# Callan



### **Executive Summary** Third Quarter 2023

Arkansas Public Employees Retirement System

Brianne Weymouth, CAIA Senior Vice President

John Jackson, CFA Senior Vice President

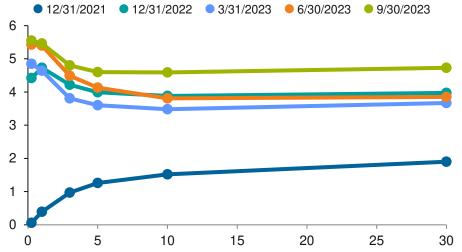
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# U.S. Economy—Summary

## For periods ended 9/30/23

#### **Quarterly Real GDP Growth** 40% 30% 20% Curr Qtr = 4.9% 10% 0% -10% -20% -30% -40% 15 17 19 20 21 22 23 14 16 18

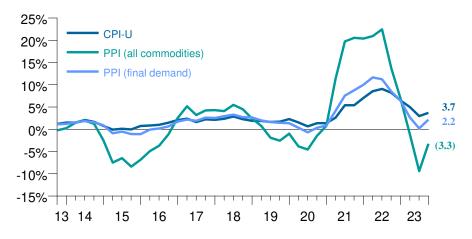
#### **U.S. Treasury Yield Curves**



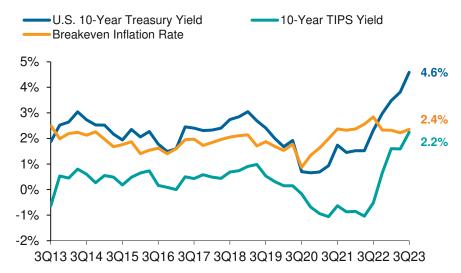
#### Sources: Bloomberg, Bureau of Labor Statistics, Callan



#### **Inflation Year-Over-Year**



#### Historical 10-Year Yields Through 9/30/23



# Equity Markets Down in 3Q, Following Rebound in First Half of 2023

Stocks and bonds still have ground to make up after declines in 2022

#### S&P 500 down 3.3% in 3Q23.

- Loss through first three quarters of 2022 was 23.9%; rebound in the following three guarters reduced the loss to 2.9% by September, but decline in 3Q shows S&P is still over 7% below 1/2022 high-water mark

### Fixed income recovered in first half of 2023 as high inflation began to ease; speculation about interest rate cuts evaporated

- Bloomberg Aggregate: up 3% in 1Q, but declined 0.8% in 2Q and another 3.2% in 3Q as Fed continued to raise rates
- CPI-U: +3.7% year-over year for 3Q, and still up 5.8% since the start of 2022

Economic data defied expectations of recession in 2023; GDP growth came in at 2.1% in 1Q and 2.2% in 2Q, and surged to a stunning 4.9% in 3Q

- Job market remains solid, providing support to Fed efforts to fight inflation

Returns for Periods ended 9/30/23						
			Last			
	Quarter	YTD	Year	5 Years	10 Years	25 Years
U.S. Equity						
Russell 3000	-3.25	12.39	20.46	9.14	11.28	8.09
S&P 500	-3.27	13.07	21.62	9.92	11.91	7.92
Russell 2000	-5.13	2.54	8.93	2.40	6.65	8.00
Global ex-U.S. Equity						
MSCI World ex USA	-4.10	6.73	24.00	3.44	3.84	4.98
MSCI Emerging Markets	-2.93	1.82	11.70	0.56	2.07	
MSCI ACWI ex USA Small Cap	-1.70	5.03	19.01	2.58	4.35	7.41
Fixed Income						
Bloomberg Aggregate	-3.23	-1.21	0.64	0.10	1.13	3.59
90-day T-Bill	1.31	3.60	4.47	1.72	1.11	1.89
Bloomberg Long Gov/Credit	-9.37	-5.40	-2.93	-1.21	1.94	4.67
Bloomberg Global Agg ex-US	-4.00	-3.20	3.39	-3.10	-1.73	2.04
Real Estate						
NCREIF Property	-1.37	-5.07	-8.39	5.26	7.40	8.31
NCREIF:NFI-ODCE Eq Wt Net	-2.12	-8.42	-13.08	5.22	7.55	6.94
Alternatives						
CS Hedge Fund Index	1.81	3.71	4.66	4.77	4.08	5.96
Cambridge Private Equity*	1.59	3.71	0.39	15.37	14.91	13.67
Bloomberg Commodity	4.71	-3.44	-1.30	6.13	-0.75	2.45
Gold Spot Price	-3.28	2.18	11.61	9.30	3.47	7.60
Inflation - CPI-U	0.88	3.70	3.70	4.04	2.77	2.56

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\*Cambridge PE data as of 2Q23

Sources: Bloomberg, Callan, Cambridge, Credit Suisse, FTSE Russell, MSCI, NCREIF, S&P Dow Jones Indices

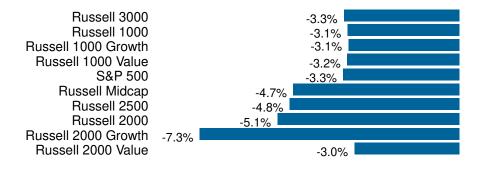


# U.S. Equity Performance: 3Q23

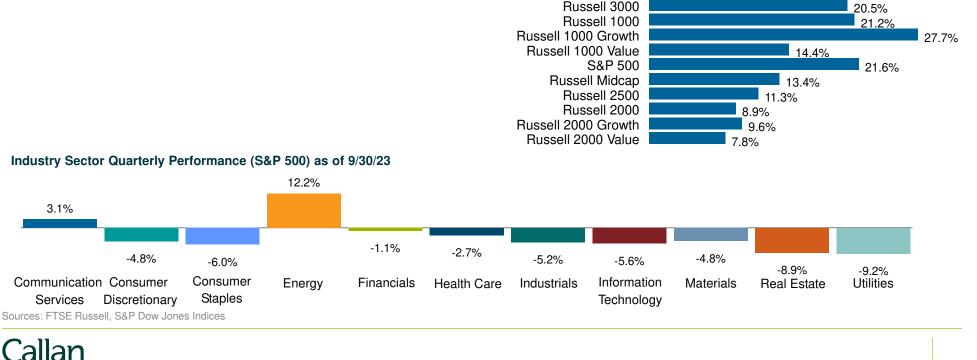
## The U.S. equity markets cooled in 3Q after an exuberant start to the year

- All U.S. equity indices posted losses during 3Q23. August and September were marked by investor fears about the potential of a "higher for longer" interest rate environment, leading to broader market declines.
- While all indices were negative, the Russell 2000 Value Index led the pack during the quarter, a reversal of the previous two quarters when the Russell 1000 Growth Index led.
- Only two of the 11 S&P 500 Index sectors generated positive 3Q returns; Energy was up 12% and Communication Services was up 3%. However, on a YTD basis, six sectors generated positive returns, with Information Technology, Communication Services and Consumer Discretionary substantially leading the group.

#### U.S. Equity: Quarter Ended 9/30/23



#### U.S. Equity: One-Year Returns Ended 9/30/23



# Global/Global ex-U.S. Equity Performance: 3Q23

## Global growth concerns

Most global markets were in the red for 3Q23.

#### Narrow market

- Global markets retreated in 3Q23 amid fears of a global recession driven by higher interest rates and slowing growth in regions outside the U.S.
- Emerging markets outperformed developed markets, buoyed by good results from India, whose economy grew nearly 8% on the heels of supportive infrastructure spending.
- Japan was strong again in local currency as it continues to benefit from post-COVID exuberance, easy monetary policy, and a new economic stimulus plan.

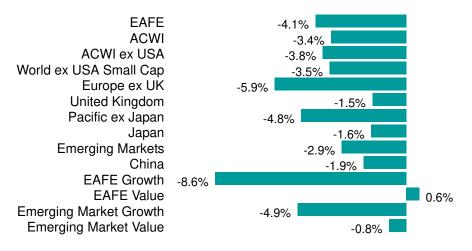
### Growth vs. value

With energy as a strong outperformer on the heels of oil price increases, value outpaced growth by a wide margin in global ex-U.S. markets.

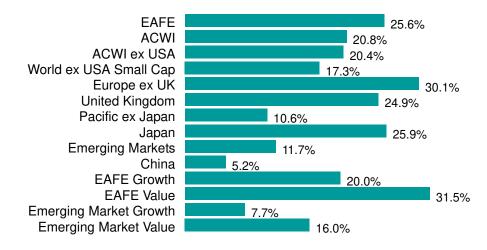
### U.S. dollar vs. other currencies

The stronger U.S. dollar, which gained 3% over the quarter, was a notable headwind for the period.

#### Global Equity Returns: Quarter Ended 9/30/23



#### Global Equity Returns: One Year Ended 9/30/23



Source: MSCI



# **U.S. Fixed Income Performance: 3Q23**

# Yields continue to march upward as spreads remain range-bound

#### U.S. fixed income fell for a second straight quarter

The Bloomberg Aggregate Index is on track for a third calendar year of negative returns, with the rise in yields continuing to detract from performance.

#### U.S. Treasury 10-year yield climbed roughly 80 bps

- 10-year ended the quarter at 4.59%, its highest level since 2007.
- The yield curve's inversion narrowed as long-term rates rose more than short-term rates.

#### **TIPS outperformed nominal Treasuries**

▶ 10-year break-even spreads widened over 10 bps.

#### Fed policy rate held to 5.25%-5.50%

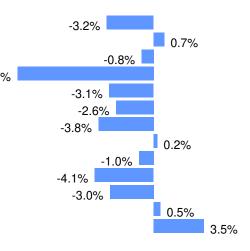
The updated dot plot suggested an additional rate hike may be in the cards before year-end.

#### Lower-quality credit continued to outperform

- High yield spreads were flat, but the sector was buoyed by strong performance in July. Additionally, a combination of higher yields and no duration continued to drive bank loan outperformance.
- IG corporate spreads tightened slightly and remained close to their 10-year average.
- Agency RMBS underperformed other securitized sectors as interest rate volatility weighed on the sector.

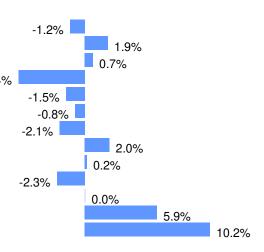
#### U.S. Fixed Income Returns: Quarter Ended 9/30/23

Bloomberg Aggregate Bloomberg Gov/Credit 1-3 Yr Bloomberg Intmdt Gov/Credit Bloomberg Long Gov/Credit Bloomberg Treasury Bloomberg Treasury Bloomberg TIPS Bloomberg Securitized Bloomberg ABS Bloomberg CMBS Bloomberg Invst Grd Credit Bloomberg High Yield Corp S&P/LSTA Leveraged Loans



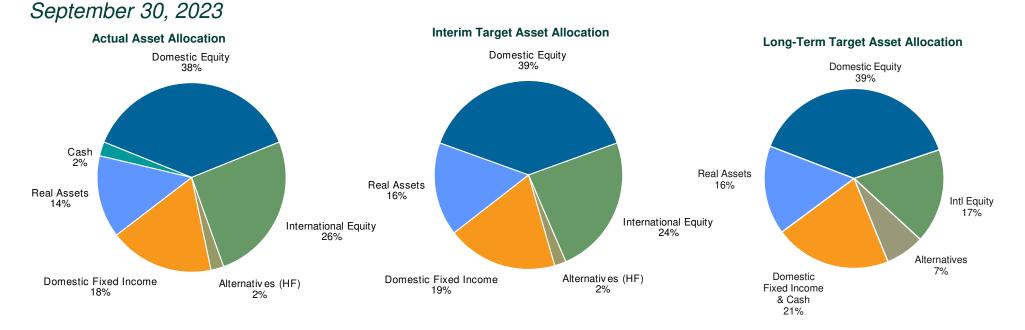
#### U.S. Fixed Income Returns: YTD Ending 9/30/23

Bloomberg Aggregate Bloomberg Gov/Credit 1-3 Yr Bloomberg Intmdt Gov/Credit Bloomberg Long Gov/Credit -5.4% Bloomberg Treasury Bloomberg TIPS Bloomberg Securitized Bloomberg ABS Bloomberg CMBS Bloomberg Invst Grd Credit Bloomberg High Yield Corp S&P/LSTA Leveraged Loans



Sources: Bloomberg, S&P Dow Jones Indices

# Actual vs. Target Asset Allocation\*



Asset Class	\$Millions Actual	Weight Actual	Interim Target	Percent Difference	\$Millions Difference
Domestic Equity	3,872	37.8%	39.0%	(1.2%)	(125)
International Equity	2,623	25.6%	24.0%	`1.6%´	<mark>(125)</mark> 164
Alternatives (HF)	224	2.2%	2.0%	0.2%	19
Domestic Fixed Income	1,837	17.9%	19.0%	(1.1%)	(111)
Real Assets	1,443	14.1%	16.0%	(1.9%)	(197)
Cash	250	2.4%	0.0%	2.4%	250
Total	10,249	100.0%	100.0%		

• The APERS Investment Policy states that rebalancing to the target asset allocation should take place when the actual asset allocation falls outside of a +/- 5% range from the target asset allocation. All asset classes are within their allowable ranges.

