



Executive Summary First Quarter 2022

Arkansas Public Employees
Retirement System

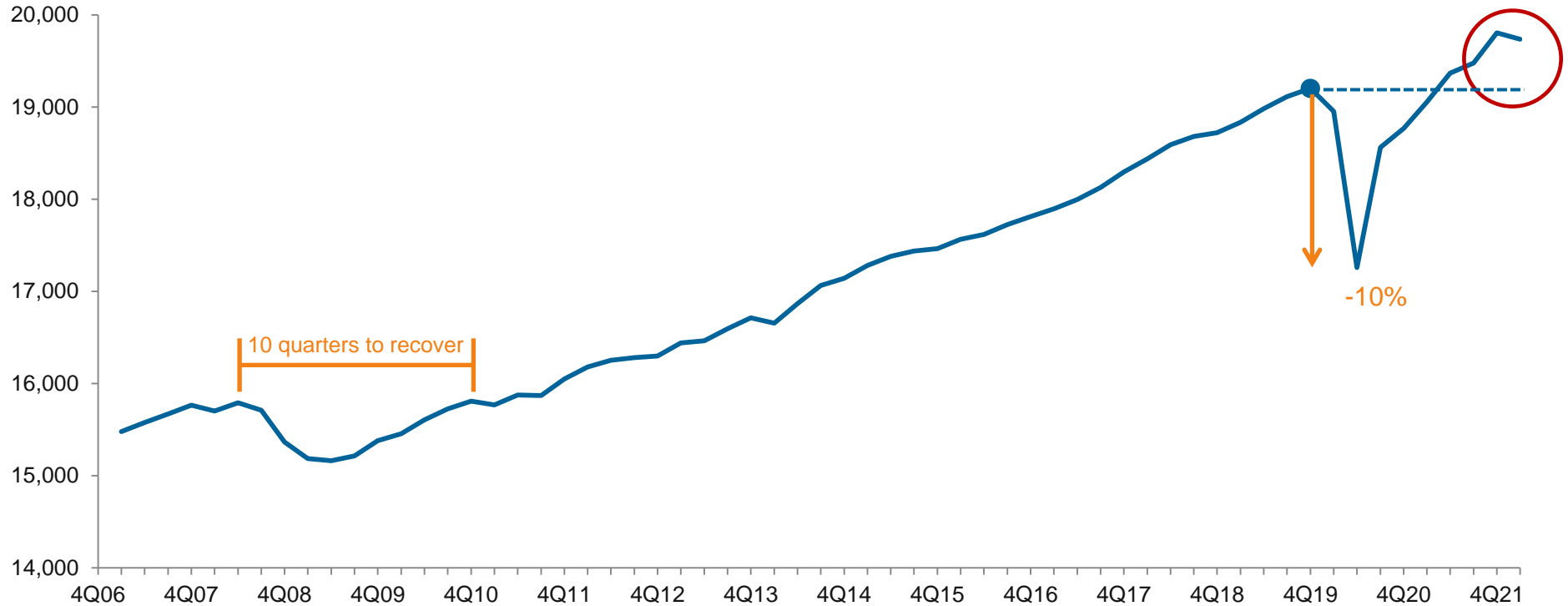
Brianne Weymouth, CAIA
Senior Vice President

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GDP Dipped in 1Q22 After Rocketing Out of the Pandemic Bottom

Recovered pre-pandemic level in 2Q21 after deepest drop in 75 years

Seasonally Adjusted Real GDP in Billions of Dollars



Consensus estimates for GDP growth in 2022 have been scaled back, from north of 4% at the start of the year to 3% or lower

– 1Q22 GDP fell 1.4% in U.S.

– Loss of business and consumer confidence following the start of the conflict in Ukraine

Source: Federal Reserve Bank of St. Louis

Down Equity and Fixed Income Markets in 1Q22

Negative returns for stocks and bonds at the same time are unusual

Global equity markets are down sharply following the invasion of Ukraine:

- Similar impact across developed markets
- Greater impact on small cap and emerging markets

Fixed income down with sharply higher inflation and interest rates:

- Blmbg Aggregate: -5.9% (and much worse since, -9.5% through April)
- CPI-U: +8.5% for the year ended 1Q22

Number of times stocks and bonds have been down together:

- 37 quarters in almost 100 years, about 10% of the quarters
- But just twice on annual basis

Inflation spiked to the highest rate reported in decades.

Economic data show growth hit “pause” in the U.S.:

- GDP fell 1.4% in 1Q22, down from almost 7% GDP growth in 4Q21
- Forecasters are revising growth estimates for 2022 down to 3% or lower.

Returns for Periods ended 3/31/22

	1 Quarter	1 Year	5 Years	10 Years	25 Years
U.S. Equity					
Russell 3000	-5.28	11.92	15.40	14.28	9.53
S&P 500	-4.60	15.65	15.99	14.64	9.44
Russell 2000	-7.53	-5.79	9.74	11.04	8.88
Global ex-U.S. Equity					
MSCI World ex USA	-4.81	3.04	7.14	6.25	5.25
MSCI Emerging Markets	-6.97	-11.37	5.98	3.36	--
MSCI ACWI ex USA Small Cap	-6.52	0.03	7.89	7.28	6.70
Fixed Income					
Bloomberg Aggregate	-5.93	-4.15	2.14	2.24	4.71
90-day T-Bill	0.04	0.06	1.13	0.63	2.01
Bloomberg Long Gov/Credit	-10.95	-3.11	4.60	4.72	6.93
Bloomberg Global Agg ex-US	-6.15	-7.89	1.27	0.06	3.40
Real Estate					
NCREIF Property	5.33	21.87	8.54	9.61	9.50
FTSE Nareit Equity	-3.86	26.49	9.63	9.81	9.69
Alternatives					
CS Hedge Fund	2.13	7.47	5.48	4.71	6.61
Cambridge Private Equity*	5.01	48.84	21.29	17.11	15.64
Bloomberg Commodity	25.55	49.25	9.00	-0.70	1.90
Gold Spot Price	6.86	13.90	9.33	1.57	7.07
Inflation - CPI-U	3.12	8.54	3.35	2.28	2.37

*Cambridge PE data through 09/30/21.

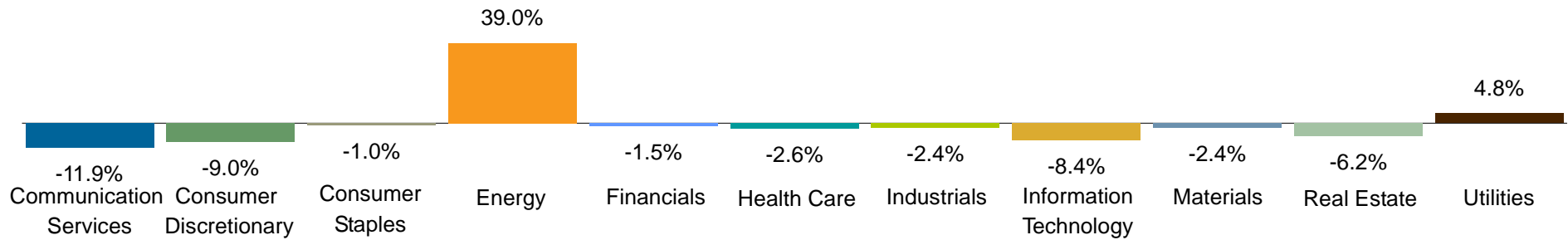
Sources: Bloomberg, Callan, Cambridge, Credit Suisse, FTSE Russell, MSCI, NCREIF, S&P Dow Jones Indices

U.S. Equity Performance: 1Q22

Returns take a step back given increased macro uncertainty

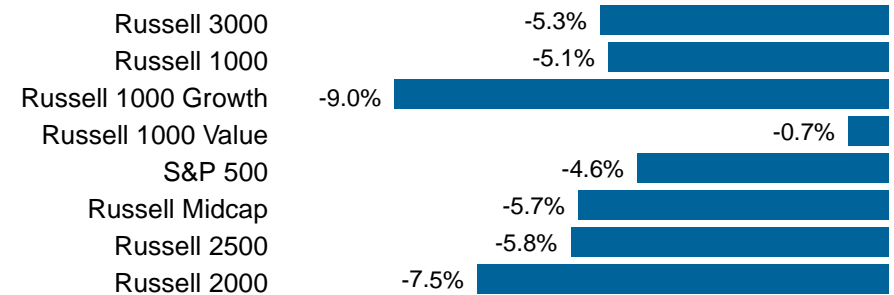
- The S&P 500 Index fell 4.6% in 1Q, but was down more than 12% early in March before staging a rally into quarter-end.
- Value stocks sharply outpaced growth across capitalizations, with the spread exceeding 10% in both mid and small caps and just over 8% in large caps.
- Energy (+39%) was the best-performing sector given a 33% spike in WTI crude oil prices. Commodity-linked Basic Materials and Utilities sectors also performed well on a relative basis.
- Communication Services (-12%), Consumer Discretionary (-9%), and Information Technology (-8%) were the worst-performing sectors.
- Uncertainty over rates, inflation, and geopolitical tensions all contributed to a volatile and risk averse environment.
- Interestingly, the Russell Dynamic Index (-4.3%) outperformed the Russell Defensive Index (-5.9%) during the 1Q downturn. Quality did not hold up as well as expected in some sectors.

