Quarterly Investment Performance Analysis

Commissioners of the Land Office,
State of Oklahoma

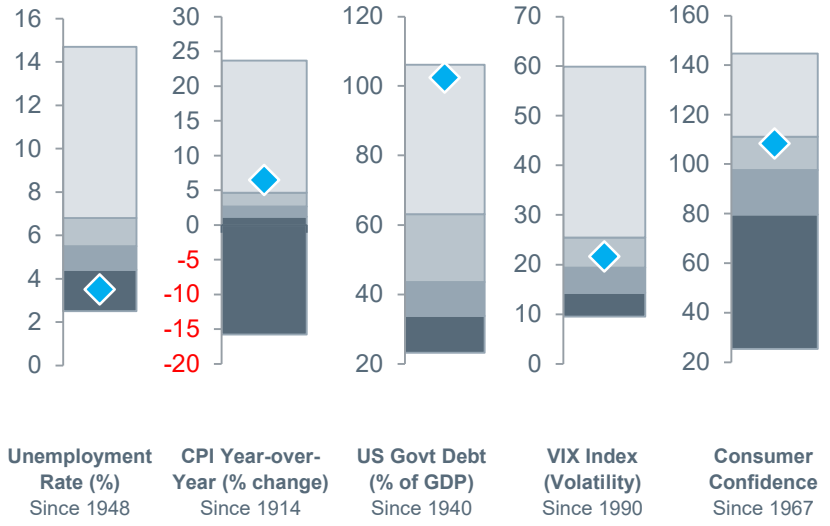
Period Ended: December 31, 2022



Fourth Quarter Economic Environment

In Q4, equity and fixed income markets delivered improved results while continuing to experience elevated volatility. However, positive quarterly returns came on the tail of a significantly negative year for many investors. Regarding economic conditions, the impact of tightening monetary policy and persistent inflation, combined with supply shocks and an energy crisis in Europe, are leading to increasing odds of a global recession in 2023. On a relatively positive note, recent data indicates that the inflationary environment is showing signs of abating. Notably, the US Consumer Price Index declined for a sixth straight month in December with a reading of 6.5%, the lowest level since October 2021. In December, the FOMC did slow the pace of policy rate hikes with a 50 basis point increase, following a series of four straight 75 basis point increases. Internationally, the war in Ukraine caused an energy price shock and trade tensions continue to test economic and political relationships across multiple regions. Within emerging markets, investor attention is focused on China with some pointing to signs of a softening stance toward pandemic restrictions as reason to be optimistic regarding the country's outlook. However, these views are countered with concerns over indications of social unrest and the consolidation of power around President Xi Jinping. With all this considered, global GDP growth forecasts continue to moderate with the OECD forecasting growth of 3.1% in 2022 with an expected decline to 2.2% global GDP growth in 2023.

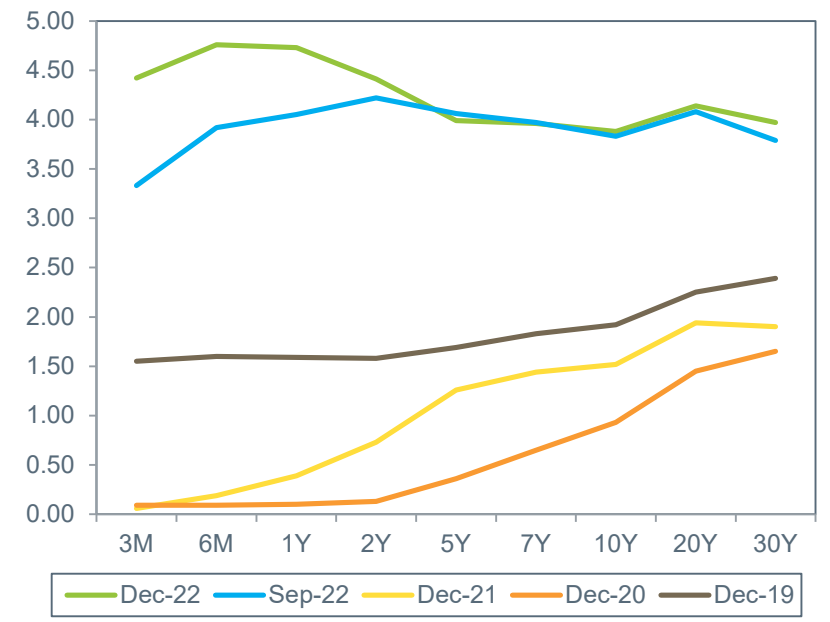
Key Economic Indicators



Economic Indicators	Dec-22		Sep-22	Dec-21	Dec-19	20 Yr
Federal Funds Rate (%)	4.33	▲	3.08	0.07	1.55	1.30
Breakeven Infl. - 5 Yr (%)	2.38	▲	2.16	2.91	1.70	1.92
Breakeven Infl. - 10 Yr (%)	2.30	▲	2.15	2.59	1.79	2.08
CPI YoY (Headline) (%)	6.5	▼	8.2	7.0	2.3	2.5
Unemployment Rate (%)	3.5	–	3.5	3.9	3.6	6.0
Real GDP YoY (%)	1.0	▼	1.8	5.7	2.6	2.0
PMI - Manufacturing	48.4	▼	50.9	58.8	47.9	53.7
USD Total Wtd Idx	121.51	▼	127.64	115.37	114.67	103.33
WTI Crude Oil per Barrel ($)	80.3	▲	79.5	75.2	61.1	67.9
Gold Spot per Oz ($)	1,824	▲	1,661	1,829	1,517	1,160

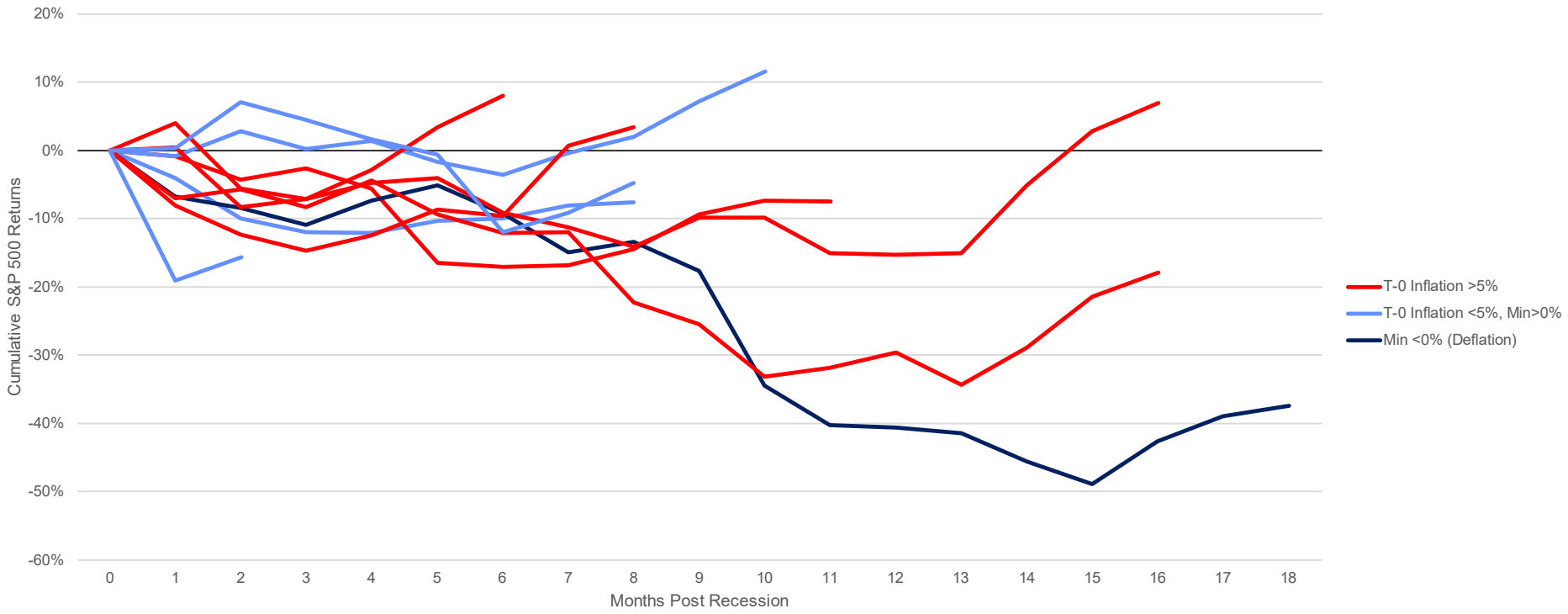
Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	7.56	-18.11	-18.11	9.42	12.56
Russell 2000	6.23	-20.44	-20.44	4.13	9.01
MSCI EAFE (Net)	17.34	-14.45	-14.45	1.54	4.67
MSCI EAFE SC (Net)	15.79	-21.39	-21.39	-0.05	6.21
MSCI Emg Mkts (Net)	9.70	-20.09	-20.09	-1.40	1.44
Bloomberg US Agg Bond	1.87	-13.01	-13.01	0.02	1.06
ICE BofAML 3 Mo US T-Bill	0.84	1.46	1.46	1.26	0.76
NCREIF ODCE (Gross)	-4.96	7.47	7.47	8.68	10.10
FTSE NAREIT Eq REIT (TR)	5.24	-24.37	-24.37	3.68	6.53
HFRI FOF Comp	1.79	-5.25	-5.25	3.02	3.51
Bloomberg Cmdty (TR)	2.22	16.09	16.09	6.44	-1.29

Treasury Yield Curve (%)



Treasury data courtesy of the US Department of the Treasury. Economic data courtesy of Bloomberg Professional Service.

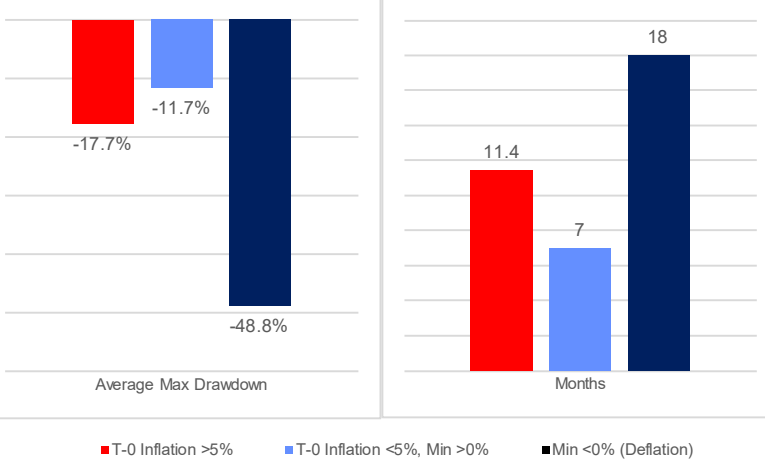
S&P 500 Performance - Recessionary Periods and Inflation Levels (1957 - Present)



Recession Statistics

Start Date	Length Months	YoY CPI% @ T-0	Max YoY CPI%	Min YoY CPI%	Max Drawdown From T-0	Cumulative Return
9/30/1957	8	2.9	3.4	2.8	-12.0%	-7.6%
5/31/1960	10	1.6	1.6	0.9	-3.6%	11.6%
1/31/1970	11	5.9	5.9	5.0	-17.0%	-7.5%
12/31/1973	16	8.4	11.2	8.4	-34.2%	-17.9%
2/29/1980	6	13.0	13.5	12.1	-7.1%	8.0%
8/31/1981	16	9.9	9.9	4.1	-15.3%	7.0%
8/31/1990	8	5.5	6.0	4.6	-14.7%	3.4%
4/30/2001	8	3.0	3.0	1.7	-11.9%	-4.7%
1/31/2008	18	3.9	5.5	-2.0	-48.8%	-37.4%
3/31/2020	2	1.2	1.2	0.3	-19.1%	-15.7%
Averages						
T-0 Inflation > 5%	11.4	8.5	9.3	6.8	-17.7%	-1.4%
T-0 Inflation < 5%, Min > 0%	7.0	2.2	2.3	1.4	-11.7%	-4.1%
Min < 0% (Deflation)	18.0	3.9	5.5	-2.0	-48.8%	-37.4%

Average S&P 500 Drawdown & Recession Length



Performance for each period begins where T-0 is equal to the start of an official recession and runs until the official end of the recession (as reported by the National Bureau of Economic Reporting).
Inflation is measured as the YoY % change in CPI. T-0 = the official recession start date.
Max and Min refer to the maximum and minimum observed YoY CPI% change during the recessionary period.
Source: RVK calculations, based on data from S&P Dow Jones Indices and FRED Database.