\*The long-term asset allocation was approved in 2023. The benchmark will be modified to reflect the new long-term targets when the Private Equity allocation has been implemented. Benchmark definitions can be found in the appendix.

# **Investment Manager Asset Allocation**

Domesito Equity         53,872,691,269         57,756         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,257,21         586,256,21         587,256,257,21         586,256,21         587,256,257,21         587,257,257,257,257,257,257,257,257,257,25	Sontombor 20 20	201	September 3	0,2023			June 30, 2	023
Lazard Asier Mynt. LC 447,314,136 4,66% (2013,265) (410,118,65) 508,077,318 4,787 Castlake Mynt. LLC 447,31,629 4,65% (20,132,83,56) (21,232,836,50) 517,986,773 4,455 Method Captal - Paavir 9 98,501,552 1,194% (56,377,76) (62,327,74) 200,818,053 1,294 Method Lagel Cag Growth 318,623,145 3,477,76 (19,60) (12,464,656) 398,448,55 3,378 Weilington Management 355,377,993 3,477,76 (19,60) (12,424,671) 472,285,558 4,477, Weilington Management 355,377,993 3,477,76 (19,60) (11,924,261) 472,285,558 4,477, Weilington Management 355,377,993 3,477,76 (19,60) (11,924,261) 472,285,558 4,477, Weilington Management 355,377,993 3,477,76 (19,60) (11,924,261) 472,285,558 4,477, Weilington Management 355,377,993 3,477,77 (19,60) (11,924,261) 472,285,558 4,477, Weilington Management 355,377,993 3,477,77 (19,60) (11,924,261) 472,285,559 4,427, Weilington Management 355,377,993 3,477,77 (19,60) (11,924,261) 472,093 3,983 3,446,453,27 3,379 Sephens Investment Mgmt. 446,888,117 4,365,567 3,916 (19,43),516 4,479,100 (19,43),516 4,479,100 (19,467,452) 422,121,00,00 4,429,120 (19,43),479,100 (19,467,452) 422,121,00,00 4,479,100 (19,467,452) 422,121,000 (19,467,452) 422,121,000 (19,467,452) 422,121,000 (19,467,452) 422,121,000 (19,479,452) 422,121,000 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 424,144,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452) 444,450 (19,479,452	September 30, 20	123	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
C Gattlocht Mymil: LLC         474,331 629         4.65%         (20,112,46)         (22,323,96)         517,298,778         4.65%           Mation Sale Sol Index, FM         673,46,777         6.65%         (65,124,177)         (63,124,172)         (22,326,166)         538,469,553         327           Wellingtom Minagarount         458,469,82         4.77%         (63,469,55)         (63,469,55)         338,469,553         4.429           Wellingtom Minagarount         458,469,82         4.77%         (63,469,55)         338,469,553         4.429           LSX Asket Managarount (458,469,225         3.56%         (61,24,249)         (16,41,355)         422,212,007         3399           International Caulty         524,223,435,454         2.66%         92,694,427)         (12,24,56)         527,755,460,77         56,783           Alstein Managarount         458,495,454         2.66%         91,791         (22,556,755)         533,088,001         5,598           International Caulty         524,223,456,454         2.66%         91,791         (22,556,755)         533,088,001         5,598           Ballie Gifford Oversnas         422,57,541         4,71%         (52,58,77)         (12,24,241,200)         573,556,456         533,786         5,588           Lazard Acard Mymit								38.59%
Methor SAP 500 Index Fid         675, 162, 779         6.63%         (6,00,24,172)         (25,562,1160)         726,543,140         7,205           Methor Lage Cap Lorent         336,023,140         3,77%         (66,00,24,172)         (63,257,14)         26,643,263         3,73%           Methor Lage Cap Lorent         436,023,140         3,77%         (65,256)         (12,245,456)         336,443,263         3,73%           Methor Lage Cap Lorent         436,023,140         3,77%         (76,71,144)         (72,445,456)         336,443,778         6,639,550         (13,25,428)         338,442,617         3,58%           Stophome Invariance Munt.         446,0480,117         4,77%         (72,1144)         (72,441,145)         (72,451,460)         32,452,459         3,58%           International Equity         54,254,340,224         52,75%         (13,451,450)         52,758,4549         53,77%         (14,451,450)         (72,451,450)         52,758,4549         53,771,102         56,778,710         56,788,549         5,777,102         56,778,710         56,778,710         56,788,549         5,777,102         56,778,710         56,788,549         5,777,710         56,778,710         56,788,549         5,777,710         56,778,7710         56,778,779         57,783,779         57,783,770         57,778,7710								
Horell Captal - Passive       198,001.332       1.94%,       (83.727)       (8.32.77)       28.52.774)         Miller Lange Cap Growth       36.603.349       3.77%,       (80.77,42)       (17.62,66)       384.85.663       3.77         LSV Ascol Management       35.507.983       3.47%,       (15.97,442)       (17.63,96)       1.425,453       35.42,617       3.55         LSV Ascol Management       35.507.983       3.37%,       (17.81,164)       (12.24.61,990)       470.103,300       4.470         Friold, Fronz Incesting       67.31,160,031       6.57%,       (17.81,164)       (12.24.65,990)       35.75,300       42.21,21007       35.77%         Maller ACW ex UP String       52.43,450,244       25.69%,       (17.43,710)       851.77,100       851.82,598       4.377         Maller ACW ex UP String       52.43,450,244       25.07%,       (14.94,154,248)       1.427       1.444.242       1.446         Maller ACW ex UP String       52.43,450,244       25.09%,       35.76%, 64.632       52.776,108,114,242       1.265,65,77       10.444,242,141       1.467         Maller ACW ex UP String       52.465,630       1.187%,144,142,141       1.467       1.265,65,77       10.777,102       10.55,247,177       10.54,242,141       1.442,241       1.467								
Melion Large Cap Concth         386.023 943         3.77%         (966)         (12.446.65)         389.498.563         3.78%           Velocition Management         436.401.000         4.74%         (12.402.657)         472.805.554         4.59%           Stephene Investment (Mmm,         446.888.117         4.39%         (72.31.91)         (12.26.428)         338.342.917         3.259           Stephene Investment (Mmm,         446.888.117         4.39%         (72.31.91)         (12.49.428)         52.259.471         47.208         422.312.007         3.897.5           International Expity         52.254.273.02 644         52.259.471         57.75%         (17.397.611)         52.759.477.102         5.668         6.479           Melion Large Cap Contrains         54.240.641         5.77%         (17.397.611)         50.1192.568         6.479           Melion Large Cap Contrains         54.257.241         4.71%         (12.63.451)         (17.597.611)         52.73.300         1.379           Melion Large Cap Contrains         52.227.614         4.71%         (12.63.451)         (12.63.452)         (12.63.452)         (12.63.452)         (12.63.452)         (12.63.452)         (12.63.452)         (12.63.452)         (12.63.452)         (12.63.452)         (12.63.452)         (12.63.452)         (								
Weilington Management Inecch         448, 441 802         4.47%         (584, 085)         (13,742, 571)         472,588,558         4.42%           SV Ass Investment Inecch         91         0.00%         (71,442, 100,200)         11,855,428)         328,758         0.00%         (13,742,571)         472,588,558         4.42%           SV Ass Investment Proley Rev Investment         456,681,927         32,97%         (12,742,671)         \$1,728,615,428)         \$22,754,439,277         \$2,755,509         422,120,77         \$2,757, 40,757,157,102         \$22,567,439,277         \$1,739,615,428)         \$27,755,498,927         \$2,577           Autern Equity         \$2,623,450,244         6,277,471%         (12,753,615,648)         \$23,757,400,177         \$1,752,656,958         \$23,800,01         5,537           Autern Adv or US SmultCop         144,960,301         1,407,460,339         1,475         \$22,93,171         \$27,73,739         1,737           Autern Adv or US SmultCop         144,960,301         1,407,572         \$2,837,531         1,273,330         1,378           Autern Adv or US SmultCop         144,960,301         1,407,573,500         5,378,71         \$4,864,632         25,193,112,431         2,657           Autern Adv or US SmultCop         144,960,301         1,407,573,400         2,198,503         4,464,652 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Lise       9       0.00%       (27,42)       (6.55)       337.888       0.00%         LSV Asset Management       345,5007.983       347%       (500.026)       (1,254.28)       538.342.617       3.35%         Shephens Investiment Mont.       446,881.117       4.36%       (725,186)       (22,441.690)       471.013.001       4.46         Heternational Equity       52,623,430.244       25,60%       (81,436.53)       (12,254.61,050)       52,725,549.277       5.77%         Attasm Partners       573,150.031       6.57%       (91,405)       (17,170.12)       5.68         Balon ACWI av UIS Find       584,408.641       5.77%       (91,405)       (17,170.12)       5.68         Acadian ACWI av UIS Find       532,306,41       5.77%       (91,405)       (17,170.12)       5.68         Acadian ACWI av UIS Simal/Cap       154,863,801       1.89%       (279,512)       (2,513,17)       119,733,3300       1.78         Acadian ACWI av UIS Simal/Cap       154,863,801       1.89%       (260,633)       \$4,864,852       \$219,312,431       2.05%         Acadian ACWI av UIS Simal/Cap       \$223,616,430       2.18%       \$(566,637)       \$4,864,852       \$219,312,431       2.05%         AcyGR Capted       0       0.00%       <								
LSV Assed Management Stophyme Investment Worth, 446,488,117 Horby Rey Investment Worth, 446,488,117 Assed Kanagement 446,488,117 Arisan Partners Mellion AVII ac US Fund Ballie GH rod Overesis 442,227,451 Arisan Partners 442,227,451 Arisan Partners 442,457,450 Arisan Partners 442,457,450 Arisan Partners 444,452,780 Arisan Partners 444,452,780 Ari								
Shephens Investment Mont.       446,688,117       4.39%       (725,184)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,246)       (12,256)       (12,256)       (12,256)       (12,256)       (12,256)       (12,256)       (12,256)       (12,256)       (12,256)       (12,256)       (12,256)       (12,256)       (12,256)       (12,256)       (12,257)       (12,442)       (12,376)       (12,376)       (12,457)       (12,442)       (12,376)       (12,442)       (12,477)       (12,442)       (12,477)       (12,442)       (14,422)       (14,422)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,442)       (14,4			• ·					
Freigr Ravy Investment       4405,493,257       3.90%       (421,245)       (16,431,505)       4422,312,007       3.95%         International Exatity       52,263,430,264       25,50%       (91,256)       (12,264,67)       (12,24,66)       (12,24,66)       (12,24,66)       (12,24,66)       (12,24,66)       (12,24,66)       (12,24,66)       (12,24,66)       (12,24,66)       (12,24,66)       (12,24,66)       (12,24,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12,34,66)       (12								
Artisan Patrixes       673,150,031       65,77%       (91,495)       (17,897,610)       691,952,595       6.47%         Baillie Gif of Overses       482,227,541       4.77%       (52,415)       (52,503,545)       533,088,001       5.03%         Lazard Acket Magin       550,166,733       5.3.7%       (440,245)       (25,513,07)       107,272,309       1.79%         Acadan AcVie xt US Fund       148,603,595       1.49%       (22,912,12)       (25,513,07)       157,225,848       5.39%         Acadan AcVie xt US Fund       158,025,951       148,053       (17,897,411)       (2,552,47)       154,442       22,914,12,221,144       22,917,123,99       1.79%         Acadam AcVie xt US Fund       5223,616,430       2.18%       \$(560,637)       \$4,864,632       \$219,312,431       2.09%         ACR Capital       0       0.00%       (3)       0       3       0.00%         Blackstone Alt. Asset Mgm1       223,051,630       2.18%       \$(560,633)       \$4,864,632       \$219,312,431       2.09%         Doubleline Capital       522,351,630       2.18%       \$(500,633)       \$4,864,632       \$219,312,451       2.09%         Medica Produc       \$1,863,696,646       17.99%       \$(513,677,05)       \$(512,570,07)       \$(515,570,75) </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3.95%</td>								3.95%