Industry Sector Quarterly Performance (S&P 500)

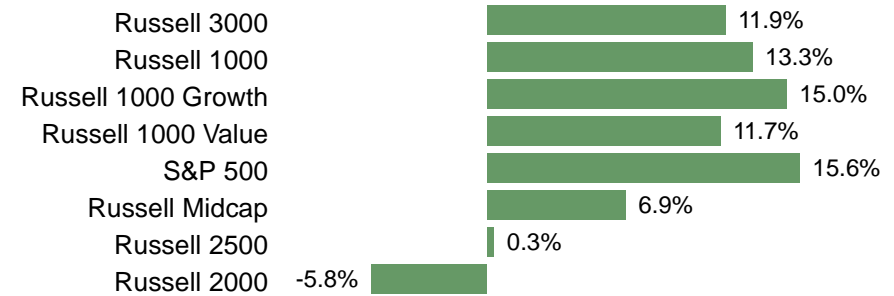


Sources: FTSE Russell, S&P Dow Jones Indices

U.S. Equity: Quarterly Returns



U.S. Equity: One-Year Returns



Global ex-U.S. Equity Performance: 1Q22

War in Ukraine stoked market volatility

- In the aftermath of invading Ukraine, Russia faced condemnation and sanctions that crippled its stocks, bonds, and currency and shocked the global markets.
- The fog of war exacerbated inflationary concerns and led energy prices to surge as Russia is the second-largest natural gas provider and the third-largest oil producer in the world.
- Energy exporters notably outperformed importers.

Fears of COVID-19

- A resurgence of COVID-19 cases in Europe and Asia, specifically in China, weighed on global recovery.
- China's zero-COVID policy has injected doubt into the 2022 GDP growth projection of 5.5%, already its lowest annual target in more than 25 years.

Growth vs. value

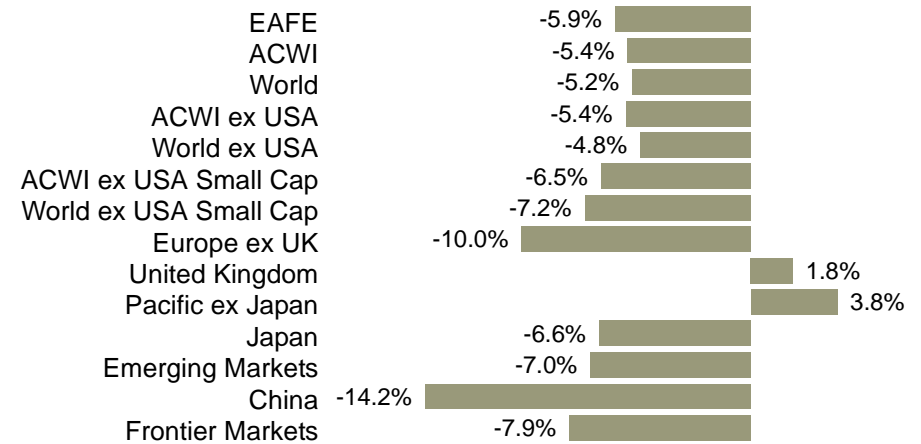
- Value sectors such as Energy, Materials, and Financials were in favor relative to growth sectors like Consumer Discretionary and Information Technology due to a combination of recession fears and tightening monetary cycle.
 - However, Energy was the worst performer within Emerging Markets due to the removal of Russia from indices with effectively zero value.

U.S. dollar vs. other currencies

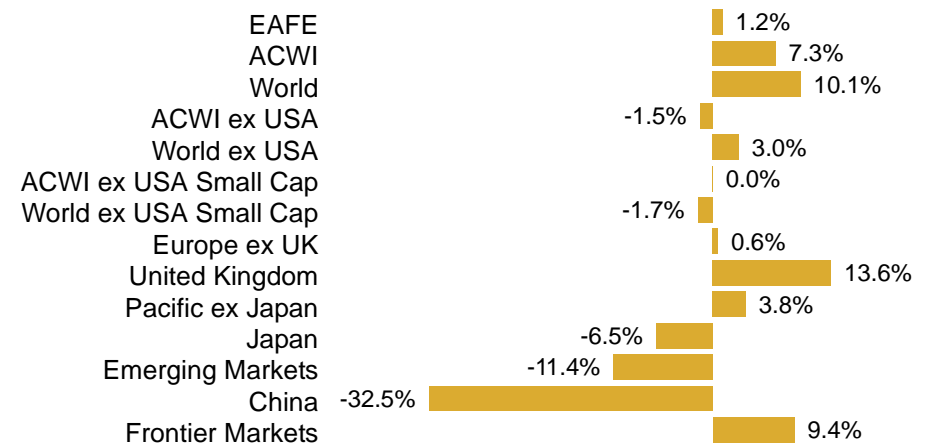
- With the uncertainty of war, the U.S. dollar strengthened against other major currencies.

Source: MSCI

Global Equity: Quarterly Returns



Global Equity: One-Year Returns



U.S. Fixed Income Performance: 1Q22

Bonds hit hard as rates rose sharply

- Bloomberg Aggregate worst quarterly return since 1980
- Curve flattened; as of 3/31 5-year UST yield 10 bps higher than 10-year UST yield (2.42% vs 2.32%)
- TIPS outperformed nominal Treasuries and 10-year breakeven spreads widened to 2.84% from 2.56% as of year-end.
- Fed raised rates by 25 bps with many more hikes expected this year.

Credit sectors underperformed

- Investment grade corporates underperformed duration-matched U.S. Treasuries by 145 bps; RMBS by 71 bps.
- High yield “benefited” from less interest rate sensitivity and relatively higher exposure to the energy sector; excess return vs. U.S. Treasuries was 92 bps.
- Defaults remain low (less than 1%) and yield breached 6%.

Leveraged loans performed relatively well

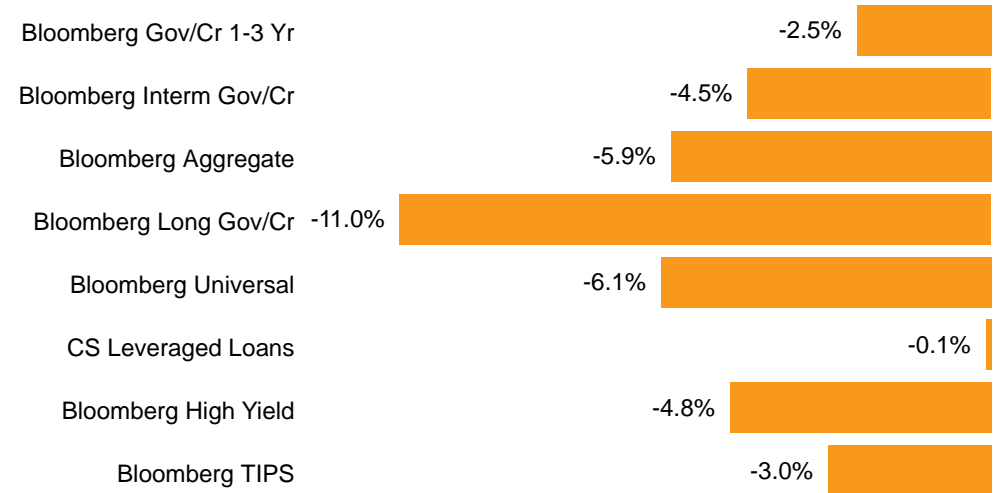
- Helped by floating rate coupons / low duration

