Callan

Executive Summary Third Quarter 2022

Arkansas Judicial Retirement System

Brianne Weymouth, CAIA Senior Vice President

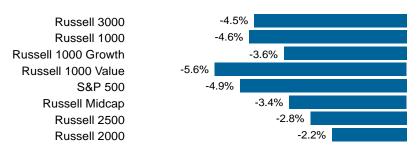
John Jackson, CFA Senior Vice President

U.S. Equity Performance: 3Q22

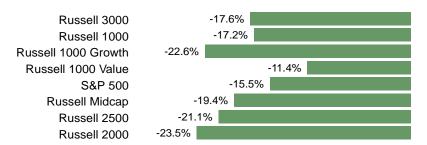
Worst Three-Quarter Start to Year in Decades

- -The S&P 500 Index fell 4.9% in 3Q22; all major U.S. indices across styles and market cap ranges were negative except for the Russell 2000 Growth Index, which gained 0.24%.
- During the quarter, all sectors posted negative returns except for Energy (+2%) and Consumer Discretionary (+4%).
 Returns for Real Estate and Communication Services were the worst, down 11% and 13%, respectively.
- Small cap (Russell 2000) outpaced large cap (Russell 1000) and growth outperformed value during the quarter, a reversal from previous quarters this year.
- Continued concerns around inflation and a potential recession, along with geopolitical headlines, contributed to a volatile and risk-averse environment.
- High inflation and interest rates continued to pressure the markets. While some inflationary data (particularly around energy) seemed to soften, other data points around food, shelter, and services remained elevated.

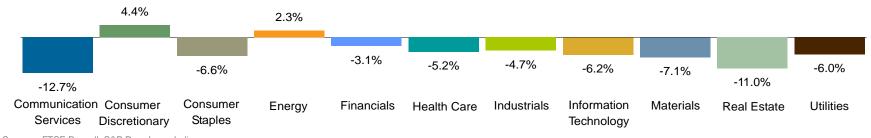
U.S. Equity: Quarterly Returns

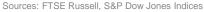


U.S. Equity: One-Year Returns



Industry Sector Quarterly Performance (S&P 500)







Global/Global ex-U.S. Equity Performance: 3Q22

Market Turmoil Around the World

 Global and global ex-U.S. equity markets waned for three straight quarters due to inflation, rising rates, and fears of global recession.

Geopolitical and macro factors plague market

- Political instability in Italy and the U.K. as a result of prime minister departures weighed on the market.
- U.K. equities lost confidence as its newly elected prime minister Liz Truss announced her economic policy.
- China's COVID-19 lockdowns and growing concerns around the property sector sapped sentiment and economic activity.

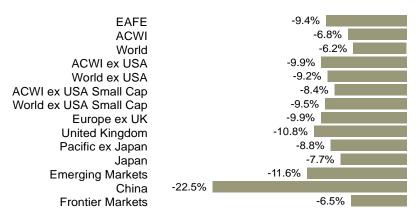
Growth vs value switch places globally

- Growth outpaced value in developed markets but lagged value in emerging markets.
- Rate-sensitive sectors in developed markets (e.g.,
 Communication Services and Real Estate) were challenged given the tightening cycle by global central banks.
- The profitability of Chinese internet companies has compressed due to lockdowns and regulation, and a cyclical downturn in electronics weakened Taiwan and Korean semiconductors.

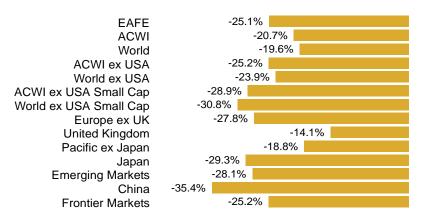
U.S. dollar vs. other currencies

- Growth and the interest rate differential as well as its safehaven status fueled the U.S. dollar to its highest level in decades.
- -The dollar gained vs. the euro and the yen by about 6%.