Artisan Patrinés       673,150,031       65.77%       (91,495)       (17,897,610)       691,952,595       6.47%         Mellion ACWI ex US Fund       584,406,451       550,106,77,17%       (52,411)       (52,503,645)       533,608,001       5.03%         Lazard Ackert Mayn       550,106,77,17%       (52,812,101)       (22,503,101)       (22,513,317)       107,272,309       1.7%         Acadam ACWI ex US Fund       530,068,201       1.89%       (22,811,101)       (25,513,417)       107,272,309       1.7%         Frankink Tompston InSmalCap       144,503,586       1.49%       (22,811,101)       (25,512,47)       154,442,211       4.44         ACR Capital       0       0.00%       (3)       0       3       0.00%         Hedge Funds       \$223,516,430       2.19%       \$(560,633)       \$4,664,632       \$219,312,431       2.20%         Domestic Fixed Income       \$1,836,696,646       17.92%       \$(500,633)       \$4,664,632       \$219,312,431       2.20%         Mecksy Shiedis       622,574,079       6.07%       (31,7,62)       (17,894,160)       600,323,228       5,62%         Domestic Fixed Income       \$1,843,208,766       14,09%       \$(17,92,740)       \$14,852,309,942       15,869         Meckay Shiedis </td <td></td> <td>International Equity</td> <td>\$2.623.430.264</td> <td>25.60%</td> <td>\$(2.504.237)</td> <td>\$(129.615.426)</td> <td>\$2.755.549.927</td> <td>25.77%</td>		International Equity	\$2.623.430.264	25.60%	\$(2.504.237)	\$(129.615.426)	\$2.755.549.927	25.77%
Melion ACVM ex US Fund       694,406,641       5.70%       (91,797)       (22,666,670)       607,157,102       5.687         Baillie Gifrard Oxerseas       482,227,541       4.77%       (440,447)       (22,513,171)       107,373,00       1.787         Acadada ACVM ex US SmallCap       114,655,959       11.80%       (22,513,171)       107,373,300       1.787         Praxish Templeton Int SmalCap       114,655,959       1.48%       (22,501,371)       107,373,300       1.787         Adernatives       \$223,616,430       2.18%       \$(660,637)       \$4,864,632       \$219,312,431       2.05%         Domestic Fixed Income       \$1,836,666,464       17.92%       \$(931,068)       \$(60,432,306,430)       \$(16,832,376,430)       \$219,312,431       2.05%         Domestic Fixed Income       \$1,836,666,464       17.92%       \$(931,068)       \$(60,332,265,56,56)       56,66%       \$(22,264)       (17,694,196)       600,332,265       5,65%         DoubleLine Copital       522,157,302       6.17%       \$(31,101)       (11,69,349)       \$(41,62,790)       601,332,265       5,65%         PGIM       631,957,032       6.17%       \$(31,101)       \$(16,350,756)       \$(38,46,632)       \$(22,19,871)       \$(17,57,27,40)       \$(41,691)       \$(16,257,970)								6.47%
Ballie Giff of Overseas       442, 527, 541       4.71%       (524, 415)       (503, 545)       538, 088, 001       5.03%         Acadian ACW ox US SmallCap       184, 580, 361       1.80%       (229, 921)       (2, 513, 517)       117, 737, 339       1.75%         Franklin Tampioto Int SmallCap       184, 580, 365       1.48%       (526, 973)       54, 864, 632       5219, 312, 434       2.05%         AQR Capital       0       0.00%       (a)       0       3       0.00%         Hedge Funds       5223, 616, 430       2.15%       \$(560, 633)       \$4, 464, 632       219, 312, 431       2.05%         Ballic Kinne Alt. Asset Mgmt       223, 616, 430       2.15%       \$(500, 633)       \$4, 464, 632       219, 312, 431       2.05%         Ballic Station Alt. Asset Mgmt       223, 616, 430       2.15%       \$(500, 633)       \$4, 464, 632       219, 312, 431       2.05%         Ballic Station Alt. Asset Mgmt       223, 616, 430       2.15%       \$(500, 633)       \$4, 646, 632       219, 312, 431       2.05%         Bonsetio Fixed Income       \$13, 602, 025       \$17, 56%       \$(17, 584)       \$18, 509, 755       \$68%       \$(31, 570, 02)       \$11, 562, 758       \$14, 98, 98%       \$14, 98, 98%       \$14, 98, 98%       \$18, 987, 972, 538       \$598, 926								5.68%
Lazard Aser Myrnt.       550,106,733       5.37%       (440,245)       (25,579,509)       576,526,548       5.39%         Acadan ACW ex US SmallCap       148,656,896       1.45%       (255,221)       (25,572,157)       157,373,390       1.75%         Franklin Templeton Inti SmallCap       148,656,896       1.45%       (256,221)       (25,572,474)       154,442,291       1.44%         Alternatives       \$223,616,430       2.16%       \$(560,637)       \$4,864,632       \$219,312,431       2.05%         AOR Capital       0       0.0%       (3)       0       3       0.09%         Biockstone Alt. Asset Myrnt       223,616,430       2.16%       \$(560,633)       \$4,864,632       \$219,312,431       2.05%         Dometic Fixed Income       \$1,836,696,646       17,92%       \$(931,069)       \$(56,344,889)       \$18,87,972,633       1.66%         DoubleLine Capital       \$52,155,75       0.57%       (317,52)       (16,350,73)       \$1,455,359,942       1.88%         PoliM       \$51,943,208,766       14,06%       \$(19,991,005)       \$(22,23,81,83,95,944       1.88%       \$1,989,91       \$11,522,760       0.11%         MacKay Sheeks       \$1,443,208,766       14,06%       \$(19,991,005)       \$(22,139,651)       \$1,445,338,942 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5.03%</td>								5.03%
Acadam ACW ev US SmallCap Franklin Templeton Intl SmallCap       184,580,361       1.45%       (279,512)       (2,513,517)       117,777,309       1.45%         Atternatives       \$223,616,430       2.18%       \$(560,637)       \$4,864,632       \$219,312,434       2.05%         AOR Capital       0       0.00%       (3)       0       3       0.00%         Heige Funds       \$223,616,430       2.18%       \$(560,633)       \$4,864,632       \$219,312,431       2.05%         Domestic Fixed Income       \$1,335,666,646       17.92%       \$(931,008)       \$(50,314,659)       \$1,867,972,633       17,66%         DoubleLine Capital       582,165,355       5.68%       (282,564)       (17,884,168)       600,332,225       5.58%         PGIM       631,957,022       6.17%       (331,012)       (16,109,949)       648,957,944       5.06%         Real Assets       \$1,443,208,766       14.09%       \$(19,91,205)       \$1,465,339,944       5.68%         MCM EB DV Non-SL REIT Fd       10,759,340       0.10%       \$(1,449)       \$(61,91)       \$1,452,780       0.11%         MCM EB DV Non-SL REIT Fd       10,759,340       0.10%       \$(1,453,089,76)       \$(17,72,746)       \$941,802,742       8.61%       5.42%         Heitm								5.39%
Franklin Templeton Intl SmallCap       148,656,896       1.45%       (252,921)       (5,532,474)       154,442,291       1.44%         Atternatives       \$223,616,430       2.18%       \$(560,637)       \$4,864,632       \$219,312,431       2.05%         AOR Capital       0       0.00%       (3)       0       3       0.00%         Hedge Funds       \$223,616,430       2.18%       \$(560,633)       \$4,864,632       \$219,312,431       2.05%         Domestic Flord Income       \$1,836,696,646       17,92%       \$(301,08)       \$(55,344,693)       \$1,87,77,633       17,66%         Domestic Flord Income       \$1,836,696,646       17,92%       \$(301,08)       \$(52,344,89)       60,332,225       56,234       56,934       589       62,637,533       58,943,445       589       63,97,945       60,977       63,97,934       60,977       60,732,223       61,76%       (31,012)       (16,103,949)       \$1,82,760       0.11%         Rel       Acast       \$1,43,200,766       14,08%       \$(19,991,205)       \$2(2,199,55)       \$1,453,339,442       18,867         Rel       Dvasco Real Estate       \$1,43,200,766       14,08%       \$(19,991,205)       \$1,427,208       0.11%         McM KE ED V Non-SL REIT Fd       \$10,759,340								1.75%
ACR Capital       0       0.00%       (3)       0       3       0.00%         Hedge Funds Elackstone Alt. Asset Mgmt       5223,616,430       2.18%       \$(560,633)       \$4,864,632       \$219,312,431       2.05%         Domestic Fixed Income DubleLine Capital       51,836,696,646       17.92%       \$(931,098)       \$(50,344,889)       \$1,837,972,633       17.66%         DombleLine Capital       552,165,535       5.65%       (222,54,07)       (317,522)       (16,109,949)       643,377,946       5.86%         PGIM       G31,357,032       6.17%       (317,522)       (16,109,949)       643,377,946       5.86%         Real Assets       \$1,443,208,766       14.08%       \$(15,991,205)       \$(22,139,951)       \$1,485,339,942       13.89%         MCM EB DV Non-SL REIT Fd       10,759,340       0.10%       \$(1,449)       \$(81,991)       \$11,622,760       0.11%         MCM EB DV Non-SL REIT Fd       10,759,340       0.10%       \$(1,449)       \$(81,991)       \$11,622,780       0.11%         Heiman Real Estate       \$22,28,261       \$3,24,074,36       3.66%       \$(243,746)       \$(17,72,748)       \$344,602,742       8.81%         Heiman Value Add Real Estate       \$324,047,436       3.16%       \$(14,553,089)       \$(243,746)								1.44%
Hedge Funds Blackstone Alt. Asset Mgmt         \$223,616,430         2.18%         \$(560,633)         \$4,864,632         \$219,312,431         2.05%           Domestic Fixed Income DoubleLine Capital         \$1,836,096,646         17.92%         \$(931,086)         \$(50,544,689)         \$1,87,972,633         17,66%         5627,540,556         5.62%           Meckay Shrieds         \$622,75,102         6.17%         \$(31,022)         (16,500,73)         633,242,354         5.62%           Meckay Shrieds         \$22,75,032         6.17%         \$(31,022)         \$(16,500,73)         633,242,354         5.62%           PGIM         G31,957,032         6.17%         \$(31,022)         \$(16,609,49)         643,37,994         6.06%           REITS         \$10,759,340         0.10%         \$(1,449)         \$(661,991)         \$11,622,780         0.11%           Core Real Estate         \$22,1340,278         8.99%         \$(2,895,716)         \$(17,577,748)         \$304,082,742         8.81%           Heitman Real Estate Tr LP         \$13,058,945         5.56%         \$(514,766)         \$(90,77,40)         \$57,019,606         5.42%           Value Add Real Estate Invesco Real Estate         \$22,440,7436         3.16%         \$(14,553,089)         \$(8,155,016)         \$346,755,542         3.24% </td <td></td> <td>Alternatives</td> <td>\$223,616,430</td> <td>2.18%</td> <td>\$(560,637)</td> <td>\$4,864,632</td> <td>\$219,312,434</td> <td>2.05%</td>		Alternatives	\$223,616,430	2.18%	\$(560,637)	\$4,864,632	\$219,312,434	2.05%
Biackstone Alt. Asset Mgmt         223,616,430         2.18%         (560,633)         4,864,632         219,312,431         2.05%           Domestic Fixed Income DoubleLine Capital         51,336,696,646         17,92%         \$(50,344,889)         \$1,887,972,633         17,669           MacKay Shields         622,574,079         6.07%         (31,75,22)         (16,350,753)         639,242,354         5.98%           PGIM         623,97,079         6.07%         (31,75,22)         (16,350,753)         639,242,354         5.98%           PGIM         631,957,032         6.176%         (31,012)         (16,109,949)         648,397,944         10.06           REITS         \$10,759,340         0.10%         \$(1,449)         \$(861,991)         \$11,622,780         0.11%           MCM EB DV Non-SL REIT Fd         \$10,759,340         0.10%         \$(1,449)         \$(861,991)         \$11,622,780         0.11%           Invesco Real Estate         \$59,480,278         8.99%         \$(2,89,716)         \$(17,572,748)         \$941,802,742         8.81%           Invesco Real Estate         \$59,473,456         3.16%         \$(14,550,08)         \$(6,555,347)         362,783,136         3.34%           Clain Industrial Trust         82,228,230         0.80%         \$(24,3,74,6) </td <td></td> <td>AQR Capital</td> <td>0</td> <td>0.00%</td> <td>(3)</td> <td>0</td> <td>3</td> <td>0.00%</td>		AQR Capital	0	0.00%	(3)	0	3	0.00%
Blackstone Alt. Asset Mgmt         223,616,430         2.18%         (560,633)         4,864,632         219,312,431         2.05%           Domestic Fixed Income DoubleLine Capital         51,336,696,646         17,92%         \$(53,346,389)         \$(1,87,92,633)         17,66%           MacKay Shields         622,574,079         6.07%         (317,522)         (16,350,753)         639,242,354         5.98%           PGIM         623,957,032         6.17%         (331,012)         (16,109,949)         648,397,944         6.06%           Real Assets         \$1,443,208,786         14.08%         \$(19,991,205)         \$(22,139,951)         \$1,455,339,942         13.89%           MCM EB DV Non-SL REIT Fd         10,759,340         0.10%         (1,449)         \$(861,991)         \$11,622,780         0.11%           Invesco Real Estate         599,432,478         8.99%         \$(2,889,716)         \$(1,77,27,48)         \$941,802,742         8.81%           Invesco Real Estate         599,432,478         8.99%         \$(2,389,716)         \$(1,757,27,48)         \$941,802,742         8.81%           Carone Listate         \$222,8230         0.80%         \$(24,374,6)         (1,14,458)         81,800,516         \$42,874,742         8.100,77%           Haiman Real Estate         \$222,8								
