/50 chance actual returns will be below our assumptions.
- Updated quarterly
- Details of our assumptions are shown in the appendices to this material
- Assumptions are set passively except for private equity and hedge funds. We add manager alpha separately for asset classes.
- Time Horizon – Up to 30 years.
- Return assumptions modelled differently according to asset class attributes.
  - E.g., Equities based on discounted dividend ('cash flow') approach:

Limitations of Asset-Liability Modeling

Asset-liability modeling can capture the likelihood of a strategy meeting the objectives

- It does not ‘predict’ the future, i.e., we cannot say which of the economic scenarios will actually occur
- The results depend on the assumptions underlying the model and the structure of the model itself

There are elements that cannot be modeled and must be thought of in addition to the results of any analysis

- E.g., idiosyncratic manager risk, liquidity requirements
- Black swans

Aon Investments' Capital Market Assumptions

Explanation of Capital Market Assumptions—12/31/2023

The following capital market assumptions were developed by Aon's Global Asset Allocation Team and represent the long-term capital market outlook (i.e., 10 years) based on data at the end of the fourth quarter of 2023. The assumptions were developed using a building block approach, reflecting observable inflation and interest rate information available in the fixed income markets as well as Consensus Economics forecast and market data sources including, but not limited to MSCI, Factset and Bloomberg. Our long-term assumptions for other asset classes are based on historical results, current market characteristics, and our professional judgment. Expected returns are using Aon 10 Year Capital Market Assumptions as of 12/31/2023. CMAs contain projections about future returns on asset classes. Our CMA projections are designed to reflect the typical cost of implementing an investment program. Expected returns are calculated using weighted allocations of the underlying CMAs. Expected Returns are geometric (long-term compounded; rounded to the nearest decimal) assuming portfolio weights are rebalanced annually. Expected returns presented are models and do not represent the returns of an actual client account. Your actual returns will be reduced by your advisory fees and other expenses you may incur as a client. Aon's advisory fees are described in Part 2A of Aon's Form ADV. Not a guarantee of future results.

Inflation – Expected Level (2.2%)

Based on Consensus Economics long-term estimates and our near-term economic outlook, we expect U.S. consumer price inflation to be approximately 2.2% during the next 10 years.

Real Returns for Asset Classes

Fixed Income		
Cash	1.6%	Over the long run, we expect the real yield on cash and money market instruments to produce a real return of 1.6% in a moderate to high-inflationary environment.
TIPS	1.8%	We expect intermediate duration Treasury Inflation-Protected Securities to produce a real return of about 1.8%.
Core Fixed Income (i.e., Market Duration)	2.3%	We expect intermediate duration Treasuries to produce a real return of about 1.7%. We estimate the fair value credit spread (credit risk premium - expected losses from defaults and downgrades) to be 0.6%, resulting in a long-term real return of 2.3%.

Aon Investments' Capital Market Assumptions

Explanation of Capital Market Assumptions—12/31/2023

Fixed Income		
Core Plus Bonds	2.5%	Modeled as 20% 5 duration gov't bonds real return of 1.7% and 80% 5 duration corporate bonds real return of 2.7%.
Long Duration Bonds – Government and Credit	2.8%	We expect Treasuries with a duration of ~14 to produce a real return of 2.5%. We estimate the fair value credit spread (credit risk premium - expected losses from defaults and downgrades) to be 0.3%, resulting in an expected real return of 2.8%.
Long Duration Bonds – Credit	3.1%	We expect Treasuries with a duration of ~12 years comparable to produce a real return of 2.5%. We estimate the fair value credit spread (credit risk premium - expected losses from defaults and downgrades) to be 0.6%, resulting in an expected real return of 3.1%.
Long Duration Bonds – Government	2.5%	We expect Treasuries with a duration of ~16 years to produce a real return of 2.5% during the next 10 years.
High Yield Bonds	3.2%	We expect intermediate duration Treasuries to produce a real return of about 1.7%. We estimate the fair value credit spread (credit risk premium - expected losses from defaults and downgrades) to be 1.5%, resulting in an expected real return of 3.2%.
Bank Loans	4.3%	We expect LIBOR to produce a real return of about 2.3%. We estimate the fair value credit spread (credit risk premium - expected losses from defaults) to be 2.0%, resulting in an expected real return of 4.3%.
Non-U.S. Developed Bonds: 50% Hedged	1.4%	We forecast real returns for non-US developed market bonds to be 1.4% over a 10-year period after adjusting for a 50% currency hedge. We assume a blend of one-third investment grade corporate bonds and two-thirds government bonds. We also produce assumptions for 0% hedged and 100% hedged non-US developed bonds.
Emerging Market Bonds (Sovereign; USD)	4.2%	We forecast real returns for emerging market sovereign bonds denominated in US dollars to be 4.2% over a 10-year period.
Emerging Market Bonds (Corporate; USD)	3.6%	We forecast real returns for emerging market corporate bonds denominated in US dollars to be 3.6% over a 10-year period.
Emerging Market Bonds (Sovereign; Local)	3.3%	We forecast real returns for emerging market sovereign bonds denominated in local currency to be 3.3% over a 10-year period.