Global Equity: Quarterly Returns



Global Equity: One-Year Returns





U.S. Fixed Income Performance: 3Q22

Bonds hit hard as rates rose sharply (again)

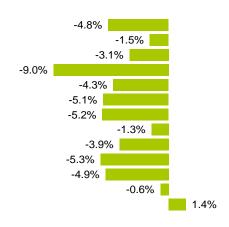
- Bloomberg U.S. Aggregate saw its worst nine-month return in its history—as did trailing 1-, 3-, 5- and 10-year returns!
- -10-year annualized return for Aggregate is a mere 0.9%.
- -The yield curve was inverted at quarter-end; 10-year at 3.83% and 2-year at 4.22%.
- The 10-year jumped to 4% briefly in late September; first time since 2009.
- TIPS underperformed nominal Treasuries, and 10-year breakeven spreads fell to 2.11% from 2.33% as of 6/30/22.
- Fed raised rates by 150 bps during the quarter, bringing target from 3.0% to 3.25%.
- Median expectation from Fed is 4.4% at year-end and 4.6% at the end of 2023. Longer-term expectations are much lower.
- -Volatility climbed to levels not seen since early 2020.

Spread sectors underperformed

- Mortgages had worst month ever vs. like-duration U.S.
 Treasuries in September; underperformed by 169 bps for 3Q.
- Corporates also underperformed: 33 bps of excess return;
 Bloomberg Corporate Bond Index yield-to-worst 5.7%.
- High yield fared better and loans posted a positive return.
- Bloomberg High Yield Corp yield-to-worst was 9.7%.

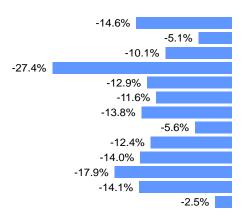
U.S. Fixed Income: Quarterly Returns

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



U.S. Fixed Income: One-Year Returns

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



Sources: Bloomberg, S&P Dow Jones Indices



Asset Allocation Review

Change in AJRS Market Value during the Quarter :

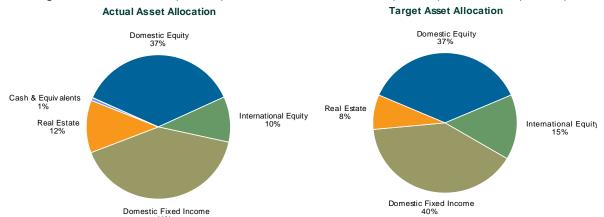
Beginning-of-Quarter Market Value: \$296,990,766

Net Increase in Market Value: \$ -11,638,940

End-of-Quarter Market Value: \$ 285,351,826

Asset Allocation of AJRS Assets at September 30, 2022

As of the quarter end, all asset classes are within the target allocation range established in the Investment Policy. International Equity is the largest underweight asset class at 4.8% below the target allocation. Domestic Equity is also 0.5% below its stated target. These positions are offset by overweights to Real Estate (+3.8%), Domestic Fixed Income (+0.8%), and Cash (+0.6%).