Securitized sectors performed relatively well

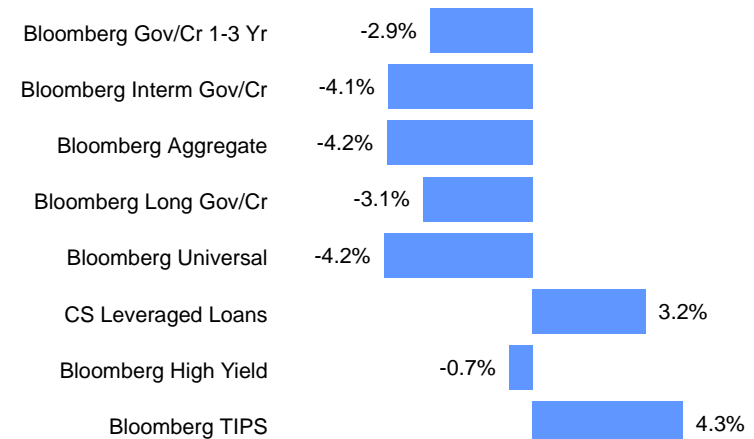
- Consumer ABS held up the best within the sector due to its shorter duration profile and solid consumer spending.
- Conduit CMBS traded in line as economy re-opens.
- Agency MBS saw duration extend by 0.4 yr due to higher rates (deters refinancing and slows payments to monthly mins).

Source: Bloomberg

U.S. Fixed Income: Quarterly Returns



U.S. Fixed Income: One-Year Returns



U.S. Private Real Estate Market Trends: 1Q22

Continued strong performance across the asset class

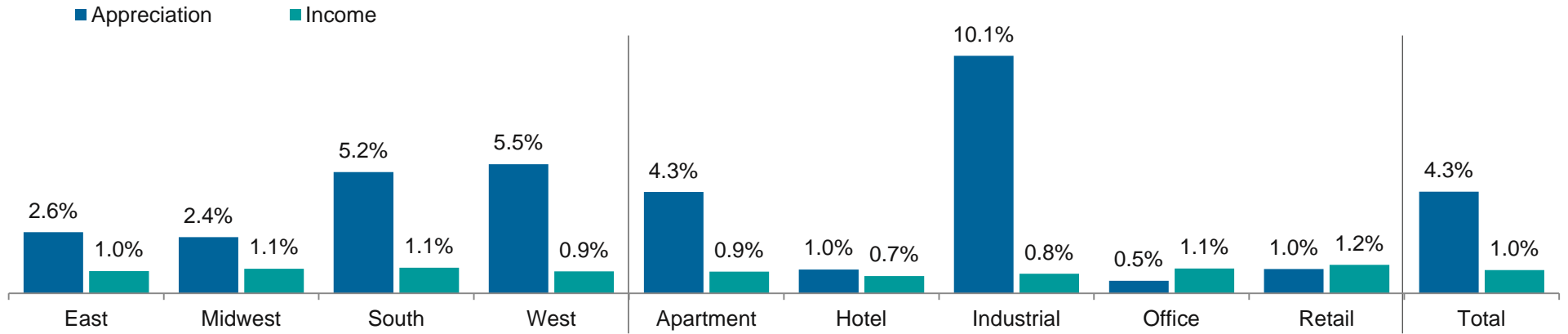
Another strong quarter for real estate

- Income returns were positive across sectors.
- Valuations are reflective of strong fundamentals in Industrial and Apartment and continued uncertainty despite a modest recovery in Office and Retail.
- Return dispersion by manager within the ODCE Index was due to the composition of underlying portfolios.
- Niche sectors such as self-storage and life sciences continued to be accretive.

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
NCREIF ODCE	7.4%	28.5%	11.3%	9.9%	10.9%
Income	0.9%	4.0%	4.0%	4.1%	4.5%
Appreciation	6.4%	23.8%	7.1%	5.6%	6.2%
NCREIF Property Index	5.3%	21.9%	9.6%	8.5%	9.6%
Income	1.0%	4.2%	4.3%	4.4%	4.6%
Appreciation	4.3%	17.2%	5.2%	4.0%	4.8%

Returns are geometrically linked

NCREIF Property Index Quarterly Returns by Region and Property Type



Source: NCREIF, ODCE return is net

Multi-Asset Class (MAC) Performance: 1Q22

Commodities and value equities aided performance

Long biased MACs

- The median Callan Long Biased manager fell 5.1%, outperforming the 60% ACWI/40% Agg, which lost 5.5% in 1Q22, with growth equity the main drag on performance.

Risk parity MACs

- The median Callan Risk Parity manager declined 4.8%, as commodity exposure was not able to offset negative performance from equities and fixed income.

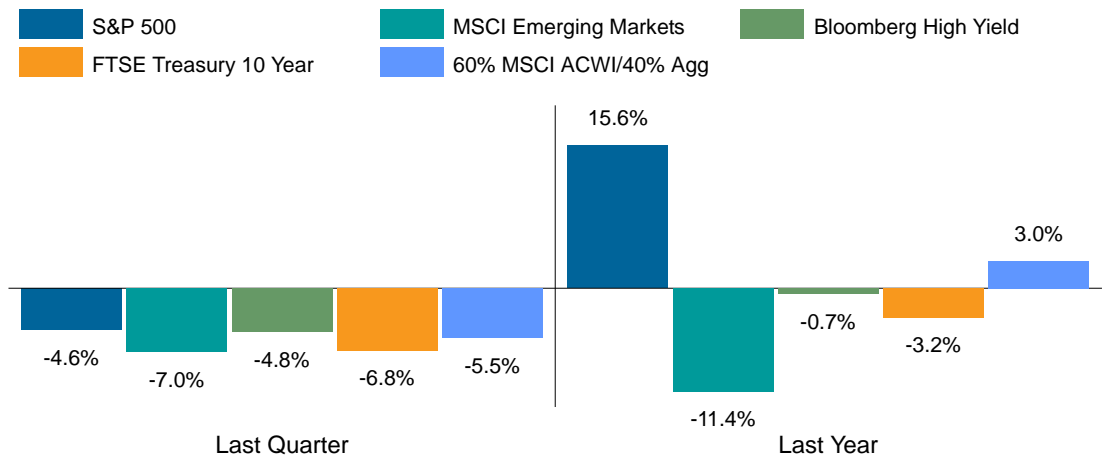
Absolute return MACs

- The median Callan Absolute Return manager dropped 1.2%, as global value positioning helped cushion some of the negative performance coming from growth equities.
- Commodities and currencies were positive on performance during the quarter.

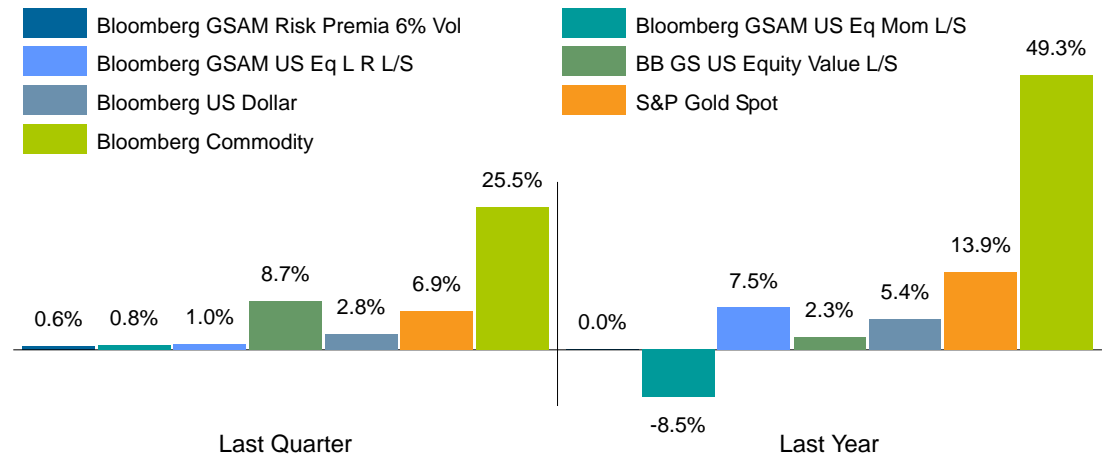
Risk premia MACs

- Bloomberg GSAM Risk Premia 6% Vol moved up 0.6% in 1Q.
- The median Callan Risk Premia manager declined 0.3%, as commodity outperformance was not able to offset equity beta.