Fourth Quarter Review

Broad Market

US equity markets experienced a decrease in volatility in Q4 with short term spikes around CPI release dates and Fed meetings. Returns were positive across market cap and style groups in Q4. The reversal to growth seen in Q3 was short-lived, as value stocks led growth by a wide margin in Q4. Energy had its best year on record with the S&P 500 Energy Index gaining 65.72%.

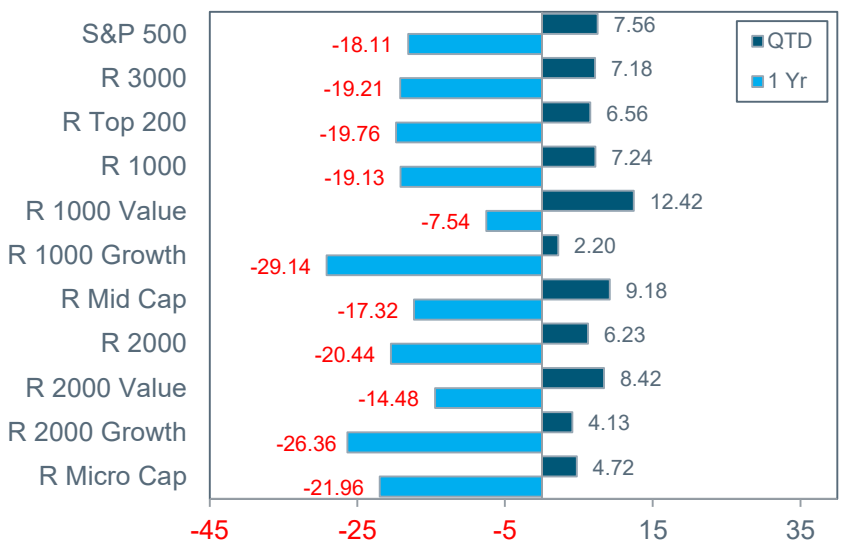
Market Cap

This year marks the worst performance of US equities across market cap groups since the GFC, and only the third time in the last 15 years that the Russell 3000 Index has generated negative returns.

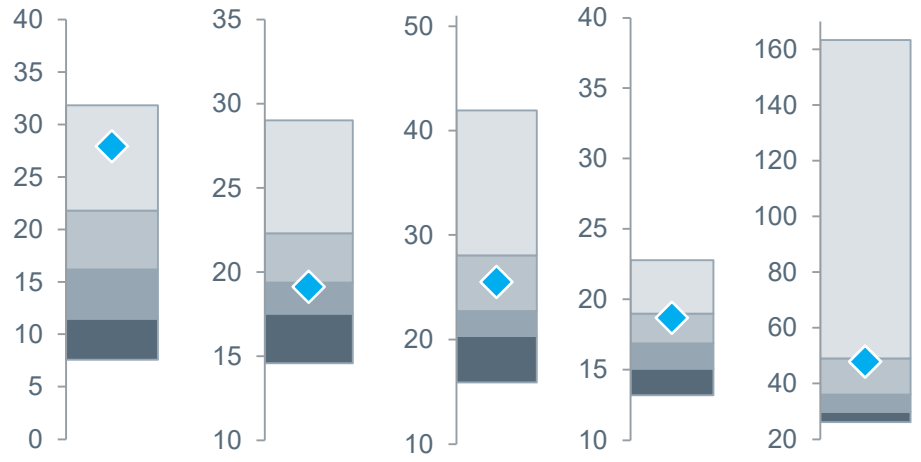
Style and Sector

Value-oriented managers had a higher success rate than core or growth managers in the small- and mid-cap spaces, while large-cap core and growth managers fared better than value managers. Growth managers across the market cap spectrum struggled to provide downside protection in 2022, while value and core managers were broadly successful.

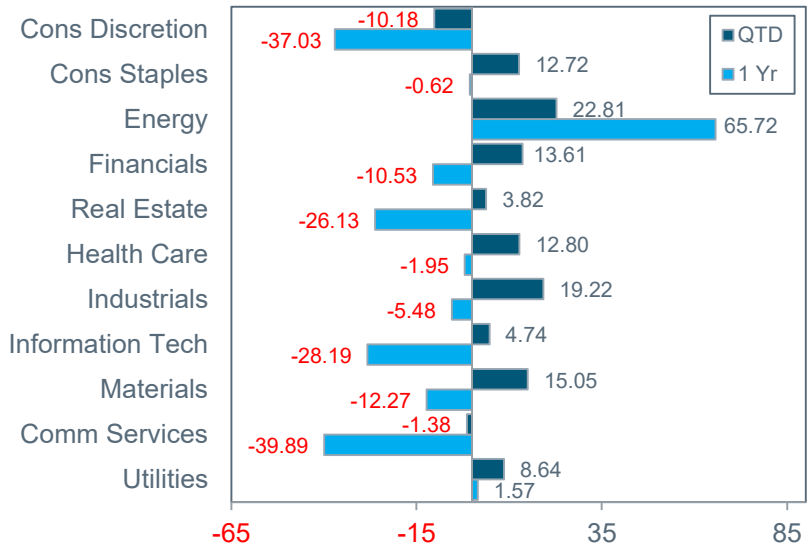
Style and Capitalization Market Performance (%)



Valuations



S&P 500 Index Sector Performance (%)



Valuation data courtesy of Bloomberg Professional Service and Robert J. Shiller, Irrational Exuberance, Second Edition (2000).
P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.

Fourth Quarter Review

Developed Markets

International developed markets meaningfully outperformed their domestic counterparts in Q4 with the MSCI EAFE Index realizing a 17.3% return for the period. Value stocks rebounded back into favor, outperforming growth in a reversal from the prior quarter, while large-cap continued its outperformance over small-cap stocks. Overall, market trends pointed to investors anticipating moderating inflation and easing of rate hikes despite the ongoing uncertainty led by the conflict in Ukraine and near-term recession fears.

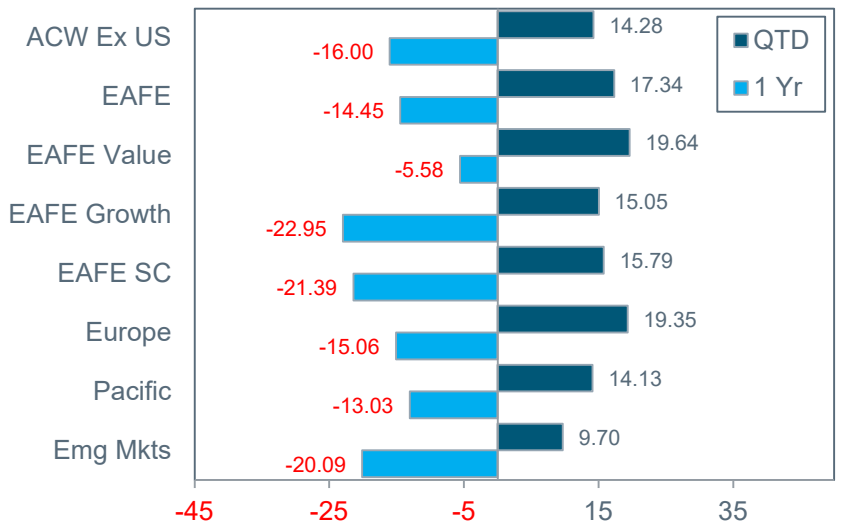
Emerging Markets

Emerging markets lagged behind developed during the quarter with the MSCI Emerging Markets Index finishing with a 9.7% return. Value stocks narrowly outperformed growth and large-cap beat small-cap.

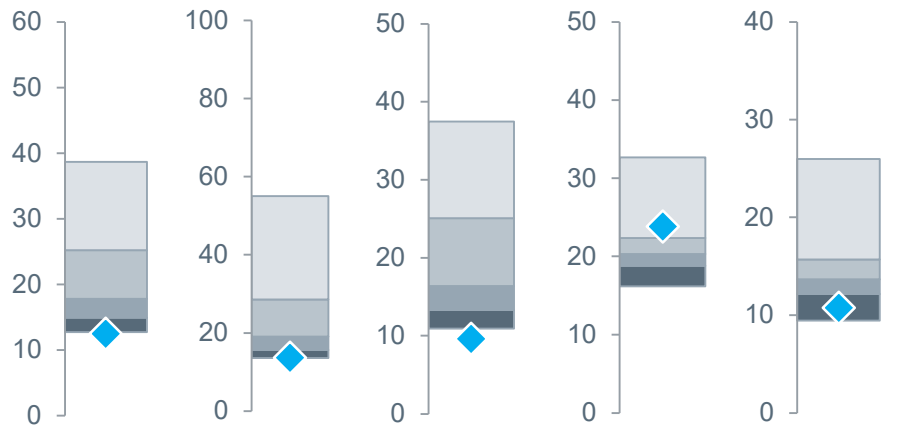
Market Cap & Style

The majority of active managers in emerging markets outperformed the index in Q4; however, active managers in international developed mostly underperformed.

MSCI Style and Capitalization Market Performance (%)

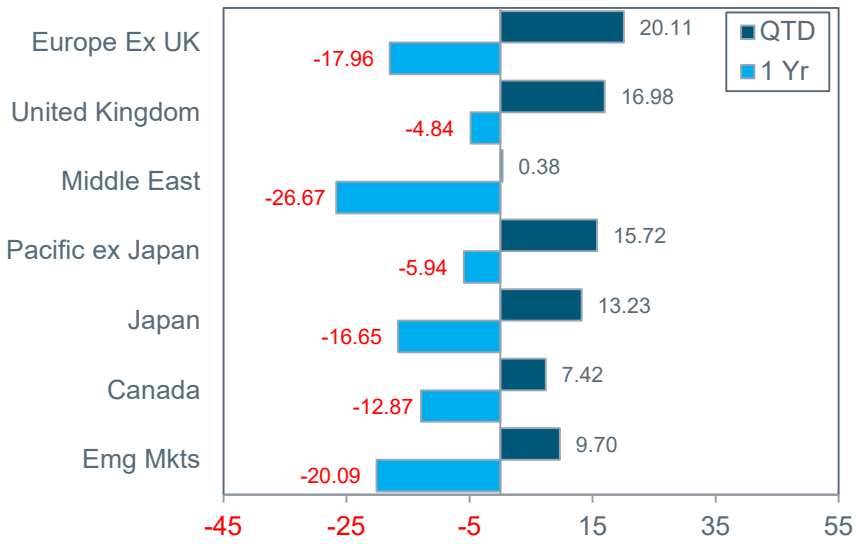


Valuations



Intl Equity	Developed Intl Equity	Developed Intl Value Equity	Developed Intl Growth Equity	Emerging Markets Equity
MSCI ACW x US	MSCI EAFE	MSCI EAFE Val	MSCI EAFE Grth	MSCI EM
12M P/E	12M P/E	12M P/E	12M P/E	12M P/E
Since 1995	Since 1995	Since 1995	Since 1995	Since 1995

MSCI Region Performance (%)



Valuation data courtesy of Bloomberg Professional Service.
P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.
All returns are shown net of foreign taxes on dividends.

Fourth Quarter Review

Broad Market

The Bloomberg US Aggregate Index finished Q4 with a return of 1.9%, capping off a decline of -13.0% in 2022, the most negative calendar year on record for the index. The year was defined by rising interest rates, as treasury yields rose 236 basis points from 1.5% to 3.9% as measured by the 10-year US Treasury yield. The Federal Reserve aggressively hiked the Federal Funds rate in response to persistent inflation over the course of the year.

Credit Market

US investment grade corporate bonds rebounded in Q4 as low supply and softer Federal Reserve rhetoric bolstered credit markets. Non-investment grade corporate credit relatively outperformed investment grade over the year.