Domestic Fixed Income         \$1,836,696,646         17.92%         \$(53,149,89)         \$1,837,972,633         17.66%           DoubleLine Capital         582,165,535         5.68%         (282,564)         (17.884,186)         600,332,285         5.68%           MacKay Shields         622,574,079         6.07%         (317,522)         (16,130,753)         600,332,285         5.89%           PGIM         631,957,032         6.17%         (331,012)         (16,109,949)         648,397,994         6.06%           Real Assets         \$1,443,206,766         14.08%         \$(19,991,205)         \$(22,139,951)         \$1,485,339,942         13.89%           REITS         \$10,759,340         0.10%         \$(1,449)         \$(861,991)         11,622,780         0.11%           MCM EB DV Non-SL REIT Fd         10,759,340         0.10%         \$(1,449)         \$(861,991)         \$11,622,780         0.11%           Invesco Real Estate         \$921,402,728         8.99%         \$(2,389,716)         \$(1,772,749)         \$841,802,722,740         18,95           Value Add Real Estate         \$224,047,405         5.56%         \$(2,889,716)         \$(1,757,973)         \$(4,863,976)         \$(2,770,970)         \$(5,655,347)         362,783,136         3.39%           Value Add Real								
DoubleLine Capital         1682, 165, 535         5.68%         (17,884,186)         600,332,285         5.62%           MacKay Shields         622,574,079         6.07%         (31,522)         (16,1630,753)         639,242,345         5.88%           PGIM         631,957,032         6.17%         (331,012)         (16,109,949)         648,397,994         6.06%           Real Assets         \$14,43,208,766         14.08%         \$(19,991,205)         \$(22,139,951)         \$11,485,339,942         13.88%           REITS         MCM EB DV Non-SL REIT Fd         10,759,340         0.10%         \$(1,449)         \$(861,991)         \$11,622,780         0.11%           Invesco Real Estate         \$921,40,278         8.99%         \$(2.889,716)         \$(17,72,44,104)         \$941,802,742         8.81%           Invesco Real Estate T LP         351,865,613         3.43%         (2.370,970)         \$(8,555,347)         \$324,773,55         3.24%           Clarion Lion Industrial Trust         82.282,200         0.80%         \$(14,553,009)         \$(14,166)         \$34,697,5542         3.24%           Jaska Pattners IV         4.490,700         4.93%         \$(14,553,009)         \$(24,27,46)         \$(14,90,70)         \$(24,27,46)         \$(14,90,70)         \$(24,27,63,16)         0.42%			220,010,100	2.1070	(000,000)	1,001,002	210,012,101	2.0070
MacKay Shields         622,574,079         6.07%         (317,522)         (16,150,753)         633,242,354         5.98%           PGIM         631,957,032         6.17%         (331,012)         (16,109,949)         648,397,994         6.06%           Real Assets         \$1,443,208,766         14.08%         \$(19,991,205)         \$(22,139,951)         \$1,485,339,942         13.89%           REITS         MCM EB DV Non-SL REIT Fd         10,759,340         0.10%         \$(1,449)         \$(861,991)         \$11,622,780         0.11%           Invesco Real Estate         \$921,340,276         8.99%         \$(2,869,716)         \$(17,72,740)         \$941,802,742         8.81%           Value Add Real Estate         \$921,340,276         8.99%         \$(2,869,716)         \$(17,572,740)         \$941,802,742         8.81%           Value Add Real Estate         \$921,340,277         8.99%         \$(2,869,716)         \$(17,572,740)         \$941,802,742         8.81%           Value Add Real Estate         \$922,340,477,436         3.16%         \$(14,553,089)         \$(6,51,55,016)         \$346,755,542         3.24%           Clarion Lion Industrial Trust         82,228,230         0.80%         (243,746)         611,458         81,860,518         0.05%         LaSalle Inc & Growth VI I P         <								17.66%
PGIM       631,957,032       6.17%       (331,012)       (16,109,949)       648,397,994       6.06%         Real Assets       \$1,443,208,766       14.08%       \$(19,991,205)       \$(22,139,951)       \$1,485,339,942       13.89%         REITS       \$10,759,340       0.10%       \$(1,449)       \$(861,991)       \$11,622,780       0.11%         MCM EB DV Non-SL REIT Fd       \$10,759,340       0.10%       \$(1,449)       \$(861,991)       \$11,622,780       0.11%         Core Real Estate       \$59,435,459       5.56%       \$(18,746)       \$(17,572,748)       \$\$94,802,742       8.81%         Heitman Real Estate       \$59,432,407,436       3.16%       \$\$(14,553,089)       \$(8,155,016)       \$346,755,542       3.24%         Value Add Real Estate       \$22,282,007,436       3.16%       \$\$(14,53,089)       \$(8,155,016)       \$346,755,542       3.24%         Harrison Street Fund VIII       44,480,708       0.43%       (187,500)       58,261       44,609,947       0.42%         Heitman Value Partners IV       44,480,728       0.05%       0.114%       60,15%       0.27%       0.643,746       60,677       0.05%       0.1641,844,500,345       0.446,903,444       0.42%       0.65%       0.28%       0.6541,8010       55,592,144 <t< td=""><td></td><td>DoubleLine Capital</td><td>582,165,535</td><td>5.68%</td><td>(282,564)</td><td>(17,884,186)</td><td>600,332,285</td><td>5.62%</td></t<>		DoubleLine Capital	582,165,535	5.68%	(282,564)	(17,884,186)	600,332,285	5.62%
Real Assets         \$1,443,208,766         14.06%         \$(19,991,205)         \$(22,139,951)         \$1,465,339,942         13.89%           REITS MCM EB DV Non-SL REIT Fd         \$10,759,340         0.10%         \$(1,449)         \$(861,991)         \$11,622,780         0.11%           Invesco Real Estate         \$921,340,278         8.99%         \$(2,889,716)         \$(17,572,748)         \$941,802,742         8.81%           Invesco Real Estate         \$5921,340,278         8.99%         \$(2,889,716)         \$(17,572,748)         \$941,802,742         8.81%           Value Add Real Estate         \$5921,340,278         8.99%         \$(2,889,716)         \$(17,572,748)         \$941,802,742         8.81%           Clarion Lion Industrial Trust         82,228,230         0.80%         \$(243,746)         611,458         81,860,518         0.75%           Clarion Lion Industrial Trust         82,228,230         0.80%         \$(243,746)         611,458         81,860,518         0.42%           LaSalle Ine & Growth VIL IP         5,006,557         0.05%         0         \$(51,610)         5548,168         0.05%           LaSalle Ine & Growth VIL IP         21,450,155         0.21%         (67,722)         (6,792,827)         28,330,144         0.28%           Starwood SOF XII         <		MacKay Shields	622,574,079	6.07%	(317,522)	(16,350,753)	639,242,354	5.98%
REITS MCM EB DV Non-SL REIT Fd       \$10,759,340       0.10%       \$(1,449)       \$(861,991)       \$11,622,780       0.11%         Core Real Estate       \$921,340,278       8.99%       \$(2,889,716)       \$(1,757,746)       \$941,802,742       8.81%         Invesco Real Estate       \$569,483,459       5.56%       (518,746)       (9,017,401)       579,019,606       5.42%         Value Add Real Estate       \$324,047,436       3.16%       \$(14,553,089)       \$(8,155,016)       \$3346,755,542       3.24%         Clarion Lion Industrial Trust       82,228,230       0.80%       (243,746)       611,458       81,860,518       0.77%         Harrison Street Fund VIII       44,480,708       0.43%       (187,500)       58,8261       44,609,947       0.42%         LaSalle Inc & Growth VI LP       5,006,567       0.05%       0       (541,601)       5,548,168       0.05%         Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,752       0.15%         Farmand       \$89,704,145       0.88%       \$(34,079)       \$921       \$90,537,333       0.22%         Invesco Parmiand Fund       \$99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         Ina		PGIM	631,957,032	6.17%	(331,012)	(16,109,949)	648,397,994	6.06%
MCM EB DV Non-SL REIT Fd       10,759,340       0.10%       (1,449)       (861,991)       11,622,780       0.11%         Core Real Estate       \$921,340,278       8.99%       \$(2,889,716)       \$(17,572,748)       \$941,802,742       8.81%         Invesco Real Estate       10,759,340       0.10%       (14,455)       (9,017,401)       579,019,066       5,42%         Heitman Real Estate Tr LP       351,856,819       3.43%       (2,370,970)       (8,555,347)       382,783,136       3.39%         Value Add Real Estate       \$324,047,436       3.16%       \$(14,553,069)       \$(8,155,016)       \$346,755,542       3.24%         Clarion Lion Industrial Trust       82,228,230       0.80%       (243,746)       611,458       81,860,518       0.7%         Harrison Street Fund VII       44,480,708       0.44%       (99,479)       1,076,418       44,500,345       0.42%         LaSalle Inc & Growth VI LP       5,006,567       0.05%       0       (541,601)       5,548,168       0.05%         Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,752       0.15%         TA Realty XI       0       0.00%       (5,530)       (2,753)       8,2,753       0.2,82,632       (2,346,676)       101,		Real Assets	\$1,443,208,786	14.08%	\$(19,991,205)	\$(22,139,951)	\$1,485,339,942	13.89%
Core Real Estate         \$921,340,278         8.99%         \$(2,889,716)         \$(17,572,748)         \$941,802,742         8.81%           Invesco Real Estate         569,483,459         5.56%         (518,746)         (9.017,7401)         579,019,606         5.42%           Heitman Real Estate Tr LP         351,856,819         3.43%         (2,370,970)         (8,555,347)         362,785,542         3.24%           Clarion Lion Industrial Trust         82,228,230         0.80%         (243,746)         611,458         81,860,518         0.77%           Harrison Street Fund VIII         44,480,708         0.44%         (19,75,500)         58,261         44,609,947         0.42%           Heitman Value Partners IV         45,477,284         0.44%         (19,9479)         1,076,418         44,500,345         0.42%           LaSalle Inc & Growth VII LP         5,006,567         0.05%         0         (541,601)         5,548,168         0.05%           Starwood SOF XII         16,821,504         0.16%         (234,056)         500,288         16,552,752         0.15%           TA Reaity X         8,774,280         0.09%         (13,878,289)         (720,104)         23,372,673         0.22%           TA Reaity XI         8,774,280         0.09%         (13,		REITS	\$10,759,340	0.10%	\$(1,449)	\$(861,991)	\$11,622,780	0.11%
Invesco Real Estate       569,483,459       5.56%       (518,746)       (9,017,401)       579,019,606       5.42%         Heitman Real Estate Tr LP       351,856,819       3.43%       (2,370,970)       (8,555,947)       382,783,136       3.39%         Value Add Real Estate       \$324,047,436       3.16%       \$(14,553,089)       \$(8,155,516)       \$346,755,542       3.24%         Clarion Lion Industrial Trust       82,228,230       0.80%       (243,746)       611,458       \$(8,166,518)       0.77%         Harrison Street Fund VIII       44,480,708       0.43%       (187,500)       58,261       44,609,947       0.42%         Heitman Value Partners IV       45,477,284       0.44%       (99,479)       1,076,418       44,500,345       0.42%         LaSalle Inc & Growth VI LP       5,006,557       0.05%       0       (541,601)       5,548,168       0.05%         LaSalle Inc & Growth VI LP       21,450,195       0.21%       (87,122)       (6,792,827)       28,300,144       0.26%         Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,752       0.15%         TA Realty XI       8,774,280       0.09%       (13,878,289)       (720,104)       23,372,673       0.22%		MCM EB DV Non-SL REIT Fd	10,759,340	0.10%	(1,449)	(861,991)	11,622,780	0.11%
Invesco Real Estate       569,483,459       5.56%       (518,746)       (9,017,401)       579,019,606       5.42%         Heitman Real Estate Tr LP       351,856,819       3.43%       (2,370,970)       (8,555,347)       362,783,136       3.39%         Value Add Real Estate       \$324,047,436       3.16%       \$(14,553,089)       \$(6,155,016)       \$346,755,542       3.24%         Clarion Lion Industrial Trust       82,228,230       0.80%       (243,746)       611,458       \$81,860,518       0.77%         Harrison Street Fund VIII       44,480,708       0.43%       (187,500)       58,261       44,609,947       0.42%         Heitman Value Partners IV       45,477,284       0.44%       (99,479)       1,076,418       44,500,345       0.42%         LaSalle Inc & Growth VI LP       5,006,567       0.05%       0       (541,601)       5,548,168       0.05%         LaSalle Inc & Growth VI LP       21,450,195       0.21%       (87,122)       (6,792,827)       28,330,144       0.26%         Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,752       0.15%         TA Realty XI       8,774,280       0.09%       (13,878,289)       (720,104)       23,372,673       0.22%		Core Real Estate	\$921.340.278	8.99%	\$(2.889.716)	\$(17.572.748)	\$941.802.742	8.81%