Traditional Market Beta Returns

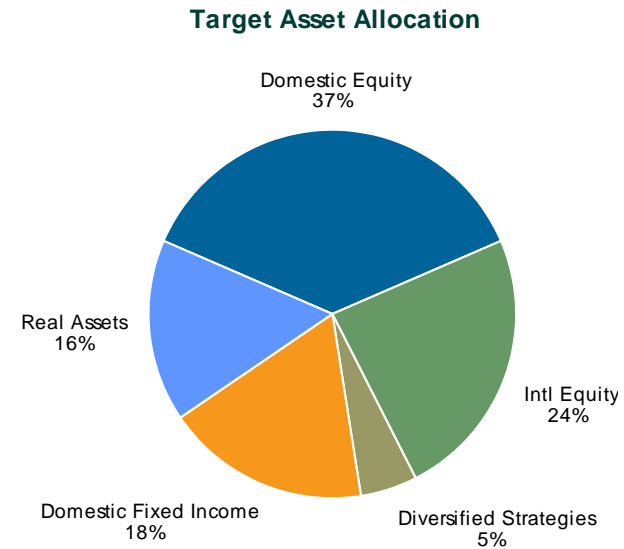
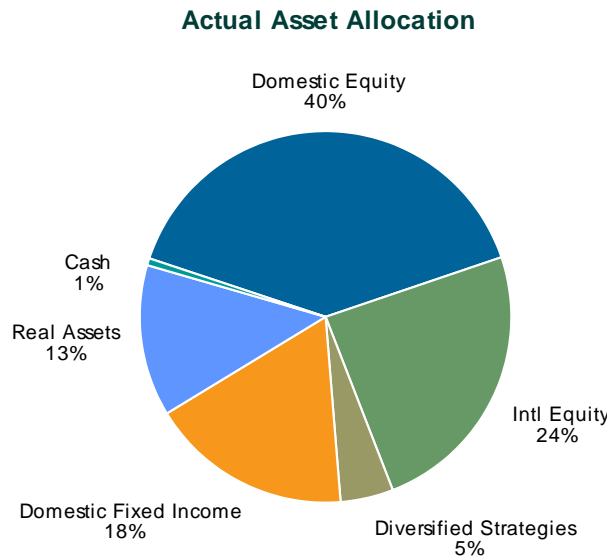


Alternative Betas and Other Market Returns



Sources: Bloomberg, Bloomberg Goldman Sachs Asset Management, FTSE Russell, MSCI, S&P Dow Jones Indices

Actual vs. Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
Domestic Equity	4,501,726	39.7%	37.0%	2.7%	306,059
Intl Equity	2,755,998	24.3%	24.0%	0.3%	34,484
Diversified Strategies	517,649	4.6%	5.0%	(0.4%)	(49,333)
Domestic Fixed Income	1,999,942	17.6%	18.0%	(0.4%)	(41,193)
Real Assets	1,501,813	13.2%	16.0%	(2.8%)	(312,530)
Cash	62,513	0.6%	0.0%	0.6%	62,513
Total	11,339,642	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.

Investment Manager Asset Allocation

	March 31, 2022			December 31, 2021		
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Total Domestic Equity	\$4,501,726,230	39.70%	\$(59,244,509)	\$(285,195,701)	\$4,846,166,439	40.38%
Lazard Asset Mgmt.	517,407,449	4.56%	(410,762)	(30,101,622)	547,919,833	4.57%
CastleArk	616,502,308	5.44%	(32,047,061)	(44,674,940)	693,224,309	5.78%
Mellon S&P 500 Index Fd	711,863,817	6.28%	(273,980)	(34,296,502)	746,434,300	6.22%
Horrell Capital - Passive	203,549,949	1.80%	(85,631)	(8,170,510)	211,806,090	1.76%
Wellington Management	564,133,901	4.97%	(6,429,980)	(3,340,010)	573,903,891	4.78%
Intech	545,843,381	4.81%	(18,055,528)	(62,456,286)	626,355,196	5.22%
LSV Asset Management	355,671,172	3.14%	(516,357)	(3,319,462)	359,506,991	3.00%
Stephens Investment Mgmt.	509,886,844	4.50%	(920,686)	(70,942,377)	581,749,907	4.85%
SSI Investment Mgmt.	476,867,408	4.21%	(504,523)	(27,893,992)	505,265,923	4.21%
International Equity	\$2,755,998,438	24.30%	\$(2,682,340)	\$(244,604,878)	\$3,003,285,657	25.02%
Artisan Partners	626,403,153	5.52%	(848,389)	(11,459,758)	638,711,300	5.32%
Mellon ACWI ex US Fund	622,276,769	5.49%	(97,821)	(35,331,211)	657,705,801	5.48%
Baillie Gifford Overseas	577,231,609	5.09%	(658,033)	(136,922,266)	714,811,908	5.96%
Lazard Asset Mgmt.	566,125,479	4.99%	(473,989)	(36,906,285)	603,505,754	5.03%
Acadian ACW ex US SmallCap	203,621,593	1.80%	(307,482)	(1,247,597)	205,176,672	1.71%
Franklin Templeton Intl SmallCap	160,055,581	1.41%	(296,489)	(22,731,616)	183,083,686	1.53%
Manning & Napier Advisors	284,255	0.00%	(137)	(6,144)	290,536	0.00%
Diversified Strategies	\$517,648,696	4.56%	\$(727,243)	\$(10,118,598)	\$528,494,537	4.40%
AQR Capital	167,529,532	1.48%	0	(3,797,840)	171,327,372	1.43%
Blackstone Alt. Asset Mgmt	207,882,480	1.83%	(521,272)	1,034,350	207,369,401	1.73%
Newton Capital	142,236,684	1.25%	(205,972)	(7,355,108)	149,797,764	1.25%
Domestic Fixed Income	\$1,999,942,329	17.64%	\$(1,034,829)	\$(127,134,349)	\$2,128,111,507	17.73%
DoubleLine Capital	632,316,461	5.58%	(304,235)	(33,547,600)	666,168,296	5.55%
MackKay Shields	679,880,895	6.00%	(361,413)	(46,751,480)	726,993,789	6.06%
PGIM	687,744,973	6.06%	(369,181)	(46,835,269)	734,949,423	6.12%
Real Assets	\$1,501,812,781	13.24%	\$(27,846,973)	\$89,394,312	\$1,440,265,443	12.00%
Energy	\$14,970	0.00%	\$(143)	\$120	\$14,992	0.00%
CastleArk Glob Energy Fd	14,970	0.00%	(143)	120	14,992	0.00%
REITS	\$146,700,164	1.29%	\$(17,762,272)	\$(6,399,185)	\$170,861,622	1.42%
MCM EB DV Non-SL REIT Fd	146,700,164	1.29%	(17,762,272)	(6,399,185)	170,861,622	1.42%
Core Real Estate	\$977,247,188	8.62%	\$(3,932,320)	\$68,415,632	\$912,763,876	7.60%
Invesco Real Estate	614,666,178	5.42%	(444,110)	37,771,496	577,338,792	4.81%
Heitman Real Estate Tr LP	362,581,010	3.20%	(3,488,210)	30,644,136	335,425,084	2.79%
Value Add Real Estate	\$299,470,247	2.64%	\$(1,289,823)	\$26,828,011	\$273,932,060	2.28%
Harrison Street Fund VIII	30,082,005	0.27%	1,269,098	0	28,812,907	0.24%
Heitman Value Partners IV	62,709,212	0.55%	3,573,482	3,713,460	55,422,270	0.46%
LaSalle Inc & Growth VI LP	8,090,463	0.07%	(17,185)	91,668	8,015,980	0.07%
LaSalle Inc & Growth VII LP	37,206,596	0.33%	(5,891,049)	1,431,784	41,665,862	0.35%
Starwood SOF XII	9,451,739	0.08%	7,970,418	1,481,321	-	-
TA Realty X	24,168	0.00%	(231,818)	(10,228)	266,214	0.00%
TA Realty XI	48,302,084	0.43%	(4,959,253)	6,370,791	46,890,546	0.39%
TA Realty XII	103,603,980	0.91%	(3,003,516)	13,749,215	92,858,281	0.77%
Timber	\$78,380,213	0.69%	\$(4,862,414)	\$549,734	\$82,692,893	0.69%
Pinnacle	78,380,213	0.69%	(4,862,414)	549,734	82,692,893	0.69%
Cash	\$62,513,368	0.55%	\$6,213,340	\$25,522	\$56,274,505	0.47%
Composite Fund	\$11,339,641,842	100.0%	\$(85,322,554)	\$(577,633,692)	\$12,002,598,088	100.0%