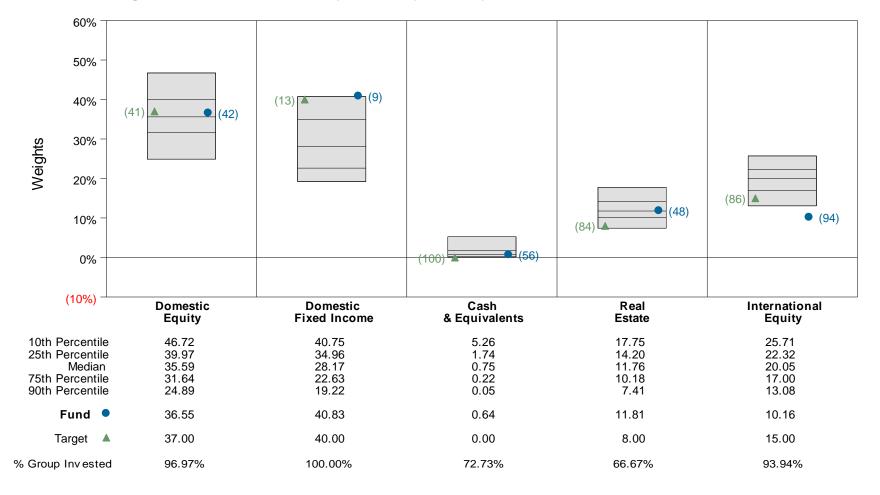


1170				
\$000s Actual	Weight Actual	Target	Percent Difference	\$000s Difference
104,289	36.5%	37.0%	(0.5%)	(1,291)
28,998	10.2%	15.0%	(4.8%)	(13,805)
116,523	40.8%	40.0%	0.8%	2,382
33,710	11.8%	8.0%	3.8%	10,882
1,832	0.6%	0.0%	0.6%	1,832
285,352	100.0%	100.0%		
	\$000s Actual 104,289 28,998 116,523 33,710 1,832	\$000s Weight Actual Actual 104,289 36.5% 28,998 10.2% 116,523 40.8% 33,710 11.8% 1,832 0.6%	\$000s Weight Actual Actual Target 104,289 36.5% 37.0% 28,998 10.2% 15.0% 116,523 40.8% 40.0% 33,710 11.8% 8.0% 1,832 0.6% 0.0%	\$000s Weight Actual Percent Difference 104,289 36.5% 37.0% (0.5%) 28,998 10.2% 15.0% (4.8%) 116,523 40.8% 40.0% 0.8% 33,710 11.8% 8.0% 3.8% 1,832 0.6% 0.0% 0.6%



Asset Allocation Review

Asset Class Weights vs Callan Public Fund Spons- Mid (100M-1B)