Heitman Real Estate Tr LP       351,856,819       3.43%       (2,370,970)       (8,555,347)       362,783,136       3.39%         Value Add Real Estate       \$324,047,436       3.16%       \$(14,553,089)       \$(8,155,016)       \$346,755,542       3.24%         Clarion Lion Industrial Trust       82,228,230       0.80%       (243,746)       611,458       81,860,518       0.77%         Harrison Street Fund VII       44,480,708       0.43%       (187,500)       58,261       44,609,947       0.42%         LaSalle Inc & Growth VI LP       5,006,567       0.05%       0       (541,601)       5,548,168       0.05%         LaSalle Inc & Growth VII LP       21,450,195       0.21%       (87,22)       (6,792,827)       28,301,144       0.26%         Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,752       0.15%         TA Realty X       0       0.00%       (5,330)       (2,753)       8,283       0.09%         TA Realty XI       8,774,280       0.99%       (13,878,289)       (720,104)       23,372,673       0.22%         TA Realty XI       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         Farmland       \$89,704,145 </td <td></td> <td>Invesco Real Estate</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5.42%</td>		Invesco Real Estate						5.42%
Clarion Lion Industrial Trust       82,228,230       0.80%       (243,746)       611,458       81,860,518       0.77%         Harrison Street Fund VIII       44,480,708       0.43%       (187,500)       58,261       44,609,947       0.42%         Heitman Value Partners IV       45,477,284       0.44%       (99,479)       1,076,418       44,609,947       0.42%         LaSalle Inc & Growth VI LP       5,006,567       0.05%       0       (541,601)       5,548,168       0.05%         LaSalle Inc & Growth VI LP       21,450,195       0.21%       (87,122)       (6,792,827)       28,330,144       0.26%         Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,752       0.15%         TA Realty X       0       0.00%       (5,530)       (2,753)       8,283       0.00%         TA Realty XII       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         TA Realty XI       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         IFC Core Farmland Fund       \$25,592,621       0.51%       (729,844)       599,683       52,722,782       0.49%         PGIM Agriculture       37,111,524								3.39%
Clarion Lion Industrial Trust       82,228,230       0.80%       (243,746)       611,458       81,860,518       0.77%         Harrison Street Fund VIII       44,480,708       0.43%       (187,500)       58,261       44,609,947       0.42%         Heitman Value Partners IV       45,477,284       0.44%       (99,479)       1,076,418       44,609,947       0.42%         LaSalle Inc & Growth VI LP       5,006,567       0.05%       0       (541,601)       5,548,168       0.05%         LaSalle Inc & Growth VI LP       21,450,195       0.21%       (87,122)       (6,792,827)       28,330,144       0.26%         Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,752       0.15%         TA Realty X       0       0.00%       (5,530)       (2,753)       8,283       0.00%         TA Realty XII       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         TA Realty XI       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         IFC Core Farmland Fund       \$25,592,621       0.51%       (729,844)       599,683       52,722,782       0.49%         PGIM Agriculture       37,111,524		Value Add Real Estate	\$324.047.436	3.16%	\$(14.553.089)	\$(8,155,016)	\$346.755.542	3.24%
Harrison Street Fund VIII       44,480,708       0.43%       (187,500)       58,261       44,609,947       0.42%         Heitman Value Partners IV       45,477,284       0.44%       (99,479)       1,076,418       44,500,345       0.42%         LaSalle Inc & Growth VI LP       5,006,657       0.05%       0       (6,1601)       5,548,168       0.05%         LaSalle Inc & Growth VII LP       21,450,195       0.21%       (87,122)       (6,792,827)       28,330,144       0.26%         Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,752       0.15%         TA Reatity X       0.00%       (5,530)       (2,753)       8,283       0.00%         TA Reatity XI       8,774,280       0.09%       (13,878,289)       (720,104)       23,372,673       0.22%         TA Reatity XI       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         IFC Core Farmland Fund       52,592,621       0.51%       (729,844)       599,683       52,722,782       0.49%         PGIM Agriculture       37,111,524       0.36%       (104,235)       (598,762)       37,814,521       0.35%         Timber       \$97,357,587       0.95%       (1,712,873		Clarion Lion Industrial Trust						0.77%
Heitman Value Partners IV       45,477,284       0.44%       (99,479)       1,076,418       44,500,345       0.42%         LaSalle Inc & Growth VIL P       5,006,567       0.05%       0       (541,601)       5,548,168       0.05%         LaSalle Inc & Growth VIL P       21,450,195       0.21%       (87,122)       (6,792,827)       28,330,144       0.26%         Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,752       0.15%         TA Realty X       0       0.00%       (5,530)       (2,753)       8,283       0.00%         TA Realty XI       8,774,280       0.09%       (13,878,289)       (720,104)       23,372,673       0.22%         TA Realty XI       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         IFC Core Farmland Fund       52,592,621       0.51%       (729,844)       599,683       52,722,782       0.49%         PGIM Agriculture       37,111,524       0.36%       (104,235)       (598,762)       37,814,521       0.35%         Timber       \$97,357,587       0.95%       \$(1,712,873)       \$4,460,420       \$94,610,040       0.88%         Pinnacle       97,357,587       0.95%       \$(1,7								0.42%
LaSalle Inc & Growth VI LP       5,006,567       0.05%       0       (541,601)       5,548,168       0.05%         LaSalle Inc & Growth VI LP       21,450,195       0.21%       (87,122)       (6,792,827)       28,330,144       0.26%         Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,52       0.15%         TA Realty X       0       0.00%       (5,530)       (2,753)       8,283       0.00%         TA Realty XI       8,774,280       0.09%       (13,878,289)       (720,104)       23,372,673       0.22%         TA Realty XI       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         IFC Core Farmland Fund       52,592,621       0.51%       (729,844)       599,683       52,722,782       0.49%         PGIM Agriculture       37,111,524       0.36%       (104,235)       (598,762)       37,814,521       0.35%         Timber       \$97,357,587       0.95%       \$(1,712,873)       \$4,460,420       \$94,610,040       0.88%         Pinnacle       97,357,559       2.44%       \$30,361,970       \$2,002,419       \$217,811,171       2.04%								0.42%
LaSalle Inc & Growth VII LP       21,450,195       0.21%       (87,122)       (6,792,827)       28,330,144       0.26%         Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,752       0.15%         TA Reatly X       0       0.00%       (13,878,289)       (720,104)       23,372,673       0.22%         TA Reatly XI       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         Farmland       \$89,704,145       0.88%       \$(834,079)       \$921       \$90,537,303       0.85%         IFC Core Farmland Fund       52,592,621       0.51%       (729,844)       599,683       52,722,782       0.49%         PGIM Agriculture       37,111,524       0.36%       (104,235)       (598,762)       37,814,521       0.35%         Timber       \$97,357,587       0.95%       \$(1,712,873)       \$4,460,420       \$94,610,040       0.88%         Pinnacle       97,357,587       0.95%       \$(1,712,873)       4,460,420       94,610,040       0.88%         Cash       \$250,175,559       2.44%       \$30,361,970       \$2,002,419       \$217,811,171       2.04%								0.05%
Starwood SOF XII       16,821,504       0.16%       (234,056)       502,808       16,552,752       0.15%         TA Realty X       0       0.00%       (5,530)       (2,753)       8,283       0.00%         TA Realty XI       8,774,280       0.09%       (13,878,289)       (720,104)       23,372,673       0.22%         TA Realty XI       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         Farmland       \$89,704,145       0.88%       \$(834,079)       \$921       \$90,537,303       0.85%         IFC Core Farmland Fund       52,592,621       0.51%       (729,844)       599,683       52,722,782       0.49%         PGIM Agriculture       37,111,524       0.36%       (104,235)       (598,762)       37,814,521       0.35%         Timber       \$97,357,587       0.95%       \$(1,712,873)       \$4,460,420       \$94,610,040       0.88%         Pinnacle       97,357,587       0.95%       \$(1,712,873)       4,460,420       94,610,040       0.88%         Cash       \$250,175,559       2.44%       \$30,361,970       \$2,002,419       \$217,811,171       2.04%		LaSalle Inc & Growth VII LP	21,450,195	0.21%	(87,122)	(6,792,827)	28,330,144	0.26%
TA Realty X       0       0.00%       (5,530)       (2,753)       8,283       0.00%         TA Realty XI       8,774,280       0.09%       (13,878,289)       (720,104)       23,372,673       0.22%         TA Realty XI       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         Farmland       \$89,704,145       0.88%       \$(834,079)       \$921       \$90,537,303       0.85%         IFC Core Farmland Fund       52,592,621       0.51%       (729,844)       559,683       52,722,782       0.49%         PGIM Agriculture       37,111,524       0.36%       (104,235)       (598,762)       37,814,521       0.35%         Timber       \$97,357,587       0.95%       \$(1,712,873)       \$4,460,420       \$94,610,040       0.88%         Pinnacle       97,357,587       0.95%       (1,712,873)       4,460,420       94,610,040       0.88%         Cash       \$250,175,559       2.44%       \$30,361,970       \$2,002,419       \$217,811,171       2.04%								0.15%
TA Realty XI       8,774,280       0.09%       (13,878,289)       (720,104)       23,372,673       0.22%         TA Realty XI       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         Farmland       \$89,704,145       0.88%       \$(834,079)       \$921       \$90,537,303       0.85%         IFC Core Farmland Fund       52,592,621       0.51%       (729,844)       599,683       52,722,782       0.49%         PGIM Agriculture       37,111,524       0.36%       (104,235)       (598,762)       37,814,521       0.35%         Timber       \$97,357,587       0.95%       \$(1,712,873)       \$4,460,420       \$94,610,040       0.88%         Qash       \$250,175,559       2.44%       \$30,361,970       \$2,002,419       \$217,811,171       2.04%		TA Realty X	0	0.00%	(5,530)	(2,753)	8,283	0.00%
TA Realtý XI       99,808,668       0.97%       182,632       (2,346,676)       101,972,712       0.95%         Farmland       \$89,704,145       0.88%       \$(834,079)       \$921       \$90,537,303       0.85%         IFC Core Farmland Fund       52,592,621       0.51%       (729,844)       599,683       52,722,782       0.49%         PGIM Agriculture       37,111,524       0.36%       (104,235)       (598,762)       37,814,521       0.35%         Timber       \$97,357,587       0.95%       \$(1,712,873)       \$4,460,420       \$94,610,040       0.88%         Pinnacle       97,357,587       0.95%       (1,712,873)       4,460,420       94,610,040       0.88%         Cash       \$250,175,559       2.44%       \$30,361,970       \$2,002,419       \$217,811,171       2.04%			8,774,280					0.22%
IFC Core Farmland Fund PGIM Agriculture       52,592,621       0.51%       (729,844)       599,683       52,722,782       0.49%         PGIM Agriculture       37,111,524       0.36%       (104,235)       (598,762)       37,814,521       0.35%         Timber Pinnacle       \$97,357,587       0.95%       \$(1,712,873)       \$4,460,420       \$94,610,040       0.88%         Cash       \$250,175,559       2.44%       \$30,361,970       \$2,002,419       \$217,811,171       2.04%								0.95%
PGIM Agriculture       37,111,524       0.36%       (104,235)       (598,762)       37,814,521       0.35%         Timber       \$97,357,587       0.95%       \$(1,712,873)       \$4,460,420       \$94,610,040       0.88%         Pinnacle       97,357,587       0.95%       (1,712,873)       4,460,420       94,610,040       0.88%         Cash       \$250,175,559       2.44%       \$30,361,970       \$2,002,419       \$217,811,171       2.04%		Farmland			\$(834,079)			0.85%
Timber Pinnacle\$97,357,587 97,357,5870.95% 0.95%\$(1,712,873) (1,712,873)\$4,460,420 4,460,420\$94,610,040 94,610,0400.88% 0.88%Cash\$250,175,5592.44%\$30,361,970\$2,002,419\$217,811,1712.04%		IFC Core Farmland Fund	52,592,621	0.51%	(729,844)	599,683	52,722,782	0.49%
Pinnacle         97,357,587         0.95%         (1,712,873)         4,460,420         94,610,040         0.88%           Cash         \$250,175,559         2.44%         \$30,361,970         \$2,002,419         \$217,811,171         2.04%		PGIM Agriculture	37,111,524	0.36%	(104,235)	(598,762)	37,814,521	0.35%
Pinnacle         97,357,587         0.95%         (1,712,873)         4,460,420         94,610,040         0.88%           Cash         \$250,175,559         2.44%         \$30,361,970         \$2,002,419         \$217,811,171         2.04%		Timber	\$97.357.587	0.95%	\$(1,712.873)	\$4.460.420	\$94.610.040	0.88%
								0.88%
		Cash	\$250,175,559	2.44%	\$30,361,970	\$2,002,419	\$217,811,171	2.04%
		Composite Fund	\$10,249,208,945	100.0%	\$(81,937,794)	\$(360,115,045)	\$10,691,261,784	100.0%



