

February 15, 2024

**Investment Meeting** 





Agenda

## Agenda

- 1. Executive Summary
- 2. 2024 Asset Study/Asset Allocation Review
- 3. Infrastructure Manager Presentations: JPMorgan and IFM
- 4. Performance Report as of December 31, 2023
- 5. Economic and Market Update
- 6. The Magnificent Seven
- 7. Disclaimer

MEKETA INVESTMENT GROUP 2 of 107

# **Executive Summary**



**Executive Summary** 

## Q4 2023 Executive Summary

Category	Results	Notes
Total Fund Performance	Positive	+7.0% net of fees (~\$119 mm)
Performance vs. Benchmark	Underperformed	7.0% net of fees vs. 7.7% policy benchmark
Performance vs. Peers	Outperformed	42 <sup>nd</sup> percentile (7.0% vs. 6.8% peer median)
Asset Allocation Attribution Effects	Detracted	Underweight to Treasuries and overweight to Private Equity detracted during the quarter
Active Public Managers vs. Benchmarks	Underperformed	3 out of 11 active managers beat/matched their respective benchmarks after fees
Compliance with Targets	In Compliance	All exposure within policy ranges

- $\rightarrow$  FIPO generated a net 7.0% return in 4Q 2023.
- $\rightarrow$  FIPO ended 2023 with \$1.75 billion in market value.

MEKETA INVESTMENT GROUP 4 of 107

<sup>&</sup>lt;sup>1</sup> All strategies that have liquidity, i.e. Includes open-end real estate, but not closed-end real estate, private equity, infrastructure.

# Asset Study Comparison: 2023 Projections vs. 2024 Projections



Asset Study Comparison: 2023 Projections vs. 2024 Projections

#### **Asset Allocation Review Introduction**

- → The purpose of this review is to ensure FIPO's asset allocation targets are still appropriate moving forward.
- → The backbone of the analysis is based on a modeling technique called Mean Variance Optimization (MVO).
- → MVO analysis seeks to predict what the long term expected return will be based on a selected asset mix.
- → MVO is a very useful tool, but it is imperfect. Qualitative analysis must be applied when evaluating the forecasts.
- → In the first quarter of each year, Meketa Investment Group typically prepares its capital market assumptions which serve as the backbone of the MVO analysis.
- → The capital market assumptions seek to predict individual asset class returns and volatility over the next twenty-year period.
- → They do not predict returns or volatility in any given single year.

MEKETA INVESTMENT GROUP 6 of 107



Asset Study Comparison: 2023 Projections vs. 2024 Projections

## **Building our forecasts**

- → Each return assumption is based on the most important factors that drive returns for that asset class.
- $\rightarrow$  The common components are income, growth and valuation.

Asset Class Category	Major Factors
Equities	Dividend Yield, GDP Growth, Valuation
Bonds	Yield to Worst, Default Rate, Recovery Rate
Real Estate	Cap Rate, Income Yield, Growth
Private Equity	EBITDA Multiple, Debt Multiple, Public Eq Valuation
Infrastructure	Public IS Valuation, Income, Growth

MEKETA INVESTMENT GROUP 7 of 107



Asset Study Comparison: 2023 Projections vs. 2024 Projections

## **Current Asset Allocation Policy**

	Target (%)	Ranges (%)
U.S. Equity	32	20% - 40%
International Developed Non-U.S. Equity	22	10% - 30%
Private Equity Fund of Funds	4	0% - 8%
Private Debt	3	0% - 6%
Investment Grade Bonds	18	12% - 25%
Treasuries	5	2% - 8%
High Yield Bonds	2	0% - 4%
Bank Loans	2	0% - 4%
Real Estate	9	6% - 12%
Core Infrastructure	3	0% - 6%
Total	100	

MEKETA INVESTMENT GROUP 8 of 107



Asset Study Comparison: 2023 Projections vs. 2024 Projections

## **Annual Asset Study**

→ The following table illustrates the changes in expected return for each sub asset class that FIPO is invested in.

## **Expected Return<sup>1</sup> Assumptions**

	2023 Study Return Assumptions (%)	2024 Study Return Assumptions (%)	Return Difference (%)	Notes
U.S. Equity	8.7	8.5	-0.2	Higher valuations
International Developed Non-U.S. Equity	9.8	8.9	-0.9	Higher valuations, lower projected earnings growth
Private Equity Fund of Funds	9.8	9.9	+0.1	Mixed valuations and slightly lower borrowing costs
Private Debt	9.0	9.2	+0.2	Less extreme distressed pricing
Investment Grade Bonds	4.7	4.8	+0.1	Slightly higher yields
Treasuries	5.0	5.0	0	
High Yield Bonds	7.3	6.8	-0.5	Tighter spreads
Bank Loans	7.0	6.6	-0.4	Tighter spreads
Real Estate	7.8	8.0	+0.2	Higher yields, partially offset by higher cap rates
Core Infrastructure	7.8	8.0	+0.2	Slightly lower borrowing costs
FIPO's 20 Year Expected Return	8.4%	8.1%	-0.3%	

MEKETA INVESTMENT GROUP 9 of 107

<sup>&</sup>lt;sup>1</sup> Twenty-year annualized return assumptions.



Asset Study Comparison: 2023 Projections vs. 2024 Projections

## Expected Risk<sup>1</sup> Assumptions

- → There have been minimal changes in our expected standard deviation assumptions.
- → Our expectations are based on historical 20-year averages (previously 15 years), with subjective adjustments.

	2023 Study Risk Assumptions (%)	2024 Study Risk Assumptions (%)	Risk Difference (%)
U.S. Equity	18.0	17.0	-1.0
International Developed Non-U.S. Equity	19.0	18.0	-1.0
Private Equity Fund of Funds	27.0	26.0	-1.0
Private Debt	15.0	15.0	-
Investment Grade Bonds	4.0	4.0	-
Treasuries	12.0	12.0	-
High Yield Bonds	11.0	11.0	-
Bank Loans	10.0	10.0	-
Real Estate	16.0	16.0	-
Core Infrastructure	14.0	14.0	-
FIPO's 20 YR Expected Standard Deviation	12.3%	11.9%	-0.4%

MEKETA INVESTMENT GROUP 10 of 107

<sup>&</sup>lt;sup>1</sup> Twenty-year annualized assumptions.



Asset Study Comparison: 2023 Projections vs. 2024 Projections

## Summary

- → Return expectations changed as follows:
  - Higher valuations for public equities and lower earnings growth expectations all result in lower forward looking return expectations.
  - Return expectations of investment grade bonds are similar as the yield curve ended 2023 similar to where it started.
- → Risk expectations decreased for most equities (public and private).

## 2023 vs. 2023 Asset Study Comparison

	Expectations based on 2023 Asset Study (%)	Expectations based on 2024 Asset Study (%)	Difference (%)
Expected Return	8.4	8.1	-0.3%
Expected Standard Deviation	12.3	11.9	-0.4%

MEKETA INVESTMENT GROUP 11 of 107

<sup>&</sup>lt;sup>1</sup> Twenty year annualized assumptions.





**Thoughts?** 

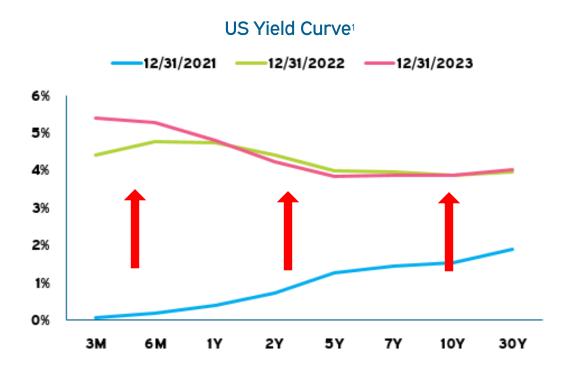
MEKETA INVESTMENT GROUP 12 of 107



Asset Study Comparison: 2023 Projections vs. 2024 Projections

#### **Interest Rates**

- → Except for the short end of the curve, the US Treasury yield curve was little changed in 2023 from where it began the year.
- → The market expects the Federal Reserve to reverse course and start lowering short-term rates in 2024, believing that the actions taken thus far to fight inflation have been sufficient.



MEKETA INVESTMENT GROUP 13 of 107

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of December 31, 2023.



Asset Study Comparison: 2023 Projections vs. 2024 Projections

## What Did We Say the Last Few Years?

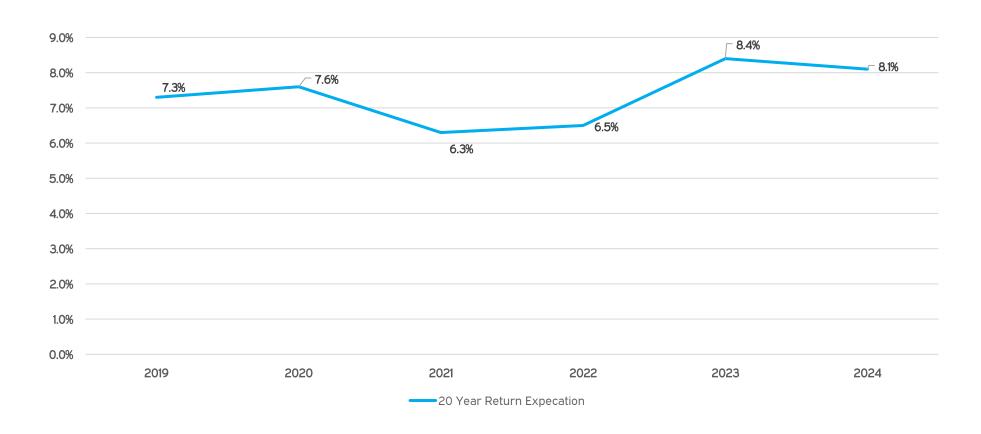
- → Keep the long term in mind.
- → Recognize the goal is a **long-term** return over your actuarial target (**not every single year**).
- → Trust the long-term asset allocation.
- $\rightarrow$  Rebalance.
- → Increase risk assets when expectations are higher.

MEKETA INVESTMENT GROUP 14 of 107



Asset Study Comparison: 2023 Projections vs. 2024 Projections

## **Historical Perspective**



- → Expectations typically fluctuate up/down ~0.50% per year (on average)
- → Expectations are up significantly in last two studies vs. 2022/2021 studies (mostly because of the yield curve).

MEKETA INVESTMENT GROUP 15 of 107



Asset Study Comparison: 2023 Projections vs. 2024 Projections

#### Recommendation

- → We are comfortable with the existing policy target and its risk/return profile.
- → The current projections provide a substantial "cushion" relative to the target actuarial return.
- $\rightarrow$  We see no need to make any changes at this time.

MEKETA INVESTMENT GROUP 16 of 107

**Core Infrastructure – Strategies for Consideration** 



Core Infrastructure - Strategies for Consideration

## **Background and Overview**

- → At the February 2023 meeting Meketa and the Board conducted an asset allocation review.
- → The Board approved replacing the "infrastructure" asset class with "core infrastructure."
- → In late 2023 the Board accepted Meketa's recommendation to interview IFM and JPM.
- → We recommend a \$50 mm commitment to one firm.

MEKETA INVESTMENT GROUP 18 of 107



Core Infrastructure – Strategies for Consideration

## **Overview of Core Infrastructure**

	Core Infrastructure		
Description	Wide range of physical assets and businesses that provide essential services to communities, including transportation, electricity, water, waste, telecommunications, and social infrastructure.		
Types of Assets purchased	Toll roads Airports Bridges Cell towers Pipelines Water storage/treatment		
Strategic Objectives	(1) Inflation linkage, (2) diversification, (3) cash yield, (4) defensive risk		
Vehicle Type	Open-end commingled funds		
Concentration	15-20 assets		
Geography	Global (Developed nations)		
Liquidity	Generally quarterly (Some have initial lock-up periods)		
Fees	0.80% - 1.25%		
Expected Return	7%-10% total return with 4%-6% coming from income/yield		
Correlation expectations	0.65 with global equities, 0.45 with global fixed income		



Core Infrastructure - Strategies for Consideration

## Strategies for Consideration<sup>1</sup>

	JPM	IFM
Strategy Name	J.P. Morgan Infrastructure Investment Fund	IFM Global Infrastructure Fund
Strategy Focus	Core Infrastructure	Core Infrastructure
Strategy AUM	\$34 billion	\$54 billion
Strategy Inception	2006	2004

ightarrow JPM and IFM have track records dating back to early 2000's for their core infrastructure funds.



## Core Infrastructure – Strategies for Consideration

## **Investment Focus Comparison**

	JPM	IFM
Focus	Acquire mature infrastructure assets with stable cash flows, monopolistic regulatory frameworks, and long-term revenue contracts	Acquire assets with monopoly-like characteristics, reliable regulatory environments, high barriers to entry, exposure to inflation and economic growth
Current Geography	50% North America, 16% Western Europe, 34% Other OECD <sup>1</sup>	44% North America, 18% Western Europe, 16% South America, 22% rest of World
Size of Each Investment	\$300mm - \$700 mm equity	\$700 mm - \$3 billion equity
Top 3 Sectors	45% Utility, 20% Midstream Energy, 18% Renewable	33% Toll Roads, 21% Midstream Energy, 16% Airports
Concentration	21 investments	24 investments
Team	~40 investment team	~120+ investment team

MEKETA INVESTMENT GROUP 21 of 107

<sup>&</sup>lt;sup>1</sup> OECD = Organisation for Economic Co-operation and Development. Data from 2023.



## Core Infrastructure – Strategies for Consideration

## Fees and Liquidity

	JPM	IFM	
Management Fee	0.86% annual management fee based on NAV (declines to 0.82% on all assets when fund reaches \$40 bb NAV)	0.77% annual management fee based on NAV	
Performance Fee	15% above a 7% hurdle	10% above an 8% hurdle	
Liquidity	Semi- annual	Quarterly	
Queue to Enter?	Currently estimated queue of 3 months to invest	Currently estimated queue of 6 to 12 months to invest	



Core Infrastructure - Strategies for Consideration

## **Performance Comparison**

- → Each firm offers different vehicles denominated in different currencies.
- → Generally, IFM has had higher returns over all trailing periods. JPM has had strong recent USD returns but lower local currency long-term returns.

#### USD Net Returns as of 6/30/2023

	1 YR	3 YR	5 YR	10 YR	Since Inception	Inception Date
JPM net USD hedged	10.3%	8.5%	-	-	8.3%	10/2018
IFM net USD hedged <sup>1</sup>	13.2%	14.5%	12.1%	10.3%	8.7%	12/2004

#### Local Currency Gross Returns as of 6/30/2023

	1 YR	3 YR	5 YR	10 YR	Since Inception	Inception Date
JPM gross local	10.9%	9.5%	9.1%	9.0%	8.4%	7/2007
IFM gross local	11.0%	15.1%	13.9%	13.0%	11.5%	12/2004

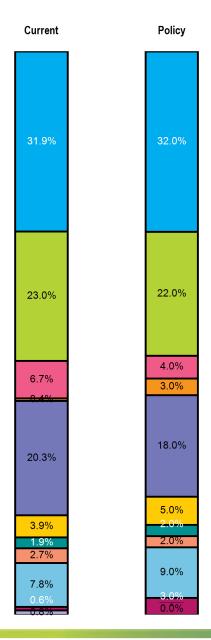
MEKETA INVESTMENT GROUP 23 of 107

<sup>&</sup>lt;sup>1</sup> Assuming 1.5% in total fees annualized (management fee and performance fee).

# Performance Report as of December 31, 2023

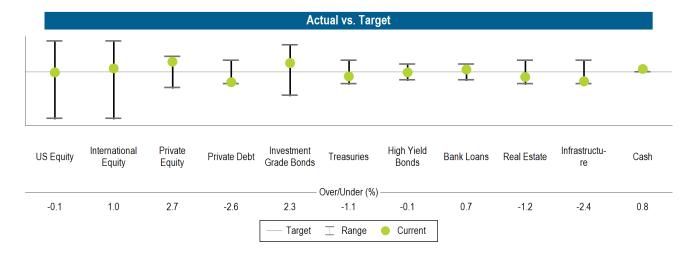


#### Total Plan | As of December 31, 2023



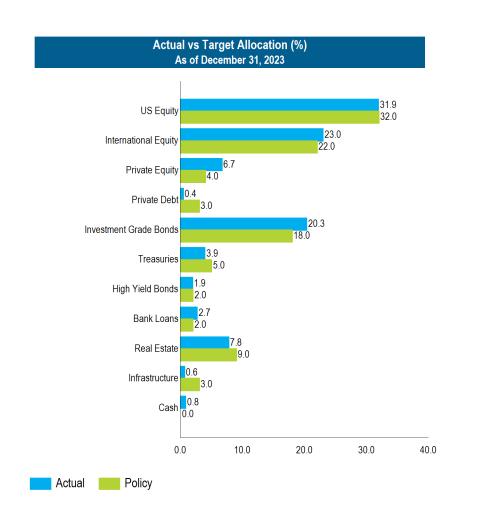
Allocation vs. Targets and Policy												
	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?							
US Equity	\$559,616,227	32%	32%	20% - 40%	Yes							
International Equity	\$402,908,063	23%	22%	10% - 30%	Yes							
Private Equity	\$117,138,791	<b>7</b> %	4%	0% - 8%	Yes							
Private Debt	\$7,203,124	0%	3%	0% - 6%	Yes							
Investment Grade Bonds	\$356,681,827	20%	18%	12% - 25%	Yes							
Treasuries	\$68,449,798	4%	5%	2% - 8%	Yes							
High Yield	\$33,625,577	2%	2%	0% - 4%	Yes							
Bank Loans	\$46,756,378	3%	2%	0% - 4%	Yes							
Real Estate	\$135,909,608	8%	9%	6% - 12%	Yes							
Infrastructure	\$10,860,662	1%	3%	0% - 6%	Yes							
Cash & Cash Alternatives	\$14,245,645	1%	0%	0% - 5%	Yes							
Total	\$1,753,395,700	100%	100%									

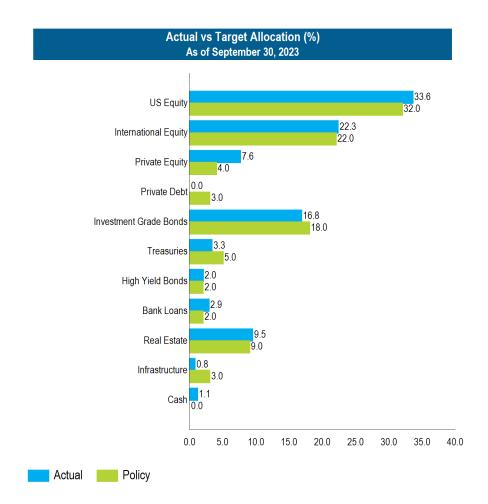
Throughout the entire report, cash includes investment in the BlackRock Liquid Policy portfolio.