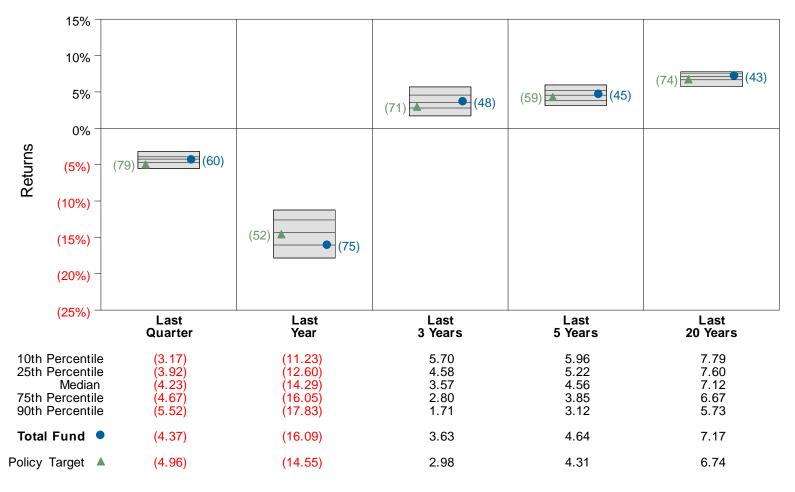
Asset Allocation Review

	September 3	30, 2022			June 30, 2022			
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight		
Domestic Equity	\$104,289,053	36.55%	\$(105,180)	\$(4,444,261)	\$108,838,494	36.65%		
Mellon Russell 1000 Growth Index	40,374,746	14.15%	(4,366)	(1,506,567)	41,885,679	14.10%		
Boston Partners	48,002,814	16.82%	(67,981)	(2,456,142)	50,526,937	17.01%		
Aristotle Capital Boston	15,911,493	5.58%	(32,832)	(481,553)	16,425,878	5.53%		
International Equity	\$28,997,555	10.16%	\$0	\$(3,144,948)	\$32,142,503	10.82%		
Baillie Gifford	28,997,555	10.16%	0	(3,144,948)	32,142,503	10.82%		
Fixed Income	\$116,522,786	40.83%	\$(91,314)	\$(5,937,277)	\$122,551,376	41.26%		
MacKay Shields LLC	116,522,786	40.83%	(91,314)	(5,937,277)	122,551,376	41.26%		
Real Estate	\$33,710,439	11.81%	\$(26,263)	\$468,766	\$33,267,936	11.20%		
Invesco Core Real Estate	33,710,439	11.81%	(26,263)	468,766	33,267,936	11.20%		
Cash & Equivalents	\$1,831,993	0.64%	\$1,624,381	\$17,156	\$190,457	0.06%		
AJRS General Fund	1,831,993	0.64%	1,624,381	17,156	190,457	0.06%		
Total Fund	\$285,351,826	100.0%	\$1,401,624	\$(13,040,564)	\$296,990,766	100.0%		



Total Fund Performance Review

Callan Public Fund Spons- Mid (100M-1B)



Policy Target consists of 40% Blmbg Aggregate, 37% Russell 3000 Index, 15% MSCI ACWI ex-US and 8% NCREIF NFI-ODCE Equal Weight Net.

Note: Numbers adjacent to return number represent the portfolio's rank relative to the corresponding peer group. 1 = Highest Ranking; 100 = Lowest Ranking.



Total Fund Performance Attribution

Relative Attribution Effects for Quarter ended September 30, 2022

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	36%	37%	(4.09%)	(4.46%)	0.14%	(0.00%)	0.13%
Domestic Fixed Incor	ne 41%	40%	(4.85%)	(4.75%)	(0.04%)	0.00%	(0.04%)
Real Estate	11%	8%	`1.41%´	0.79%	0.07%	0.18%	0.25%
International Equity	11%	15%	(9.78%)	(9.80%)	0.00%	0.21%	0.21%
Cash & Equivalents	1%	0%	0.59%	0.59%	0.00%	0.03%	0.03%
Total			(4.37%) =	(4.96%) +	0.17% +	0.43%	0.59%

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	38%	37%	(15.09%)	(17.63%)	0.98%	(0.14%)	0.84%
Domestic Fixed Incor	ne 40%	40%	(16.64%)	(14.60%)	(0.85%)	(0.02%)	(0.87%)
Real Estate	9%	8%	`19.90%´	`21.70%′	(0.09%)	`0.41%´	`0.32%´
International Equity	12%	15%	(39.20%)	(24.79%)	(2.19%)	0.35%	(1.85%)
Cash & Equivalents	0%	0%	` 0.78%´	` 0.78%´	0.00%	0.03%	_`0.03%´
Total			(16.09%) =	(14.55%) +	(2.16%) +	0.62%	(1.54%)



Total Fund Performance Attribution

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	38%	37%	8.84%	7.70%	0.46%	(0.16%)	0.29%
Domestic Fixed Incor	ne 38%	40%	(2.49%)	(3.26%)	0.19%	0.04%	0.23%
Real Estate	9%	8%	11.36%	12.13%	(0.05%)	0.07%	0.01%
International Equity	15%	15%	(2.70%)	(1.07%)	(0.03%)	0.19%	0.16%
Cash & Equivalents	0%	0%	0.58%	0.58%	0.00%	(0.03%)	_(0.03%)
Total			3.63% =	2.98% +	0.56% +	0.10%	0.65%

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	38%	37%	8.80%	8.62%	0.09%	(0.11%)	(0.02%)
Domestic Fixed Incor	ne 37%	40%	0.41%	(0.27%)	0.19%	0.01%	0.19%
Real Estate	9%	8%	9.97%	`9.87%´	0.01%	0.02%	0.04%
International Equity	15%	15%	(1.01%)	(0.34%)	0.04%	0.10%	0.14%
Cash & Equivalents	0%	0%	1.16%	1.16%	0.00%	(0.02%)	(0.02%)
Total			4.64% =	4.31% +	0.32% +	0.01%	0.33%