# **Asset Class Performance and Market Values**

# September 30, 2023

\$(Dollars) \$3,872,081,260 - \$2,623,430,264	<u>Weight</u> 37.78% -	Quarter (4.01%) (3.25%)	<u>Year</u> 14.99% 20.46%	Years 7.73%	<u>Years</u> 7.89%
<u> </u>	37.78% -				7 89%
\$2,623,430,264			20.70/0	9.38%	9.14%
-	25.60%	<b>(4.71%)</b> (3.49%)	<b>23.07%</b> 20.19%	<b>4.38%</b> 3.42%	<b>4.08%</b> 1.86%
		(0.4070)	20.1070	0.4270	1.0070
\$223,616,430	2.18%	2.22%	9.24%	5.06%	5.13%
\$223,616,430	2.18%	2.22%	7.24%	7.13%	5.69%
Index*** -	-	0.68%	6.80%	5.15%	5.39%
\$1,836,696,646	17.92%	(2.67%)	2.72%	(3.90%)	0.93%
-	-	(3.23%)	0.64%	(5.21%)	0.10%
\$1,443,208,786	14.08%	(1.50%)	(9.66%)	11.94%	5.92%
* -	-	(1.37%)	4.31%	8.59%	7.36%
\$10,759,340	0.10% -	<b>(7.42%)</b> (7.40%)	<b>2.23%</b> 2.61%	<b>6.10%</b> 6.12%	<b>1.29%</b> 1.56%
\$921 340 278	8 00%	(1.87%)	(12 20%)	7 75%	5.32%
	-	(2.12%)	(13.08%)	6.69%	5.22%
\$324,047,436	3.16%	(2.39%)	(12.72%)	16.64%	13.63%
-	-	(1.37%)	(8.39%)	6.04%	5.26%
\$89,704,145	0.88%	0.01%	4.68%	-	-
dex -	-	(0.26%)	5.81%	7.17%	6.13%
\$97,357,587	0.95%	<b>4.73%</b>	<b>16.83%</b>	14.02%	<b>6.15%</b> 5.87%
	-	1.37 /0	10.03 %	9.15%	5.67 /0
\$250,175,559	2.44%	1.20%	4.42%	1.80%	1.74%
\$10,249,208,945	100.00%	(3.41%)	9.91%	5.25%	5.28%
\$9,999,033,385	97.56%	(3.47%)	9.90%	<b>5.24%</b>	<b>5.29%</b> 5.77%
	\$223,616,430 Index*** \$1,836,696,646 * \$1,443,208,786 * \$10,759,340 EIT \$921,340,278 \$324,047,436 \$89,704,145 dex \$97,357,587 Index \$250,175,559 \$10,249,208,945	\$223,616,430 2.18% Index****	\$223,616,430 $2.18\%$ $2.22\%$ Index***       -       - $0.68\%$ \$1,836,696,646 $17.92\%$ $(2.67\%)$ *       -       - $(3.23\%)$ \$1,443,208,786 $14.08\%$ $(1.50\%)$ \$10,759,340 $0.10\%$ $(7.42\%)$ \$10,759,340 $0.10\%$ $(7.42\%)$ \$10,759,340 $0.10\%$ $(7.42\%)$ \$10,759,340 $0.10\%$ $(7.42\%)$ \$10,759,340 $0.10\%$ $(7.42\%)$ \$10,759,340 $0.10\%$ $(7.42\%)$ \$10,759,340 $0.10\%$ $(7.42\%)$ \$21,340,278 $8.99\%$ $(1.87\%)$ \$324,047,436 $3.16\%$ $(2.39\%)$ $  (1.37\%)$ \$89,704,145 $0.88\%$ $0.01\%$ $dex$ $ 1.37\%$ $dex$ $ 1.37\%$ \$250,175,559 $2.44\%$ $1.20\%$	$\$223,616,430$ $2.18\%$ $2.22\%$ $9.24\%$ $\$223,616,430$ $2.18\%$ $2.22\%$ $7.24\%$ $\ln dex^{***}$ $ 0.68\%$ $6.80\%$ $\$1,836,696,646$ $17.92\%$ $(2.67\%)$ $2.72\%$ $$1,836,696,646$ $17.92\%$ $(2.67\%)$ $2.72\%$ $$1,836,696,646$ $17.92\%$ $(2.67\%)$ $2.72\%$ $$1,443,208,786$ $14.08\%$ $(1.50\%)$ $(9.66\%)$ $*$ $ (1.37\%)$ $4.31\%$ $$10,759,340$ $0.10\%$ $(7.42\%)$ $2.23\%$ $$117$ $ (7.40\%)$ $2.61\%$ $$10,759,340$ $0.10\%$ $(7.42\%)$ $2.23\%$ $$217$ $ (1.37\%)$ $(12.29\%)$ $$10,759,340$ $ (1.87\%)$ $(12.29\%)$ $$324,047,436$ $3.16\%$ $(2.39\%)$ $(12.72\%)$ $$324,047,436$ $3.16\%$ $(2.39\%)$ $(12.72\%)$ $$4.68\%$ $0.01\%$ $4.68\%$ $5.81\%$ $$dex$ $ 1.37\%$ $16.83\%$ $10.03\%$ $$$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

- **Domestic Equity** underperformed the benchmark in the third quarter and over the last 5-year period.
- International Equity underperformed the benchmark in the third quarter but has exceeded the benchmark return over longer time periods.
- **Hedge Funds** outperformed the index in the third quarter and leads the benchmark over longer time periods.
- **Domestic Fixed Income** outperformed the benchmark in the third quarter and leads the index over longer trailing time periods.
- Farmland and Timber outperformed their respective benchmarks for the quarter. The Timber allocation outpaced its benchmark over the last one-, three-, and five-year periods, while Farmland trailed its benchmark over the last year.
- Value Add Real Estate lagged the benchmark in the third quarter, but the allocation meaningfully outperformed over the trailing three- and five-year periods.
- **Core Real Estate** edged its benchmark return for the quarter and outperformed over longer periods.
- **REITS** performed in line with the benchmark for the quarter and modestly underperformed over the last five years.

\* Current Quarter Target = 39% Russell 3000 Index, 24% MSCI ACWI ex US IMI Index, 19% Blmbg Aggregate Index, 16% CPI All Urban Cons +4%, 3% MSCI World Index and 2% Blmbg Aggregate Index \*\* MSCI EAFE through 12/31/2020; MSCI ACWI ex US IMI (Net) thereafter.

\*\*\* 60% MSCI World and 40% Bloomberg Aggregate through 6/30/2023; HFRI FOF: Diversified Index thereafter

\*\*\*\* CPI All Urban Consumers +4% through 6/30/2023; NCREIF Total Index thereafter



# **Total Fund Performance**

September 30, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 20 Years
10th Percentile	(1.32)	13.96	7.58	6.86	7.61	7.78
25th Percentile	(1.80)	12.42	6.31	6.25	7.18	7.47
Median	(2.30)	11.09	<b></b> 5.25 <b></b>	5.48	6.68	7.19
75th Percentile	(2.92)	9.75	4.16	4.81	6.12	6.79
90th Percentile	(3.33)	8.49	3.13	4.28	5.55	6.43
Total Fund	<mark>(3.41)</mark> (92)	9.91 (73)	5.25 (50)	5.28 (59)	6.69 (50)	7.22 (45)
Policy Target	(2.50) (62)	14.35 (7)	5.26 (49)	5.86 (36)	6.76 (47)	7.20 (48)

- The above chart shows the distribution of returns for the Callan Public Fund DB Peer Group across time periods ended September 30, 2023. Returns longer than one year annualized.
- The returns and peer group ranking for the APERS Total Fund and Total Fund Target are shown in the bottom two rows.
  - **The 25th percentile return** represents the value above which 25% of the returns fall. In other words, it's the point where a quarter of the peer group earned a higher return, and three-quarters of the peer group earned a lower return.
  - **The median return** represents the middle value in a distribution of returns. If we arrange all the returns in ascending order, the median is the value that separates the lower half from the higher half.
  - **The 75th percentile return** represents the value above which 75% of the returns fall. In other words, it's the point where three-quarters of the peer group earned a higher return, and a quarter of the peer group earned a lower return.
- Over the last one- and 5-year periods, the Fund underperformed its benchmark and finished below its peer group median.
- Over the last 3- and 10-year periods, the Fund finished in line with the benchmark and peer group median.
- For the trailing 20-year period, the Fund edged its benchmark return and ranked in the top half of its peer group.