#### Total Plan | As of December 31, 2023



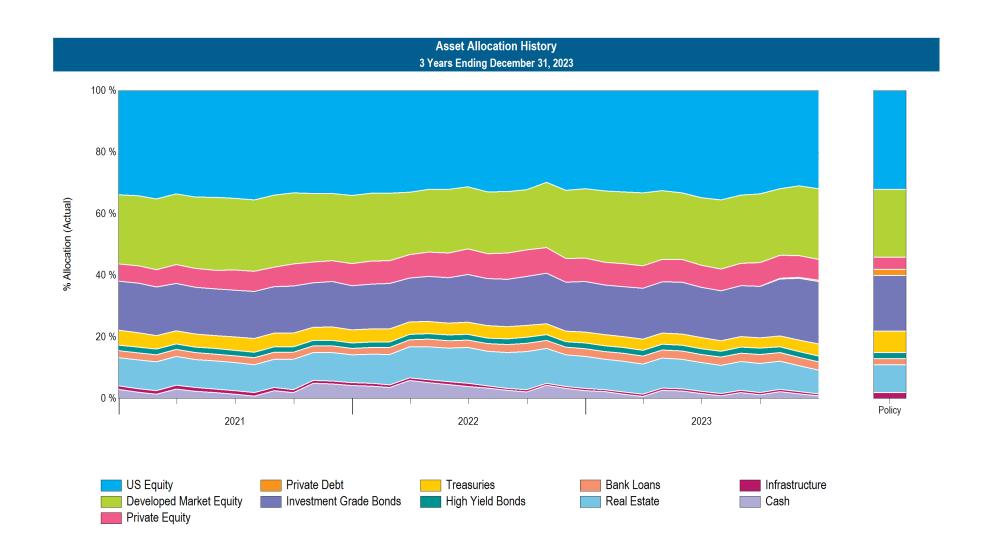


MEKETA INVESTMENT GROUP 26 of 107





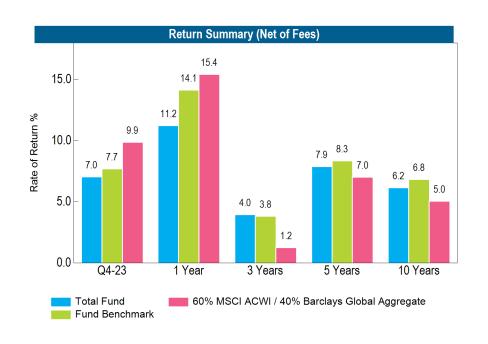
Total Plan | As of December 31, 2023



MEKETA INVESTMENT GROUP 27 of 107



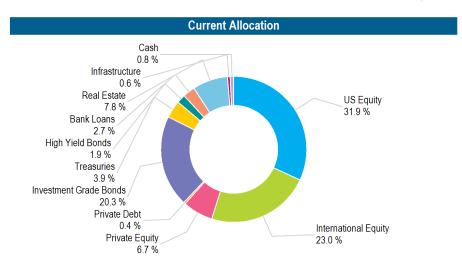
#### Total Plan | As of December 31, 2023



	QTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund (Net of Fees)	7.0	7.0	11.2	4.0	7.9	6.2
Fund Benchmark	7.7	7.7	14.1	3.8	8.3	6.8
InvestorForce Public DB \$1-5B Net Rank	42	42	61	52	57	55
InvestorForce Public DB \$1-5B Net Median	6.8	6.8	11.7	4.0	8.0	6.3

As of 6/1/2023, the total fund benchmark consists of 32% Russell 3000, 22% MSCI EAFE, 9% NCREIF ODCE, 4% MSCI ACWI IMI (Lagged) +2%, 3% Barclays US High Yield 1Q Lagged + 2%, 18% Barclays US Aggregate, 2% Credit Suisse Leveraged Loans, 2% ICE BofA Merrill Lynch US High Yield, 5% Barclays US Long Treasury, and 3% Consumer Price Index + 2%

Benchmark returns prior to 9/30/2019 provided by prior consultant.



Annua	Annualized Standard Deviation  Total Fund				pe Ratio al Fund	
12.0				0.8		
11.0				0.7		
9.0				0.6		
8.0			_	0.5		
7.0			-	0.4		
6.0				0.4		
5.0				0.3		-
4.0				0.2		
3.0				0.2		
2.0			H	0.1		

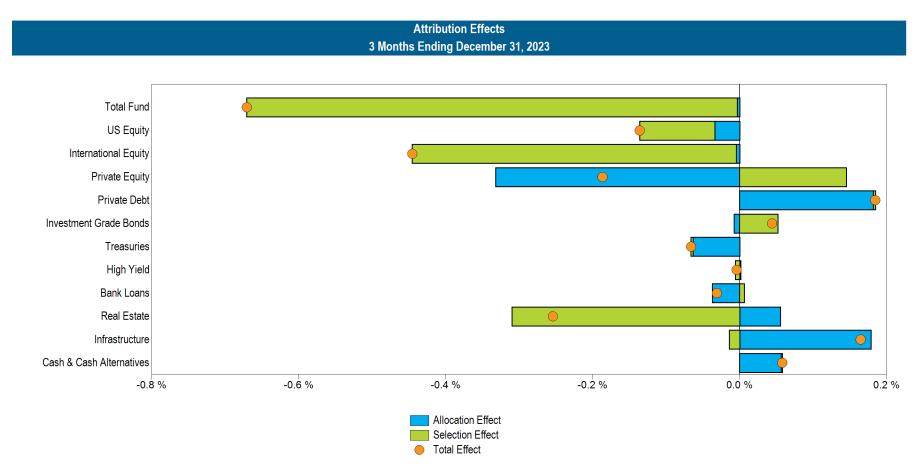
MEKETA INVESTMENT GROUP 28 of 107

1.0

3 Yrs



#### Total Plan | As of December 31, 2023



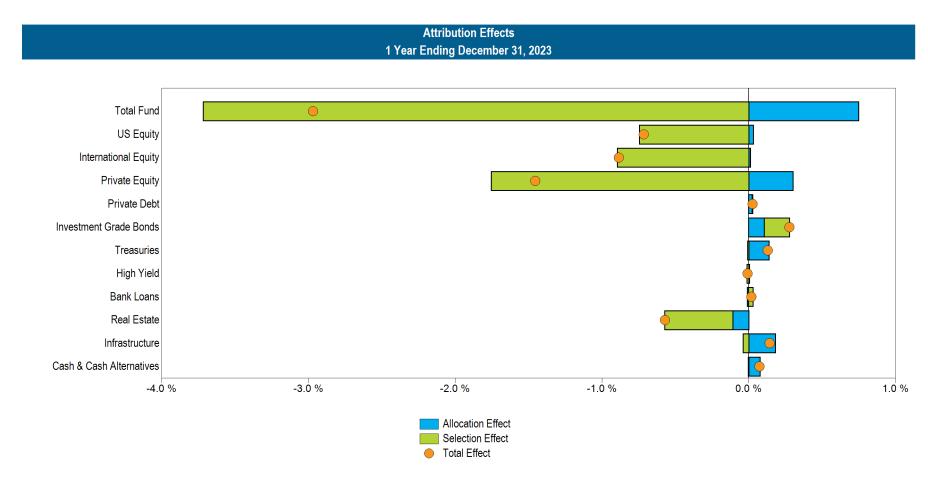
	Wtd. Actual	Wtd. Index	Excess	Selection	Allocation	Total
	Return	Return	Return	Effect	Effect	Effects
Total	7.0%	7.7%	-0.7%	-0.7%	-0.1%	-0.7%

The performance calculation methodology in attribution tables is different from the standard time weighted returns (geometric linkage of monthly returns) found throughout the rest of the report. In attribution tables, the average weight of each asset class (over the specified time period) is multiplied by the time period performance of that asset class and summed. Values may not sum due to rounding.

MEKETA INVESTMENT GROUP 29 of 107



#### Total Plan | As of December 31, 2023



	Wtd. Actual	Wtd. Index	Excess	Selection	Allocation	Total
	Return	Return	Return	Effect	Effect	Effects
Total	11.2%	14.2%	-3.0%	-3.7%	0.7%	-3.0%

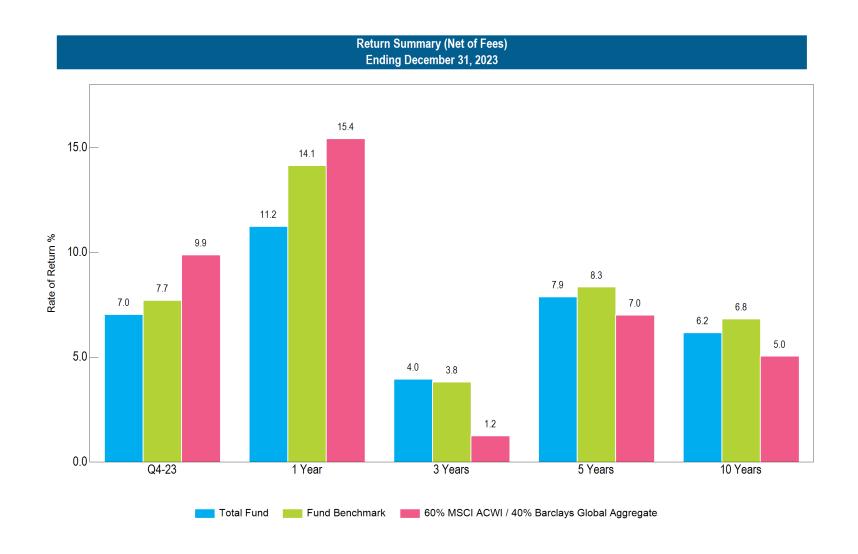
The performance calculation methodology in attribution tables is different from the standard time weighted returns (geometric linkage of monthly returns) found throughout the rest of the report. In attribution tables, the average weight of each asset class (over the specified time period) is multiplied by the time period performance of that asset class and summed. Values may not sum due to rounding.

MEKETA INVESTMENT GROUP 30 of 107





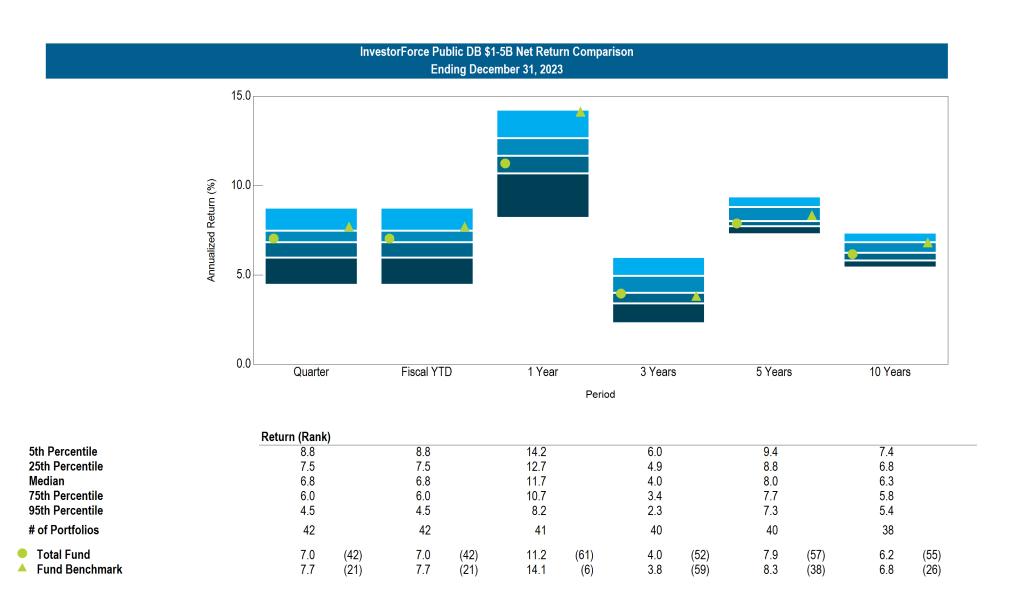
Total Plan | As of December 31, 2023



MEKETA INVESTMENT GROUP 31 of 107



Total Plan | As of December 31, 2023





Total Plan | As of December 31, 2023

Asset Class Performance Summary (Net of Fees)										
	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. Date	S.I. (%)	
Total Fund Fund Benchmark	1,753,395,700	100.0	7.0 7.7	11.2 14.1	4.0 <i>3.8</i>	7.9 8.3	6.2 6.8	Jan-94 Jan-94	7.7 7.5	
US Equity Russell 3000	559,616,227	31.9	11.8 12.1	<b>23.5</b> <i>26.0</i>	8.5 <i>8.5</i>	13.9 <i>15.2</i>	10.5 11.5	Jan-94 Jan-94	10.0	
International Equity  MSCI EAFE	402,908,063	23.0	8.5 10.4	14.4 18.2	1.2 4.0	7.9 <i>8.2</i>	5.2 4.3	<b>Jan-94</b> <i>Jan-94</i>	<u></u> 5.2	
Private Equity  MSCI ACWI IMI (1Q Lagged) +2%	117,138,791	6.7	- <b>0.6</b> -2.9	<b>0.5</b> <i>22.5</i>	<b>15.7</b> 9.0	13.8 8.2	12.6 9.5	Jan-94 Jan-94		
Private Debt  BBarc HY 1Q Lagged + 2%	7,203,124	0.4	0.0 1.0	12.5	<u></u> 3.8	<u></u> 5.0				
Investment Grade Bonds Bloomberg US Aggregate TR	356,681,827	20.3	<b>7.1</b> <i>6.8</i>	<b>6.4</b> 5.5	-2.8 -3.3	1.5 1.1	2.0 <i>1.8</i>	Jan-94 Jan-94	<b>4.5 4.4</b>	
Treasuries  Bloomberg US Govt Long TR	68,449,798	3.9	12.6 12.7	2.9 <i>3.1</i>	<b>-11.4</b> <i>-11.3</i>	-1.2	<u></u> 2.3	Jun-20 Jun-20	-10.3 -10.3	
High Yield  ICE BofA US High Yield TR	33,625,577	1.9	6.8 7.1	12.8 <i>13.4</i>	2.3 2.0	<b>5.6</b> <i>5.2</i>	<b>4.5</b>	Jan-94 Jan-94	6.7	
Bank Loans Credit Suisse Leveraged Loans	46,756,378	2.7	<b>3.1</b> <i>2.9</i>	14.1 13.0	<b>6.1 5.6</b>	<b>5.9 5.6</b>	<u></u> 4.4	Jan-94 Jan-94	<u></u> 5.3	

Fiscal year end is September 30.

MEKETA INVESTMENT GROUP 33 of 107



## Total Plan | As of December 31, 2023

	Market Value (\$)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. Date	S.I. (%)
Real Estate	135,909,608	7.8	-8.0	-16.0	2.8	3.0	5.6	Jan-94	
NCREIF ODCE			-4.8	-12.0	4.9	4.2	7.3	Jan-94	8.3
Infrastructure	10,860,662	0.6	-1.7	0.5	10.6	8.6		Jan-94	
CPI+2%			0.2	5.4	7.7	6.1	4.8	Jan-94	4.6
Cash & Cash Alternatives	14,245,645	0.8	10.8	16.5	4.3	9.0		Jan-94	
BlackRock Custom Benchmark			10.6	16.3	4.3	9.0		Jan-94	

MEKETA INVESTMENT GROUP 34 of 107



## Total Plan | As of December 31, 2023

Performance Summary (Net of Fees)									
	Market Value (\$)	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. Date	S.I. (%)
Total Fund	1,753,395,700		7.0	11.2	4.0	7.9	6.2	Jan-94	7.7
Fund Benchmark			7.7	14.1	3.8	8.3	6.8	Jan-94	7.5
InvestorForce Public DB \$1-5B Net Median			6.8	11.7	4.0	8.0	6.3	Jan-94	7.4
InvestorForce Public DB \$1-5B Net Rank			42	61	52	57	55	Jan-94	27
US Equity	559,616,227	31.9	11.8	23.5	8.5	13.9	10.5	Jan-94	
Russell 3000			12.1	26.0	8.5	15.2	11.5	Jan-94	10.0
Northern Trust S&P500 Index Fund	322,021,556	57.5	11.7	26.2	10.0			Aug-20	13.5
S&P 500			11.7	26.3	10.0	15.7	12.0	Aug-20	13.5
Waycross Partners Core Equity	70,971,183	12.7	12.7	33.4				Nov-22	30.7
S&P 500			11.7	26.3	10.0	15.7	12.0	Nov-22	21.6
eV US Large Cap Core Equity Net Median			11.5	21.6	9.0	14.3	11.0	Nov-22	19.1
eV US Large Cap Core Equity Net Rank			18	3				Nov-22	2
Boston Partners Mid Cap Value	58,307,085	10.4	11.7	16.8	11.5	13.9	9.8	Jun-98	9.7
Russell MidCap Value			12.1	12.7	8.4	11.2	8.3	Jun-98	8.9
eV US Mid Cap Value Equity Net Median			11.4	13.0	10.1	12.0	8.1	Jun-98	9.5
eV US Mid Cap Value Equity Net Rank			40	29	<i>28</i>	<i>25</i>	13	Jun-98	48
Champlain Mid Cap	46,050,385	8.2	11.3	14.0	1.9	12.0	11.2	Jul-09	14.0
Russell MidCap			12.8	17.2	5.9	12.7	9.4	Jul-09	13.3
eV US Mid Cap Core Equity Net Median			11.8	16.6	8.1	13.2	9.6	Jul-09	13.4
eV US Mid Cap Core Equity Net Rank			60	79	87	68	16	Jul-09	26
Champlain Small Cap	62,266,017	11.1	10.9	13.2	0.8	10.1	9.0	Jan-04	10.7
Russell 2000			14.0	16.9	2.2	10.0	7.2	Jan-04	8.1
eV US Small Cap Core Equity Net Median			12.2	16.7	6.8	11.9	8.2	Jan-04	9.1
eV US Small Cap Core Equity Net Rank			76	73	92	80	28	Jan-04	8