Emerging Market Debt

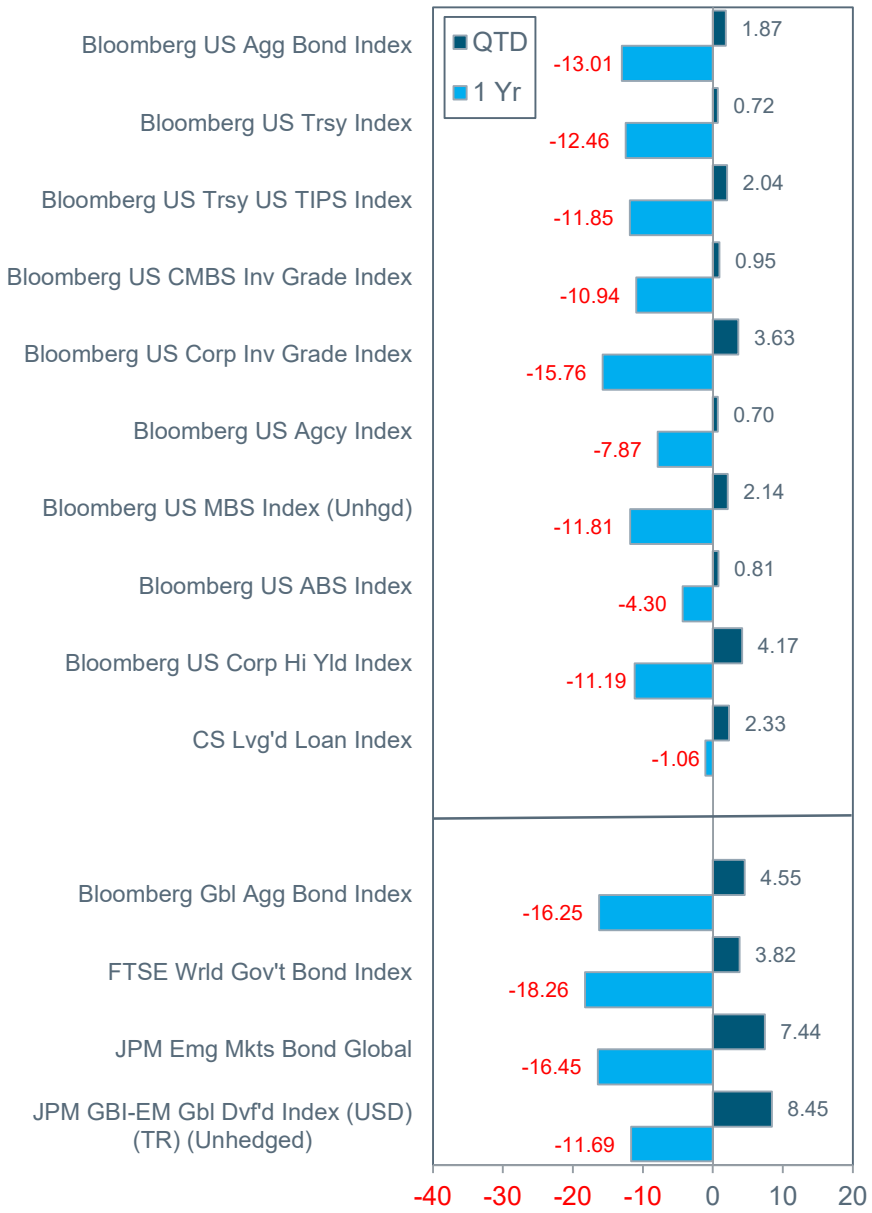
Conditions in global fixed income markets were defined by concerns over low growth, persistent inflation, rising interest rates, a strong US Dollar, and geopolitical conflict. The Bloomberg Global Aggregate Index returned 1.0% in Q4 and -11.2% in 2022, while the JPM EMBI Global Diversified returned 8.1% and -17.8% over these respective periods.

Valuations



US Treasury Bonds	US Aggregate Bonds	US Corporate Bonds	US Credit Bonds	US High-Yield Bonds
10-Yr US Treasury Yields	Bloomberg US Agg Spreads	Bloomberg US Corp Spreads	Bloomberg US Credit Spreads	Bloomberg US Corp:HY Spreads
Since 1953	Since 2000	Since 1989	Since 2000	Since 2000

Fixed Income Performance (%)



Valuation data courtesy of Bloomberg Professional Service.
Valuations shown represent the 5th through 95th percentiles to minimize the effect of outliers.

Fourth Quarter Review - Absolute Return

General Market - Hedge Funds

Despite a highly challenging market backdrop, hedge funds broadly delivered much-needed capital preservation to institutional investors. The year also ended on a strong note given most managers were reducing leverage and overall market exposure going into Q4. The HFRI Fund-Asset-Weighted Composite Index delivered an annual return of 1.0% while it's Asset-Weighted counterpart ended the year at -4.0%.

General Market - Global Tactical Asset Allocation (GTAA)

Global Tactical Asset Allocation (GTAA) strategies that RVK follows closely posted significant gains with moderate dispersion to close an otherwise challenging year. Given a strong quarter for non-US equity, as well as value-oriented equity within the US, nearly all active managers with significant diversification outperformed a US centric blend of 60% equity and 40% fixed income. The top performing long-biased GTAA strategies were those who have included meaningful market neutral idiosyncratic relative valuation exposures. While those who moderately underperformed peers benefitted from a value bias despite maintaining US equity and fixed income exposures.

Fourth Quarter Review - Real Assets

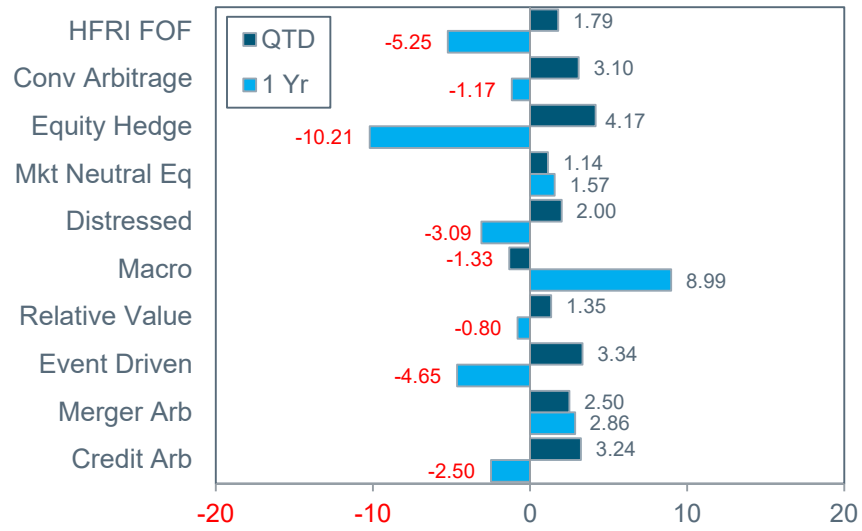
General Market - Diversified Inflation Strategies (DIS)

DIS managers tracked closely by RVK have outperformed a US-centric blend of 60% equity and 40% fixed income both year to date, and over the quarter. After responding positively to record inflationary pressures in Q1 of 2022, DIS posted losses in the second and third quarters that followed. Strong Q4 performance has materialized across the peer group, with those who rely on income-oriented investment processes and those who hold larger TIPS allocation lagging the group to a moderate degree.

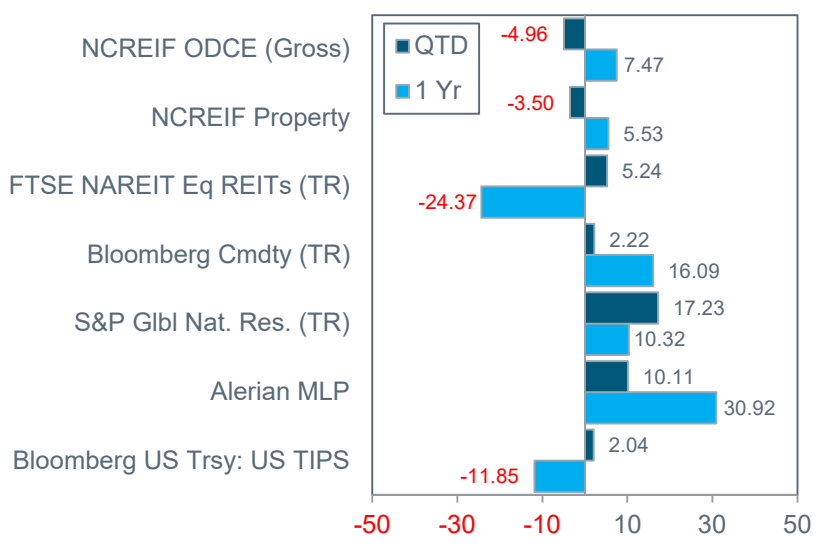
General Market - Real Estate

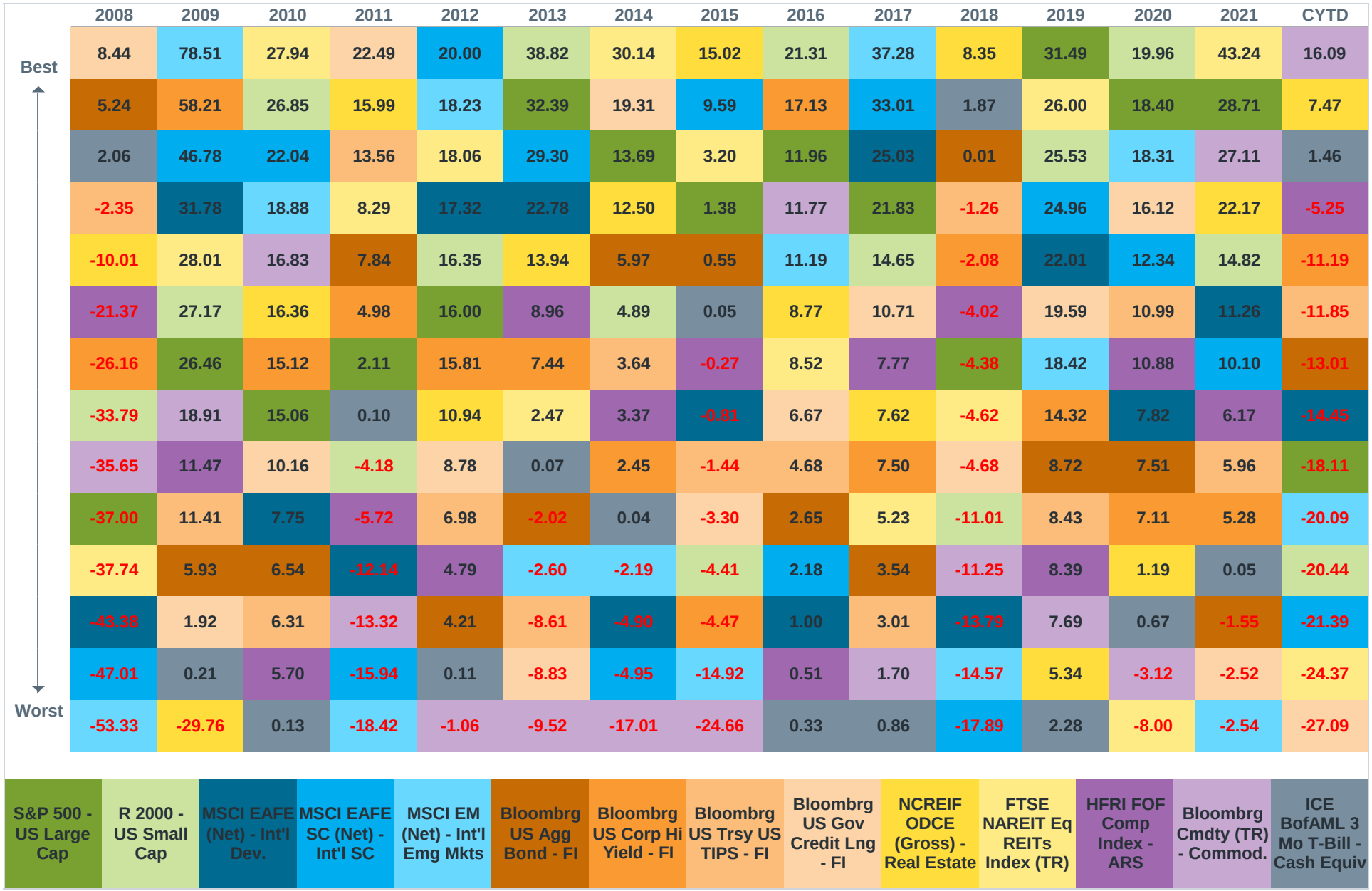
Core private real estate generated a negative return of -5.0% in Q4 (on a preliminary and gross of fee basis), as reported by the NFI-ODCE Index, with the total return comprising of 0.8% income and -5.8% price appreciation. Investors of publicly traded real estate significantly outperformed their private market counterparts by a meaningful margin. Publicly traded real estate delivered a fourth quarter total return of 4.5%, as measured by FTSE/NAREIT All REITs Index.