Asset Class Performance and Market Values

	Market Value \$(Dollars)	Ending Weight	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years
Domestic Equity Russell 3000 Index	\$4,501,726,230 -	39.92% -	(5.87%) (5.28%)	2.25% 3.40%	9.77% 11.92%	17.66% 18.24%	15.05% 15.40%
International Equity MSCI EAFE	\$2,755,998,438 -	24.44% -	(8.15%) (5.91%)	(9.39%) (3.81%)	(3.79%) 1.16%	9.55% 7.78%	8.21% 6.72%
Diversified Strategies Diversified Strategy Trgt**	\$517,648,696 -	4.59% -	(1.91%) (5.47%)	0.12% (1.04%)	5.25% 4.28%	6.69% 10.07%	6.68% 8.66%
Domestic Fixed Income Blmbg Aggregate	\$1,999,942,329 -	17.73% -	(5.98%) (5.93%)	(5.60%) (5.87%)	(2.96%) (4.15%)	2.84% 1.69%	3.26% 2.14%
Real Assets CPIU + 4%	\$1,501,812,781 -	13.32% -	6.27% 4.02%	21.50% 8.75%	27.85% 12.54%	11.29% 8.19%	9.21% 7.36%
REITS S&P DJ US Select REIT	\$146,700,164 -	1.30% -	(3.71%) (3.71%)	14.82% 14.28%	28.31% 27.72%	9.59% 9.90%	- 8.89%
Core Real Estate NFI-ODCE Eq Wt Net	\$977,247,188 -	8.67% -	7.52% 7.77%	19.59% 23.53%	25.04% 28.69%	9.27% 11.11%	8.61% 9.46%
Value Add Real Estate NCREIF Total Index	\$299,470,247 -	2.66% -	9.51% 5.33%	37.99% 17.65%	44.58% 21.87%	20.73% 9.60%	17.62% 8.54%
Timber NCREIF Timberland Index	\$78,380,213 -	0.70% -	0.70% 3.21%	6.48% 9.95%	8.21% 11.82%	1.83% 4.75%	0.25% 4.08%
Total Fund*** Benchmark*	\$11,277,128,474 -	100.00% -	(4.84%) (4.07%)	(0.26%) 0.64%	5.73% 6.12%	11.64% 11.16%	10.10% 9.66%

- **Domestic Equity** has lagged its benchmark across all trailing time periods however has outperformed peers over 3 and 5 years.
- **International Equity** underperformed in the first quarter, but leads its benchmark over the last 3- and 5-year periods.
- **Diversified Strategies** bested the benchmark return in the first quarter, but long term underperformance persists.
- **Domestic Fixed Income** was in line with its benchmark for the quarter, but leads the Bloomberg Aggregate Index over other trailing time periods due to its Core Plus orientation.
- **Real Assets** outpaced its benchmark for the first quarter and over all longer periods.

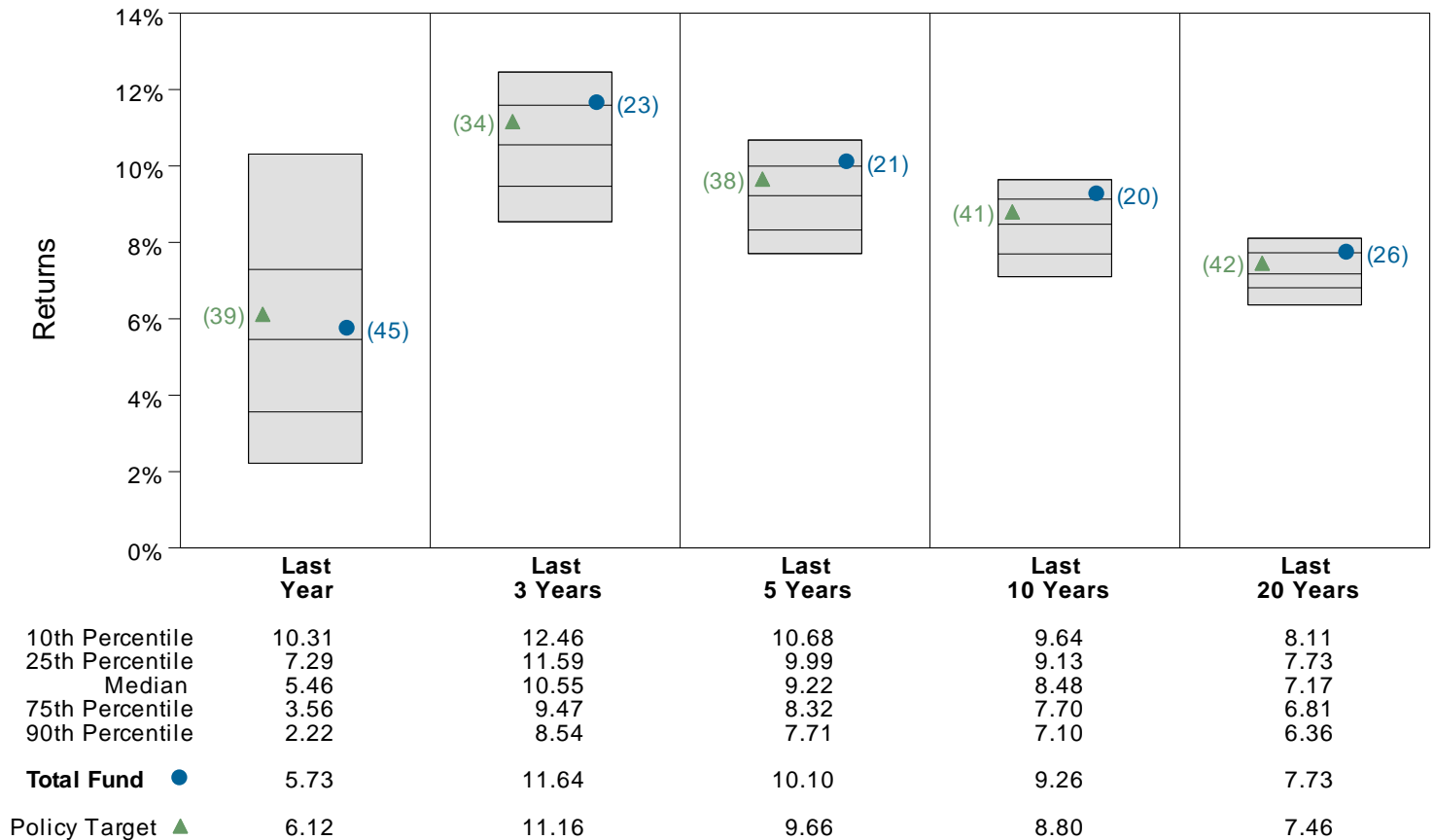
* Benchmark consists of 37% Russell 3000 Index, 24% MSCI EAFE Index, 18% Blmbg Aggregate Index, 16% CPI All Urban Cons +4%, 3% MSCI World Index and 2% Blmbg Aggregate Index

** 60% MSCI World and 40% Bloomberg Aggregate.

*** Performance excludes In-House.

Total Fund Performance

Callan Public Fund Sponsor Database



The Total Fund trailed its policy benchmark over the last year, but ranked ahead of its peer group median. Over the remaining trailing periods, the fund has beaten the benchmark return and ranked at or near the top quartile of peers.