## Total Plan | As of December 31, 2023

	Market Value (\$)	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. Date	S.I. (%)
International Equity	402,908,063	23.0	8.5	14.4	1.2	7.9	5.2	Jan-94	
MSCI EAFE	22.27. 2.27. 2.2		10.4	18.2	4.0	8.2	4.3	Jan-94	5.2
Northern Trust EAFE Index Fund	139,544,726	34.6	10.4	18.2	4.3			Aug-20	9.2
MSCI EAFE			10.4	18.2	4.0	8.2	4.3	Aug-20	8.9
Wellington International Quality Growth (IQG)	133,314,688	33.1	8.6	14.4	-2.8	7.9		Nov-14	7.0
MSCI ACWI ex USA Growth			11.1	14.0	-2.7	<i>7.5</i>	4.5	Nov-14	<i>5.1</i>
eV ACWI ex-US Growth Equity Net Median			12.4	16.2	-2.5	8.8	5.4	Nov-14	6.2
eV ACWI ex-US Growth Equity Net Rank			97	67	56	72		Nov-14	39
First Eagle International Equity	129,991,531	32.3	6.5	10.3				Sep-22	10.3
MSCI EAFE Value			8.2	18.9	7.6	7.1	3.2	Sep-22	21.4
MSCI EAFE			10.4	<i>18.2</i>	4.0	8.2	4.3	Sep-22	18.8
eV EAFE Value Equity Net Median			8.5	18.4	6.2	7.7	4.1	Sep-22	19.1
eV EAFE Value Equity Net Rank			88	97				Sep-22	99
Private Equity	117,138,791	6.7	-0.6	0.5	15.7	13.8	12.6	Jan-94	
MSCI ACWI IMI (1Q Lagged) +2%			-2.9	22.5	9.0	8.2	9.5	Jan-94	
Adams Street 2012 Global Fund	10,535,110	9.0	-3.6	-5.5	10.6	12.9	12.2	Jul-12	6.7
MSCI ACWI IMI (1Q Lagged) +2%			-2.9	22.5	9.0	8.2	9.5	Jul-12	10.2
Adams Street Venture Innovation Fund	10,541,571	9.0	-3.4	-12.3	31.0	30.0		Dec-17	16.7
MSCI ACWI IMI (1Q Lagged) +2%			-2.9	22.5	9.0	8.2	9.5	Dec-17	9.1
Catalyst III	1,787,827	1.5	-6.8	-15.1	8.0	6.8	9.1	Oct-12	11.9
MSCI ACWI IMI (1Q Lagged) +2%			-2.9	22.5	9.0	8.2	9.5	Oct-12	11.0
Catalyst IV	6,878,191	5.9	-6.3	12.9	5.1	16.3		Nov-15	12.9
MSCI ACWI IMI (1Q Lagged) +2%			-2.9	22.5	9.0	8.2	9.5	Nov-15	9.3

MEKETA INVESTMENT GROUP 36 of 107



Total Plan | As of December 31, 2023

	Market Value (\$)	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. Date	S.I. (%)
Coller Fund VI  MSCI ACWI IMI (1Q Lagged) +2%	1,491,933	1.3	-2.6 <i>-2.9</i>	-8.0 <i>22.5</i>	10.9 <i>9.0</i>	8.5 <i>8.2</i>	12.0 <i>9.5</i>	Oct-12	16.4 11.0
Coller Fund VII  MSCI ACWI IMI (1Q Lagged) +2%	4,563,645	3.9	3.3 -2.9	12.8 22.5	18.6 9.0	12.3 <i>8.2</i>	9.5	Oct-16	24.2
Coller Fund VIII  MSCI ACWI IMI (1Q Lagged) +2%	12,280,579	10.5	3.3 -2.9	8.2 <i>22.5</i>	33.2 9.0	<del></del> 8.2	<u></u> 9.5	Jun-20 <i>Jun-20</i>	30.0 11.0
JP Morgan Global Fund V  MSCI ACWI IMI (1Q Lagged) +2%	8,832,813	7.5	2.3 -2.9	-0.9 <i>22.5</i>	17.4 9.0	15.2 <i>8.2</i>	9.5	May-14 <i>May-14</i>	16.7 9.4
JP Morgan Global Fund VI MSCI ACWI IMI (1Q Lagged) +2%	15,514,830	13.2	0.5 -2.9	1.5 <i>22.5</i>	16.1 9.0	12.6 <i>8.2</i>	<u></u> 9.5	Dec-17	18.4 <i>9.1</i>
JP Morgan Global Fund VIII  MSCI ACWI IMI (1Q Lagged) +2%	15,646,579	13.4	1.9 <i>-2.9</i>	12.0 <i>22.5</i>	16.5 9.0	<del></del> 8.2	9.5	Mar-19 <i>Mar-19</i>	12.3 9.9
JPMorgan US Corporate Finance III  MSCI ACWI IMI (1Q Lagged) +2%	453,136	0.4	3.4 -2.9	-3.4 <i>22.5</i>	16.3 9.0	18.0 <i>8.2</i>	15.7 9.5	Oct-06 <i>Oct-06</i>	<del></del> 8.4
JPMorgan Venture Capital Fund III  MSCI ACWI IMI (1Q Lagged) +2%	1,054,494	0.9	-1.6 <i>-2.9</i>	-3.3 <i>22.5</i>	4.3 9.0	3.8 <i>8.2</i>	6.7 9.5	Oct-06 <i>Oct-06</i>	<del></del> 8.4
Lexington Capital Partners VIII  MSCI ACWI IMI (1Q Lagged) +2%	8,271,154	7.1	0.2 -2.9	-0.5 <i>22.5</i>	13.6 9.0	10.4 <i>8.2</i>	<u></u> 9.5	Aug-15 <i>Aug-15</i>	14.0 <i>8.9</i>
Lexington Capital Partners IX  MSCI ACWI IMI (1Q Lagged) +2%	14,565,490	12.4	-3.4 <i>-2.9</i>	-4.2 22.5	19.0 <i>9.0</i>	<del></del> 8.2	<u></u> 9.5	Mar-19 <i>Mar-19</i>	9.9

MEKETA INVESTMENT GROUP 37 of 107



# Total Plan | As of December 31, 2023

	Market Value (\$)	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. Date	S.I. (%)
Pantheon USA Fund VII	1,415,403	1.2	-1.7	0.8	12.0	10.4	10.4	Sep-07	8.7
MSCI ACWI IMI (1Q Lagged) +2%			-2.9	22.5	9.0	8.2	9.5	Sep-07	7.3
Standard Life Europe Smaller Funds I	2,854,629	2.4	1.8	-4.1	2.4	4.7	1.7	Oct-12	-18.1
MSCI ACWI IMI (1Q Lagged) +2%			-2.9	22.5	9.0	8.2	9.5	Oct-12	11.0
Coller Fund V	4,473	0.0					- 1		
JPMorgan European Corporate Finance III	102,625	0.1							
Lexington Capital Partners VI-B	68,988	0.1					- 1		
Pantheon Europe Fund V-B	275,322	0.2					- 1		
Private Debt	7,203,124	0.4	0.0				-		
BBarc HY 1Q Lagged + 2%			1.0	12.5	3.8	5.0			
Golub Capital 4	7,203,124	100.0							
Investment Grade Bonds	356,681,827	20.3	7.1	6.4	-2.8	1.5	2.0	Jan-94	4.5
Bloomberg US Aggregate TR			6.8	5.5	-3.3	1.1	1.8	Jan-94	4.4
NT US Aggregate Bond	214,561,423	60.2	6.8	5.5	-3.3			Aug-20	-3.0
Bloomberg US Aggregate TR			6.8	5.5	-3.3	1.1	1.8	Aug-20	-3.0
Dodge & Cox Core Fixed Income	142,120,404	39.8	7.6	8.3	-1.4	2.7	2.7	Jan-02	4.3
Bloomberg US Aggregate TR			6.8	<i>5.5</i>	<i>-3.3</i>	1.1	1.8	Jan-02	<i>3.5</i>
eV US Core Fixed Inc Net Median			6.8	5.9	-3.1	1.4	2.0	Jan-02	3.8
eV US Core Fixed Inc Net Rank			6	2	3	1	3	Jan-02	5

MEKETA INVESTMENT GROUP 38 of 107



# Total Plan | As of December 31, 2023

	Market Value (\$)	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. Date	S.I. (%)
Treasuries	68,449,798	3.9	12.6	2.9	-11.4			Jun-20	-10.3
Bloomberg US Govt Long TR			12.7	3.1	-11.3	-1.2	2.3	Jun-20	-10.3
NT Long-Term Gov. Bond Index Fund	68,449,798	100.0	12.6	2.9	-11.4			Jun-20	-10.3
Bloomberg US Govt Long TR			12.7	3.1	-11.3	-1.2	2.3	Jun-20	-10.3
High Yield	33,625,577	1.9	6.8	12.8	2.3	5.6	4.5	Jan-94	
ICE BofA US High Yield TR			7.1	13.4	2.0	5.2	4.5	Jan-94	6.7
AXA High Yield	33,625,577	100.0	6.8	12.8	2.3	5.6		Mar-14	4.3
ICE BofA US High Yield TR			7.1	13.4	2.0	5.2	4.5	Mar-14	4.3
eV US High Yield Fixed Inc Net Median			6.5	12.2	2.1	5.1	4.3	Mar-14	4.1
eV US High Yield Fixed Inc Net Rank			35	37	39	22		Mar-14	31
Bank Loans	46,756,378	2.7	3.1	14.1	6.1	5.9		Jan-94	
Credit Suisse Leveraged Loans			2.9	13.0	<i>5.6</i>	<i>5.6</i>	4.4	Jan-94	5.3
Aristotle Pacific	46,756,378	100.0	3.1	14.1	6.1	5.9		May-14	4.7
Credit Suisse Leveraged Loans			2.9	13.0	<i>5.6</i>	5.6	4.4	May-14	4.4
eV US Float-Rate Bank Loan Fixed Inc Net Median			2.9	12.5	5.0	5.1	3.9	May-14	<i>3.9</i>
eV US Float-Rate Bank Loan Fixed Inc Net Rank			29	15	6	9	-	May-14	5

MEKETA INVESTMENT GROUP 39 of 107



# Total Plan | As of December 31, 2023

	Market Value (\$)	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. Date	S.I. (%)
Real Estate	135,909,608	7.8	-8.0	-16.0	2.8	3.0	5.6	Jan-94	
NCREIF ODCE			-4.8	-12.0	4.9	4.2	7.3	Jan-94	8.3
Centersquare Value Fund IV	7,198,136	5.3	-4.9	-9.3	18.2	6.4		Oct-18	3.6
NCREIF Property +300bps 1QLAG			-0.6	-5.6	9.2	8.4		Oct-18	8.5
JP Morgan SPF	102,035,902	75.1	-7.6	-15.1	1.8	1.9	5.3	Jan-10	
NCREIF ODCE			-4.8	-12.0	4.9	4.2	7.3	Jan-10	9.2
JP Morgan SSPF	23,070,134	17.0	-11.4	-23.5	-2.7	-0.3	5.5	Jan-10	
NCREIF ODCE + 100bps			-4.6	-11.1	6.0	5.3	8.4	Jan-10	10.3
Retirement Office	3,605,436	2.7							
Infrastructure	10,860,662	0.6	-1.7	0.5	10.6	8.6		Jan-94	
CPI+2%			0.2	5.4	7.7	6.1	4.8	Jan-94	4.6
BlackRock Global Renewable Power Fund II	10,860,662	100.0	-1.7	-0.3	11.5	8.1		Sep-16	5.9
CPI + 500 bps			0.9	8.5	10.9	9.3	7.9	Sep-16	8.5
Cash & Cash Alternatives	14,245,645	8.0	10.8	16.5	4.3	9.0		Jan-94	
BlackRock Custom Benchmark			10.6	16.3	4.3	9.0		Jan-94	
BlackRock Liquid Policy Portfolio	9,110,163	64.0	10.8	16.5	4.3	9.0		Jul-14	6.5
BlackRock Custom Benchmark			10.6	16.3	4.3	9.0		Jul-14	6.6
Main Account	5,135,482	36.0							

MEKETA INVESTMENT GROUP 40 of 107



Total Plan | As of December 31, 2023

Asset Class Performance Summary (Net of Fees)											
	Fiscal YTD (%)	Fiscal 2023 (%)	Fiscal 2022 (%)	Fiscal 2021 (%)	Fiscal 2020 (%)	Fiscal 2019 (%)	Fiscal 2018 (%)	Fiscal 2017 (%)	Fiscal 2016 (%)	Fiscal 2015 (%)	
Total Fund	7.0	9.5	-12.8	19.7	6.3	4.8	6.7	9.0	8.6	1.9	
Fund Benchmark	7.7	12.2	-14.7	18.5	9.0	6.1	7.2	10.8	10.0	0.2	
US Equity	11.8	19.6	-17.2	32.8	8.7	1.1	18.7	16.9	13.9	2.1	
Russell 3000	12.1	20.5	-17.6	31.9	<i>15.0</i>	2.9	17.6	18.7	<i>15.0</i>	-0.5	
Northern Trust S&P500 Index Fund	11.7	21.6	-15.5	30.0							
S&P 500	11.7	21.6	-15.5	30.0	15.1	4.3	17.9	18.6	15.4	-0.6	
Waycross Partners Core Equity	12.7										
S&P 500	11.7	21.6	-15.5	30.0	15.1	4.3	17.9	18.6	15.4	-0.6	
Boston Partners Mid Cap Value	11.7	18.5	-11.5	44.0	-7.5	2.3	7.8	16.1	15.4	5.3	
Russell MidCap Value	12.1	11.0	-13.6	42.4	-7.3	1.6	8.8	13.4	17.3	-2.1	
Champlain Mid Cap	11.3	9.6	-26.3	39.2	17.7	6.0	24.7	17.6	21.0	1.2	
Russell MidCap	12.8	13.4	-19.4	38.1	4.6	3.2	14.0	15.3	14.2	-0.2	
Champlain Small Cap	10.9	11.4	-22.8	36.2	5.4	-4.6	23.5	19.4	24.7	4.0	
Russell 2000	14.0	8.9	-23.5	47.7	0.4	-8.9	15.2	20.7	15.5	1.2	
International Equity	8.5	20.5	-25.4	20.1	8.4	1.8	3.5	14.2	11.3	-2.4	
MSCI EAFE	10.4	<i>25.6</i>	-25.1	<i>25.7</i>	0.5	-1.3	<i>2.</i> 7	19.1	6.5	-8.7	
Northern Trust EAFE Index Fund	10.4	26.9	-25.0	25.5							
MSCI EAFE	10.4	<i>25.6</i>	-25.1	<i>25.7</i>	0.5	-1.3	<i>2.</i> 7	19.1	6.5	<i>-8.7</i>	
Wellington International Quality Growth (IQG)	8.6	18.5	-33.4	20.8	19.9	1.3	8.0	20.0	10.5		
MSCI ACWI ex USA Growth	11.1	15.8	-30.2	17.0	17.5	2.0	3.1	17.7	11.5	-8.1	
First Eagle International Equity	6.5	16.0									
MSCI EAFE Value	8.2	31.5	-20.2	30.7	-11.9	-4.9	-0.4	22.5	3.5	-12.6	

MEKETA INVESTMENT GROUP 41 of 107



# Total Plan | As of December 31, 2023

	Fiscal YTD (%)	Fiscal 2023 (%)	Fiscal 2022 (%)	Fiscal 2021 (%)	Fiscal 2020 (%)	Fiscal 2019 (%)	Fiscal 2018 (%)	Fiscal 2017 (%)	Fiscal 2016 (%)	Fiscal 2015 (%)
Private Equity	-0.6	-2.7	12.4	56.5	4.1	11.6	14.1	6.9	6.4	11.4
MSCI ACWI IMI (1Q Lagged) +2%	-2.9	18.4	-14.8	43.7	3.2	6.6	13.3	21.4	-1.9	2.8
Adams Street 2012 Global Fund	-3.6	-5.9	-1.6	74.9	7.1	15.1	16.6	11.0	7.2	5.6
MSCI ACWI IMI (1Q Lagged) +2%	-2.9	18.4	-14.8	43.7	3.2	6.6	13.3	21.4	-1.9	2.8
Adams Street Venture Innovation Fund	-3.4	-11.8	16.4	147.5	22.6	20.3				
MSCI ACWI IMI (1Q Lagged) +2%	-2.9	18.4	-14.8	43.7	3.2	6.6	13.3	21.4	-1.9	2.8
Catalyst III	-6.8	-3.5	20.2	24.3	-4.7	11.8	8.2	7.0	13.2	14.6
MSCI ACWI IMI (1Q Lagged) +2%	-2.9	18.4	-14.8	43.7	3.2	6.6	13.3	21.4	-1.9	2.8
Catalyst IV	-6.3	17.2	-27.3	59.7	47.5	16.7	14.6	17.3		
MSCI ACWI IMI (1Q Lagged) +2%	-2.9	18.4	-14.8	43.7	3.2	6.6	13.3	21.4	-1.9	2.8
Coller Fund VI	-2.6	-14.1	13.6	57.5	-12.2	13.9	23.0	7.6	15.3	7.9
MSCI ACWI IMI (1Q Lagged) +2%	-2.9	18.4	-14.8	43.7	3.2	6.6	13.3	21.4	-1.9	2.8
Coller Fund VII	3.3	-1.2	18.1	47.5	-3.2	6.0	63.0	62.0		
MSCI ACWI IMI (1Q Lagged) +2%	-2.9	18.4	-14.8	43.7	3.2	6.6	13.3	21.4	-1.9	2.8
Coller Fund VIII	3.3	-4.2	44.1	87.1						
MSCI ACWI IMI (1Q Lagged) +2%	-2.9	18.4	-14.8	43.7	3.2	6.6	13.3	21.4	-1.9	2.8
JP Morgan Global Fund V	2.3	-8.6	15.9	59.8	-7.3	36.9	13.5	9.1	27.2	30.1
MSCI ACWI IMI (1Q Lagged) +2%	-2.9	18.4	-14.8	43.7	<i>3.2</i>	6.6	13.3	21.4	-1.9	2.8
JP Morgan Global Fund VI	0.5	0.4	24.8	34.8	3.9	0.7				
MSCI ACWI IMI (1Q Lagged) +2%	-2.9	18.4	-14.8	43.7	3.2	6.6	13.3	21.4	-1.9	2.8
JP Morgan Global Fund VIII	1.9	8.9	23.7	19.7	7.0					
MSCI ACWI IMI (1Q Lagged) +2%	-2.9	18.4	-14.8	43.7	3.2	6.6	13.3	21.4	-1.9	2.8