HFRI Hedge Fund Performance (%)



Real Asset Performance (%)





	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	CYTD
Best	8.44	78.51	27.94	22.49	20.00	38.82	30.14	15.02	21.31	37.28	8.35	31.49	19.96	43.24	16.09
	5.24	58.21	26.85	15.99	18.23	32.39	19.31	9.59	17.13	33.01	1.87	26.00	18.40	28.71	7.47
	2.06	46.78	22.04	13.56	18.06	29.30	13.69	3.20	11.96	25.03	0.01	25.53	18.31	27.11	1.46
	-2.35	31.78	18.88	8.29	17.32	22.78	12.50	1.38	11.77	21.83	-1.26	24.96	16.12	22.17	-5.25
	-10.01	28.01	16.83	7.84	16.35	13.94	5.97	0.55	11.19	14.65	-2.08	22.01	12.34	14.82	-11.19
	-21.37	27.17	16.36	4.98	16.00	8.96	4.89	0.05	8.77	10.71	-4.02	19.59	10.99	11.26	-11.85
	-26.16	26.46	15.12	2.11	15.81	7.44	3.64	-0.27	8.52	7.77	-4.38	18.42	10.88	10.10	-13.01
	-33.79	18.91	15.06	0.10	10.94	2.47	3.37	-0.81	6.67	7.62	-4.62	14.32	7.82	6.17	-14.45
	-35.65	11.47	10.16	-4.18	8.78	0.07	2.45	-1.44	4.68	7.50	-4.68	8.72	7.51	5.96	-18.11
	-37.00	11.41	7.75	-5.72	6.98	-2.02	0.04	-3.30	2.65	5.23	-11.01	8.43	7.11	5.28	-20.09
	-37.74	5.93	6.54	-12.14	4.79	-2.60	-2.19	-4.41	2.18	3.54	-11.25	8.39	1.19	0.05	-20.44
	-43.38	1.92	6.31	-13.32	4.21	-8.61	-4.90	-4.47	1.00	3.01	-13.79	7.69	0.67	-1.55	-21.39
	-47.01	0.21	5.70	-15.94	0.11	-8.83	-4.95	-14.92	0.51	1.70	-14.57	5.34	-3.12	-2.52	-24.37
Worst	-53.33	-29.76	0.13	-18.42	-1.06	-9.52	-17.01	-24.66	0.33	0.86	-17.89	2.28	-8.00	-2.54	-27.09

S&P 500 - US Large Cap	R 2000 - US Small Cap	MSCI EAFE (Net) - Int'l Dev.	MSCI EAFE SC (Net) - Int'l SC	MSCI EM (Net) - Int'l Emg Mkts	Bloomberg US Agg Bond - FI	Bloomberg US Corp Hi Yield - FI	Bloomberg US Trsy US TIPS - FI	Bloomberg US Gov Credit Lng - FI	NCREIF ODCE (Gross) - Real Estate	FTSE NAREIT Eq REITs Index (TR)	HFRI FOF Comp Index - ARS	Bloomberg Cmdty (TR) - Commod.	ICE BofAML 3 Mo T-Bill - Cash Equiv

NCREIF ODCE (Gross) performance is reported quarterly; performance is shown N/A in interim-quarter months.

RVK

Asset Allocation & Performance

	Allocation		Perf. (%)
	Market Value ($)	%	QTD
Total Fund	**2,457,201,427**	**100.00**	**6.19**
Domestic Equity	**538,939,368**	**21.93**	**11.90**
Robeco BPAM Premium Eq (SA)	108,315,323	4.41	14.44
Vanguard Hi Dv Yld;Adm (VHYAX)	217,907,624	8.87	15.15
BlackRock R 1000 Index Fund (CF)	88,660,587	3.61	7.35
Silvercrest Small Cap Value (SA)	124,055,834	5.05	7.89
MLPs	**132,209,924**	**5.38**	**8.00**
Harvest Fund Advisors MLP (SA)	132,209,924	5.38	8.00
International Equity	**224,906,809**	**9.15**	**15.36**
Vanguard I HD Y;Adm (VIHAX)	113,386,510	4.61	16.09
Vanguard Tot I S;Ins + (VTPSX)	111,520,299	4.54	14.72

Asset Allocation & Performance

	Allocation		Perf. (%)
	Market Value ($)	%	QTD
Fixed Income	**1,375,358,638**	**55.97**	**2.43**
Dodge & Cox Fixed Income (SA)	203,712,115	8.29	2.67
Insight Core Plus Select Income (SA)	203,661,595	8.29	3.13
Guggenheim (BBB) (SA)	100,886,406	4.11	2.56
JPMorgan MBS (SA)	202,475,375	8.24	1.25
Guggenheim CMBS (SA)	100,096,515	4.07	0.25
Voya Investment Management US High Yield (SA)	127,816,660	5.20	4.60
Fort Washington High Yield (SA)	131,917,809	5.37	4.90
Cohen & Steers Preferreds (SA)	253,805,442	10.33	1.51
Oklahoma Treasurer's Cash Pool	50,870,701	2.07	0.44
Bank of Oklahoma Cash	116,020	0.00	0.77
REITs	**64,201,726**	**2.61**	**4.76**
CenterSquare US REIT Total Return Comp (SA)	64,201,726	2.61	4.76
Listed Infrastructure	**121,584,960**	**4.95**	**9.57**
Cohen & Steers Global Listed Infrastructure Fund, LP	121,584,960	4.95	9.57

Schedule of Investable Assets

Periods Ending	Beginning Market Value ($)	Net Cash Flow ($)	Gain/Loss ($)	Ending Market Value ($)	% Return	Unit Value
CYTD	**2,755,067,404**	**-58,103,936**	**-239,762,041**	**2,457,201,427**	**-8.74**	**91.26**

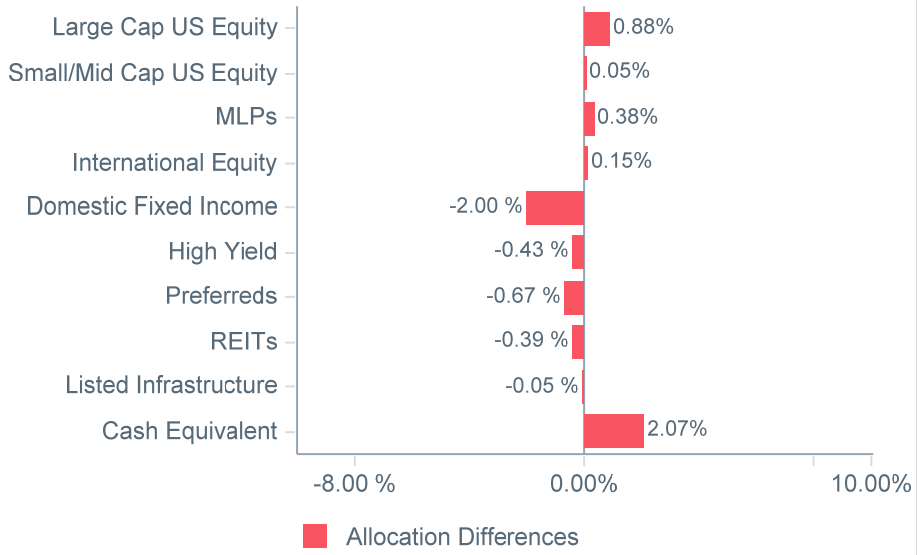
Allocations shown may not sum up to 100% exactly due to rounding. Performance shown is gross of fees. RVK calculates performance for investment managers and composites using different methodologies. Please see the Glossary for additional information.

RVK

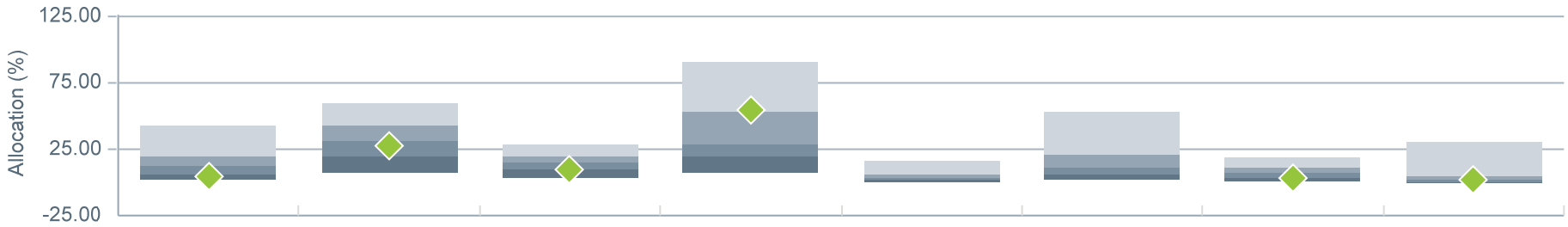
Asset Allocation vs. Target Allocation

	Market Value ($)	Allocation (%)	Target (%)
Large Cap US Equity	414,883,534	16.88	16.00
Small/Mid Cap US Equity	124,055,834	5.05	5.00
MLPs	132,209,924	5.38	5.00
International Equity	224,906,809	9.15	9.00
Domestic Fixed Income	810,832,007	33.00	35.00
High Yield	259,734,468	10.57	11.00
Preferreds	253,805,442	10.33	11.00
REITs	64,201,726	2.61	3.00
Listed Infrastructure	121,584,960	4.95	5.00
Cash Equivalent	50,986,721	2.07	0.00
Total Fund	2,457,201,427	100.00	100.00

Asset Allocation vs. Target Allocation Differences



Asset Allocation vs. All Master Trust - Total Fund



	Global Equity	US Equity	Global ex-US Equity	US Fixed	Global ex-US Fixed	Alternatives	Total Real Estate	Cash & Equivalents
◆ Total Fund	4.95 (81)	27.31 (60)	9.15 (76)	53.90 (25)	N/A	N/A	2.61 (86)	2.07 (45)
Median	11.80	31.32	14.27	29.26	3.33	10.71	6.90	1.66
Population	819	3,787	3,306	3,894	526	1,912	1,463	2,886

Allocations shown may not sum up to 100% exactly due to rounding. Robeco Boston Partners Premium Equity (SA) is included in the Large Cap US Equity market value. Domestic Fixed Income consists of Dodge & Cox Fixed Income (SA), Cutwater Core Plus Select Income (SA), Guggenheim (BBB) (SA), JPMorgan MBS (SA), and Guggenheim CMBS (SA). MLPs are included in the US Equity segment allocation. Global Equity is composed of the Cohen & Steers Listed Infrastructure Fund, LP.

Commissioners of the Land Office, State of Oklahoma
Total Fund Yield - Trailing Periods

As of November 30, 2022

	Yield %											
	MTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2021	2020	2019	Since Inception	Inception Date
Total Fund Yield	0.32	3.46	3.92	3.86	3.94	3.99	3.98	3.62	4.08	4.13	2.67	01/01/2008
Total Fund Yield ($)	$7,588,275	$88,352,205	$100,783,420	$97,177,040	$97,003,595	$95,720,621	$92,848,549	$96,134,214	$95,801,121	$99,117,382		

The Total Fund Yield is calculated by dividing the total manager income distributed by the average period market value.
Yield is arithmetically annualized for periods greater than one year. Yield shown is on a trailing basis as of the end of the prior month.

RVK

Commissioners of the Land Office, State of Oklahoma
Comparative Performance (Net of Fees) - Trailing Periods

As of December 31, 2022

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Total Fund	**6.11**	**-8.98**	**-8.98**	**2.04**	**3.14**	**4.97**	**4.68**	**6.31**	**12/01/1995**
Target Allocation Index	5.25	-12.15	-12.15	1.63	3.20	4.90	4.55	6.25	
Difference	0.86	3.17	3.17	0.41	-0.06	0.07	0.13	0.06	
Actual Allocation Index	6.22	-9.71	-9.71	1.44	2.81	4.61	4.36	N/A	
Difference	-0.11	0.73	0.73	0.60	0.33	0.36	0.32	N/A	
Domestic Equity	**11.83**	**-6.88**	**-6.88**	**8.01**	**7.53**	**10.37**	**11.15**	**8.85**	**12/01/1995**
Russell 3000 Index	7.18	-19.21	-19.21	7.07	8.79	11.04	12.13	9.02	
Difference	4.65	12.33	12.33	0.94	-1.26	-0.67	-0.98	-0.17	
MLPs	**7.80**	**27.73**	**27.73**	**10.52**	**5.45**	**5.51**	**N/A**	**1.51**	**03/01/2014**
MLP Custom Index	9.35	33.71	33.71	10.60	5.46	6.05	3.47	0.80	
Difference	-1.55	-5.98	-5.98	-0.08	-0.01	-0.54	N/A	0.71	
International Equity	**15.32**	**-11.55**	**-11.55**	**1.71**	**1.81**	**5.57**	**4.83**	**2.97**	**05/01/2007**
Vanguard Spl Tot Int'l Stock Index	14.14	-16.10	-16.10	0.52	1.10	5.03	4.20	2.03	
Difference	1.18	4.55	4.55	1.19	0.71	0.54	0.63	0.94	
Fixed Income	**2.37**	**-11.74**	**-11.74**	**-0.92**	**1.49**	**2.86**	**2.91**	**5.61**	**07/01/1999**
Bloomberg US Unv Bond Index	2.24	-12.99	-12.99	-2.54	0.18	1.26	1.33	4.17	
Difference	0.13	1.25	1.25	1.62	1.31	1.60	1.58	1.44	
REITs	**4.63**	**-23.73**	**-23.73**	**1.34**	**4.58**	**5.33**	**7.47**	**7.88**	**08/01/2008**
FTSE NAREIT Eq REITs Index (TR)	5.24	-24.37	-24.37	-0.11	3.68	4.58	6.53	6.44	
Difference	-0.61	0.64	0.64	1.45	0.90	0.75	0.94	1.44	
Listed Infrastructure	**9.43**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**-7.65**	**04/01/2022**
FTSE Global Core Infrastructure 50/50 Index (Net)	9.01	N/A	N/A	N/A	N/A	N/A	N/A	-8.28	
Difference	0.42	N/A	N/A	N/A	N/A	N/A	N/A	0.63	

RVK began monitoring the assets of Commissioners of the Land Office, State of Oklahoma as of 07/01/2005. Prior historical data was provided by the previous consultant. Performance shown is net of fees. Indices show N/A for since inception returns when the fund contains more history than the corresponding benchmark. Please see the Addendum for custom index definitions.