Policy Target consists of 37% Russell 3000 Index, 24% MSCI EAFE Index, 18% Blmbg Aggregate Index, 16% CPI All Urban Cons +4%, 3% MSCI World Index and 2% Blmbg Aggregate Index

Investment Manager Returns and Peer Group Rankings

	Last Quarter		Fiscal YTD		Last Year		Last 3 Years		Last 5 Years	
Total Domestic Equity	(5.87%)	80	2.25%	73	9.77%	73	17.66%	36	15.05%	32
Russell 3000 Index	(5.28%)	59	3.40%	49	11.92%	35	18.24%	18	15.40%	19
Pub Pln- Dom Equity	(5.14%)		3.35%		11.11%		17.25%		14.60%	
Lazard Asset Mgmt.	(5.49%)	67	2.94%	57	9.80%	60	14.68%	81	13.95%	53
Russell 3000 Index	(5.28%)	67	3.40%	53	11.92%	49	18.24%	48	15.40%	39
Callan All Cap Broad	(4.41%)		3.97%		11.68%		18.12%		14.10%	
CastleArk	(6.37%)	68	2.61%	58	12.78%	39	22.37%	7	19.68%	15
Russell 3000 Growth Index	(9.25%)	77	1.33%	68	12.86%	38	22.68%	7	20.16%	12
Callan All Cap Broad	(4.41%)		3.97%		11.68%		18.12%		14.10%	
Mellon S&P 500 Index Fd	(4.59%)	53	6.54%	27	15.65%	29	18.36%	55	15.67%	50
S&P 500 Index	(4.60%)	53	6.54%	27	15.65%	30	18.92%	48	15.99%	34
Callan Large Cap Core	(4.59%)		5.29%		13.91%		18.61%		15.70%	
Horrell Capital - Passive	(3.86%)	46	8.14%	17	13.03%	38	16.92%	67	14.51%	47
Bloomberg Arkansas Index	(2.36%)	42	22.87%	1	27.90%	1	22.83%	6	17.33%	27
S&P 500 Index	(4.60%)	59	6.54%	29	15.65%	18	18.92%	38	15.99%	33
Callan All Cap Broad	(4.41%)		3.97%		11.68%		18.12%		14.10%	
Wellington Management	(0.58%)	75	8.26%	45	14.64%	38	14.31%	55	10.58%	70
Russell 1000 Value Index	(0.74%)	79	6.14%	76	11.67%	83	13.02%	78	10.29%	82
Callan Large Cap Value	0.45%		8.04%		14.04%		14.59%		11.56%	
Intech	(9.94%)	48	4.36%	11	15.59%	12	20.14%	46	18.47%	65
Russell 1000 Growth Index	(9.04%)	33	2.72%	23	14.98%	15	23.60%	9	20.88%	17
Callan Large Cap Growth	(10.01%)		(1.64%)		9.25%		20.04%		19.42%	
LSV Asset Management	(0.92%)	27	4.90%	27	8.83%	42	13.49%	59	-	
Russell 2000 Value Index	(2.40%)	54	(1.18%)	89	3.32%	79	12.73%	71	8.57%	71
Callan Small Cap Value	(2.25%)		3.10%		7.67%		13.92%		9.41%	
Stephens Investment Mgmt.	(12.19%)	42	(8.13%)	18	(1.89%)	17	14.62%	57	15.80%	54
Russell 2000 Growth Index	(12.63%)	50	(17.56%)	76	(14.33%)	79	9.88%	94	10.33%	96
Callan Small Cap Growth	(12.62%)		(11.98%)		(7.81%)		15.16%		16.44%	
SSI Investment Mgmt	(5.52%)	63	(6.86%)	79	(3.97%)	72	17.89%	15	14.12%	19
ML All Conv	(5.41%)	62	(5.90%)	64	(2.21%)	51	18.00%	14	14.40%	16
Callan Convert Bonds DB	(4.84%)		(4.77%)		(2.06%)		11.86%		10.15%	

- Total **Domestic Equity** trailed the Russell 3000 Index in the first quarter and finished in the 80th percentile of peers. The asset class performed modestly below its benchmark over longer periods, but it ranked ahead of its peer group median over the trailing three and five years.
- CastleArk and Wellington outperformed the benchmark, but ranked in the bottom third of peers for the quarter. CastleArk trails the index but is ahead of peers over 5 years. Conversely, Wellington is ahead of the index but trailing its peers.
- LSV and Stephens led their benchmarks and ranked in the top half of their respective peer groups. Both managers benefitted from the market shift to value, as LSV is deep value and Stephens incorporates quality in their growth process.

Investment Manager Returns and Peer Group Rankings

	Last Quarter	Fiscal YTD	Last Year	Last 3 Years	Last 5 Years					
International Equity	(8.15%)	72	(9.39%)	70	(3.79%)	66	9.55%	27	8.21%	32
MSCI EAFE	(5.91%)	30	(3.81%)	11	1.16%	14	7.78%	76	6.72%	80
Pub Pln- Intl Equity	(6.98%)		(8.10%)		(2.08%)		8.94%		7.77%	
Artisan Partners	(1.80%)	9	(0.66%)	6	6.15%	3	13.17%	6	9.86%	21
MSCI EAFE	(5.91%)	44	(3.81%)	30	1.16%	34	7.78%	66	6.72%	66
Callan NonUS Eq	(6.66%)		(5.68%)		(1.00%)		8.93%		7.72%	
Mellon ACWI ex US Fund	(5.37%)	35	(6.43%)	54	(1.16%)	51	7.86%	64	-	
MSCI ACWI ex US	(5.44%)	35	(6.60%)	58	(1.48%)	54	7.51%	70	6.76%	65
Callan NonUS Eq	(6.66%)		(5.68%)		(1.00%)		8.93%		7.72%	
Baillie Gifford Overseas	(19.16%)	100	(22.07%)	99	(17.15%)	99	9.91%	36	8.64%	33
MSCI ACWIxUS Gross	(5.33%)	35	(6.33%)	54	(1.04%)	50	8.01%	63	7.26%	55
Callan NonUS Eq	(6.66%)		(5.68%)		(1.00%)		8.93%		7.72%	
Lazard Asset Mgmt.	(6.12%)	46	(8.00%)	65	(4.05%)	76	6.89%	78	7.71%	50
MSCI ACWIxUS Gross	(5.33%)	35	(6.33%)	54	(1.04%)	50	8.01%	63	7.26%	55
Callan NonUS Eq	(6.66%)		(5.68%)		(1.00%)		8.93%		7.72%	
Acadian ACW ex US SmallCap	(0.60%)	1	(0.36%)	1	10.32%	2	-	-	-	
MSCI ACWI ex US Small Cap	(6.52%)	22	(5.94%)	22	0.03%	20	10.22%	33	7.89%	36
Callan Intl Small Cap	(10.40%)		(9.13%)		(3.24%)		8.77%		6.91%	
Franklin Templeton Intl SmallCap	(12.43%)	66	(13.57%)	80	(7.65%)	75	-	-	-	
MSCI ACWI ex US Small Cap	(6.52%)	22	(5.94%)	22	0.03%	20	10.22%	33	7.89%	36
Callan Intl Small Cap	(10.40%)		(9.13%)		(3.24%)		8.77%		6.91%	
Diversified Strategies	(1.91%)		0.12%		5.25%		6.69%		6.68%	
Diversified Strategy Trgt**	(5.47%)		(1.04%)		4.28%		10.07%		8.66%	
AQR Capital	(2.22%)	31	(0.22%)	41	8.96%	17	7.58%	48	7.83%	30
Diversified Strategy Trgt**	(5.47%)	86	(1.04%)	47	4.28%	42	10.07%	16	8.66%	15
Intl/Global Balanced DB	(3.73%)		(1.41%)		3.53%		7.17%		6.50%	
Blackstone Alt. Asset Mgmt.	0.50%	15	1.75%	26	5.18%	32	5.61%	65	6.02%	54
T-Bills + 4%	1.02%	12	3.05%	20	4.06%	43	4.81%	72	5.13%	66
Intl/Global Balanced DB	(3.73%)		(1.41%)		3.53%		7.17%		6.50%	
Newton Capital	(4.91%)	79	(1.78%)	59	1.32%	74	7.28%	49	6.39%	51
LIBOR + 4%	1.05%	12	3.10%	20	4.14%	43	4.76%	72	5.18%	65
Intl/Global Balanced DB	(3.73%)		(1.41%)		3.53%		7.17%		6.50%	

- Total **International Equity** trailed the MSCI EAFE Index and ranked in the 72nd percentile of peers in the first quarter. Artisan and Acadian both returned in the top decile of peers. Baillie Gifford was the largest detractor due to its growth orientation.
- Longer term performance for international equity has been strong relative to the index and peers.
- **Diversified Strategies** outperformed its target in the first quarter. AQR led its benchmark and ranked in the top third of peers. BAAM trailed its benchmark but ranked in the 15th percentile of peers for the quarter. Newton trailed its benchmark and ranked in the bottom quartile of its peer group.
- The Diversified Strategies portfolio lagged its benchmark over the last 3- and 5-year periods as strong equity markets have bolstered returns of the index.