MEKETA INVESTMENT GROUP 42 of 107



# Total Plan | As of December 31, 2023

	Fiscal	Fiscal	Fiscal	Fiscal	Fiscal	Fiscal	Fiscal	Fiscal	Fiscal	Fiscal
	YTD	2023	2022	2021	2020	2019	2018	2017	2016	2015
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
JPMorgan US Corporate Finance III  MSCI ACWI IMI (1Q Lagged) +2%	3.4	-22.1	19.3	107.9	14.8	-1.6	-0.3	23.5	4.6	26.8
	-2.9	<i>18.4</i>	<i>-14.8</i>	<i>43.</i> 7	<i>3.2</i>	<i>6.6</i>	<i>13.3</i>	<i>21.4</i>	-1.9	<i>2.8</i>
JPMorgan Venture Capital Fund III  MSCI ACWI IMI (1Q Lagged) +2%	-1.6	-16.1	-5.0	57.7	0.5	0.5	10.7	5.1	-6.2	19.2
	-2.9	<i>18.4</i>	<i>-14.8</i>	<i>43.</i> 7	<i>3.2</i>	6.6	13.3	<i>21.4</i>	<i>-1.9</i>	<i>2.8</i>
Lexington Capital Partners VIII  MSCI ACWI IMI (1Q Lagged) +2%	0.2	-6.1	14.0	51.9	-1.0	3.1	42.4	15.1	10.0	<u></u>
	<i>-2.9</i>	<i>18.4</i>	<i>-14.8</i>	<i>43.7</i>	<i>3.2</i>	<i>6.6</i>	<i>13.3</i>	<i>21.4</i>	<i>-1.9</i>	2.8
Lexington Capital Partners IX  MSCI ACWI IMI (1Q Lagged) +2%	-3.4 <i>-2.9</i>	-5.4 <i>18.4</i>	28.2 <i>-14.8</i>	63.9 <i>43.7</i>	-15.5 <i>3.2</i>	6.6	13.3	<u></u> 21.4	-1.9	<u></u> 2.8
Pantheon USA Fund VII  MSCI ACWI IMI (1Q Lagged) +2%	-1.7	-0.2	3.8	55.2	9.8	-9.3	13.8	14.5	7.2	9.2
	-2.9	<i>18.4</i>	<i>-14.8</i>	<i>43.7</i>	<i>3.2</i>	<i>6.6</i>	<i>13.3</i>	<i>21.4</i>	-1.9	<i>2.8</i>
Standard Life Europe Smaller Funds I  MSCI ACWI IMI (1Q Lagged) +2%	1.8	1.8	-7.2	21.3	3.5	5.4	10.6	-5.6	9.3	-20.1
	-2.9	<i>18.4</i>	-14.8	43.7	<i>3.2</i>	6.6	<i>13.3</i>	<i>21.4</i>	<i>-1.9</i>	<i>2.8</i>
Coller Fund V JPMorgan European Corporate Finance III										
Lexington Capital Partners VI-B  Pantheon Europe Fund V-B										
Private Debt  BBarc HY 1Q Lagged + 2%  Golub Capital 4	<b>0.0</b> <i>1.0</i>	 11.2	0.0 -11.1	<b>0.0</b> <i>17.6</i>	<u></u> 2.0		-	<del></del> 	<del></del> 	

MEKETA INVESTMENT GROUP 43 of 107



# Total Plan | As of December 31, 2023

	Fiscal YTD (%)	Fiscal 2023 (%)	Fiscal 2022 (%)	Fiscal 2021 (%)	Fiscal 2020 (%)	Fiscal 2019 (%)	Fiscal 2018 (%)	Fiscal 2017 (%)	Fiscal 2016 (%)	Fiscal 2015 (%)
Investment Grade Bonds	7.1	1.7	-14.4	-0.1	7.0	9.4	-0.8	1.2	5.6	1.3
Bloomberg US Aggregate TR	6.8	0.6	-14.6	-0.9	7.0	10.3	-1.2	0.1	5.2	2.9
NT US Aggregate Bond	6.8	0.6	-14.6	-0.9						
Bloomberg US Aggregate TR	6.8	0.6	-14.6	-0.9	7.0	10.3	-1.2	0.1	5.2	2.9
Dodge & Cox Core Fixed Income	7.6	3.8	-14.0	2.4	7.5	8.8	-0.2	1.3	5.5	2.0
Bloomberg US Aggregate TR	6.8	0.6	-14.6	-0.9	7.0	10.3	-1.2	0.1	5.2	2.9
Treasuries	12.6	-9.2	-26.5	-10.2						
Bloomberg US Govt Long TR	12.7	-9.0	-26.6	-10.1	16.2	24.6	<i>-3.5</i>	-6.1	13.0	8.6
NT Long-Term Gov. Bond Index Fund	12.6	-9.2	-26.5	-10.2						
Bloomberg US Govt Long TR	12.7	-9.0	-26.6	-10.1	16.2	24.6	<i>-3.5</i>	-6.1	13.0	8.6
High Yield	6.8	10.3	-12.3	9.4	5.6	5.9	3.5	9.7	8.7	-3.6
ICE BofA US High Yield TR	7.1	10.2	-14.1	11.5	2.3	6.4	2.9	9.1	12.8	-3.6
AXA High Yield	6.8	10.3	-12.3	9.4	5.6	5.9	3.5	9.7	8.7	-3.6
ICE BofA US High Yield TR	7.1	10.2	-14.1	11.5	2.3	6.4	2.9	9.1	12.8	-3.6
Bank Loans	3.1	13.8	-2.4	7.3	1.2	3.6	5.5	5.9	5.5	1.9
Credit Suisse Leveraged Loans	2.9	12.5	-2.6	8.5	0.8	3.1	5.6	5.4	5.3	1.2
Aristotle Pacific	3.1	13.8	-2.4	7.3	1.2	3.6	5.5	5.9	5.5	1.9
Credit Suisse Leveraged Loans	2.9	12.5	-2.6	8.5	0.8	3.1	5.6	5.4	<i>5.3</i>	1.2

MEKETA INVESTMENT GROUP 44 of 107



# Total Plan | As of December 31, 2023

	Fiscal YTD (%)	Fiscal 2023 (%)	Fiscal 2022 (%)	Fiscal 2021 (%)	Fiscal 2020 (%)	Fiscal 2019 (%)	Fiscal 2018 (%)	Fiscal 2017 (%)	Fiscal 2016 (%)	Fiscal 2015 (%)
Real Estate	-8.0	-13.1	19.5	16.1	-3.5	7.4	7.0	5.1	10.9	11.3
NCREIF ODCE	-4.8	-12.1	22.1	14.6	1.4	5.6	8.7	7.7	10.1	15.0
Centersquare Value Fund IV	-4.9	0.2	42.3	27.5	-0.9	-29.6				
NCREIF Property +300bps 1QLAG	-0.6	<i>-3.8</i>	<i>25.0</i>	10.6	<i>5.8</i>	9.7	10.4	10.2	13.9	
JP Morgan SPF	-7.6	-12.8	18.0	13.0	0.8	2.9	6.9	6.5	8.6	13.4
NCREIF ODCE	-4.8	-12.1	22.1	14.6	1.4	<i>5.6</i>	8.7	7.7	10.1	15.0
JP Morgan SSPF	-11.4	-19.8	13.4	16.6	1.2	5.9	9.1	8.2	10.3	19.0
NCREIF ODCE + 100bps	-4.6	-11.3	23.3	15.8	2.4	6.6	9.8	8.7	11.2	16.1
Retirement Office										
Infrastructure	-1.7	3.1	48.1	-7.7	2.4	7.2				
CPI+2%	0.2	<i>5.8</i>	10.4	7.5	3.4	<i>3.7</i>	4.3	4.3	3.5	2.0
BlackRock Global Renewable Power Fund II	-1.7	2.3	41.2	-0.7	8.3	-2.6	4.3	-2.1		
CPI + 500 bps	0.9	8.9	13.6	10.6	6.4	6.8	7.4	7.3	6.5	<i>5.0</i>
Cash & Cash Alternatives	10.8	13.2	-17.2	21.9	6.3	3.9	7.2	12.2	11.4	-1.3
BlackRock Custom Benchmark	10.6	13.5	-17.4	22.3	6.2	3.9	7.5	12.5	11.6	-1.1
BlackRock Liquid Policy Portfolio	10.8	13.2	-17.2	21.9	6.3	3.9	7.2	12.2	11.4	-1.3
BlackRock Custom Benchmark	10.6	13.5	-17.4	22.3	6.2	3.9	7.5	12.5	11.6	-1.1
Main Account										

MEKETA INVESTMENT GROUP 45 of 107



Total Plan | As of December 31, 2023

Statistics Summary (Net of Fees)									
	5 '	Years Ending Decen	nber 31, 2023						
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error			
Total Fund	7.9%	10.9%	-0.3	1.0	0.6	1.3%			
Fund Benchmark	8.3%	10.9%		1.0	0.6	0.0%			
US Equity	13.9%	19.4%	-0.7	1.0	0.6	1.9%			
Russell 3000	15.2%	19.1%		1.0	0.7	0.0%			
International Equity	7.9%	16.0%	-0.1	0.9	0.4	4.2%			
MSCI EAFE	8.2%	18.1%		1.0	0.4	0.0%			
Private Equity	13.8%	11.8%	0.3	0.1	1.0	20.8%			
MSCI ACWI IMI (1Q Lagged) +2%	8.2%	18.5%		1.0	0.3	0.0%			
Private Debt									
BBarc HY 1Q Lagged + 2%	5.0%	9.3%		1.0	0.3	0.0%			
Investment Grade Bonds	1.5%	6.4%	0.3	1.0	0.0	1.5%			
Bloomberg US Aggregate TR	1.1%	6.2%		1.0	-0.1	0.0%			
Treasuries									
Bloomberg US Govt Long TR	-1.2%	15.2%		1.0	-0.2	0.0%			
High Yield	5.6%	8.5%	0.2	0.9	0.5	1.7%			
ICE BofA US High Yield TR	5.2%	9.6%		1.0	0.4	0.0%			
Bank Loans	5.9%	5.7%	0.2	0.8	0.7	2.1%			
Credit Suisse Leveraged Loans	5.6%	7.2%		1.0	0.5	0.0%			
Real Estate	3.0%	6.3%	-0.2	0.6	0.2	5.6%			
NCREIF ODCE	4.2%	7.5%		1.0	0.3	0.0%			

MEKETA INVESTMENT GROUP 46 of 107



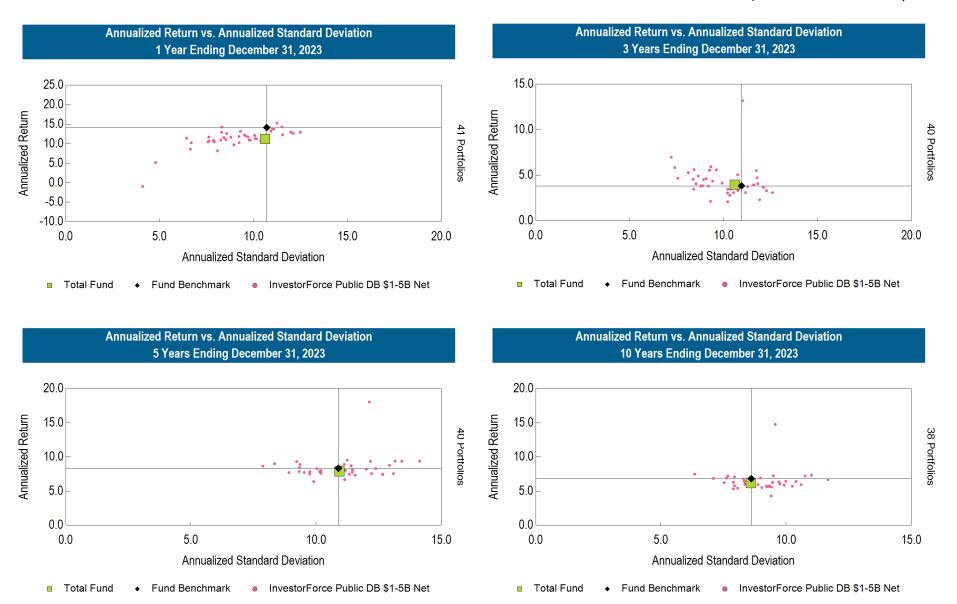
# Total Plan | As of December 31, 2023

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Infrastructure	8.6%	14.2%	0.2	1.9	0.5	14.0%
CPI+2%	6.1%	1.4%		1.0	3.2	0.0%
Cash & Cash Alternatives	9.0%	14.0%	-0.1	1.0	0.5	0.6%
BlackRock Custom Benchmark	9.0%	14.1%		1.0	0.5	0.0%

MEKETA INVESTMENT GROUP 47 of 107



#### Total Plan | As of December 31, 2023





# Public Manager Expense Analysis | As of December 31, 2023

Public Manager Expense Analysis									
	As Of December 31,	2023							
Name	Market Value	% of Portfolio	Estimated Fee	Estimated Fee Value					
Aristotle Pacific	\$46,756,378	2.9%	0.37%	\$172,999					
AXA High Yield	\$33,625,577	2.1%	0.33%	\$109,283					
BlackRock Liquid Policy Portfolio	\$9,110,163	0.6%	0.09%	\$8,199					
Boston Partners Mid Cap Value	\$58,307,085	3.6%	0.63%	\$366,535					
Champlain Mid Cap	\$46,050,385	2.9%	0.55%	\$253,277					
Champlain Small Cap	\$62,266,017	3.9%	0.55%	\$342,463					
Dodge & Cox Core Fixed Income	\$142,120,404	8.9%	0.20%	\$283,044					
First Eagle International Equity	\$129,991,531	8.1%	0.55%	\$714,953					
JP Morgan SPF	\$102,035,902	6.4%	0.88%	\$895,269					
JP Morgan SSPF	\$23,070,134	1.4%	1.25%	\$288,377					
Northern Trust EAFE Index Fund	\$139,544,726	8.7%	0.01%	\$17,443					
Northern Trust S&P500 Index Fund	\$322,021,556	20.1%	0.00%	\$8,051					
NT Long-Term Gov. Bond Index Fund	\$68,449,798	4.3%	0.03%	\$20,535					
NT US Aggregate Bond	\$214,561,423	13.4%	0.02%	\$37,548					
Waycross Partners Core Equity	\$70,971,183	4.4%	0.44%	\$308,885					
Wellington International Quality Growth (IQG)	\$133,314,688	8.3%	0.59%	\$783,231					
Total	\$1,602,196,951	100.0%	0.29%	\$4,610,093					

MEKETA INVESTMENT GROUP 49 of 107





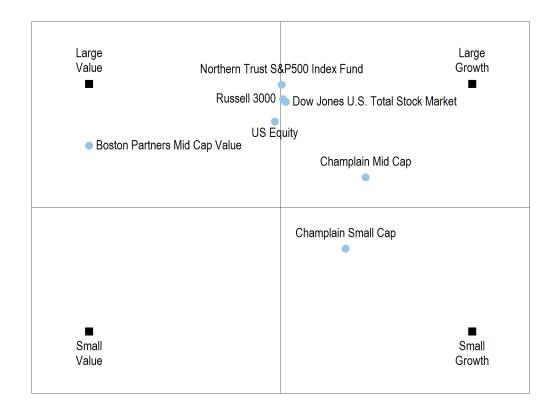
# **US Equity**



#### US Equity | As of December 31, 2023

Asset Allocation on December 31, 2023			
	Actual	Actual	
Northern Trust S&P500 Index Fund	\$322,021,556	57.5%	
Waycross Partners Core Equity	\$70,971,183	12.7%	
Boston Partners Mid Cap Value	\$58,307,085	10.4%	
Champlain Mid Cap	\$46,050,385	8.2%	
Champlain Small Cap	\$62,266,017	11.1%	
Total	\$559,616,227	100.0%	

# U.S. Effective Style Map 3 Years Ending December 31, 2023

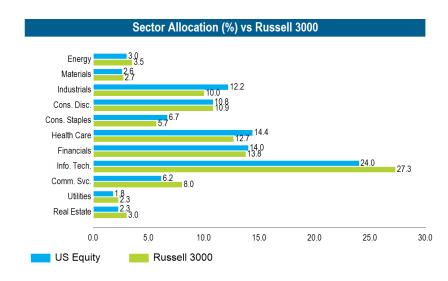


MEKETA INVESTMENT GROUP 51 of 107



#### US Equity | As of December 31, 2023

US Equity Characteristics				
vs Russell 3000				
	Portfolio	Index		
	Q4-23	Q4-23		
Market Value				
Market Value (\$M)	559.6			
Number Of Holdings	649	2967		
Characteristics				
Weighted Avg. Market Cap. (\$B)	517.8	631.9		
Median Market Cap (\$B)	24.6	2.7		
P/E Ratio	23.9	23.5		
Yield	1.4	1.5		
EPS Growth - 5 Yrs.	14.0	15.6		
Price to Book	4.1	4.1		
Company Size Distribution				
Weighted Avg. Market Cap. (\$B)	517.8	631.9		
Median Market Cap. (\$B)	24.6	2.7		
Large Cap. (%)	65.4	73.8		
Medium Cap. (%)	28.6	20.4		
Small Cap. (%)	6.0	5.8		



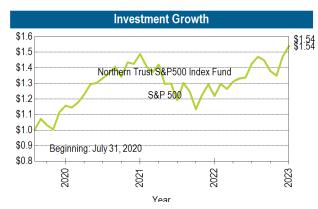
Top Holdings	
APPLE INC	4.9%
MICROSOFT CORP	4.9%
AMAZON.COM INC	2.6%
NVIDIA CORPORATION	2.4%
META PLATFORMS INC	1.7%
ALPHABET INC	1.7%
ALPHABET INC	1.0%
TESLA INC	1.0%
MASTERCARD INC	1.0%
BERKSHIRE HATHAWAY INC	0.9%
Total	22.1%

MEKETA INVESTMENT GROUP 52 of 107



#### Northern Trust S&P500 Index Fund | As of December 31, 2023

Account Information				
Account Name	Northern Trust S&P500 Index Fund			
Account Structure	Commingled Fund			
Investment Style	Passive			
Inception Date	8/01/20			
Account Type	US Equity			
Benchmark	S&P 500			
Universe				



Characteristics		
	Portfolio	S&P 500
Number of Holdings	506	503
Weighted Avg. Market Cap. (\$B)	716.6	718.0
Median Market Cap. (\$B)	33.1	33.1
Price To Earnings	24.3	24.3
Price To Book	4.4	4.4
Price To Sales	2.9	2.9
Return on Equity (%)	28.3	28.4
Yield (%)	1.5	1.5

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Northern Trust S&P500 Index Fund  S&P 500	11.7 <i>11.7</i>	26.2 <i>26.3</i>	10.0 <i>10.0</i>	 15.7	 12.0	13.5 <i>13.5</i>	Aug-20 <i>Aug-20</i>