Aon Investments' Capital Market Assumptions

Explanation of Capital Market Assumptions—12/31/2023

Multi-Asset Credit (MAC)	4.6%	We assume real returns from beta exposure to high yield, bank loans and emerging market debt to add 3.8% plus 0.8% from alpha (net of fees) over a 10-year period.
Private Debt-Direct Lending	5.9%	The base building block is bank loans 4.3% + spread 1.6% (net of management fees and performance incentives). There is 100% leverage included in the assumption with the cost of financing at LIBOR +2.5%.
Equities		
Large Cap US. Equity	4.2%	This assumption is based on 1.03 beta to global equities plus inflation and real cash return
Small Cap U.S. Equity	4.4%	Adding a 0.2% return premium for small cap U.S. equity over large cap U.S. equity results in an expected real return of 4.4%. This return premium is theoretically justified by the higher risk inherent in small cap U.S. equity versus large cap U.S. equity and is also justified by historical data. In recent years, higher small cap valuations relative to large cap equity has reduced the small cap premium.
Global Equity (Developed & Emerging Markets	4.4%	We employ a building block process to develop discounted cash flows using the developed and emerging markets that comprise the MSCI All-Country World Index. Our roll-up model produces an expected real return of 4.4% for global equity.
International (Non-U.S.) Equity, Developed Markets	4.2%	This assumption is based on 0.85 beta to global equities plus inflation and real cash return
Emerging Market Stocks	4.5%	This assumption is based on 1.14 beta to global equities plus inflation and real cash return

Aon Investments' Capital Market Assumptions

Explanation of Capital Market Assumptions—12/31/2023

Alternative Asset Classes		
Low Beta (Defensive) Hedge Funds	2.5%	Encompasses defensive/low volatility hedge fund strategies with low correlations to risk assets. This assumption represents median manager performance. 1% base fee + 10% performance fee is deducted from the return expectation.
Low Beta (Defensive) Hedge Funds Institutional Quality	3.5%	Represent defensive/low volatility hedge fund strategies with low correlations to risk assets. 1% base fee + 7% performance fee is deducted from return expectations. To use this category the funds must be institutional quality.
High Beta (Return Enhancing) Hedge Funds	3.5%	Encompasses return enhancing/higher volatility hedge fund strategies with higher correlations to risk assets. The assumption represents median manager performance. 1% base fee + 10% performance fee is deducted from the return expectations.
High Beta (Return Enhancing) Hedge Funds Institutional Quality	5.5%	Represents return enhancing/higher volatility hedge fund strategies with higher correlations to risk assets. 1% base fee + 7% performance fee is deducted from return expectations. To use this category the funds must be institutional quality.
Broad Hedge Funds Universe	3.0%	Generic hedge fund investments which represents a portfolio of diversified strategies. We assume 50% defensive/50% return enhancing strategies. 1% base fee + 10% performance fee is deducted from the return expectations.
Broad Hedge Funds Institutional Quality	4.5%	Generic hedge fund investments which represents a portfolio of diversified strategies. We assume 50% defensive institutional quality/50% return enhancing institutional quality strategies. To use this category the funds must be institutional quality. 1% base fee + 7% performance fee is deducted from the return expectations.
Core Real Estate	3.5%	Our real return assumption for core real estate is based a gross income of about 3.7%, management fees of roughly 1%, 25% leverage and future capital appreciation near the rate of inflation during the next 10 years. We assume a portfolio of equity real estate holdings that is diversified by property and by geographic region.
Non-Core Real Estate	5.4%	Core real estate is levered approximately 100% as the base building block for this assumption. We subtract financing costs for the leverage and 2% management costs. We also assume nominal alpha of 2% over core real estate. We assume a 50/50 mix of value-add and opportunistic investments.
U.S. REITs	4.1%	Our real return assumption for U.S. REITs is based on income of about 3.9% and future capital appreciation near the rate of inflation during the next 10 years. REITs are a sub-set of U.S. small/mid cap equity universe.