					Last		Last	
	Last		Last		3		5	
	Quarter		Year		Years		Years	
Domestic Equity	(4.09%)	32	(15.09%)	16	8.84%	7	8.80%	17
Domestic Equity Benchmark	(4.46%)	58	(17.63%)	67	7.70%	36	8.62%	29
Russell 3000 Index	(4.46%)	58	(17.63%)	67	7.70%	36	8.62%	29
S&P 500 Index	(4.88%)	99	(15.47%)	25	8.16%	24	9.24%	10
Med Public Fd - Dom Eqty	(4.35%)		(16.92%)		7.43%		8.22%	
Mellon Russell 1000 Growth Index	(3.60%)	34	(22.73%)	31	10.48%	14	-	
Russell 1000 Growth Index	(3.60%)	34	(22.59%)	30	10.67%	13	12.17%	16
Callan Large Cap Growth	(4.20%)		(25.84%)		7.85%		10.52%	
Boston Partners	(4.87%)	36	(6.63%)	23	7.64%	23	7.04%	30
Russell 1000 Value Index	(5.62%)	56	(11.36%)	72	4.36%	88	5.29%	78
Callan Large Cap Value	(5.24%)		(9.37%)		5.97%		6.37%	
Aristotle Capital Boston	(2.95%)	39	(15.22%)	21	-		-	
Russell 2000 Index	(2.19%)	23	(23.50%)	91	4.29%	74	3.55%	76
Callan Small Cap Core	(3.48%)		(19.28%)		5.80%		4.96%	
International Equity	(9.78%)	45	(39.20%)	95	(2.70%)	85	(1.01%)	78
International Equity Benchmark	(9.80%)	45	(24.79%)	29	(1.07%)	56	(0.34%)	45
Med Public Fd - Int Eqty	(9.97%)		(26.77%)		(0.85%)		(0.38%)	
Baillie Gifford Intl Choice Fd	(9.78%)	63	(39.20%)	98	(2.70%)	85	(1.01%)	69
MSCI ACWIxUS Gross	(9.80%)	63	(24.79%)	36	(1.07%)	60	(0.34%)	54
Callan NonUS Eq	(9.30%)		(25.79%)		(0.57%)		(0.13%)	



	Last Quarter		Fiscal Year		Last 3 Years		Last 5 Years	
Domestic Fixed Income	(4.85%)	87	(16.64%)	97	(2.49%)	63	0.41%	50
Domestic Fixed Income Benchmark	(4.75%)	86	(14.60%)	68	(3.26%)	99	(0.27%)	99
Med Public Fd - Dom Fixed	(3.90%)		(13.40%)		(2.09%)		0.41%	
MacKay Shields LLC	(4.85%)	91	(16.64%)	91	(2.49%)	54	0.41%	52
Blmbg Aggregate Index	(4.75%)	88	(14.60%)	43	(3.26%)	94	(0.27%)	96
Callan Core Plus Fl	(4.30%)		(14.86%)		(2.45%)		0.41%	
Real Estate	1.41%	69	19.90%	75	11.36%	62	9.97%	56
Med Public Fd - Real Est	3.01%		24.27%		11.75%		9.99%	
Invesco Core Real Estate	1.41%	79	19.90%	65	11.36%	52	9.97%	29
NFI-ODCE Equal Weight Net**	0.79%	84	21.70%	53	12.13%	34	9.87%	36
Callan OE Core Cmngld RE	3.12%		22.26%		11.57%		9.24%	
Total Fund	(4.37%)	60	(16.09%)	75	3.63%	48	4.64%	45
Callan Public Fd Mid DB	(4.23%)		(14.29%)		3.57%		4.56%	
Total Fund ex Cash	(4.41%)	63	(16.13%)	76	3.70%	45	4.69%	44
Target Benchmark*	(4.96%)	79	(14.55%)	52	2.98%	71	4.31%	59
Callan Public Fd Mid DB	(4.23%)		(14.29%)	Ü_	3.57%		4.56%	

^{*}Current Quarter Target = 40.0% Blmbg Aggregate, 37.0% Russell 3000 Index, 15.0% MSCI ACWI ex-US Gross and 8.0% NCREIF NFI-ODCE Eq Wt Net. **The third quarter 2022 NFI-ODCE Equal Weight Idx return is based on preliminary data.