Characteristics		
	Portfolio	S&P 500
COMPANY SIZE DISTRIBUTION		
Weighted Avg. Market Cap. (\$B)	716.6	718.0
Median Market Cap. (\$B)	33.1	33.1
Large Cap. (%)	85.5	85.4
Medium Cap. (%)	14.5	14.2
Small Cap. (%)	0.0	0.5

Top Holdings		
APPLE INC	7.0%	
MICROSOFT CORP	7.0%	
AMAZON.COM INC	3.4%	
NVIDIA CORPORATION	3.1%	
ALPHABET INC	2.1%	
META PLATFORMS INC	2.0%	
ALPHABET INC	1.8%	
TESLA INC	1.7%	
BERKSHIRE HATHAWAY INC	1.6%	
JPMORGAN CHASE & CO	1.2%	

Sector Allocation				
	Portfolio	S&P 500		
INDUSTRY SECTOR DISTRIBUTION (% E	iquity)			
Energy	3.9	3.8		
Materials	2.4	2.3		
Industrials	8.8	8.7		
Consumer Discretionary	10.8	11.2		
Consumer Staples	6.2	6.6		
Health Care	12.6	12.4		
Financials	13.0	13.2		
Information Technology	28.8	28.3		
Communication Services	8.6	8.8		
Utilities	2.2	2.2		
Real Estate	2.5	2.4		

MEKETA INVESTMENT GROUP 53 of 107



# Waycross Partners Core Equity | As of December 31, 2023

	Account Information
Account Name	<b>Waycross Partners Core Equity</b>
Account Structure	Separate Account
Investment Style	Active
Inception Date	11/01/22
Account Type	US Equity
Benchmark	S&P 500
Universe	eV US Large Cap Core Equity Net



Characteristics		
	Portfolio	S&P 500
Number of Holdings	30	503
Weighted Avg. Market Cap. (\$B)	698.1	718.0
Median Market Cap. (\$B)	104.3	33.1
Price To Earnings	24.0	24.3
Price To Book	4.5	4.4
Price To Sales	2.3	2.9
Return on Equity (%)	40.0	28.4
Yield (%)	1.3	1.5

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Waycross Partners Core Equity	12.7	33.4				30.7	Nov-22
S&P 500	11.7	26.3	10.0	15.7	12.0	21.6	Nov-22

Characteristics		
	Portfolio	S&P 500
COMPANY SIZE DISTRIBUTION		
Weighted Avg. Market Cap. (\$B)	698.1	718.0
Median Market Cap. (\$B)	104.3	33.1
Large Cap. (%)	94.4	85.4
Medium Cap. (%)	5.6	14.2
Small Cap. (%)	0.0	0.5

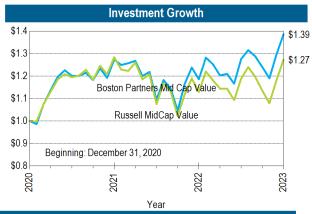
Top Holdings	
MICROSOFT CORP	6.6%
APPLE INC	6.6%
META PLATFORMS INC	4.7%
NVIDIA CORPORATION	4.7%
INTUITIVE SURGICAL INC	4.3%
AMAZON.COM INC	4.3%
ALPHABET INC	4.0%
ABBVIE INC	3.7%
ANALOG DEVICES INC	3.6%
MASTERCARD INC	3.5%

Sector Allocation	1	
	Portfolio	S&P 500
INDUSTRY SECTOR DISTRIBUTION (%	Equity)	
Energy	2.3	3.8
Materials	0.0	2.3
Industrials	8.1	8.7
Consumer Discretionary	13.6	11.2
Consumer Staples	5.6	6.6
Health Care	19.9	12.4
Financials	17.6	13.2
Information Technology	24.1	28.3
Communication Services	8.7	8.8
Utilities	0.0	2.2
Real Estate	0.0	2.4



# Boston Partners Mid Cap Value | As of December 31, 2023

	Account Information
Account Name	Boston Partners Mid Cap Value
Account Structure	Separate Account
Investment Style	Active
Inception Date	6/01/98
Account Type	US Stock Mid Cap Value
Benchmark	Russell MidCap Value
Universe	eV US Mid Cap Value Equity Net



Characteristics		
	Portfolio	Russell MidCap Value
lumber of Holdings	144	699
Veighted Avg. Market Cap. (\$B)	23.4	23.1
Median Market Cap. (\$B)	16.9	10.6
Price To Earnings	18.3	17.8
Price To Book	3.0	2.4
Price To Sales	1.7	1.6
Return on Equity (%)	22.5	12.7
field (%)	1.8	2.1

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Boston Partners Mid Cap Value	11.7	16.8	11.5	13.9	9.8	9.7	Jun-98
Russell MidCap Value	12.1	12.7	8.4	11.2	8.3	8.9	Jun-98

Sector Allocation	1	
	Portfolio	Russell MidCap Value
INDUSTRY SECTOR DISTRIBUTION (%	Equity)	
Energy	4.9	5.0
Materials	7.7	7.6
Industrials	22.7	19.2
Consumer Discretionary	13.5	9.4
Consumer Staples	2.2	3.6
Health Care	6.7	6.8
Financials	14.6	17.7
Information Technology	9.9	9.5
Communication Services	1.3	3.2
Utilities	5.1	7.2
Real Estate	8.1	10.6

Characteristics		
	Portfolio	Russell MidCap Value
COMPANY SIZE DISTRIBUTION		
Weighted Avg. Market Cap. (\$B)	23.4	23.1
Median Market Cap. (\$B)	16.9	10.6
Large Cap. (%)	16.2	13.9
Medium Cap. (%)	81.9	80.2
Small Cap. (%)	1.9	5.9

Top Holdings		
CASH - USD	2.7%	
AMERIPRISE FINANCIAL INC	2.2%	
PARKER-HANNIFIN CORP	1.8%	
AMETEK INC	1.5%	
HOWMET AEROSPACE INC	1.5%	
AUTOZONE INC	1.4%	
TEXTRON INC	1.4%	
FIFTH THIRD BANCORP	1.3%	
DOVER CORP	1.3%	
CENTERPOINT ENERGY INC.	1.3%	

MEKETA INVESTMENT GROUP 55 of 107



# Champlain Mid Cap | As of December 31, 2023

A	ccount Information
Account Name	Champlain Mid Cap
Account Structure	Separate Account
Investment Style	Active
Inception Date	7/01/09
Account Type	US Stock Mid Cap Core
Benchmark	Russell MidCap
Universe	eV US Mid Cap Core Equity Net



Characteristics		
	Portfolio	Russell MidCap
Number of Holdings	58	810
Weighted Avg. Market Cap. (\$B)	24.9	24.6
Median Market Cap. (\$B)	18.5	11.0
Price To Earnings	33.1	20.0
Price To Book	4.6	3.0
Price To Sales	4.1	1.8
Return on Equity (%)	16.2	16.0
Yield (%)	0.8	1.7

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Champlain Mid Cap	11.3	14.0	1.9	12.0	11.2	14.0	Jul-09
Russell MidCap	12.8	17.2	5.9	12.7	9.4	13.3	Jul-09

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Champlain Mid Cap	11.3	14.0	1.9	12.0	11.2	14.0	Jul-09
Russell MidCap	12.8	17.2	5.9	12.7	9.4	13.3	Jul-09

Characteristics		
	Portfolio	Russell MidCap
COMPANY SIZE DISTRIBUTION		
Weighted Avg. Market Cap. (\$B)	24.9	24.6
Median Market Cap. (\$B)	18.5	11.0
Large Cap. (%)	14.2	16.5
Medium Cap. (%)	84.9	77.3
Small Cap. (%)	0.9	6.2

3.6%
3.6%
3.4%
3.2%
2.8%
2.7%
2.7%
2.4%
2.4%
2.3%

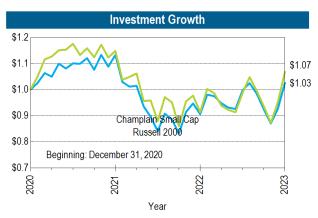
Sector Alloca	tion	
	Portfolio	Russell MidCap
INDUSTRY SECTOR DISTRIBUTION	I (% Equity)	
Energy	0.0	4.5
Materials	0.0	5.8
Industrials	18.8	19.4
Consumer Discretionary	8.7	10.6
Consumer Staples	11.4	3.4
Health Care	22.5	10.3
Financials	12.2	15.6
Information Technology	21.3	13.7
Communication Services	0.0	3.5
Utilities	0.0	5.2
Real Estate	0.0	8.0

MEKETA INVESTMENT GROUP 56 of 107



# Champlain Small Cap | As of December 31, 2023

Account Information			
Account Name	Champlain Small Cap		
Account Structure	Separate Account		
Investment Style	Active		
Inception Date	1/01/04		
Account Type	US Stock Small Cap Core		
Benchmark	Russell 2000		
Universe	eV US Small Cap Core Equity Net		



Characteristics		
	Portfolio	Russell 2000
lumber of Holdings	73	1,961
Veighted Avg. Market Cap. (\$B)	4.5	3.3
Median Market Cap. (\$B)	3.2	1.0
Price To Earnings	27.5	15.9
Price To Book	3.0	2.3
Price To Sales	3.0	1.3
Return on Equity (%)	4.8	4.4
'ield (%)	0.7	1.5

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Champlain Small Cap	10.9	13.2	0.8	10.1	9.0	10.7	Jan-04
Russell 2000	14.0	16.9	2.2	10.0	7.2	8.1	Jan-04

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
hamplain Small Cap	10.9	13.2	0.8	10.1	9.0	10.7	Jan-04
Russell 2000	14.0	16.9	2.2	10.0	7.2	8.1	Jan-04

Characteristics		
	Portfolio	Russell 2000
COMPANY SIZE DISTRIBUTION		
Weighted Avg. Market Cap. (\$B)	4.5	3.3
Median Market Cap. (\$B)	3.2	1.0
Large Cap. (%)	0.0	0.0
Medium Cap. (%)	42.9	28.9
Small Cap. (%)	57.1	71.1

Top Holdings	
CASH - USD	3.3%
PURE STORAGE INC	3.2%
RBC BEARINGS INC	2.5%
JOHN BEAN TECHNOLOGIES CORP	2.4%
SMARTSHEET INC	2.3%
FRESHWORKS INC CL A CL A	2.3%
ESCO TECHNOLOGIES INC.	2.3%
INSPIRE MEDICAL SYSTEMS INC	2.2%
SIMPLY GOOD FOODS CO (THE)	2.1%
AXONICS INC	2.0%

Sector Allocation				
	Portfolio	Russell 2000		
INDUSTRY SECTOR DISTRIBUTION (% E	Equity)			
Energy	0.0	6.9		
Materials	4.0	4.4		
Industrials	19.5	17.0		
Consumer Discretionary	6.7	10.9		
Consumer Staples	11.3	3.4		
Health Care	18.3	15.4		
Financials	16.0	17.1		
Information Technology	14.4	13.6		
Communication Services	0.0	2.3		
Utilities	0.0	2.8		
Real Estate	0.0	6.2		

MEKETA INVESTMENT GROUP 57 of 107





**International Equity** 



#### International Equity | As of December 31, 2023

Asset Allocation on December 31, 2023				
	Actual	Actual		
First Eagle International Equity	\$129,991,531	32.3%		
Northern Trust EAFE Index Fund	\$139,544,726	34.6%		
Wellington International Quality Growth (IQG)	\$133,314,688	33.1%		
Total	\$402,850,946	100.0%		

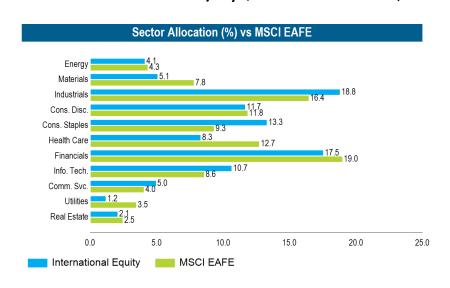


MEKETA INVESTMENT GROUP 59 of 107



#### **International Equity Characteristics VS MSCI EAFE** Portfolio Index Q4-23 Q4-23 Market Value Market Value (\$M) 402.9 **Number Of Holdings** 913 781 Characteristics Weighted Avg. Market 87.7 89.2 Cap. (\$B) Median Market Cap (\$B) 13.6 13.5 P/E Ratio 15.0 14.5 Yield 2.8 3.2 EPS Growth - 5 Yrs. 8.8 9.8 Price to Book 2.5 2.6 Weighted Avg. Market 87.7 89.2 Cap. (\$B) Median Market Cap. (\$B) 13.6 13.5 Large Cap. (%) 61.4 66.6 Medium Cap. (%) 30.5 25.3 Small Cap. (%) 8.1 8.0

# Miami Fire and Police Retirement Trust International Equity | As of December 31, 2023



Top Holdings	
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	2.0%
ASTRAZENECA PLC	1.6%
ASML HOLDING NV	1.5%
IMPERIAL OIL LTD	1.4%
RECKITT BENCKISER GROUP PLC	1.3%
BRITISH AMERICAN TOBACCO PLC	1.3%
NESTLE SA, CHAM UND VEVEY	1.2%
AIRBUS SE	1.2%
DANONE	1.2%
TENCENT HOLDINGS LTD	1.1%
Total	13.6%

MEKETA INVESTMENT GROUP 60 of 107



# International Equity | As of December 31, 2023

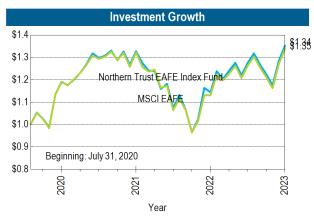
International Equity Region Allocation						
vs MSCI EAFE						
Region	% of Total	% of Bench	% Diff			
North America ex U.S.	4.2%	0.0%	4.2%			
United States	1.0%	0.0%	1.0%			
Europe Ex U.K.	42.7%	50.7%	-8.0%			
United Kingdom	13.7%	14.8%	-1.1%			
Pacific Basin Ex Japan	6.0%	11.4%	-5.4%			
Japan	18.5%	22.5%	-4.0%			
Emerging Markets	12.9%	0.0%	12.9%			
Other	1.2%	0.7%	0.5%			
Total	100.0%	100.0%	0.0%			

MEKETA INVESTMENT GROUP 61 of 107



# Northern Trust EAFE Index Fund | As of December 31, 2023

Account Information					
Account Name	Northern Trust EAFE Index Fund				
Account Structure	Commingled Fund				
Investment Style	Passive				
Inception Date	8/01/20				
Account Type	International				
Benchmark	MSCI EAFE				
Universe					



Characteristics					
	Portfolio	MSCI EAFE			
lumber of Holdings	869	781			
Veighted Avg. Market Cap. (\$B)	90.0	89.2			
Median Market Cap. (\$B)	12.1	13.5			
Price To Earnings	14.9	14.5			
Price To Book	2.6	2.6			
Price To Sales	1.2	1.2			
Return on Equity (%)	15.7	15.6			
(ield (%)	3.2	3.2			
Tield (%)	3.2	3.2			

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Northern Trust EAFE Index Fund	10.4	18.2	4.3			9.2	Aug-20
MSCI EAFE	10.4	18.2	4.0	8.2	4.3	8.9	Aug-20

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Northern Trust EAFE Index Fund	10.4	18.2	4.3			9.2	Aug-20
MSCI EAFE	10.4	18.2	4.0	8.2	4.3	8.9	Aug-20

Characteristics					
	Portfolio	MSCI EAFE			
COMPANY SIZE DISTRIBUTION					
Weighted Avg. Market Cap. (\$B)	90.0	89.2			
Median Market Cap. (\$B)	12.1	13.5			
Large Cap. (%)	67.3	66.6			
Medium Cap. (%)	26.0	25.3			
Small Cap. (%)	6.7	8.0			

Top Holdings					
NOVO NORDISK A/S	2.0%				
NESTLE SA, CHAM UND VEVEY	1.9%				
ASML HOLDING NV	1.8%				
LVMH MOET HENNESSY LOUIS VUITTON SE	1.4%				
SHELL PLC	1.3%				
NOVARTIS AG	1.3%				
ROCHE HOLDING AG	1.3%				
ASTRAZENECA PLC	1.3%				
TOYOTA MOTOR CORP	1.2%				
BHP GROUP LTD	1.1%				

Sector Allocation					
Portfolio					
INDUSTRY SECTOR DISTRIBUTION	l (% Equity)				
Energy	4.3	4.3			
Materials	7.6	7.8			
Industrials	16.2	16.4			
Consumer Discretionary	11.7	11.8			
Consumer Staples	9.1	9.3			
Health Care	12.7	12.7			
Financials	18.8	19.0			
Information Technology	8.5	8.6			
Communication Services	4.0	4.0			
Utilities	3.4	3.5			
Real Estate	2.4	2.5			

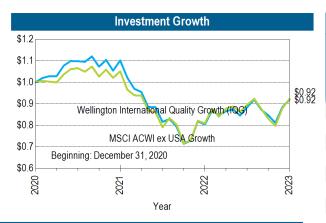
Sector allocation total is less than 100% due to cash holdings.