Aon Investments' Capital Market Assumptions

Explanation of Capital Market Assumptions—12/31/2023

Commodities	3.7%	Our commodity assumption is for a diversified portfolio of commodity futures contracts. Commodity futures returns are composed of three parts: spot price appreciation, collateral return, and roll return (positive or negative change implied by the shape of the future curve). We believe that spot prices will converge with CPI over the long run (i.e., 2.2%). Collateral is assumed to be Gov't cash (1.6%). Also, we believe the roll effect will be near zero, resulting in a real return of about 3.7% for commodities.
Private Equity	6.9%	Our private equity assumption reflects a diversified fund of funds with exposure to buyouts, venture capital, distressed debt, and mezzanine debt.
Infrastructure	4.9%	Our infrastructure assumption is formulated using a cash flow-based approach that projects cash flows (on a diversified portfolio of assets) over a 10-year period. Income and capital growth as well as gearing levels, debt costs and terms, relevant tax and management expenses are all taken into consideration. Our approach produces an expected real return of 4.9% for infrastructure.
eLDI	3.4%	Combination of various long credit strategies (1/6 real estate debt, 1/3 securitized debt, 1/6 CMOs, 1/3 private placements).
Closed-end Real Assets	5.8%	Combination of 50% Non-Core Real Estate and 50% Infrastructure.

Volatility/Correlation Assumptions

Assumed volatilities are formulated with reference to implied volatilities priced into option contracts of various terms, as well as with regard to historical volatility levels. For asset classes which are not marked to market (for example real estate), we "de-smooth" historical returns before calculating volatilities. Importantly, we consider expected volatility trends in the future – in recent years we assumed the re-emergence of an economic cycle and a loss of confidence in central bankers would lead to an increase in volatility. Correlation assumptions are generally similar to actual historical results; however, we do make adjustments to reflect our forward-looking views as well as current market fundamentals.

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About This Material

This material includes a summary of calculations and consulting related to the finances of the Virginia529 Defined Benefit 529 Program ("Virginia 529"). The following variables have been addressed:

- Actuarial liability and surplus
- RBC charge and ratio
- Duration and hedge ratio

This analysis is intended to assist Virginia 529 and other stakeholders with a review of the associated issues and options, and its use may not be appropriate for other purposes. This analysis has been prepared solely for the benefit of JLARC, Virginia529, and other stakeholders for the DB529 fund. Any further dissemination of this report is not allowed without the written consent of Aon Investments USA Inc.

Our calculations were generally based on the methodologies identified in the actuary's valuation report for Virginia 529. We believe the methodology used in these calculations conforms to the applicable standards identified in the report.

Models are used to develop alternative scenarios based on the underlying valuation model and project financial results under those scenarios. The models were developed by experts outside and within Aon. Where outside models were used, the models were reviewed by experts within Aon. The models were selected as appropriate for these projections by the undersigned.

Experience different than anticipated could have a material impact on the ultimate costs of the benefits. In addition, changes in plan provisions or applicable laws could have a significant impact on cost. Actual experience may differ from our modeling assumptions.

Our calculations were based on data provided by the plan actuary. The actuarial assumptions and methods and plan provisions reflected in these projections are the same as those used for the 2023 actuarial valuation for Virginia 529 as noted in the actuarial reports, except where noted in this report. Unless specifically noted, our calculations do not reflect any other changes or events after June 30, 2023. Reflecting events after June 30, 2023 would impact the results of the projection.

In conducting these projections, we have relied on plan design, demographic and financial information provided by other parties, including the plan's actuary and plan sponsor. While we cannot verify the accuracy of all of the information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy or completeness of the information and believe that it has produced appropriate results.

These projections have been conducted in accordance with generally accepted actuarial principles and practices, including applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board. The undersigned actuary is familiar with the near-term and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no colleague of Aon Investments USA Inc. providing services to Virginia 529 has any direct financial interest or indirect material interest in Virginia 529. Thus, we believe there is no relationship existing that might affect our capacity to prepare and certify this report for Virginia 529.

Aon Investments USA Inc.

Richard Parker FSA, CFA

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Aon Investments USA Inc.
200 E. Randolph Street
Suite 700
Chicago, IL 60601
ATTN: Aon Investments Compliance Officer