Current Quarter Target = 39% Russell 3000 Index, 24% MSCI ACWI ex US IMI Index, 19% Blmbg Aggregate Index, 16% NCREIF Total Index, 2% HFRI FOF: Diversified Index

# **Investment Manager Returns and Peer Group Rankings**

last

last

# September 30, 2023

1					Last		Last	
	Last		Last		3		5	
	Quarter		Year		Years		Years	
Domestic Equity Russell 3000 Index Pub Pln- Dom Equity	<b>(4.01%)</b> (3.25%) (3.41%)	<b>89</b> 30	<b>14.99%</b> 20.46% 19.58%	<b>98</b> 19	<b>7.73%</b> 9.38% 9.94%	<b>91</b> 65	<b>7.89%</b> 9.14% 8.53%	<b>74</b> 18
Lazard Asset Mgmt. Russell 3000 Index Callan All Cap Broad	(8.07%) (3.25%) (3.02%)	99 54	12.22% 20.46% 19.20%	86 46	6.26% 9.38% 10.89%	78 61	6.85% 9.14% 8.27%	79 34
CastleArk Russell 3000 Growth Index Callan All Cap Broad	(4.51%) (3.34%) (3.02%)	81 60	21.61% 26.63% 19.20%	35 14	8.50% 7.54% 10.89%	64 75	10.24% 11.70% 8.27%	24 10
Mellon S&P 500 Index Fd S&P 500 Index Callan Large Cap Core	(3.27%) (3.27%) (2.46%)	85 85	21.63% 21.62% 21.19%	42 42	10.16% 10.15% 10.30%	52 52	9.61% 9.92% 9.80%	56 46
Horrell Capital - Passive Bloomberg Arkansas Index S&P 500 Index Callan All Cap Broad	(3.98%) 2.59% (3.27%) (3.02%)	69 2 54	12.53% 18.51% 21.62% 19.20%	85 60 35	10.10% 27.09% 10.15% 10.89%	57 3 57	9.07% 13.34% 9.92% 8.27%	35 5 31
Mellon Large Cap Growth Russell 1000 Growth Index Callan Large Cap Growth	(3.13%) (3.13%) (3.42%)	36 36	- 27.72% 26.41%	43	- 7.97% 5.97%	26	- 12.42% 10.53%	15
Wellington Management Russell 1000 Value Index Callan Large Cap Value	(2.91%) (3.16%) (2.07%)	76 86	17.06% 14.44% 16.45%	45 66	12.50% 11.05% 13.95%	67 83	7.29% 6.23% 6.97%	45 78
LSV Asset Management Russell 2000 Value Index Callan Small Cap Value	(0.55%) (2.96%) (1.97%)	22 63	18.81% 7.84% 13.45%	23 89	21.86% 13.32% 16.80%	16 85	5.69% 2.59% 5.20%	34 94
Stephens Investment Mgmt. Russell 2000 Growth Index Callan Small Cap Growth	(4.79%) (7.32%) (6.49%)	11 66	10.45% 9.59% 10.67%	57 60	3.40% 1.09% 2.95%	42 64	4.14% 1.55% 5.00%	63 89
Froley Revy Investment ML All Conv Callan Convert Bonds DB	(3.90%) (2.53%) (2.36%)	90 59	2.52% 7.49% 7.30%	91 47	0.88% 3.06% 2.60%	83 44	6.90% 8.36% 6.28%	35 16

#### • Total **Domestic Equity** underperformance over the last year has weighed on long-term results, as the composite trails the benchmark and peer group median over the trailing 3- and 5-year periods.

- LSV, Wellington, and Stephens led their respective benchmarks for the quarter, and LSV and Stephens ranked in the top half of their peer universe. All three managers have outperformed their benchmark over the last 5-year period.
- CastleArk, Lazard, and Froley Revy underperformed their respective benchmarks and median peer for the third quarter. CastleArk and Froley Revy trailed the benchmark over the last five years but rank in the top half of peers. Lazard has underperformed the benchmark and its peer group median over longer periods.

# **Investment Manager Returns and Peer Group Rankings**

last

last

# September 30, 2023

1 ,					Last		Last	
	Last		Last		3		5	
	Quarter		Year		Years		Years	
International Equity Benchmark* Pub Pln- Intl Equity	<b>(4.71%)</b> (3.49%) (3.70%)	<b>91</b> 17	<b>23.07%</b> 20.19% 22.07%	<b>36</b> 73	<b>4.38%</b> 3.42% 4.27%	<b>45</b> 71	<b>4.08%</b> 1.86% 3.48%	<b>27</b> 89
Artisan Partners MSCI EAFE Callan NonUS Eq	(2.59%) (4.11%) (4.58%)	25 44	33.54% 25.65% 23.96%	7 38	15.35% 5.75% 4.97%	1 43	8.83% 3.24% 3.76%	1 68
Mellon ACWI ex US Fund MSCI ACWI ex US Callan NonUS Eq	(3.73%) (3.77%) (4.58%)	37 37	20.79% 20.39% 23.96%	70 74	4.05% 3.74% 4.97%	60 62	2.90% 2.58% 3.76%	75 81
Baillie Gifford Overseas MSCI ACWIxUS Gross Callan NonUS Eq	(10.24%) (3.68%) (4.58%)	97 36	14.63% 21.02% 23.96%	96 69	<mark>(6.59%)</mark> 4.24% 4.97%	97 57	1.38% 3.07% 3.76%	93 71
Lazard Asset Mgmt. MSCI ACWIxUS Gross Callan NonUS Eq	(4.51%) (3.68%) (4.58%)	49 36	23.51% 21.02% 23.96%	53 69	4.83% 4.24% 4.97%	51 57	3.41% 3.07% 3.76%	64 71
Acadian ACW ex US SmallCap MSCI ACWI ex US Small Cap Callan Intl Small Cap	(1.35%) (1.70%) (3.83%)	10 18	18.86% 19.01% 20.07%	53 53	- 4.02% 1.65%	30	- 2.58% 1.66%	33
Franklin Templeton Intl SmallCap MSCI ACWI ex US Small Cap Callan Intl Small Cap	(3.59%) (1.70%) (3.83%)	45 18	21.78% 19.01% 20.07%	32 53	4.02% 1.65%	30	2.58% 1.66%	33
Alternatives	2.22%		9.24%		5.06%		5.13%	
Hedge Funds HFRI FOF: Diversified Index***	<b>2.22%</b> 0.68%		<b>7.24%</b> 6.80%		<b>7.13%</b> 5.15%		<b>5.69%</b> 5.39%	
Blackstone Alt. Asset Mgmt. HFRI FOF: Diversified Index*** Callan Core Diversif FoF	2.22% 0.68% 1.35%	13 84	7.24% 6.80% 5.86%	27 30	7.13% 5.15% 5.21%	10 51	5.69% 5.39% 4.08%	16 19

- Total International Equity underperformed the benchmark in the third quarter but has outpaced the benchmark over longer periods. The composite ranks in the 27<sup>th</sup> percentile of peers over the last five years.
- Artisan and Acadian led their respective benchmarks for the quarter, while Baillie Gifford, Lazard, and Franklin Templeton underperformed. Artisan, Lazard, Acadian, and Franklin Templeton ranked in the top half of their peer groups.
- Over the 5-year period, Artisan and Lazard have outperformed their respective benchmarks. Baillie Gifford underperformed over the last five years.
- Hedge Funds, Blackstone, has outpaced its target return and ranks in the top quartile of peers over the trailing 3- and 5-year periods.

\*\* MSCI EAFE through 12/31/2020; MSCI ACWI ex US IMI (Net) thereafter.

\*\*\* 60% MSCI World and 40% Bloomberg Aggregate through 6/30/2023; HFRI FOF: Diversified Index thereafter



# **Investment Manager Returns and Peer Group Rankings**

# September 30, 2023

<b> </b>					Last		Last	
	Last		Last		3		5	
	Quarter		Year		Years		Years	
Domestic Fixed Income Blmbg Aggregate Index Pub Pln- Dom Fixed	<b>(2.67%)</b> (3.23%) (2.52%)	<b>57</b> 78	<b>2.72%</b> 0.64% 2.32%	<b>32</b> 95	<b>(3.90%)</b> (5.21%) (3.65%)	<b>56</b> 92	<b>0.93%</b> 0.10% 0.97%	<b>51</b> 94
DoubleLine Capital MacKay Shields PGIM BImbg Aggregate Index Callan Core Plus FI	(2.98%) (2.56%) (2.49%) (3.23%) (2.88%)	63 20 16 82	1.77% 3.25% 3.09% 0.64% 1.84%	53 8 13 91	(3.64%) (3.76%) (4.28%) (5.21%) (4.13%)	26 31 62 96	0.34% 1.25% 1.14% 0.10% 0.91%	94 20 27 97
Real Assets NCREIF Total Index****	<b>(1.50%)</b> (1.37%)		<mark>(9.66%)</mark> 4.31%		<b>11.94%</b> 8.59%		<b>5.92%</b> 7.36%	
REITS S&P DJ US Select REIT	<b>(7.42%)</b> (7.40%)		<b>2.23%</b> 2.61%		<b>6.10%</b> 6.12%		<b>1.29%</b> 1.56%	
MCM EB DV Non-SL REIT Fd S&P DJ US Select REIT Callan Real Estate REIT	(7.42%) (7.40%) (7.43%)	49 44	2.23% 2.61% 2.59%	57 50	6.10% 6.12% 4.95%	27 26	1.29% 1.56% 4.32%	92 88
Core Real Estate NCREIF NFI-ODCE Eq Wt Net	<b>(1.87%)</b> (2.12%)		<b>(12.29%)</b> (13.08%)		<b>7.75%</b> 6.69%		<b>5.32%</b> 5.22%	
Invesco Real Estate Heitman Real Estate Trust LP***** NCREIF NFI-ODCE Eq Wt Net Callan OE Core Cmngld RE	(1.56%) (2.37%) (2.12%) (0.61%)	85 88 87	(12.39%) (12.12%) (13.08%) (11.40%)	62 60 66	6.89% 9.15% 6.69% 6.64%	45 22 49	5.19% 5.59% 5.22% 5.38%	59 47 58
Value Add Real Estate NCREIF Total Index	<b>(2.39%)</b> (1.37%)		<b>(12.72%)</b> (8.39%)		<b>16.64%</b> 6.04%		<b>13.63%</b> 5.26%	
Clarion Lion Industrial Trust Harrison Street Fund VIII Heitman Value Partners IV LaSalle Inc & Growth VI LP LaSalle Inc & Growth VII LP Starwood SOF XII TA Associates Realty Fund XI NCREIF Total Index	0.75% 0.13% 2.42% (9.76%) (24.05%) 3.08% (4.29%) (2.29%) (1.37%)		15.73% (6.00%) (33.77%) (43.08%) 2.07% (40.38%) (10.06%) (8.39%)		17.03% (15.29%) (6.00%) 10.39% 24.90% 6.04%		15.21% (10.14%) (1.53%) 10.85% 5.26%	
Farmland IFC Core Farmland Fund PGIM Agriculture NCREIF Farmland Index	<b>0.01%</b> 1.15% (1.59%) (0.26%)		<b>4.68%</b> 8.44% (0.79%) 5.81%		- - 7.17%		- - 6.13%	
Timber Pinnacle NCREIF Timberland Index	<b>4.73%</b> 4.73% 1.37%		<b>16.83%</b> 16.83% 10.03%		<b>14.02%</b> 14.02% 9.15%		<b>6.15%</b> 6.15% 5.87%	
Cash	1.20%		4.42%		1.80%		1.74%	
Total Fund Callan Public Fund Spr DB	<b>(3.41%)</b> (2.30%)	92	<b>9.91%</b> 11.09%	73	<b>5.25%</b> 5.25%	50	<b>5.28%</b> 5.48%	59
<b>Total Fund ex Cash</b> Benchmark* Callan Public Fund Spr DB	<b>(3.47%)</b> (2.93%) (2.30%)	<b>92</b> 75	<b>9.90%</b> 13.85% 11.09%	<b>73</b> 11	<b>5.24%</b> 5.11% 5.25%	<b>50</b> 54	<b>5.29%</b> 5.77% 5.48%	<b>59</b> 43

- **Domestic Fixed Income** leads the index over the last 3- and 5-year periods. All three managers delivered excess returns over the benchmark in the third quarter and have outperformed over longer periods.
- The **Real Assets** composite underperformed its target for the third quarter and over the last year. REITS performed in line with the benchmark for the quarter, and Core Real Estate outperformed.
- The **Total Fund** underperformed its benchmark and ranked below its peer group median for the quarter. The Fund ranked at the 50<sup>th</sup> percentile of peers and exceeded the benchmark over the last 3-year period. Over the last 5 years, the Fund trailed its benchmark and ranked at the 59<sup>th</sup> percentile of its peer group.