MEKETA INVESTMENT GROUP 62 of 107



# Wellington International Quality Growth (IQG) | As of December 31, 2023

Account Information					
Account Name	Wellington International Quality Growth (IQG)				
Account Structure	Commingled Fund				
Investment Style	Active				
Inception Date	11/01/14				
Account Type	International				
Benchmark	MSCI ACWI ex USA Growth				
Universe	eV ACWI ex-US Growth Equity Net				



Characteristics					
		MSCI			
	Portfolio	ACWI ex			
	FULLION	USA			
		Growth			
lumber of Holdings	63	1,289			
Veighted Avg. Market Cap. (\$B)	116.2	117.1			
Median Market Cap. (\$B)	41.6	10.5			
Price To Earnings	17.5	21.6			
Price To Book	3.6	3.5			
Price To Sales	1.9	2.4			
Return on Equity (%)	21.3	18.3			
/ield (%)	2.1	1.8			

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Wellington International Quality Growth (IQG)	8.6	14.4	-2.8	7.9		7.0	Nov-14
MSCI ACWI ex USA Growth	11.1	14.0	-2.7	7.5	4.5	5.1	Nov-14

Median Market Cap. (\$B)	41.6	10.5
Price To Earnings	17.5	21.6
Price To Book	3.6	3.5
Price To Sales	1.9	2.4
Return on Equity (%)	21.3	18.3
rield (%)	2.1	1.8
Sector Allocation		
		MSCI
	Portfolio	ACWI ex
	Portiono	USA

Characteristics		
	Portfolio	MSCI ACWI ex USA Growth
COMPANY SIZE DISTRIBUTION		
Weighted Avg. Market Cap. (\$B)	116.2	117.1
Median Market Cap. (\$B)	41.6	10.5
Large Cap. (%)	68.8	65.7
Medium Cap. (%)	31.2	22.3
Small Cap. (%)	0.0	12.0

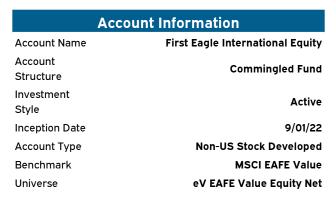
Top Holdings	
TAIWAN SEMICONDUCTOR MANUFACTURING CO	5.8%
TENCENT HOLDINGS LTD	3.4%
ASTRAZENECA PLC	3.3%
AIRBUS SE	2.9%
INDUSTRIA DE DISENO TEXTIL INDITEX SA	2.6%
SAMSUNG ELECTRONICS CO LTD	2.5%
CONSTELLATION SOFTWARE INC	2.5%
ASML HOLDING NV	2.4%
TOKYO ELECTRON LTD	2.4%
RECRUIT HOLDINGS CO LTD	2.4%

	Portfolio	MSCI ACWI ex USA Growth
NDUSTRY SECTOR DISTRIBUTION (%	Equity)	
Energy	1.3	1.7
Materials	1.4	6.9
ndustrials	24.5	16.3
Consumer Discretionary	13.5	14.4
Consumer Staples	8.2	11.1
Health Care	8.0	11.3
Financials	14.2	12.2
nformation Technology	19.8	18.8
Communication Services	9.5	5.9
Utilities	0.0	0.9
Real Estate	0.0	0.6

MEKETA INVESTMENT GROUP 63 of 107



#### First Eagle International Equity | As of December 31, 2023





Characteristics		
	Portfolio	MSCI EAFE Value
Number of Holdings	90	482
Weighted Avg. Market Cap. (\$B)	55.2	67.8
Median Market Cap. (\$B)	17.2	12.0
Price To Earnings	13.0	10.1
Price To Book	1.8	1.8
Price To Sales	1.2	0.8
Return on Equity (%)	11.6	12.1
Yield (%)	3.1	4.6

Portfolio Performance Summary							
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
First Eagle International Equity	6.5	10.3				10.3	Sep-22
MSCI EAFE Value	8.2	18.9	7.6	7.1	3.2	21.4	Sep-22

18.2

10.4

Characteristic	s	
	Portfolio	MSCI EAFE Value
COMPANY SIZE DISTRIBUTION		
Weighted Avg. Market Cap. (\$B)	55.2	67.8
Median Market Cap. (\$B)	17.2	12.0
Large Cap. (%)	47.2	60.6
Medium Cap. (%)	34.6	29.0

Small Cap. (%)

Top Holdings	
CASH - USD	4.5%
IMPERIAL OIL LTD	4.2%
DANONE	3.3%
WILLIS TOWERS WATSON PLC	2.9%
UNILEVER PLC COMMON STOCK GBP.0311	2.8%
SHELL PLC	2.8%
FOMENTO ECONOMICO MEXICAN SAB DE CV	2.5%
GROUPE BRUXELLES LAMBERT SA	2.4%
CIE FINANCIERE RICHEMONT AG, ZUG	2.4%
BRITISH AMERICAN TOBACCO PLC	2.4%

Sector Allocation	n	
	Portfolio	MSCI EAFE Value
INDUSTRY SECTOR DISTRIBUTION (%	Equity)	
Energy	6.9	8.8
Materials	6.1	9.4
Industrials	15.7	13.8
Consumer Discretionary	9.8	7.5
Consumer Staples	23.1	5.8
Health Care	4.0	10.0
Financials	19.7	26.9
Information Technology	3.6	2.0
Communication Services	1.3	4.8
Utilities	0.0	6.5
Real Estate	3.8	4.4

MEKETA INVESTMENT GROUP 64 of 107



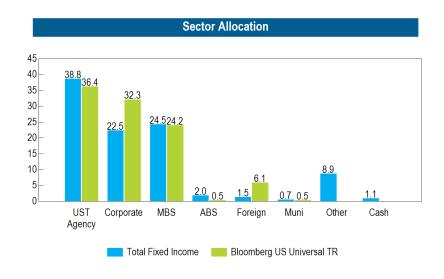
# **Fixed Income**

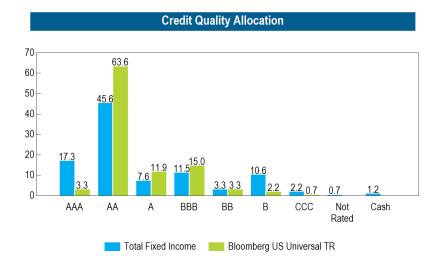


#### Total Fixed Income | As of December 31, 2023

Asset Allocation on December 31, 2023			
	Actual	Actual	
NT US Aggregate Bond	\$214,561,423	42.4%	
Dodge & Cox Core Fixed Income	\$142,120,404	28.1%	
NT Long-Term Gov. Bond Index Fund	\$68,449,798	13.5%	
AXA High Yield	\$33,625,577	6.7%	
Aristotle Pacific	\$46,756,378	9.2%	
Total	\$505,513,580	100.0%	

Total Fixed Income	e Characteristics		
vs. Bloomberg US Universal TR			
	Portfolio	Index	
	Q4-23	Q4-23	
Fixed Income Characteristics			
Yield to Maturity	5.2	4.8	
Average Duration	6.6	6.0	
Average Quality	Α	А	
Weighted Average Maturity	10.2	8.3	





Weighted Average Maturity of BBgBarc US Universal TR is 8.3 as reported by Barclays Live.

Credit quality allocations of the benchmark are based on S&P ratings and may differ from the ratings methodology provided by the manager.

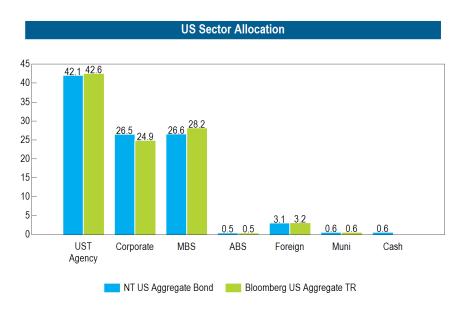
MEKETA INVESTMENT GROUP 66 of 107

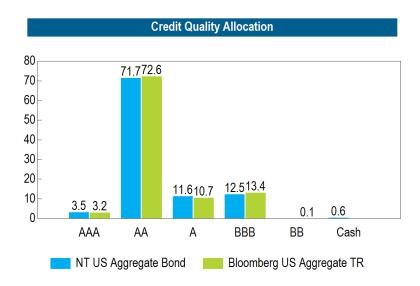


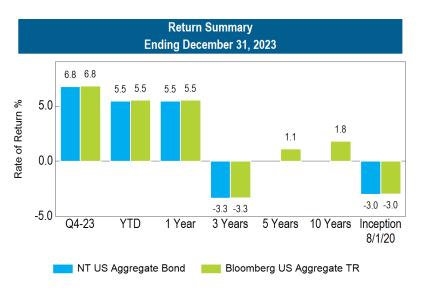
# Miami Fire and Police Retirement Trust NT US Aggregate Bond | As of December 31, 2023

NT US Aggregate Bond Characteristics						
vs. Bloomberg US Aggregate TR						
	Portfolio	Index	Portfolio			
	Q4-23	Q4-23	Q3-23			
Fixed Income Characteristics	Fixed Income Characteristics					
Yield to Maturity	4.5	4.4	5.4			
Average Duration	6.2	6.1	6.0			
Average Quality	AA	AA	AA			
Weighted Average Maturity	8.6	8.5	8.5			

Weighted Average Maturity of BBgBarc US Aggregate TR is 8.5 as reported by Barclays Live.







Credit quality allocations of the benchmark are based on S&P ratings and may differ from the ratings methodology provided by the manager.

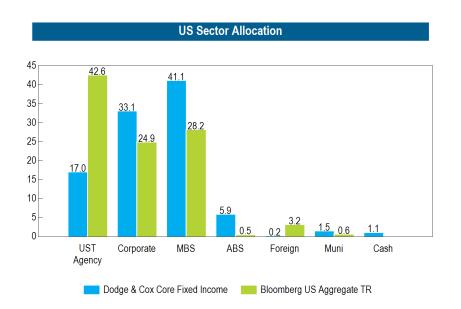
MEKETA INVESTMENT GROUP 67 of 107

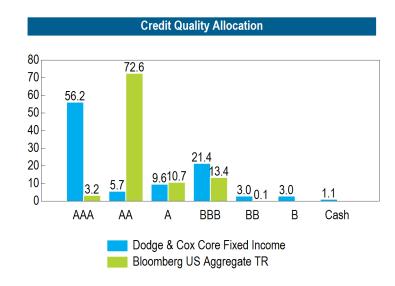


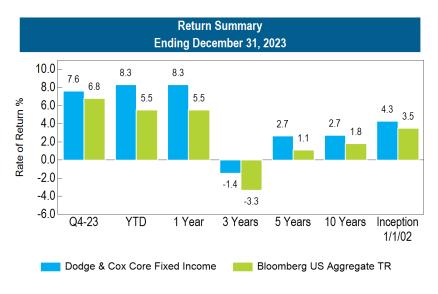
#### Dodge & Cox Core Fixed Income | As of December 31, 2023

Dodge & Cox Characteristics vs. Bloomberg US Aggregate TR					
Portfolio Index Portfolio					
	Q4-23	Q4-23	Q3-23		
Fixed Income Characteristics					
Yield to Maturity	5.3	4.4	6.2		
Average Duration	6.0	6.1	5.7		
Average Quality	Α	AA	Α		
Weighted Average Maturity	10.2	8.5	10.3		

Weighted Average Maturity of BBgBarc US Aggregate TR is 8.5 as reported by Barclays Live.







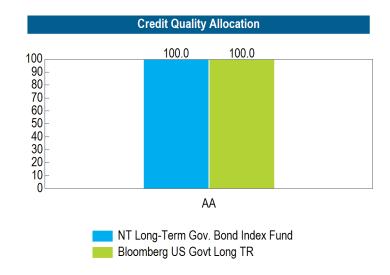
Credit quality allocations of the benchmark are based on S&P ratings and may differ from the ratings methodology provided by the manager.

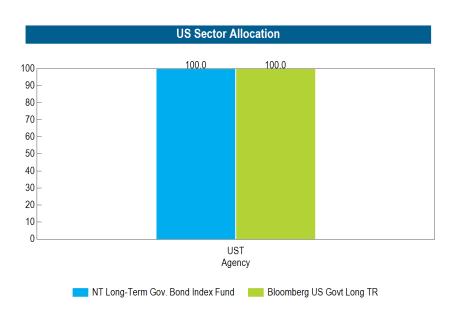
MEKETA INVESTMENT GROUP 68 of 107

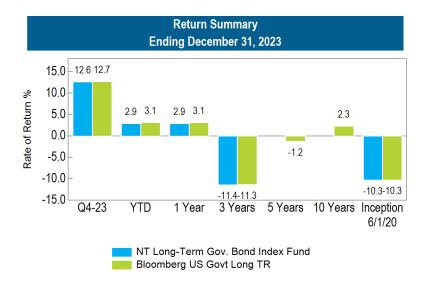


# NT Long-Term Gov. Bond Index Fund | As of December 31, 2023

NT Long-Term Gov. Bond Index Fund Characteristics vs. Bloomberg US Govt Long TR				
	Portfolio	Index	Portfolio	
	Q4-23	Q4-23	Q3-23	
Fixed Income Characteristics				
Yield to Maturity	4.1	4.1	4.9	
Average Duration	15.6	15.5	15.3	
Average Quality	AA	AA	AA	
Weighted Average Maturity	22.7	22.7	22.8	







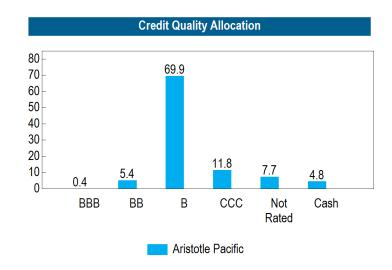
Credit quality allocations of the benchmark are based on S&P ratings and may differ from the ratings methodology provided by the manager.

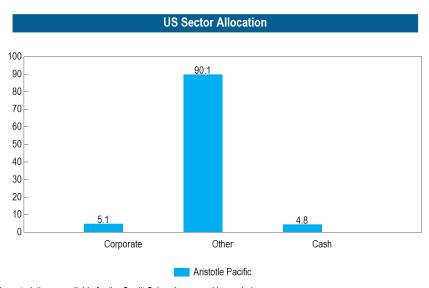
MEKETA INVESTMENT GROUP 69 of 107

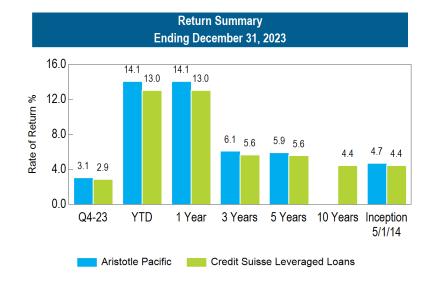


#### Aristotle Pacific | As of December 31, 2023

Pacific Asset Management Characteristics				
	Portfolio	Portfolio		
	Q4-23	Q3-23		
Fixed Income Characteristics				
Yield to Maturity	8.2	9.2		
Average Duration	0.3	0.3		
Average Quality	В	В		
Weighted Average Maturity	3.8	3.8		







Characteristics unavailable for the Credit Suisse Leveraged Loans index. "Other" refers to bank loans.

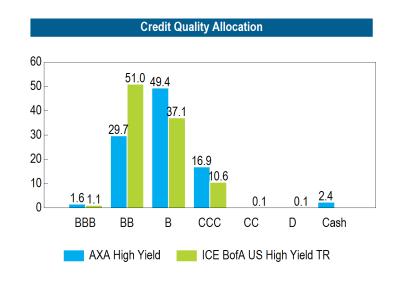
Credit quality allocations of the benchmark are based on S&P ratings and may differ from the ratings methodology provided by the manager.

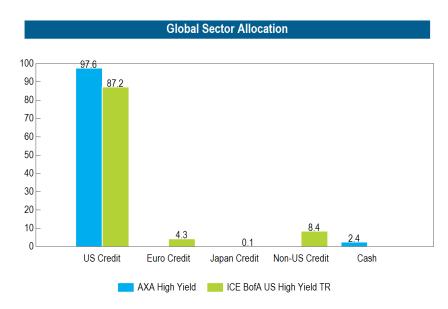
MEKETA INVESTMENT GROUP 70 of 107



#### AXA High Yield | As of December 31, 2023

AXA High Yield Characteristics vs. ICE BofA US High Yield TR				
	Portfolio	Portfolio		
	Q4-23	Q3-23		
Fixed Income Characteristics				
Yield to Maturity	7.5	8.7		
Average Duration	2.9	3.7		
Average Quality	В	В		
Weighted Average Maturity	4.6	4.7		







Credit quality allocations of the benchmark are based on S&P ratings and may differ from the ratings methodology provided by the manager.

MEKETA INVESTMENT GROUP 71 of 107

# **Private Markets Analysis**



#### Private Markets Analysis | As of December 31, 2023

		Private M	larket Invest	ments Overvi	ew					
Investments		Commit	ments	Contributions &	Distributions	Valuat	tions	Perf	orman	се
Investment Name	Vintage Year	Commitment (\$)	Unfunded Commitment (\$)		Cumulative Distributions (\$)	Valuation (\$)	Total Value (\$)	DPI	TVPI	IRR (%)
Golub Capital BDC 4, Inc.	2023	50,000,000	42,750,000	7,250,000	46,876	7,203,124	7,250,000	0.0	1.0	NM
Total		50,000,000	42,750,000	7,250,000	46,876	7,203,124	7,250,000	0.0	1.0	NM

Total includes active investments only.

Unfunded Commitment figures are based on statements from the GP.

MEKETA INVESTMENT GROUP 73 of 107



#### Private Markets Analysis | As of December 31, 2023

		Private M	larket Invest	ments Overvi	ew					
Investments		Commit	ments	Contributions &	Distributions	Valuat	ions	Perf	orman	се
Investment Name	Vintage Year	Commitment (\$)	Unfunded Commitment (\$)		Cumulative Distributions (\$)	Valuation (\$)	Total Value (\$)	DPI	TVPI	IRR (%)
CenterSquare Value-Added Fund IV, L.P.	2018	25,000,000	4,032,257	20,967,743	24,596,774	7,198,136	31,794,910	1.2	1.5	14.7
Total		25,000,000	4,032,257	20,967,743	24,596,774	7,198,136	31,794,910	1.2	1.5	14.7

Total includes active investments only.

Unfunded Commitment figures are based on statements from the GP.