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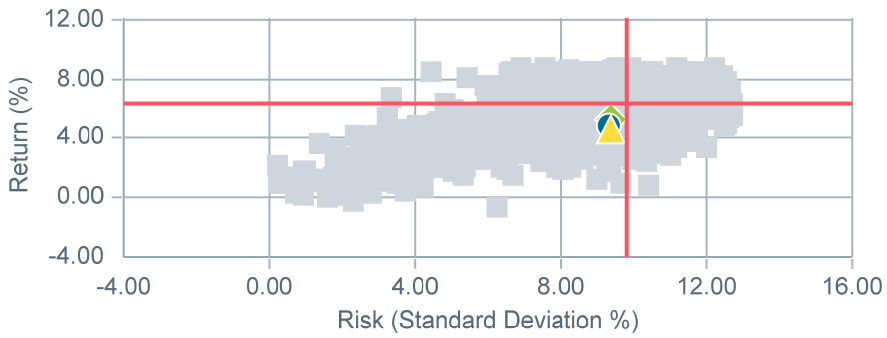
Commissioners of the Land Office, State of Oklahoma **As of December 31, 2022**
Comparative Performance (Net of Fees) - Calendar Years

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Total Fund	**11.17**	**5.00**	**16.28**	**-5.50**	**9.56**	**9.79**	**-3.72**	**6.04**	**10.19**	**12.30**
Target Allocation Index	9.68	8.93	16.71	-4.45	9.25	9.35	-4.01	6.60	9.07	11.64
Difference	1.49	-3.93	-0.43	-1.05	0.31	0.44	0.29	-0.56	1.12	0.66
Actual Allocation Index	10.90	4.24	16.12	-5.23	8.44	10.10	-4.57	6.63	9.81	11.51
Difference	0.27	0.76	0.16	-0.27	1.12	-0.31	0.85	-0.59	0.38	0.79
Domestic Equity	**26.12**	**7.28**	**26.40**	**-9.72**	**16.66**	**18.93**	**-2.33**	**8.86**	**35.67**	**16.04**
Russell 3000 Index	25.66	20.89	31.02	-5.24	21.13	12.74	0.48	12.56	33.55	16.42
Difference	0.46	-13.61	-4.62	-4.48	-4.47	6.19	-2.81	-3.70	2.12	-0.38
MLPs	**40.48**	**-24.76**	**10.99**	**-12.99**	**-4.51**	**16.90**	**-28.45**	**N/A**	**N/A**	**N/A**
MLP Custom Index	41.99	-28.75	10.29	-12.56	-5.79	22.73	-33.50	7.89	29.96	5.19
Difference	-1.51	3.99	0.70	-0.43	1.28	-5.83	5.05	N/A	N/A	N/A
International Equity	**11.78**	**6.41**	**21.50**	**-14.42**	**27.52**	**4.78**	**-4.16**	**-5.66**	**21.30**	**14.93**
Vanguard Spl Tot Int'l Stock Index	8.84	11.24	21.80	-14.61	27.41	4.72	-4.29	-3.39	15.76	17.04
Difference	2.94	-4.83	-0.30	0.19	0.11	0.06	0.13	-2.27	5.54	-2.11
Fixed Income	**1.54**	**8.52**	**11.86**	**-1.01**	**6.45**	**6.27**	**0.38**	**6.11**	**2.62**	**10.55**
Bloomberg US Unv Bond Index	-1.10	7.58	9.29	-0.25	4.09	3.91	0.43	5.56	-1.35	5.53
Difference	2.64	0.94	2.57	-0.76	2.36	2.36	-0.05	0.55	3.97	5.02
REITs	**42.00**	**-3.91**	**26.76**	**-5.20**	**6.27**	**8.20**	**4.96**	**31.98**	**3.20**	**17.11**
FTSE NAREIT Eq REITs Index (TR)	43.24	-8.00	26.00	-4.62	5.23	8.52	3.20	30.14	2.47	18.06
Difference	-1.24	4.09	0.76	-0.58	1.04	-0.32	1.76	1.84	0.73	-0.95
Listed Infrastructure	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
FTSE Global Core Infrastructure 50/50 Index (Net)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RVK began monitoring the assets of Commissioners of the Land Office, State of Oklahoma as of 07/01/2005. Prior historical data was provided by the previous consultant. Performance shown is net of fees. Please see the Addendum for custom index definitions.

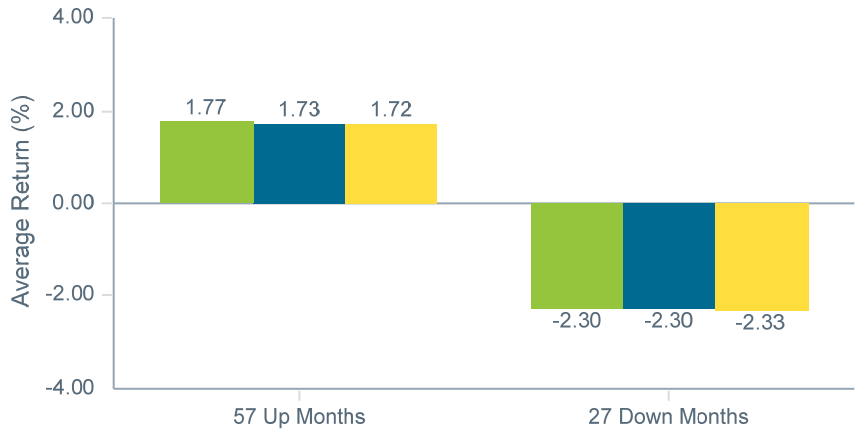
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Plan Sponsor Scattergram - 7 Years

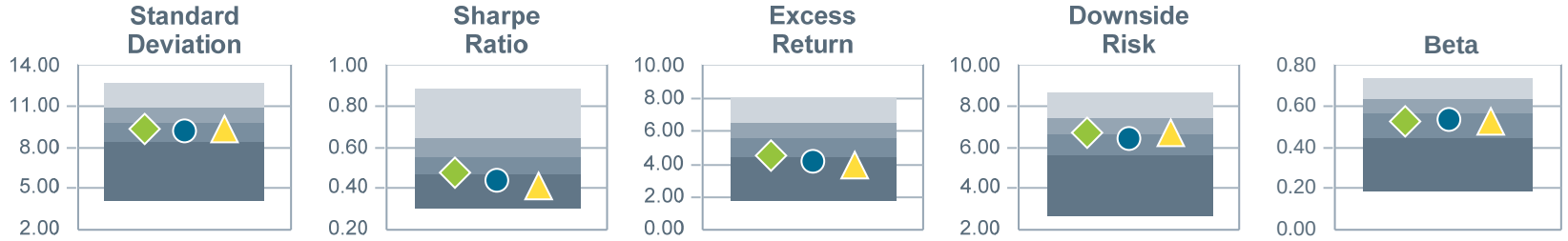


	Return	Standard Deviation
Total Fund	5.26	9.36
Target Allocation Index	4.90	9.32
Actual Allocation Index	4.61	9.39
Median	6.29	9.82

Up/Down Markets - 7 Years



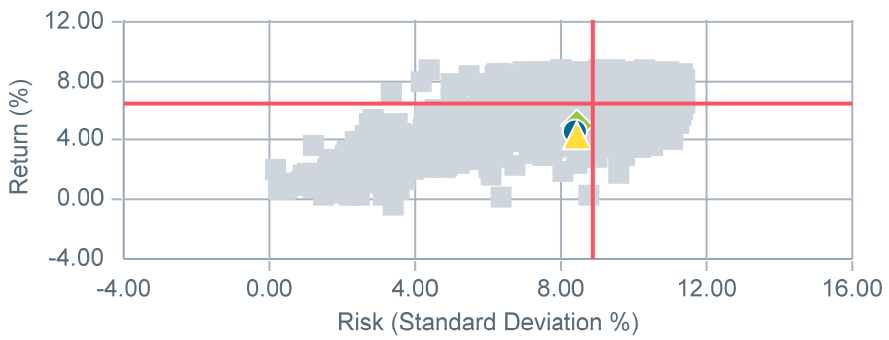
Plan Sponsor Peer Group Analysis - Multi Statistics (Beta vs. S&P 500)



	7 Years	7 Years	7 Years	7 Years	7 Years
Total Fund	9.36 (60)	0.48 (72)	4.52 (74)	6.72 (50)	0.53 (59)
Target Allocation Index	9.32 (61)	0.44 (81)	4.17 (79)	6.48 (57)	0.54 (58)
Actual Allocation Index	9.39 (60)	0.41 (87)	3.90 (81)	6.77 (48)	0.53 (59)
Median	9.82	0.55	5.57	6.69	0.56
Population	2,189	2,189	2,189	2,189	2,189

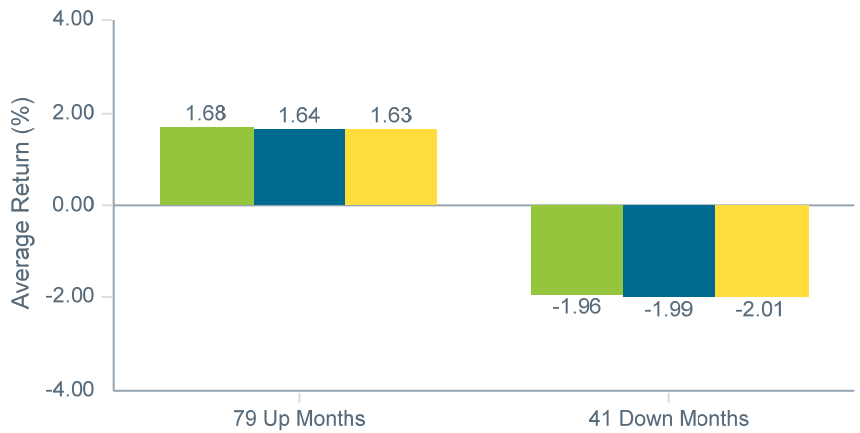
Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Plan Sponsor Scattergram - 10 Years



	Return	Standard Deviation
Total Fund	4.99	8.42
Target Allocation Index	4.55	8.39
Actual Allocation Index	4.36	8.43
Median	6.48	8.90

Up/Down Markets - 10 Years



Plan Sponsor Peer Group Analysis - Multi Statistics (Beta vs. S&P 500)



	10 Years	10 Years	10 Years	10 Years	10 Years
Total Fund	8.42 (63)	0.53 (81)	4.48 (80)	5.92 (49)	0.53 (61)
Target Allocation Index	8.39 (64)	0.48 (88)	4.05 (84)	5.75 (56)	0.52 (61)
Actual Allocation Index	8.43 (63)	0.46 (91)	3.87 (86)	5.97 (47)	0.52 (61)
Median	8.90	0.66	5.99	5.88	0.56
Population	1,886	1,886	1,886	1,886	1,886

Performance shown is gross of fees. Calculation is based on monthly periodicity. Parentheses contain percentile ranks.