**60% MSCI World/40% Blmbg Aggregate

Investment Manager Returns and Peer Group Rankings

	Last Quarter		Fiscal YTD		Last Year		Last 3 Years		Last 5 Years	
Domestic Fixed Income	(5.98%)	81	(5.60%)	74	(2.96%)	39	2.84%	36	3.26%	26
Bimbg Aggregate Index	(5.93%)	80	(5.87%)	87	(4.15%)	94	1.69%	83	2.14%	78
Pub Pln- Dom Fixed	(4.98%)		(4.97%)		(3.33%)		2.36%		2.76%	
DoubleLine Capital	(5.04%)	15	(4.73%)	13	(2.75%)	15	1.94%	96	2.57%	94
Mackay Shields	(6.43%)	90	(5.88%)	79	(3.13%)	34	3.58%	14	3.60%	13
PGIM	(6.38%)	89	(6.18%)	91	(3.08%)	27	2.91%	46	3.54%	15
Bimbg Aggregate Index	(5.93%)	58	(5.87%)	78	(4.15%)	89	1.69%	98	2.14%	99
Callan Core Plus FI	(5.83%)		(5.57%)		(3.29%)		2.83%		3.11%	
Real Assets	6.27%		21.50%		27.85%		11.29%		9.21%	
CPIU + 4%	4.02%		8.75%		12.54%		8.19%		7.36%	
REITS	(3.71%)		14.82%		28.31%		9.59%		-	
S&P DJ US Select REIT	(3.71%)		14.28%		27.72%		9.90%		8.89%	
MCM EB DV Non-SL REIT Fd	(3.71%)	24	14.82%	5	28.31%	20	9.59%	90	-	
S&P DJ US Select REIT	(3.71%)	24	14.28%	10	27.72%	28	9.90%	82	8.89%	87
Callan Real Estate REIT	(4.92%)		11.88%		25.97%		13.30%		11.32%	
Core Real Estate	7.52%		19.59%		25.04%		9.27%		8.61%	
NCREIF NFI-ODCE Eq Wt Net	7.77%		23.53%		28.69%		11.11%		9.46%	
Invesco Real Estate	6.54%	13	21.27%	45	27.07%	34	10.20%	47	9.35%	38
Heitman Real Estate Trust LP***	9.17%	1	16.87%	65	21.77%	62	7.85%	81	7.68%	80
NCREIF NFI-ODCE Eq Wt Net	7.77%	6	23.53%	25	28.69%	21	11.11%	27	9.46%	35
Callan OE Core Cmngld RE	5.00%		20.16%		25.56%		9.66%		8.55%	
Value Add Real Estate	9.51%		37.99%		44.58%		20.73%		17.62%	
NCREIF Total Index	5.33%		17.65%		21.87%		9.60%		8.54%	
Harrison Street Fund VIII	0.00%		-		-		-		-	
Heitman Value Partners IV	6.59%		21.85%		25.32%		16.53%		-	
LaSalle Inc & Growth VI LP	1.15%		3.25%		4.46%		(1.83%)		2.80%	
LaSalle Inc & Growth VII LP	3.82%		38.90%		39.32%		13.75%		13.44%	
TA Realty X	(3.84%)		(2.68%)		1.98%		7.46%		11.77%	
TA Realty XI	13.81%		53.62%		66.79%		29.70%		21.59%	
TA Realty XII	14.88%		51.01%		61.60%		-		-	
NCREIF Total Index	5.33%		17.65%		21.87%		9.60%		8.54%	
Timber	0.70%		6.48%		8.21%		1.83%		0.25%	
Pinnacle	0.70%		6.48%		8.21%		1.83%		0.25%	
NCREIF Timberland Index	3.21%		9.95%		11.82%		4.75%		4.08%	
Total Fund	(4.84%)	74	(0.26%)	59	5.73%	45	11.64%	23	10.10%	21
Benchmark*	(4.07%)	46	0.64%	40	6.12%	39	11.16%	34	9.66%	38
Callan Public Fund Spr DB	(4.20%)		0.12%		5.46%		10.55%		9.22%	

- **Domestic Fixed Income** was in line with the Bloomberg Aggregate Index in the first quarter and ranked in the bottom quartile of peers. DoubleLine outpaced the benchmark and finished in the 15th percentile of its peer group, and provided downside protection for the Fund. Mackay and PGIM trailed the benchmark and peers.

- The **Real Assets** composite led its real return benchmark during the quarter. Positive performance in the quarter was driven by the Value-Add Real Estate allocation.

- The **Total Fund** trailed its benchmark and finished in the 74th percentile of peers for the quarter. The Total Fund has consistently outperformed its benchmark and ranked above median of peers during the longer periods shown in the table.

*Policy Target consists of 37% Russell 3000 Index, 24% MSCI EAFE Index, 18% Bimbg Aggregate Index, 16% CPI All Urban Cons +4%, 3% MSCI World Index and 2% Bimbg Aggregate Index

*** Funded July 8, 2015. Performance prior to October 1, 2015 represents fund composite returns.

Investment Manager Organizational Developments

Blackstone Alternative Asset Management – On April 22, 2022, **BAAM** announced the departure of Tej Arora and Katherine Chan, two managing directors within BAAM's special situations investing group.

Tej was replaced by Eric Nortman, Managing Director in the special situations group. Katherine was a product specialist within the special situations group and had no oversight over investment decisions. She has not been replaced at this time.

With the hiring of Atish Nigam in December 2021 as the Chief Investment Officer of the special situations group, additional changes to the team were expected, and that has played out.

Acadian Asset Management – On April 20, 2022, **Acadian** announced the departure of Harry Gakidis, SVP and Lead Portfolio Manager for Core Equities. Harry was not a member of Acadian's Senior Investment Leadership Team (SILT) nor the Executive Committee.

Harry spent 8 years at Acadian and his responsibilities will be absorbed by Ryan Taliaferro, Director of Equity Strategies, while the firm evaluates the optimal structure and develops a go-forward plan.

Lazard Asset Management – On April 8, 2022, **Lazard Asset Management** (LAM) announced the retirement of CEO Ashish Bhutani, effective June 1, 2022. Evan Russo, CFO of Lazard Ltd since October 2017, will assume the role of CEO at that time. Bhutani will remain chairman of LAM and vice chairman of Lazard until the end of 2022.

The appointment of Russo as CEO of LAM was collectively made by Bhutani, Lazard CEO Kenneth Jacobs, and the Lazard Board of Directors. Russo joined the firm as a director in 2007 and served a variety of leadership roles including co-head of Lazard's Capital Markets and Capital Structure Advisory. Russo will continue to function as CFO, and work with Jacobs to find a successor.

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.

Upcoming Projects:

- **Domestic Equity Structure Study**
- **Diversified Strategies Structure Study**
- **Fixed Income Structure Study**

Total Fund Relative Attribution

Relative Attribution Effects for Quarter ended March 31, 2022

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	41%	37%	(5.87%)	(5.28%)	(0.24%)	(0.04%)	(0.29%)
Domestic Fixed Income	18%	18%	(5.98%)	(5.93%)	(0.01%)	0.00%	(0.00%)
International Equity	25%	24%	(8.15%)	(5.91%)	(0.56%)	(0.02%)	(0.58%)
Diversified Strategies	4%	5%	(1.91%)	(5.47%)	0.16%	0.01%	0.17%
Real Assets	12%	16%	6.27%	4.02%	0.27%	(0.33%)	(0.06%)
Total			(4.84%)	(4.07%)	(0.39%)	(0.38%)	(0.77%)

- At the Total Fund level, active management and asset allocation detracted equally. Active management in Diversified Strategies and Real Assets added value in the quarter. Active management in International Equity and an underweight to Real Assets had the largest negative effects.

One Year Relative Attribution Effects

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	41%	37%	9.77%	11.92%	(0.85%)	0.20%	(0.65%)
Domestic Fixed Income	17%	18%	(2.96%)	(4.15%)	0.20%	0.08%	0.28%
International Equity	26%	24%	(3.79%)	1.16%	(1.33%)	(0.08%)	(1.41%)
Diversified Strategies	4%	5%	5.25%	4.28%	0.04%	0.01%	0.05%
Real Assets	12%	16%	27.85%	12.54%	1.62%	(0.26%)	1.36%
Total			5.73%	6.12%	(0.33%)	(0.05%)	(0.38%)

- Over the last year, active management and asset allocation decisions have been unfavorable. Positive active management in Real Assets was offset by adverse active management in Domestic and International Equity. An overweight to Domestic Equities and underweight to Fixed Income added value over the last year.