MEKETA INVESTMENT GROUP 74 of 107



#### Private Markets Analysis | As of December 31, 2023

	Private Market Investments Overview									
Investments	Investments		Commitments		Contributions & Distributions		Valuations		Performance	
Investment Name	Vintage Year	Commitment (\$)	Unfunded Commitment (\$)	Cumulative Contributions (\$)	Cumulative Distributions (\$)	Valuation (\$)	Total Value (\$)	DPI	TVPI	IRR (%)
Adams Street 2012 Global Fund, L.P.	2012	14,000,000	995,690	13,004,310	15,967,732	10,535,110	26,502,842	1.2	2.0	13.0
Adams Street Venture Innovation Fund, L.P.	2017	5,000,000	381,316	4,618,684	2,393,150	10,541,571	12,934,721	0.5	2.8	29.2
Catalyst Fund Limited Partnership III	2012	5,000,000	40,903	5,959,011	7,804,357	1,787,827	9,592,184	1.3	1.6	9.3
Catalyst Fund Limited Partnership IV	2015	7,000,000	279,654	8,470,346	10,679,722	6,878,191	17,557,913	1.7	1.9	20.6
Coller International Partners V, L.P.	2007	14,000,000	3,371,623	10,948,000	15,448,074	4,473	15,452,547	1.4	1.4	7.4
Coller International Partners VI, L.P.	2012	14,000,000	140,000	9,838,743	16,111,950	1,491,933	17,603,882	1.6	1.8	14.8
Coller International Partners VII, L.P.	2015	10,000,000	700,000	7,670,766	8,360,729	4,563,645	12,924,374	1.1	1.7	13.7
Coller International Partners VIII, L.P.	2020	15,000,000	3,056,971	9,393,859	1,692,100	12,280,579	13,972,680	0.2	1.5	NM
JP Morgan Global Fund V, L.P.	2013	10,000,000	6,816,339	9,798,188	12,084,044	8,832,813	20,916,857	1.2	2.1	15.7
JP Morgan Global Fund VI, L.P.	2017	15,000,000	201,812	13,920,762	5,930,560	15,514,830	21,445,390	0.4	1.5	12.0
JP Morgan Global Fund VIII, L.P.	2019	15,000,000	1,256,333	12,115,634	1,941,172	15,646,579	17,587,751	0.2	1.5	16.0
JP Morgan Corp Fin Pool III LLC	2006	6,037,500	3,212,960	6,937,085	13,680,122	453,136	14,133,258	2.0	2.0	15.0
JP Morgan European Corporate Finance Fund III, L.P.	2006	3,281,250	714,000	3,306,187	5,163,114	102,625	5,265,739	1.6	1.6	9.1
JP Morgan Venture Capital Fund III, L.P.	2006	3,458,000	6,891	3,475,806	5,587,337	1,054,494	6,641,831	1.6	1.9	10.2
Lexington Capital Partners VI-B, L.P.	2006	14,000,000	168,008	14,858,579	20,388,034	68,988	20,457,022	1.4	1.4	6.6
Lexington Capital Partners VIII, L.P.	2014	14,000,000	131,823	12,960,307	12,946,839	8,271,154	21,205,886	1.0	1.6	15.1
Lexington Capital Partners IX Offshore, L.P.	2018	15,000,000	9,589	12,918,998	3,585,946	14,565,490	18,151,436	0.3	1.4	19.6
Pantheon USA Fund VII, L.P.	2006	10,500,000	228,849	9,786,000	16,931,261	1,415,403	18,346,664	1.7	1.9	10.0
Pantheon Europe Fund V B, L.P.	2006	3,693,962	831,474	3,530,920	5,002,135	275,322	5,277,457	1.4	1.5	6.5
SL Capital European Smaller Funds I, L.P.	2012	9,814,000	2,834,098	8,937,362	9,412,847	2,854,629	12,267,476	1.1	1.4	6.5
Total		203,784,712	25,378,333	181,546,820	191,093,000	117,138,792	308,237,910	1.0	1.7	12.7

Total includes active investments only.

Unfunded Commitment figures are based on statements from the GP.

Lexington Capital Partners Unfunded Commitment figures include prior recallable distributions.

MEKETA INVESTMENT GROUP 75 of 107



#### Private Markets Analysis | As of December 31, 2023

		Private M	larket Invest	ments Overvi	ew					
Investments		Commit	tments	Contributions &	Distributions	Valuat	tions	Perf	orman	ce
Investment Name	Vintage Year	Commitment (\$)	Unfunded Commitment (\$)	Cumulative Contributions (\$)	Cumulative Distributions (\$)	Valuation (\$)	Total Value (\$)	DPI	TVPI	IRR (%)
BlackRock Renewable Power Fund II	2016	20,000,000	577,396	20,092,728	14,545,459	10,860,662	25,406,120	0.7	1.3	6.0
Total		20,000,000	577,396	20,092,728	14,545,459	10,860,662	25,406,120	0.7	1.3	6.0

Total includes active investments only.

Unfunded Commitment figures are based on statements from the GP. Unfunded Commitment figures include prior recallable distributions.

MEKETA INVESTMENT GROUP 76 of 107

# **4Q Market Review**

Data as of December 31, 2023



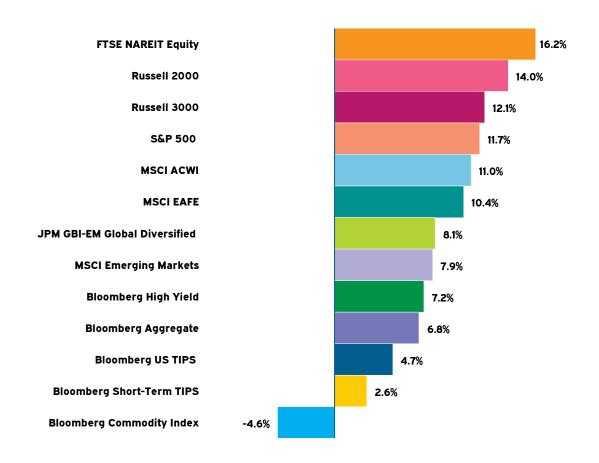
#### Commentary

- → Most markets rallied in the fourth quarter in anticipation that policy rates cuts were ahead in 2024.
  - Major central banks have largely paused interest rates hikes. Markets are now largely expecting the FOMC to maintain interest rates at the current levels and begin cutting rates as soon as Q1 2024.
  - Inflation rose in December in the US and Europe, but both finished the year much lower than where they started. China remained in deflationary territory (-0.3%) at year-end.
  - US equity markets (Russell 3000 index) posted strong gains for the quarter (12.1%), raising full year results to +26.0%. Most sectors rallied, with more defensive sectors lagging.
  - Non-US developed equity markets also rallied in the fourth quarter (MSCI EAFE 10.4%), with the weakening of the US dollar contributing meaningfully (10.4% versus 5.0% ex.-US dollar influence). The performance difference between US and international developed equities for the year remained wide (26.0% versus 18.2%).
  - Emerging market equities were up 7.9% in the fourth quarter and 9.8% for calendar 2023 but trailed developed markets due to lagging returns in China (-4.2% Q4/-11.2% one-year). Emerging market equities ex.-China returned 20% in 2023.
  - Interest rates generally fell in the fourth quarter, particularly for longer-dated maturities. The broad US bond market rallied (6.8%) for the quarter, lifting 2023 returns into positive territory (5.5%).
- → Looking to 2024, the paths of inflation and monetary policy, China's economic disorder and slowing economic growth, and the wars in Ukraine and Israel, will be key.

MEKETA INVESTMENT GROUP 78 of 107



#### 4Q 23 Index Returns

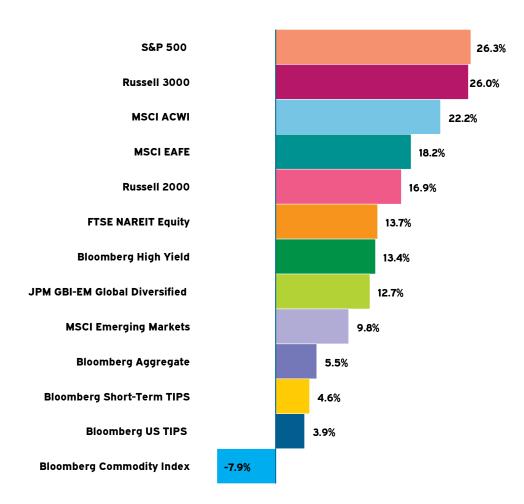


→ Nearly all asset classes were positive in 4Q23. Equities produced double digit returns.

MEKETA INVESTMENT GROUP 79 of 107



#### 2023 Index Returns

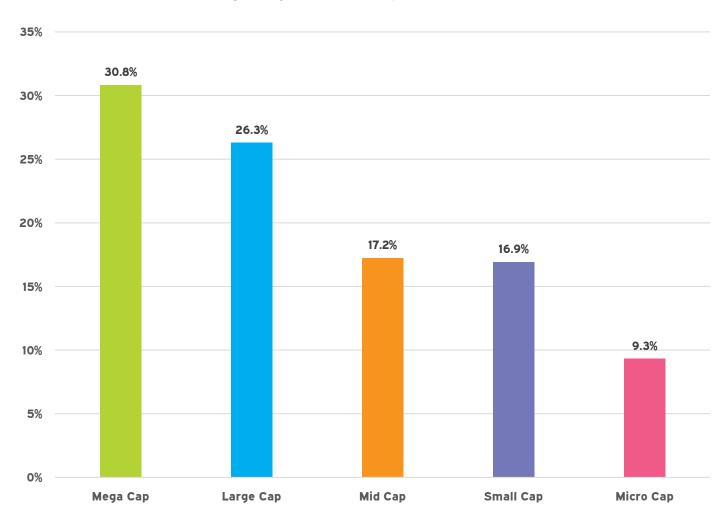


 $\rightarrow$  Led by the strong results in 4Q23, returns for the full 2023 calendar year look similar, led by US equities .

MEKETA INVESTMENT GROUP 80 of 107



# Large Cap Led the Way – 2023 Returns

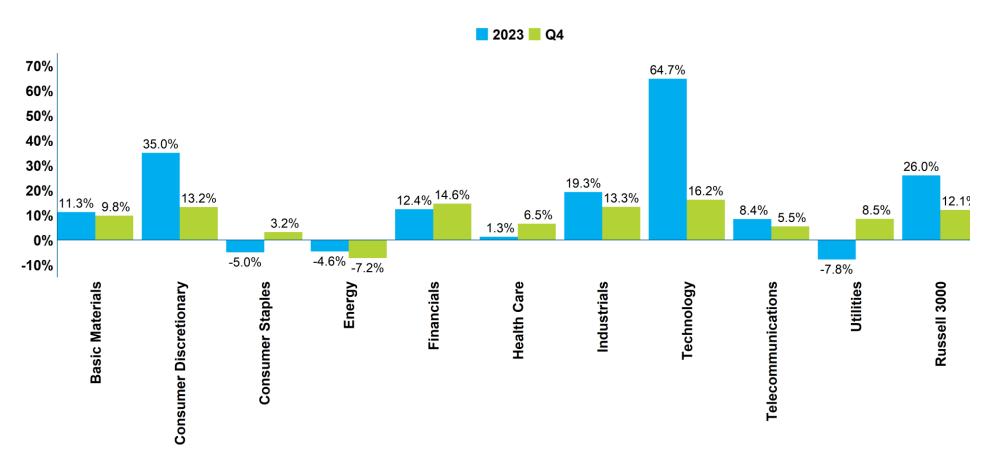


ightarrow Performance was very different for mega/large cap US companies vs. small cap US companies in 2023. .

MEKETA INVESTMENT GROUP 81 of 107



#### Russell 3000 Sector Returns<sup>1</sup>

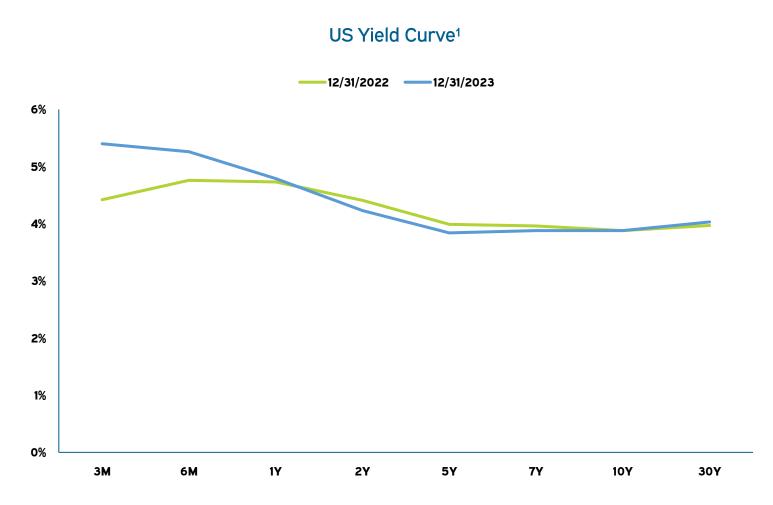


→ All sectors posted gains for the fourth quarter, except for energy (-7.2%) given oil's recent declines..

MEKETA INVESTMENT GROUP 82 of 107

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of December 31, 2023.





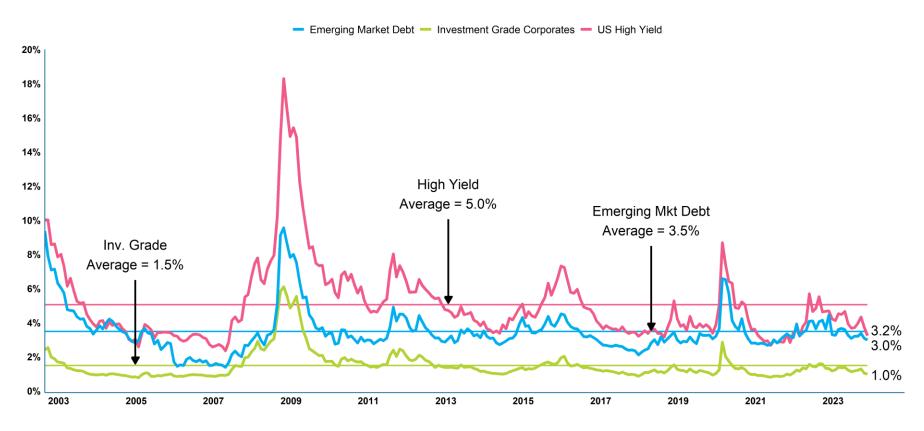
→ The more policy sensitive short-term maturities were higher this year while longer-term maturities finished the year where they started.

MEKETA INVESTMENT GROUP 83 of 107

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of December 31, 2023.



# Credit Spreads vs. US Treasury Bonds<sup>1</sup>



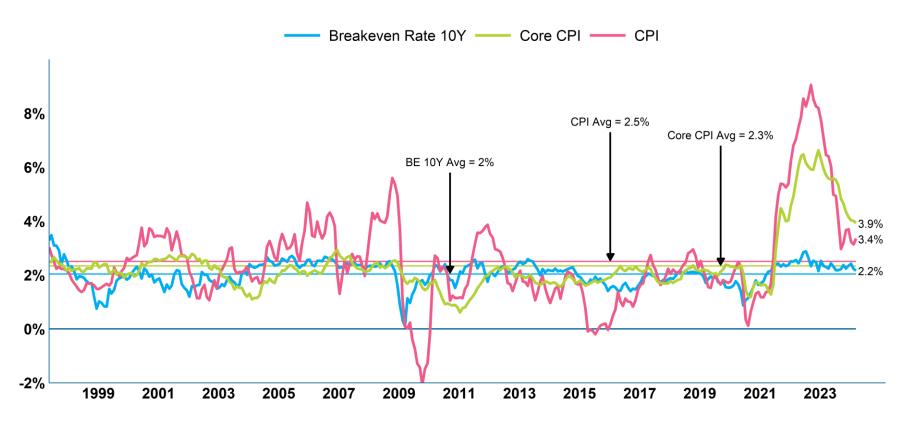
→ All spreads remain below their respective long run averages. Expectations of peaking policy rates and the corresponding increase in risk appetite benefited credit in the fourth quarter with spreads (the added yield above a comparable maturity Treasury) narrowing.

MEKETA INVESTMENT GROUP 84 of 107

<sup>1</sup> Sources: Bloomberg. Data is as of December 31, 2023. Average lines denote the average of the investment grade, high yield, and emerging market spread values from September 2002 to the recent month-end, respectively.



#### US Ten-Year Breakeven Inflation and CPI<sup>1</sup>



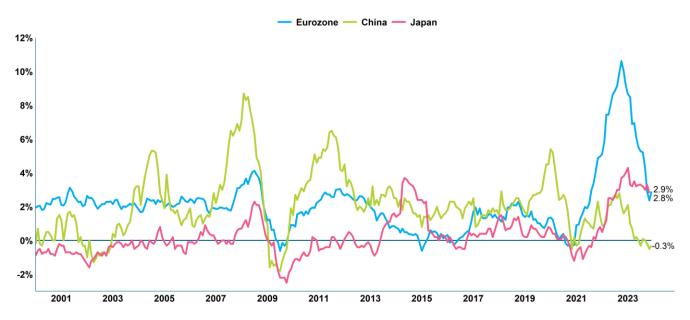
- → Both CPI and Core CPI declined meaningfully in 2023.
- → Inflation expectations (breakevens the blue line) have remained relatively stable despite the significant volatility in inflation.

MEKETA INVESTMENT GROUP 85 of 107

<sup>&</sup>lt;sup>1</sup> Source: FRED. Data is as December 2023. The CPI and 10 Year Breakeven average lines denote the average values from February 1997 to the present month-end, respectively. Breakeven values represent month-end values for comparative purposes.



# Global Inflation (CPI Trailing Twelve Months)<sup>1</sup>



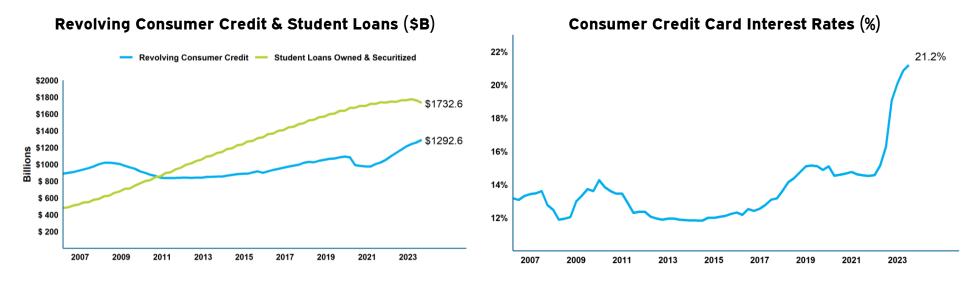
→ Outside the US, inflation is also falling across major economies with China slipping into deflation.

MEKETA INVESTMENT GROUP 86 of 107

<sup>1</sup> Source: FRED for United States CPI and Eurozone CPI. Source: Bloomberg for Japan CPI, China CPI, and Eurozone December flash estimate. Data is as December 31, 2023, except Japan which is as of November 30, 2023.



#### US Consumer Under Stress?1



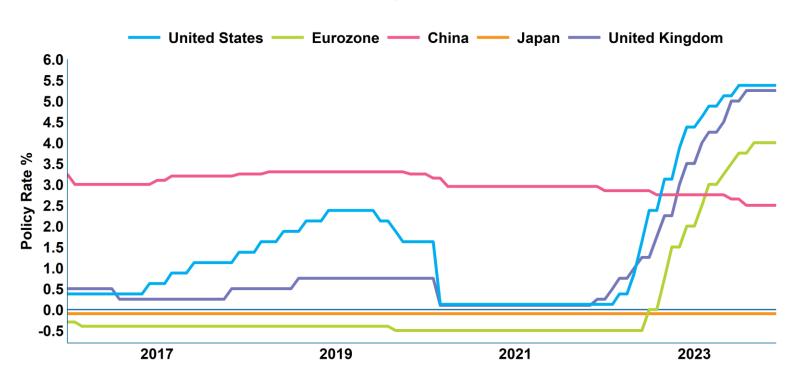
- → Despite the strong labor market and higher wages, pressures have started to build on the US consumer. This is an important consideration as consumer spending has been a key driver of economic growth.
- → Revolving consumer credit surged to new highs in 2023 even as credit card interest rates hit levels not seen before (the prior peak was around 19% in the 1980s).
- → The return of student loan repayments after a three-year pandemic-related reprieve could add to pressures on consumers' budgets. This might be partially mitigated by recently initiated repayment and forgiveness programs.
- → As we look ahead, the strength of the US consumer will remain key as this sector makes up most of the domestic economy (GDP).