Commissioners of the Land Office, State of Oklahoma
Comparative Performance (Gross of Fees) - Trailing Periods

As of December 31, 2022

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Total Fund	**6.19**	**-8.74**	**-8.74**	**2.31**	**3.42**	**5.26**	**4.99**	**6.54**	**12/01/1995**
Target Allocation Index	5.25	-12.15	-12.15	1.63	3.20	4.90	4.55	6.25	
Difference	0.94	3.41	3.41	0.68	0.22	0.36	0.44	0.29	
Actual Allocation Index	6.22	-9.71	-9.71	1.44	2.81	4.61	4.36	N/A	
Difference	-0.03	0.97	0.97	0.87	0.61	0.65	0.63	N/A	
All Master Trust - Total Fund Median	5.29	-13.06	-13.06	2.99	4.36	6.29	6.48	7.13	
Rank	33	16	16	63	70	73	80	77	
Domestic Equity	**11.90**	**-6.64**	**-6.64**	**8.28**	**7.81**	**10.68**	**11.49**	**9.12**	**12/01/1995**
Russell 3000 Index	7.18	-19.21	-19.21	7.07	8.79	11.04	12.13	9.02	
Difference	4.72	12.57	12.57	1.21	-0.98	-0.36	-0.64	0.10	
All Master Trust-US Equity Segment Median	7.70	-17.91	-17.91	6.10	7.60	10.08	11.24	8.93	
Rank	7	2	2	13	44	32	43	44	
MLPs	**8.00**	**28.66**	**28.66**	**11.33**	**6.20**	**6.25**	**N/A**	**2.22**	**03/01/2014**
MLP Custom Index	9.35	33.71	33.71	10.60	5.46	6.05	3.47	0.80	
Difference	-1.35	-5.05	-5.05	0.73	0.74	0.20	N/A	1.42	
International Equity	**15.36**	**-11.41**	**-11.41**	**1.87**	**1.94**	**5.69**	**5.05**	**3.31**	**05/01/2007**
Vanguard Spl Tot Int'l Stock Index	14.14	-16.10	-16.10	0.52	1.10	5.03	4.20	2.03	
Difference	1.22	4.69	4.69	1.35	0.84	0.66	0.85	1.28	
All Master Trust-Intl. Equity Segment Median	14.25	-16.56	-16.56	1.03	1.82	5.57	5.05	2.98	
Rank	27	10	10	32	47	46	50	29	
Fixed Income	**2.43**	**-11.55**	**-11.55**	**-0.71**	**1.72**	**3.10**	**3.15**	**5.80**	**07/01/1999**
Bloomberg US Unv Bond Index	2.24	-12.99	-12.99	-2.54	0.18	1.26	1.33	4.17	
Difference	0.19	1.44	1.44	1.83	1.54	1.84	1.82	1.63	
All Master Trust-US Fixed Income Segment Median	1.84	-12.74	-12.74	-1.82	0.51	1.80	1.71	4.54	
Rank	26	40	40	22	10	9	3	10	
REITs	**4.76**	**-23.34**	**-23.34**	**1.85**	**5.10**	**5.87**	**8.03**	**8.43**	**08/01/2008**
FTSE NAREIT Eq REITs Index (TR)	5.24	-24.37	-24.37	-0.11	3.68	4.58	6.53	6.44	
Difference	-0.48	1.03	1.03	1.96	1.42	1.29	1.50	1.99	
Listed Infrastructure	**9.57**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**-7.28**	**04/01/2022**
FTSE Global Core Infrastructure 50/50 Index (Net)	9.01	N/A	N/A	N/A	N/A	N/A	N/A	-8.28	
Difference	0.56	N/A	N/A	N/A	N/A	N/A	N/A	1.00	

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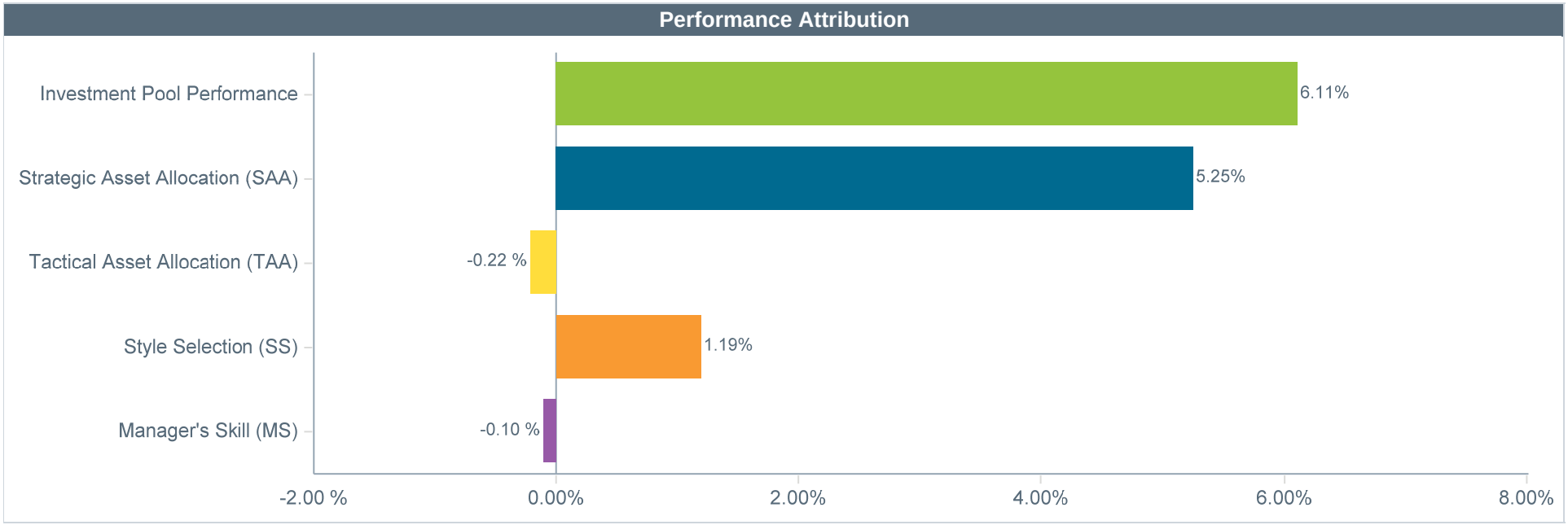
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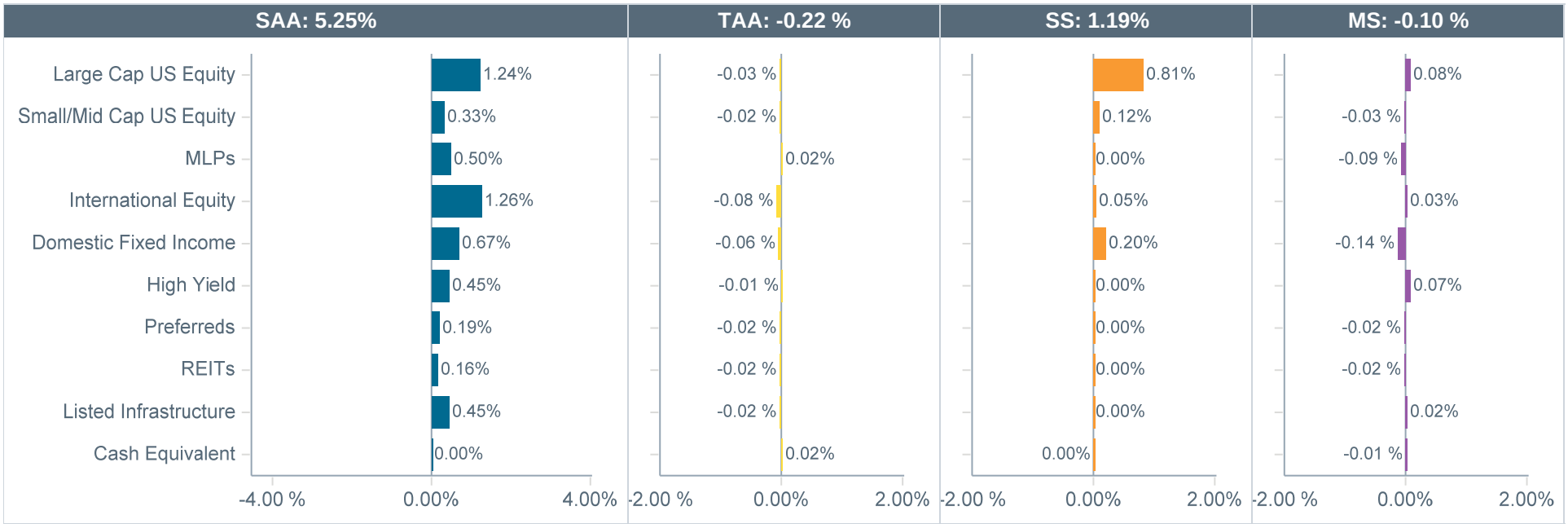
Commissioners of the Land Office, State of Oklahoma **As of December 31, 2022**
Comparative Performance (Gross of Fees) - Calendar Years

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Total Fund	**11.46**	**5.27**	**16.58**	**-5.23**	**9.88**	**10.12**	**-3.38**	**6.44**	**10.57**	**12.73**
Target Allocation Index	9.68	8.93	16.71	-4.45	9.25	9.35	-4.01	6.60	9.07	11.64
Difference	1.78	-3.66	-0.13	-0.78	0.63	0.77	0.63	-0.16	1.50	1.09
Actual Allocation Index	10.90	4.24	16.12	-5.23	8.44	10.10	-4.57	6.63	9.81	11.51
Difference	0.56	1.03	0.46	0.00	1.44	0.02	1.19	-0.19	0.76	1.22
All Master Trust - Total Fund Median	12.45	12.54	18.58	-4.28	14.93	7.52	-0.64	6.12	14.72	12.47
Rank	59	94	71	68	88	7	92	45	76	45
Domestic Equity	**26.43**	**7.55**	**26.72**	**-9.44**	**17.05**	**19.35**	**-1.97**	**9.26**	**36.12**	**16.64**
Russell 3000 Index	25.66	20.89	31.02	-5.24	21.13	12.74	0.48	12.56	33.55	16.42
Difference	0.77	-13.34	-4.30	-4.20	-4.08	6.61	-2.45	-3.30	2.57	0.22
All Master Trust-US Equity Segment Median	23.99	18.13	28.77	-5.78	20.71	12.45	0.27	11.05	33.37	16.62
Rank	27	96	67	95	90	2	83	78	19	50
MLPs	**41.49**	**-24.20**	**11.75**	**-12.39**	**-3.85**	**17.70**	**-27.94**	**N/A**	**N/A**	**N/A**
MLP Custom Index	41.99	-28.75	10.29	-12.56	-5.79	22.73	-33.50	7.89	29.96	5.19
Difference	-0.50	4.55	1.46	0.17	1.94	-5.03	5.56	N/A	N/A	N/A
International Equity	**11.97**	**6.56**	**21.58**	**-14.36**	**27.61**	**4.85**	**-3.91**	**-5.16**	**21.95**	**15.46**
Vanguard Spl Tot Int'l Stock Index	8.84	11.24	21.80	-14.61	27.41	4.72	-4.29	-3.39	15.76	17.04
Difference	3.13	-4.68	-0.22	0.25	0.20	0.13	0.38	-1.77	6.19	-1.58
All Master Trust-Intl. Equity Segment Median	9.92	11.70	22.69	-13.71	28.21	4.37	-2.94	-2.30	18.68	18.39
Rank	27	89	75	64	57	42	63	95	26	91
Fixed Income	**1.76**	**8.76**	**12.13**	**-0.76**	**6.71**	**6.53**	**0.63**	**6.38**	**2.89**	**10.83**
Bloomberg US Unv Bond Index	-1.10	7.58	9.29	-0.25	4.09	3.91	0.43	5.56	-1.35	5.53
Difference	2.86	1.18	2.84	-0.51	2.62	2.62	0.20	0.82	4.24	5.30
All Master Trust-US Fixed Income Segment Median	-0.54	8.58	9.09	-0.39	4.78	4.24	-0.01	6.01	-1.81	7.78
Rank	12	48	28	59	28	28	30	42	4	12
REITs	**42.70**	**-3.42**	**27.39**	**-4.71**	**6.84**	**8.78**	**5.52**	**32.68**	**3.76**	**17.72**
FTSE NAREIT Eq REITs Index (TR)	43.24	-8.00	26.00	-4.62	5.23	8.52	3.20	30.14	2.47	18.06
Difference	-0.54	4.58	1.39	-0.09	1.61	0.26	2.32	2.54	1.29	-0.34
Listed Infrastructure	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
FTSE Global Core Infrastructure 50/50 Index (Net)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