\* Current Quarter Target = 39% Russell 3000 Index, 24% MSCI ACWI ex US IMI Index, 19% Blmbg Aggregate Index, 16% CPI All Urban Cons +4%, 3% MSCI World Index and 2% Blmbg Aggregate Index \*\*\* MSCI EAFE through 12/31/2020; MSCI ACWI ex US IMI (Net) thereafter.

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\*\*\* 60% MSCI World and 40% Bloomberg Aggregate through 6/30/2023; HFRI FOF: Diversified Index thereafter

\*\*\*\* CPI All Urban Consumers +4% through 6/30/2023; NCREIF Total Index thereafter



# **Organizational Developments**

## 3<sup>rd</sup> Quarter 2023

### Acadian Asset Management – International Small Cap Equity

On October 4, 2023, Acadian announced a 7% staff reduction across the firm 28 people were terminated in total, including 7 individuals across their investment team:

- 3 individuals were from the Analytics & Data and Implementation teams (51 remaining members).
- 3 individuals were mid-level researchers (11 remaining members, although 2 new senior hires are starting in October).
- 1 associate PM on the Core Equity Team AVP level (30 remaining members, with 1 new hire starting later this year).

The firm continues to hire across its investment platform and has made several significant additions in the past five years with the expansion of its credit capabilities. Callan does not believe this announcement is an actionable event as the staffing reduction should not impact Acadian's investment strategies.

# Work Plan Update

### Asset Liability Study

Completed in February 2019. The Board decided to keep the current asset allocation unchanged

### Investment Policy Review and Update – Completed in August 2019

### Non-US Equity Structure Study

- The Board reviewed the Non-US Equity Structure Study at the November 2019 Board Meeting
- The Board selected a structure which included a new allocation to Non-US Small Cap Equity
- The Non-US Small Cap Equity search was concluded in November 2020 with the selection of Acadian Asset Management and Franklin Templeton Investments

### **Real Assets Structure Study**

- The Board reviewed the Real Assets Structure at the February 2021 meeting. The Board chose to eliminate the Energy equity allocation, in favor of additional Core and Core Plus real estate, and Farmland. Additional Allocations to Value-add real estate were also approved
- At the May 2021 Board Meeting, the Board approved the Real Estate Pacing Study and new commitments to Starwood and Harrison Street Partners
- At the November 2021 Board Meeting, Farmland managers were interviewed and both IFC and PGIM were allocated \$50 million.
- Core Plus Real Estate Manager Interviews occurred at the February Board Meeting, all three managers, Carlyle, Principal, and Clarion, were hired to manage \$85 million.

### **Domestic Equity Structure Study**

• Presented at the August 2022 Board Meeting. The Board decided to maintain the current Domestic Equity Structure.

### Private Equity Education and Total Fund Asset Allocation Review

- Private equity education was provided at the Trustee Workshop in October 2022. In the November 2022 meeting the Board received an asset allocation review which included portfolios containing private equity.
- The Board requested that Callan complete a Private Equity pacing analysis using a 5% private equity target allocation for the Fund.

# Work Plan Update

### Total Fund Asset Allocation Review Update and Private Equity Pacing Study Analysis

• Presented at the February 2023 meeting

### Private Equity Education, Pacing Study Review

- Additional Private Equity education provided on May 16<sup>th</sup>, 2023
- Private Equity Pacing Study results presented at the May 16th, 2023 meeting

### **Upcoming Projects:**

- Investment Policy Review
- Fixed Income Structure Study

# **Total Fund Relative Attribution**

# September 30, 2023

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	39%	39%	(4.01%)	(3.25%)	(0.29%)	0.00%	(0.29%)
Domestic Fixed Income		19%	(2.67%)	(3.23%)	0.10%	0.00%	0.10%
International Equity	26%	24%	(4.71%)	(3.49%)	(0.32%)	(0.01%)	(0.33%)
Alternatives	2%	2%	2.22%	0.68%	0.03%	0.00%	0.03%
Real Assets	14%	16%	(1.50%)	(1.37%)	(0.02%)	(0.04%)	(0.06%)
Cash	2%	0%	1.20%	1.20%	0.00%	0.06%	0.06%
Total			(3.41%) =	(2.93%) +	(0.49%) +	0.01%	(0.48%)

Relative Attribution Effects for Quarter ended September 30, 2023

#### Three Year Annualized Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	39%	37%	7.73%	9.38%	(0.62%)	0.13%	(0.50%)
Domestic Fixed Income	9 17%	18%	(3.90%)	(5.21%)	0.22%	0.11%	0.33%
International Equity	25%	24%	4.38%	3.42%	0.25%	(0.07%)	0.18%
Alternatives	4%	5%	5.06%	4.22%	0.05%	0.01%	0.06%
Real Assets	13%	16%	11.94%	8.59%	0.26%	(0.17%)	0.09%
Cash	1%	0%	1.80%	1.80%	0.00%	(0.02%)	(0.02%)
Total			5.25% =	5.11%	+ 0.15% +	(0.01%)	0.14%

#### **Five Year Annualized Relative Attribution Effects**

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	39%	37%	7.89%	9.14%	(0.48%)	0.03%	(0.45%)
Domestic Fixed Income	17%	18%	0.93%	0.10%	0.11%	(0.08%)	0.04%
International Equity	25%	24%	4.08%	1.86%	0.56%	(0.07%)	0.48%
Alternatives	4%	5%	5.13%	5.70%	(0.03%)	0.00%	(0.02%)
Real Assets	14%	16%	5.92%	7.36%	(0.36%)	(0.15%)	(0.51%)
Cash	1%	0%	1.74%	1.74%	0.00%	(0.02%)	(0.02%)
Total			5.28% =	5.77%	+ (0.20%) +	(0.29%)	(0.49%)

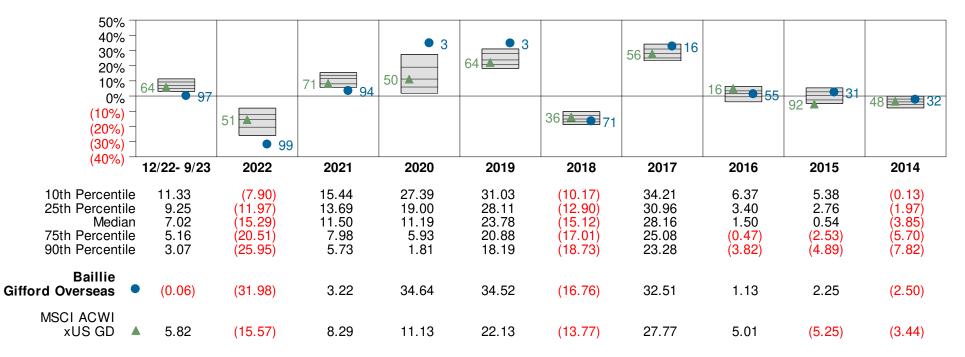
- Active management was the primary detractor for the quarter. Domestic and International Equity outweighed positive contributions from and Fixed Income managers. Variance from policy weights had a muted impact overall.
- Over the last three years, active management had a positive impact on relative performance. Domestic Equity was the only asset class where active management detracted. The Fund benefited from an overweight to domestic Equity and an underweight to Fixed Income, but an underweight to Real Assets and an overweight to International Equity were detractors.
- The Fund trailed its policy benchmark return over the last five years. Active management within International Equity and Fixed Income added value, while Domestic Equity and Real Assets managers were the primary detractors. Underweights to Real Assets and Fixed Income and the overweight to International Equity also detracted. The small allocation to cash also was a headwind to relative performance.

Current Quarter Target = 39% Russell 3000 Index, 24% MSCI ACWI ex US IMI Index, 19% Blmbg Aggregate Index, 16% NCREIF Total Index, 2% HFRI FOF: Diversified Index

# **Manager Spotlight**

# **Baillie Gifford**

### Performance vs Callan Non-US Equity (Gross)



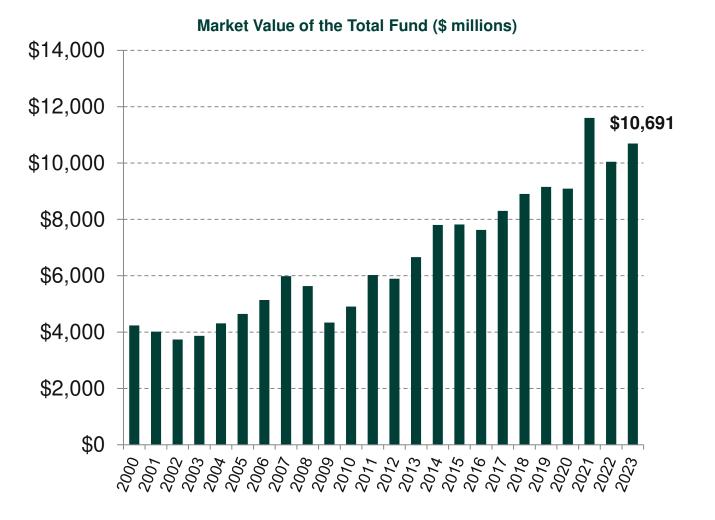
• Baillie Gifford outperformed the benchmark and placed in the top third of its peer group in 5 of the last 9 full calendar years.

• Recently, Baillie Gifford has underperformed the benchmark and ranked in the bottom decile of peers in two consecutive calendar years. The strategy trails the benchmark and ranks in the 99<sup>th</sup> percentile of its peer group year-to-date.

# **Historical Market Values of the Total Fund**

Fiscal Year-End Market Values

Fiscal Year Ending	Market Value
2000	\$4,236,749,732
2001	\$4,012,745,608
2002	\$3,739,381,695
2003	\$3,869,787,673
2004	\$4,307,589,827
2005	\$4,642,924,118
2006	\$5,136,985,259
2007	\$5,985,111,493
2008	\$5,633,155,289
2009	\$4,341,419,711
2010	\$4,907,734,835
2011	\$6,022,965,592
2012	\$5,896,862,618
2013	\$6,662,631,673
2014	\$7,800,291,923
2015	\$7,820,289,128
2016	\$7,624,665,446
2017	\$8,301,352,120
2018	\$8,904,393,859
2019	\$9,153,121,783
2020	\$9,093,497,703
2021	\$11,602,695,185
2022	\$10,042,629,672
2023	\$10,691,261,784



# **Benchmark Definitions**

1. Total Fund Benchmark (Target): Blend of asset class benchmarks at policy weights. The Long-Term Target was established in July 2023; however, the benchmark will be modified in accordance with the actual implementation. This process reflects the practical implementation of the strategic long-term asset allocation.

	Long-Term	3Q 2023
	Target	Target
Russell 3000	39.0%	39.0%
MSCI ACWI XUS IMI	17.0	24.0
Bloomberg Aggregate	21.0	19.0
Real Assets	16.0	16.0
Alternatives	7.0	2.0
<ul> <li>Private Equity</li> </ul>	5.0	0.0
- Hedge Funds	2.0	2.0
Total Target	100.0%	100.0%

- 2. Domestic Equity Benchmark: Russell 3000 Index
- 3. International Equity Benchmark: MSCI ACWI xUS IMI Index; Prior to 12/31/2020 MSCI EAFE Index
- 4. Fixed Income Benchmark: Bloomberg Aggregate Index
- 5. Real Assets: NCREIF Property Index; Prior to 7/1/2023 CPI All Urban Consumers + 4%
- 6. Private Equity: Russell 3000 Index +3%
- 7. Hedge Funds: HFRI Diversified Index; Prior to 7/1/2023 60% MSCI World and 40% Bloomberg Aggregate.

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