	Last	Last	Last 3	Last 5	Last 15-1/4
NET OF THE DETURNS	Quarter	Year	Years	Years	Years
NET OF FEE RETURNS					
Domestic Equity					
Mellon Russell 1000 Growth Index	(3.61%)	(22.76%)	10.44%	-	-
Russell 1000 Growth Index	(3.60%)	(22.59%)	10.67%	12.17%	10.22%
Boston Partners	(5.00%)	(7.14%)	7.06%	6.46%	7.01%
Russell 1000 Value Index	(5.62%)	(11.36%)	4.36%	5.29%	5.59%
Aristotle Capital Boston	(3.15%)	(15.91%)	_	-	-
Russell 2000 Index	(2.19%)	(23.50%)	4.29%	3.55%	6.07%
	, ,	,			
International Equity					
Baillie Gifford Intl Choice Fd	(9.90%)	(39.51%)	(3.17%)	(1.51%)	-
MSCI ACWIxUS Gross	(9.80%)	(24.79%)	(1.07%)	(0.34%)	1.33%
Domestic Fixed Income					
MacKay Shields LLC	(4.92%)	(16.90%)	(2.78%)	0.11%	-
Blmbg Aggregate Index	(4.75%)	(14.60%)	(3.26%)	(0.27%)	2.88%
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Real Estate					
Invesco Core Real Estate	1.34%	19.57%	11.05%	9.51%	-
NFI-ODCE Equal Weight Net	0.79%	21.70%	12.13%	9.87%	6.04%
Total Fund	(4.45%)	(16.38%)	3.28%	4.23%	5.11%
	-				
Total Fund ex Cash	(4.49%)	(16.42%)	3.34%	4.27%	5.31%
Target Benchmark*	(4.96%)	(14.55%)	2.98%	4.31%	5.34%

^{*}Current Quarter Target = 40.0% Blmbg Aggregate, 37.0% Russell 3000 Index, 15.0% MSCI ACWI ex-US Gross and 8.0% NCREIF NFI-ODCE Eq Wt Net.



The Total Fund returned -4.37% in the third quarter and lagged the benchmark return of -4.23%. The Total Fund's third quarter performance ranked at the 60th percentile of peers. For the last year, the Total Fund returned -16.09% compared to the -14.29% benchmark return and ranked at the 75th percentile of peers. The Total Fund's return ranks in the top half of peers across intermediate- and long-term periods. Additionally, the Fund outpaced its benchmark over the last 3-, 5-, 10-, 15-, and 20-year periods on an annualized basis.

The AJRS Domestic Equity Composite fell 4.09% in the quarter and outperformed the Russell 3000 Index (-4.46%). Second quarter returns ranked in the top third of peers. Over the last year, Domestic Equity returned -15.09%, which was ahead of its benchmark (-17.63%). The composite leads its benchmark over the last 3-, 5-, 20-, and 31.25-year periods.

- The **Mellon** Russell 1000 Growth Index Fund is passively invested in the Russell 1000 Growth Index. The Fund matched the benchmark return of -3.60% for the quarter and finished at the 34th percentile in the Callan Large Cap Growth peer universe. Over the trailing year, the Fund fell 22.73% and ranked at the 31st percentile of peers.
- In large cap value equity, **Boston Partners** finished the quarter down 4.87% and outperformed the benchmark return of -5.62%. Third quarter results rank at the 36th percentile of the Callan Large Cap Value peer group. Sector allocation contributed to positive relative results, led by an overweight to energy and underweights to real estate and communication services. Over the last year, the Fund returned -6.63% versus the benchmark return of -11.36% and ranked at the 23rd percentile of peers. The Fund leads its benchmark and ranks in the top third of its peer group over longer periods.
- In small cap equity, **Aristotle Capital** posted a third quarter return of -2.95% and trailed the Russell 2000 Index (-2.19%). The Fund ranked at the 39th percentile of peers for the quarter. Stock selection within health care, utilities, and consumer discretionary were the primary detractors. Over the trailing year, the Fund (-15.22%) outperformed its benchmark (-23.50%) and ranked at the 21st percentile of peers.