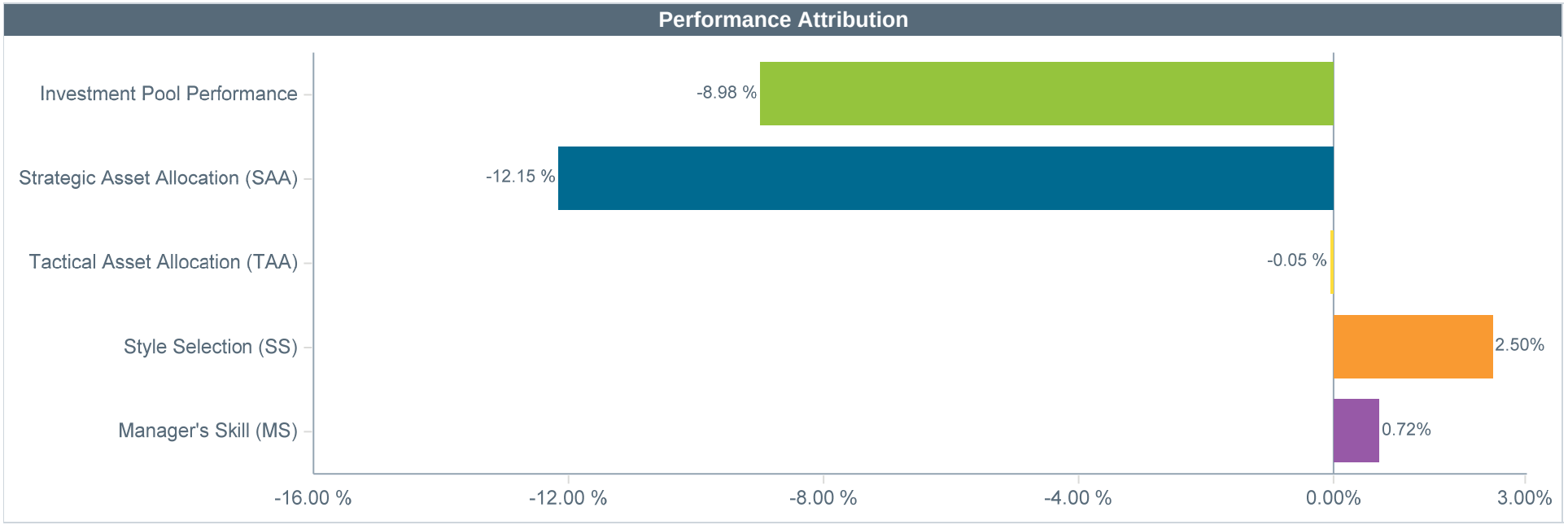
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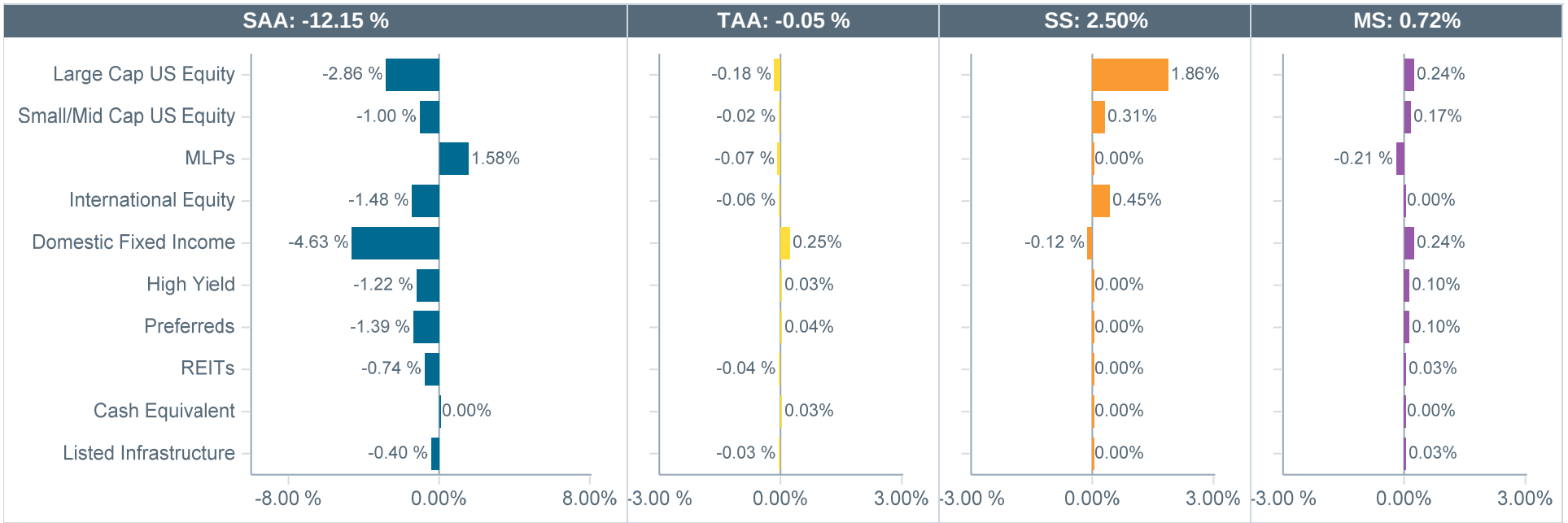
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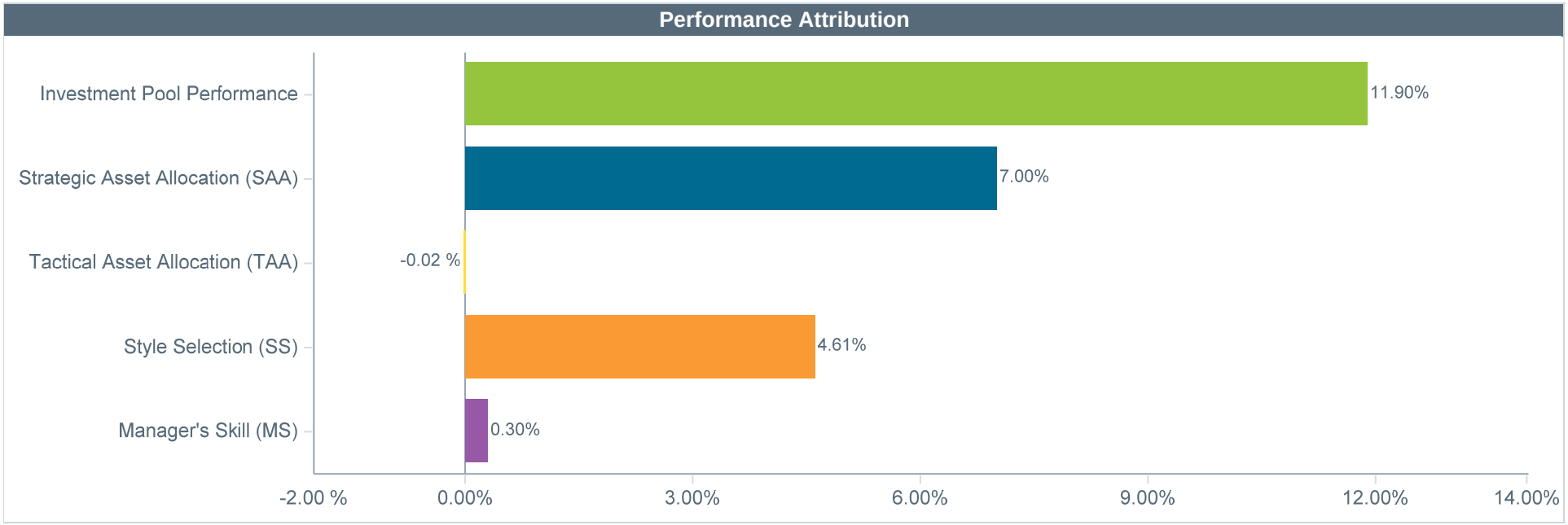


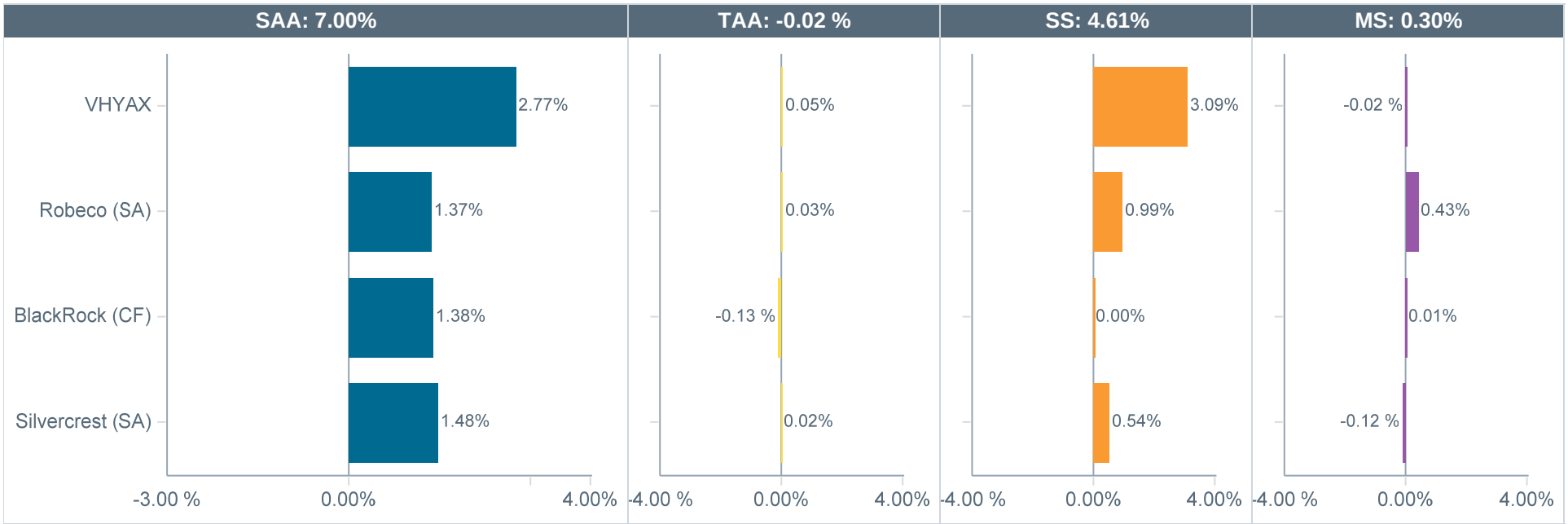
Performance shown is net of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution - IDP calculation.