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	40%	37%	15.05%	15.40%	(0.14%)	0.12%	(0.02%)
Domestic Fixed Income	16%	18%	3.26%	2.14%	0.16%	0.00%	0.16%
International Equity	25%	24%	8.21%	6.72%	0.37%	(0.05%)	0.32%
Diversified Strategies	5%	5%	6.68%	8.66%	(0.10%)	0.00%	(0.10%)
Real Assets	14%	16%	9.21%	7.35%	0.12%	(0.04%)	0.08%
Total			10.10%	9.66%	0.41%	0.03%	0.44%

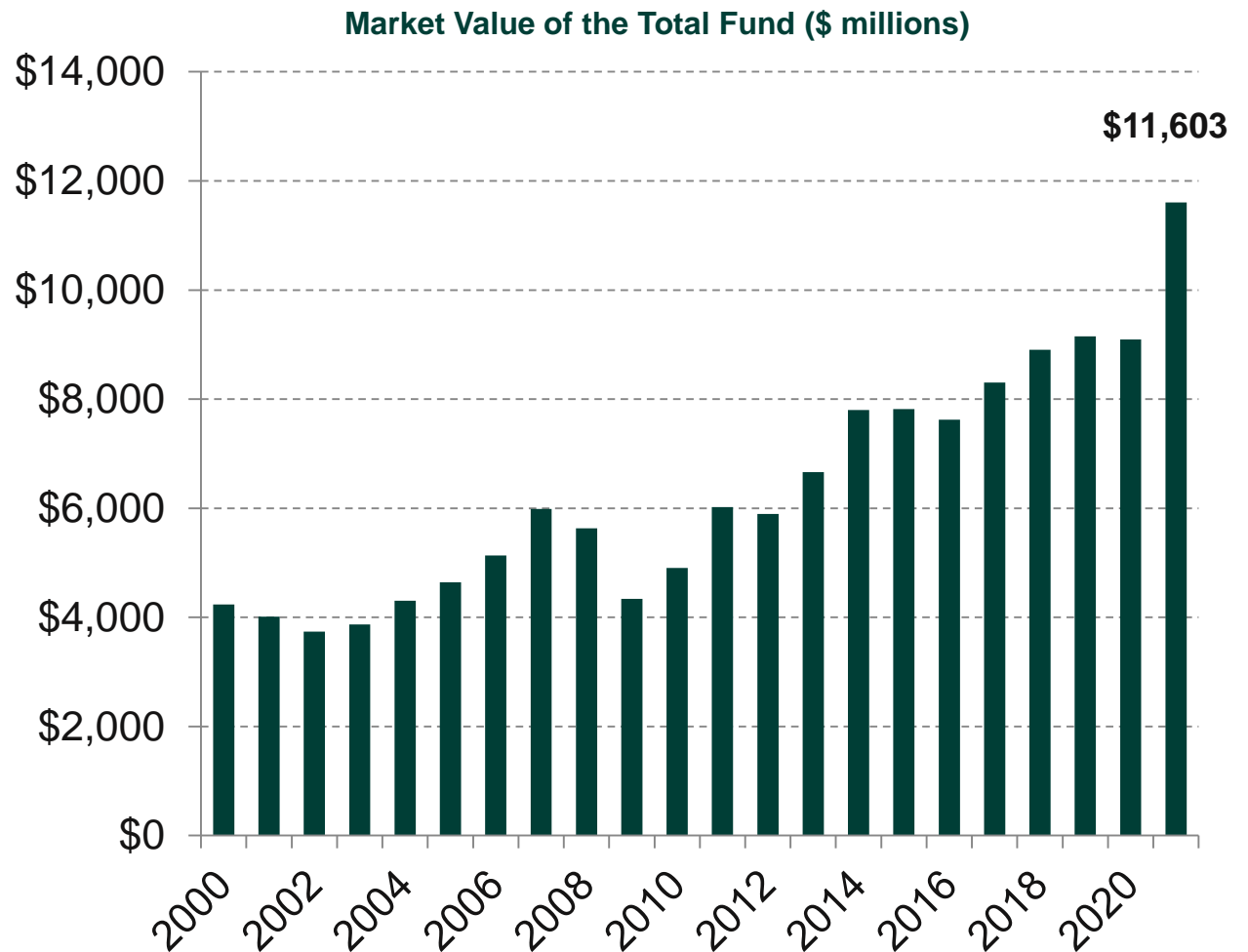
- Over the last five years, active management was the primary driver of outperformance. Domestic Fixed Income, International Equity, and Real Assets outperformed during the period.

Policy Target consists of 37% Russell 3000 Index, 24% MSCI EAFE Index, 18% Blmbg Aggregate Index, 16% CPI All Urban Cons +4%, 3% MSCI World Index and 2% Blmbg Aggregate Index

Historical Market Values of the Total Fund

As of June 30, 2021

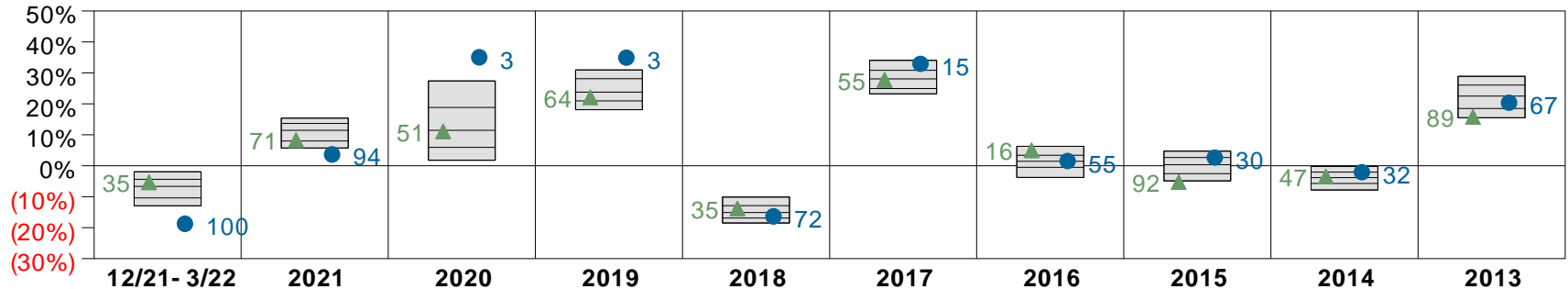
Fiscal Year Ending	Market Value
2000	\$4,236,749,732
2001	\$4,012,745,608
2002	\$3,739,381,695
2003	\$3,869,787,673
2004	\$4,307,589,827
2005	\$4,642,924,118
2006	\$5,136,985,259
2007	\$5,985,111,493
2008	\$5,633,155,289
2009	\$4,341,419,711
2010	\$4,907,734,835
2011	\$6,022,965,592
2012	\$5,896,862,618
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



Baillie Gifford

Annual Fund Performance

Performance vs Callan Non-US Equity (Gross)



	12/21- 3/22	2021	2020	2019	2018	2017	2016	2015	2014	2013
10th Percentile	(1.92)	15.38	27.38	30.95	(10.10)	34.06	6.28	4.74	(0.22)	28.92
25th Percentile	(4.36)	13.67	18.82	28.12	(12.90)	30.86	3.39	2.67	(2.04)	26.05
Median	(6.66)	11.45	11.48	23.78	(15.13)	28.08	1.48	0.35	(3.85)	22.49
75th Percentile	(10.40)	7.99	5.96	20.94	(16.89)	24.96	(0.49)	(2.53)	(5.73)	18.53
90th Percentile	(12.95)	5.76	1.81	18.14	(18.48)	23.21	(3.79)	(4.89)	(7.82)	15.49
Baillie Gifford Overseas ●	(19.16)	3.22	34.64	34.52	(16.76)	32.51	1.13	2.25	(2.50)	19.94
MSCI ACWIxUS Gross ▲	(5.33)	8.29	11.13	22.13	(13.77)	27.77	5.01	(5.25)	(3.44)	15.78