The AJRS International Equity Composite declined 9.78% during the quarter and matched the benchmark return of -9.80%. Third quarter performance ranked at the 45th percentile of peers. For the last year, the International Equity Composite (-39.20%) trailed the benchmark return (-24.79%) and ranked at the 95th percentile of peers. The Composite outperformed the benchmark over the trailing 7- and 15-year periods.

• **Baillie Gifford** is the only manager in the international equity composite. The Fund performed in line with the index for the quarter and ranked at the 63rd percentile of peers. Active security selection within industrials was additive to performance, while exposure to China was a headwind. The Fund trails its benchmark and peers over longer annualized periods.

The AJRS Domestic Fixed Income Composite fell 4.85% in the third quarter versus the -4.75% return of the Bloomberg Aggregate Index and ranked in the 87th percentile of peers. Over the trailing year, Fixed Income returned -16.64% and trailed the benchmark (-14.60%). The Composite outperformed its benchmark across longer-term periods.

• MacKay Shields, the only manager in the fixed income composite, underperformed the Bloomberg Aggregate and ranked at the 91st percentile of its peer group for the quarter. The Fund's overweight to corporate bonds and underweight to treasuries was a headwind for relative results. Over the last year, the Fund ranks at the 91st percentile of peers. The Fund leads its benchmark and ranks in the top third of peers over the trailing 7-and 10-year periods.

The AJRS Real Estate Composite returned 1.41% in the third quarter and 19.90% for the trailing year.

• Invesco Core Real Estate is the lone fund within the real estate composite. The Fund outperformed the NFI-ODCE Equal Weight Net Index (0.79%) and ranked at the 79th percentile of peers for the quarter. Over the last year, the fund returned 19.90% relative to the 21.70% return of the benchmark and ranked in the third quartile of peers. The Fund leads the index and ranks in the top third of its peer group over the trailing 5- and 7-year periods.



Organizational Developments

Boston Partners Large Cap Value – On September 26th, 2022, Boston Partners announced that after a 20-year career at Boston Partners, Stephanie McGirr has decided to retire from Boston Partners and the investment business. She will remain with the firm until January 31, 2023. Her responsibilities on the Large Cap team will be assumed principally by portfolio managers Josh White (17 years with Boston Partners) and David Cohen (6 years with Boston Partners). There is no change to the Large Cap investment team structure as the team goes to 4 from 5 Portfolio Managers.

Mackay Shields – On September 20th, 2022, Mackay Shields announced that John Loffredo, Co-Head of MacKay Municipal Managers has been named Vice Chairman of MacKay Shields with oversight responsibilities for investment teams across both Taxable and Tax-Exempt markets. Leveraging his deep investment knowledge and 30 plus years of experience and leadership across research, portfolio construction and risk management over multiple market cycles, John will work alongside Jeff Phlegar, CEO to ensure the investment platform and teams are fully resourced and well positioned to serve our clients.

John will retain his current responsibilities as Co-Head of MacKay Municipal Managers (MMM) as will the leaders of the other investment teams. There will be no changes to MacKay's longstanding "boutique within a boutique" philosophy that combines the investment agility of autonomous investment teams with a strong institutional infrastructure.

Janelle Woodward, President of MacKay Shields, has decided to leave the firm to explore other opportunities. To ensure a smooth and seamless transition, she will remain with the firm through the end of the year.