MEKETA INVESTMENT GROUP 87 of 107

Source: FRED. Data is as of September 30, 2023. Revolving Consumer Credit data is seasonally adjusted to remove distortions during the holiday season.







- $\rightarrow$  The Fed has been on hold since July 2023 when it raised rates to a range of 5.25%-5.50%.
- → Markets are pricing in six rate cuts next year given the track of economic data and recent comments from the Fed, while the Fed itself is only predicting three.
- → How this discrepancy is resolved will be key in 2024.

MEKETA INVESTMENT GROUP 88 of 107

<sup>&</sup>lt;sup>1</sup> Source: Bloomberg. Data is as of December 2023.

The Magnificent Seven



## What are the Magnificent Seven?

- → The Magnificent Seven are a basket of mega-cap stocks that dominated the equity market in 2023.
  - Five of the seven companies are considered leaders in the technology industry.
  - The other two (Amazon and Tesla) are heavily intertwined with technology and also generally considered leaders in the industry.
- → They include:
  - Alphabet (Google)
  - Amazon
  - Apple
  - Meta (Facebook)
  - Microsoft
  - Nvidia
  - Tesla



# A Brief History of the Acronyms

- → FAANG, originally FANG, was a term used to describe some of the highest-growth tech stocks of the 2000's.
  - It included Facebook (now Meta), Amazon, Apple (added later), Netflix, and Google (now Alphabet).
- → A changing market environment and re-branding of several companies prompted a shift in acronyms in 2021.
  - Netflix was dropped and Microsoft was added, changing the acronym to MAMAA.1
- → In 2023, this group of MAMAA stocks was expanded to include Nvidia and Tesla, which together became the Magnificent Seven.

#### **Timeline of Tech Stock Acronyms**

2013	2017	2021	2023
<ul> <li>The term FANG is coined.</li> <li>Facebook (now Meta)</li> <li>Amazon</li> <li>Netflix</li> <li>Google (now Alphabet)</li> </ul>	→ Apple is added to FANG, expanding it to FAANG.	<ul> <li>→ FAANG drops Netflix, adds Microsoft, and rebrands to MAMAA.</li> <li>● Meta</li> <li>● Amazon</li> <li>● Microsoft</li> <li>● Alphabet</li> <li>● Apple</li> </ul>	<ul> <li>→ The Magnificent Seven term emerges.         <ul> <li>(also known as MAMA ANT)</li> <li>Alphabet</li> <li>Amazon</li> <li>Apple</li> <li>Meta</li> <li>Microsoft</li> <li>Nvidia</li> <li>Tesla</li> </ul> </li> <li>(Also called MAMA ANT)</li> </ul>

<sup>&</sup>lt;sup>1</sup> Source: Forbes, "What Happened to FAANG Stocks? They Became MAMAA Stocks," November 2023.

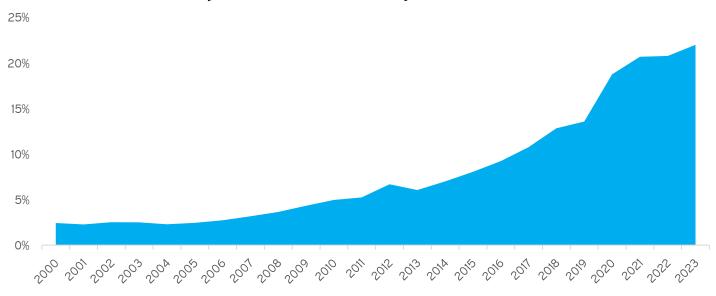
MEKETA INVESTMENT GROUP 91 of 107



# What is the Magnificent Seven's Relative Weight?

- $\rightarrow$  As of December 31, 2023, the Magnificent Seven cumulatively represented 22% of the Russell 3000 index.
- → However, these seven stocks were not always as dominant as they are today.

#### The Magnificent Seven's Index Weight in the Russell 3000<sup>2</sup>



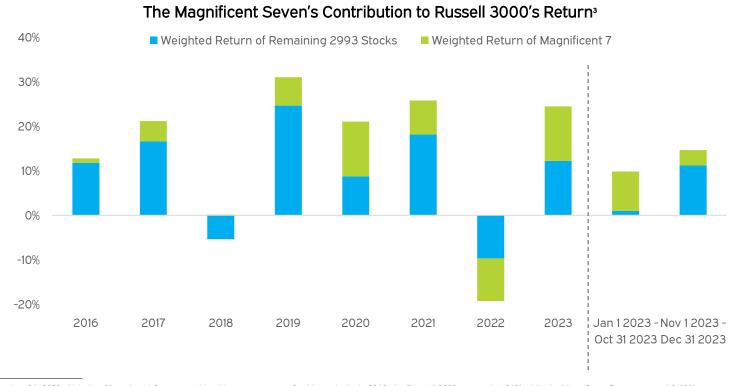
MEKETA INVESTMENT GROUP 92 of 107

<sup>&</sup>lt;sup>2</sup> Source: FactSet, as of December 31, 2023. Note that Alphabet Class A and C were combined into one category for this analysis. Includes all seven stocks at their weight in the index at that time; note that not all seven companies were publicly listed for the full period shown.



# Is the Magnificent Seven Driving the Stock Market?

- $\rightarrow$  It is not unusual for the largest stocks in the market to represent an outsized share of performance.
- → The Magnificent Seven represented nearly all of the Russell 3000's return from January to October 2023.
  - This was somewhat atypical and has led to concerns about market concentration.
  - However, in the rally at the end of 2023 (November through December), their influence declined.



<sup>&</sup>lt;sup>3</sup> Source: FactSet, as of December 31, 2023. Alphabet Class A and C were combined into one category for this analysis. In 2018, the Russell 3000 returned -5.21% while the Magnificent Seven returned 0.16%.

MEKETA INVESTMENT GROUP 93 of 107

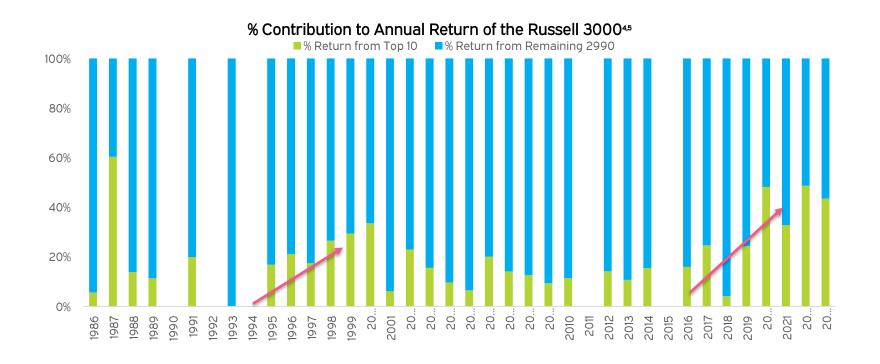


# Historical Influence of the Top 10 Constituents on US Equity Returns

- → Since 2018, the top ten constituents' influence on the Russell 3000's returns has grown, coinciding with the rise of the Magnificent Seven.
- → The dot-com bubble was the last time the top ten's influence on returns was this high for a sustained period.

MEKETA INVESTMENT GROUP 94 of 107





MEKETA INVESTMENT GROUP 95 of 107

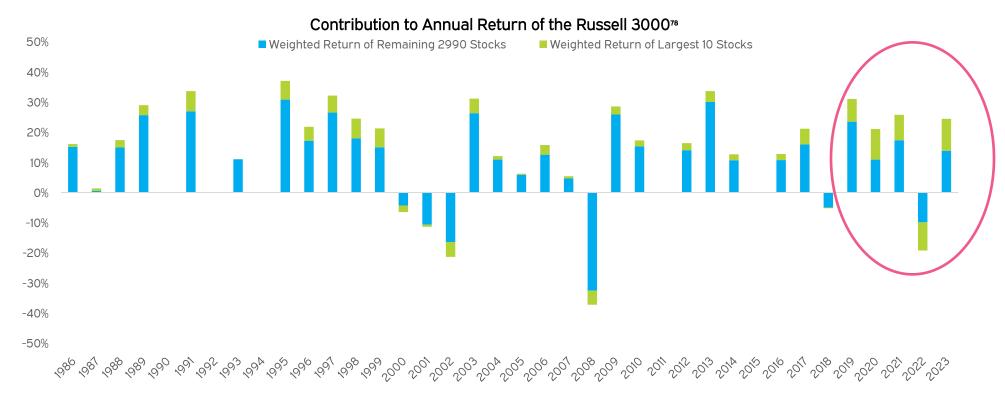
<sup>&</sup>lt;sup>4</sup> Source: FactSet, as of December 31, 2023. Note that Alphabet Class A and C were combined into one category for this analysis.

<sup>&</sup>lt;sup>5</sup> In years 1990, 1992, 1994, 2011, and 2015, the top 10 and the rest moved in opposite directions, making the stacked column not meaningful; hence they were excluded from the chart.



# Historical Contribution of the Top 10 Constituents to US Equity Returns

- → While 2023 stands out for the top ten contributing such a large share of returns, it is part of a trend.
  - The last five years have all been in the top ten years ranked by absolute contribution to return by the largest ten stocks in the Russell 3000 since 1986.



<sup>&</sup>lt;sup>6</sup> Ranking excludes years 1994, 2011, and 2015 due to the top 10 stocks having higher returns than the Russell 3000.

MEKETA INVESTMENT GROUP 96 of 107

<sup>&</sup>lt;sup>7</sup> Source: FactSet, as of December 31, 2023. Note that Alphabet Class A and C were combined into one category for this analysis.

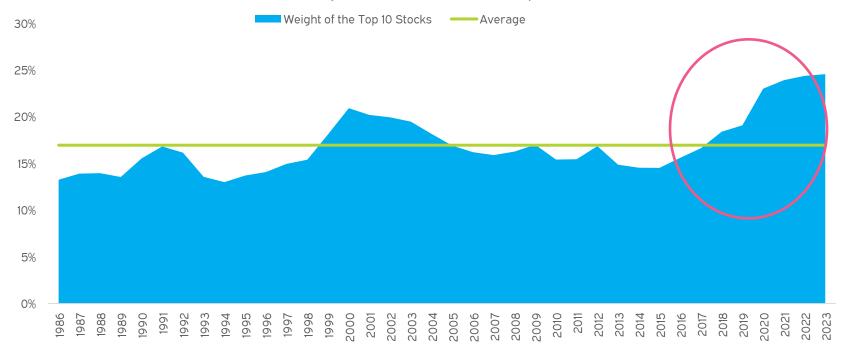
<sup>8</sup> In years 1990, 1992, 1994, 2011, and 2015, the top 10 and the rest moved in opposite directions, making the stacked column not meaningful; hence they were excluded from the chart.



#### How Concentrated is the Market in Historical Context?

- → The index weight of the ten largest constituents has been cyclical, with periods of both peaks and troughs.
- → Since 1986, the average combined weight of the ten largest constituents in the Russell 3000 is ~17%.
- → There have only been two periods above this average: 1999 to 2004 and 2018 to 2023.





MEKETA INVESTMENT GROUP 97 of 107

<sup>9</sup> Source: FactSet, as of December 31, 2023. Note that Alphabet Class A and C were combined into one category for this analysis.



#### What if we Look Back Even Further?

- → In the longer history of the US stock market, there have been many companies at different periods who accumulated a larger than average share of market cap.
- → But this was often concentrated in just one or two companies, such as US Steel or AT&T (aka, Ma Bell).
  - It is unprecedented for the ten largest names to have such a large weight.
- → There have been periods where the market was even more concentrated in a single sector.
  - Railroads dominated the US stock market from the Civil War until World War I.

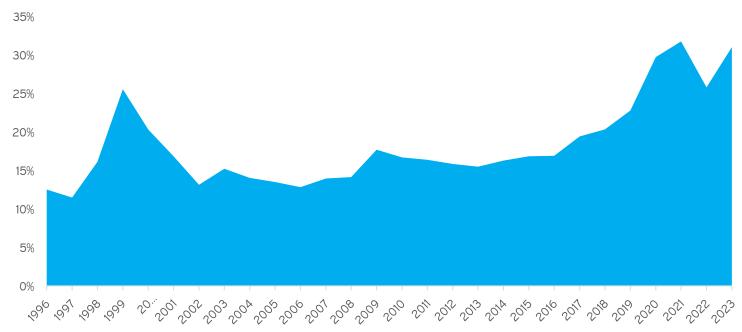
MEKETA INVESTMENT GROUP 98 of 107



# Top Heavy in Tech

- → The sharpest increases in market concentration coincided with an affinity for stocks in the technology industry.
- → The first of these periods the late 1990s' through early 2000s was the peak of the dot-com era.
  - After the dot-com bubble burst, the weight of the tech industry in the index dropped.
- → In recent years, the technology industry's relative weight has surpassed that of the dot-com era.





<sup>10</sup> Source: FactSet, as of December 31, 2023. See the Appendix for more details on the sectors and sub-sectors included in Technology. Note that Alphabet Class A and C were combined into one category for this analysis.

MEKETA INVESTMENT GROUP 99 of 107



#### Why These Stocks? Why Now?

- → The common theme of the FAANG stocks and the Magnificent Seven has been technology.
  - These companies are on the leading edge of figuring out how best to use emerging technology to provide services demanded by their customers.
  - Importantly, many have built diverse business models and/or shown an ability to adapt to change.
- → The COVID-19 pandemic further boosted the demand for these stocks.
  - Many of these companies offered solutions for remote work, e-commerce, entertainment, and communication in a socially distanced world.
- → The release of ChatGPT in late 2022 made generative AI an overnight sensation.
  - It has ignited the race for companies to develop and bring their own, unique generative AI products to market.

MEKETA INVESTMENT GROUP 100 of 107



# Might History be Repeating Itself?

- → Might this period resemble the dot-com period, where many of the most-hyped stocks were ultimately not those who benefitted the most from the emergent technology?
- → Or might the Magnificent Seven maintain their growth trajectory, continuing to evolve and learning how to use new technologies?

# Dot-Com Bubble Today

- → The unprecedented growth in widespread internet adoption led to exponential demand for online services and products.
- → This benefited firms who provided these internet services.
- → It also benefited those companies who were building the "infrastructure" needed for the internet, such as Cisco, Intel, IBM, and Microsoft.
- → The bubble burst when many of smaller internet-based companies failed to generate profits or revenues, and investors lost confidence in their future.

- → Generative AI is a potentially transformative technology, like the internet.
- → This benefits firms who make generative AI tools, such as Microsoft, Meta, and Alphabet.
- → It also benefits companies who make the components necessary for AI, like Nvidia, the largest US designer of the high-end chips needed to power AI.

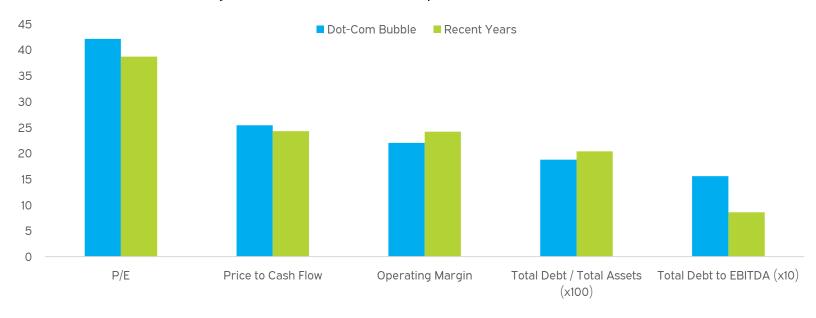
MEKETA INVESTMENT GROUP 101 of 107



## How do the Financials Match Up?

- → When comparing several key financial ratios of the ten largest stocks during the dot-com bubble to those of recent years, they are relatively in line with each other.
- → One key takeaway is both periods have a similar debt to assets, but recent years have a lower debt to income.
  - This may signify that the top ten companies are more financially stable now than during the dot-com bubble.

#### Average Financial Metrics of the Top 10 Stocks in the Russell 3000"



<sup>11</sup> Source: FactSet. Period for the Dot-Com Bubble is 1998 to 2002. Period for Recent Years is 2018 to 2023. Total Debt / Total Assets and Total Debt / EBITDA are as of December 31, 2023, and are multiplied by 100 and 10, respectively, for the purposes of viewing this chart. All other ratios are as of September 30, 2023.

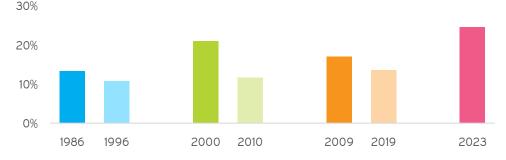
MEKETA INVESTMENT GROUP 102 of 107



#### What is the Risk?

- → If history is any guide, only a few of the Magnificent Seven will continue to outperform.
  - The inherent "creative destruction" of capitalism has a history of dethroning the largest companies. 2
- → Some will be among the "winners" who learn how to adapt to and benefit from emerging technological trends.
  - Microsoft is worth more than 6x its peak value from the dot-com era.
- → Others will fail to evolve or execute, and they will likely fall behind.
  - Cisco Systems has never regained its peak value from 2000.
- → With so much of the market concentrated in such a small number of stocks, the decline of even a few would be painful for all investors in the stock market.
- → Yet investors have survived many past cycles of concentration and changes in market leadership.

#### Weight of the Top 10 Largest Stocks in the Russell 3000 & Weight of Same 10 Stocks a Decade Later<sup>13</sup>



<sup>12</sup> According to MSCI, only one-quarter of stocks have historically kept pace with the market after reaching the top ten.

MEKETA INVESTMENT GROUP 103 of 107

<sup>13</sup> Source: FactSet, as of December 31, 2023. Note that Alphabet Class A and C were combined into one category for this analysis.



# Summary

- → The Magnificent Seven is not the first time that concentration in the market has spiked. The last major peak coincided with the dot-com bubble.
- → Parallels between today and the exuberance of the dot-com era beg the question of whether these companies will be the ones who benefit most from emerging technologies such as Al.

MEKETA INVESTMENT GROUP 104 of 107

# **Appendix**

# **Disclaimer**



#### City of Miami Firefighters' and Police Officers' Retirement Trust

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MEKETA INVESTMENT GROUP 107 of 107