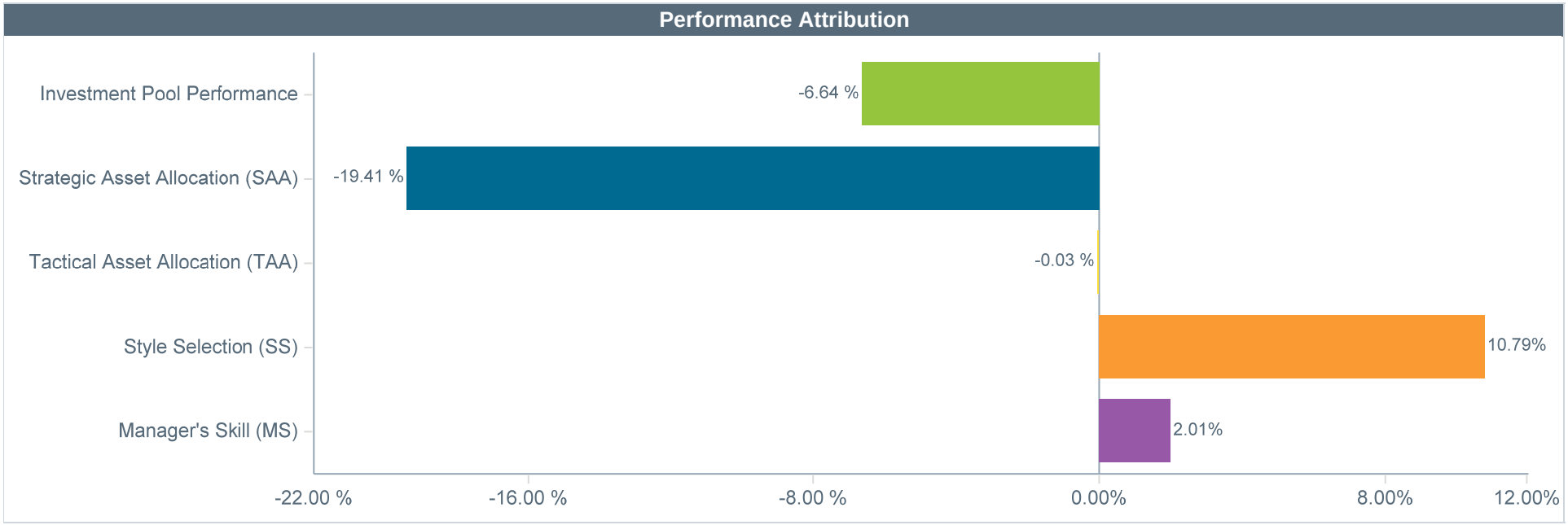


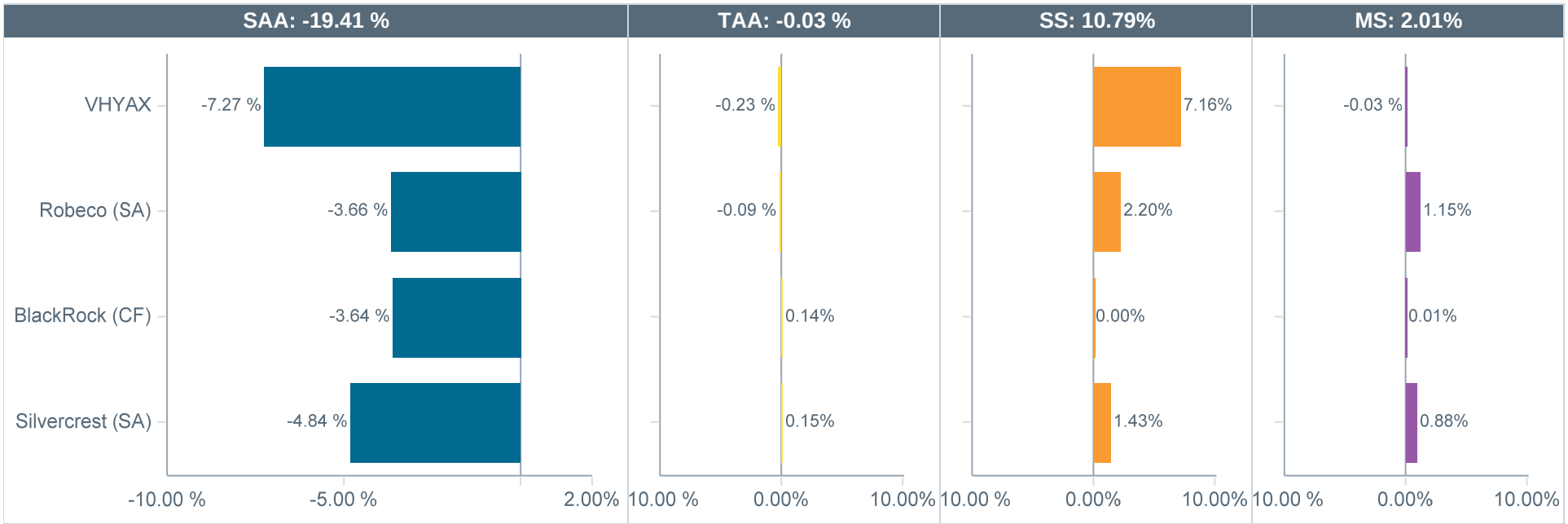
Performance shown is net of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution - IDP calculation.





Performance shown is gross of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution - IDP calculation.





Performance shown is gross of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution - IDP calculation.

Commissioners of the Land Office, State of Oklahoma
Comparative Performance (Net of Fees) - Trailing Periods

As of December 31, 2022

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Robeco BPAM Premium Eq (SA)	**14.31**	**-2.10**	**-2.10**	**8.94**	**7.96**	**10.40**	**12.25**	**11.44**	**01/01/1996**
Russell 3000 Val Custom Index	12.18	-7.98	-7.98	5.88	6.50	9.07	10.16	9.73	
Difference	2.13	5.88	5.88	3.06	1.46	1.33	2.09	1.71	
Vanguard Hi Dv Yld;Adm (VHYAX)	**15.12**	**-0.46**	**-0.46**	**8.29**	**8.19**	**N/A**	**N/A**	**10.10**	**10/01/2016**
FTSE Hi Div Yld Index	15.16	-0.32	-0.32	8.36	8.28	10.63	11.66	10.20	
Difference	-0.04	-0.14	-0.14	-0.07	-0.09	N/A	N/A	-0.10	
BlackRock R 1000 Index Fund (CF)	**7.35**	**-19.07**	**-19.07**	**7.34**	**9.10**	**11.21**	**N/A**	**11.46**	**04/01/2013**
Russell 1000 Index	7.24	-19.13	-19.13	7.35	9.13	11.26	12.37	11.51	
Difference	0.11	0.06	0.06	-0.01	-0.03	-0.05	N/A	-0.05	
Silvercrest Small Cap Value (SA)	**7.75**	**-11.13**	**-11.13**	**5.88**	**4.54**	**8.77**	**9.74**	**9.76**	**06/01/2002**
Russell 2000 Val Index	8.42	-14.48	-14.48	4.70	4.13	8.23	8.48	7.60	
Difference	-0.67	3.35	3.35	1.18	0.41	0.54	1.26	2.16	
Harvest Fund Advisors MLP (SA)	**7.80**	**29.58**	**29.58**	**11.45**	**6.57**	**6.45**	**N/A**	**2.26**	**03/01/2014**
S&P MLP Index (TR)	9.35	33.71	33.71	10.60	5.58	6.07	3.20	0.53	
Difference	-1.55	-4.13	-4.13	0.85	0.99	0.38	N/A	1.73	
Vanguard I HD Y;Adm (VIHAX)	**16.03**	**-6.87**	**-6.87**	**N/A**	**N/A**	**N/A**	**N/A**	**15.44**	**04/01/2020**
FTSE All Wrld Ex US Hi Div Yld Index	15.54	-6.73	-6.73	2.26	2.13	5.72	4.09	15.41	
Difference	0.49	-0.14	-0.14	N/A	N/A	N/A	N/A	0.03	
Vanguard Tot I S;Ins + (VTPSX)	**14.70**	**-15.99**	**-15.99**	**0.54**	**1.13**	**5.06**	**N/A**	**2.82**	**05/01/2015**
Vanguard Spl Tot Int'l Stock Index	14.14	-16.10	-16.10	0.52	1.10	5.03	4.20	2.82	
Difference	0.56	0.11	0.11	0.02	0.03	0.03	N/A	0.00	
Dodge & Cox Fixed Income (SA)	**2.63**	**-11.17**	**-11.17**	**-1.00**	**1.25**	**2.16**	**2.16**	**5.27**	**08/01/1996**
Bloomberg US Agg Bond Index	1.87	-13.01	-13.01	-2.71	0.02	0.89	1.06	4.30	
Difference	0.76	1.84	1.84	1.71	1.23	1.27	1.10	0.97	
Insight Core Plus Select Income (SA)	**3.07**	**-15.85**	**-15.85**	**-1.96**	**1.16**	**2.97**	**N/A**	**2.99**	**12/01/2013**
Bloomberg US Crdt Index	3.44	-15.26	-15.26	-2.86	0.42	1.96	1.82	2.20	
Difference	-0.37	-0.59	-0.59	0.90	0.74	1.01	N/A	0.79	
Guggenheim (BBB) (SA)	**2.48**	**-18.14**	**-18.14**	**-1.92**	**0.25**	**N/A**	**N/A**	**1.71**	**05/01/2016**
Bloomberg US Corp Inv Grade Index	3.63	-15.76	-15.76	-2.88	0.45	2.08	1.96	1.38	
Difference	-1.15	-2.38	-2.38	0.96	-0.20	N/A	N/A	0.33	

RVK began monitoring the assets of Commissioners of the Land Office, State of Oklahoma as of 07/01/2005. Prior historical data was provided by the previous consultant. Performance shown is net of fees. Please see the Addendum for custom index definitions.

RVK

Commissioners of the Land Office, State of Oklahoma
Comparative Performance (Net of Fees) - Trailing Periods

As of December 31, 2022

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
JPMorgan MBS (SA)	**1.21**	**-9.24**	**-9.24**	**-1.57**	**0.67**	**1.15**	**1.44**	**2.30**	**07/01/2010**
Bloomberg US MBS Index (Unhgd)	2.14	-11.81	-11.81	-3.22	-0.53	0.20	0.74	1.36	
Difference	-0.93	2.57	2.57	1.65	1.20	0.95	0.70	0.94	
Guggenheim CMBS (SA)	**0.17**	**-11.28**	**-11.28**	**-1.92**	**0.50**	**1.65**	**1.97**	**3.61**	**07/01/2010**
Bloomberg US CMBS Inv Grade Aaa Index	1.25	-10.49	-10.49	-1.52	0.76	1.47	1.52	2.59	
Difference	-1.08	-0.79	-0.79	-0.40	-0.26	0.18	0.45	1.02	
Voya Investment Management US High Yield (SA)	**4.54**	**-10.22**	**-10.22**	**-0.01**	**2.33**	**4.29**	**3.34**	**6.27**	**07/01/2001**
ICE BofAML US Hi Yld Master II Index	3.98	-11.25	-11.25	-0.25	2.11	4.94	3.94	6.56	
Difference	0.56	1.03	1.03	0.24	0.22	-0.65	-0.60	-0.29	
ICE BofAML US Hi Yld BB-B Cnst Index	4.32	-10.61	-10.61	-0.22	2.30	4.65	3.93	6.25	
Difference	0.22	0.39	0.39	0.21	0.03	-0.36	-0.59	0.02	
Fort Washington High Yield (SA)	**4.85**	**-10.44**	**-10.44**	**-0.63**	**1.97**	**4.20**	**N/A**	**3.02**	**07/01/2015**
ICE BofAML US Cash Pay Hi Yld Index	4.07	-11.14	-11.14	-0.21	2.13	4.94	3.94	3.61	
Difference	0.78	0.70	0.70	-0.42	-0.16	-0.74	N/A	-0.59	
ICE BofAML US Hi Yld BB-B Cnst Index	4.32	-10.61	-10.61	-0.22	2.30	4.65	3.93	3.57	
Difference	0.53	0.17	0.17	-0.41	-0.33	-0.45	N/A	-0.55	
Cohen & Steers Preferreds (SA)	**1.44**	**-12.04**	**-12.04**	**-0.40**	**2.54**	**4.19**	**5.25**	**6.23**	**04/01/2007**
50% ICE BofAML All Cap/50% ICE BofAML Fxd Pref Idx	1.62	-12.83	-12.83	-1.32	1.68	3.14	3.85	3.76	
Difference	-0.18	0.79	0.79	0.92	0.86	1.05	1.40	2.47	
CenterSquare US REIT Total Return (SA)	**4.63**	**-23.73**	**-23.73**	**1.21**	**4.48**	**5.27**	**7.43**	**7.81**	**08/01/2008**
FTSE NAREIT Eq REITs Index (TR)	5.24	-24.37	-24.37	-0.11	3.68	4.58	6.53	6.44	
Difference	-0.61	0.64	0.64	1.32	0.80	0.69	0.90	1.37	
Cohen & Steers Global Listed Infrastructure Fund, LP	**9.43**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**-7.65**	**04/01/2022**
FTSE Global Core Infrastructure 50/50 Index (Net)	9.01	N/A	N/A	N/A	N/A	N/A	N/A	-8.28	
Difference	0.42	N/A	N/A	N/A	N/A	N/A	N/A	0.63	
Oklahoma Treasurer's Cash Pool	**0.44**	**1.33**	**1.33**	**1.57**	**1.88**	**1.84**	**1.85**	**1.97**	**12/01/2010**
ICE BofAML 3 Mo US T-Bill Index	0.84	1.46	1.46	0.72	1.26	1.07	0.76	0.65	
Difference	-0.40	-0.13	-0.13	0.85	0.62	0.77	1.09	1.32	
Bank of Oklahoma Cash	**0.75**	**1.48**	**1.48**	**0.62**	**1.62**	**1.32**	**0.94**	**1.36**	**07/01/2002**
ICE BofAML 3 Mo US T-Bill Index	0.84	1.46	1.46	0.72	1.26	1.07	0.76	1.28	
Difference	-0.09	0.02	0.02	-0.10	0.36	0.25	0.18	0.08	

RVK began monitoring the assets of Commissioners of the Land Office, State of Oklahoma as of 07/01/2005. Prior historical data was provided by the previous consultant. Performance shown is net of fees. Please see the Addendum for custom index definitions.

RVK

Commissioners of the Land Office, State of Oklahoma
Comparative Performance (Net of Fees) - Calendar Years

As of December 31, 2022

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Robeco BPAM Premium Eq (SA)	**26.17**	**4.66**	**28.31**	**-11.60**	**18.44**	**15.11**	**0.87**	**12.47**	**40.01**	**15.87**
Russell 3000 Val Custom Index	25.37	2.87	26.26	-8.58	13.19	18.40	-4.13	12.70	32.69	17.55
Difference	0.80	1.79	2.05	-3.02	5.25	-3.29	5.00	-0.23	7.32	-1.68
Vanguard Hi Dv Yld;Adm (VHYAX)	**26.13**	**1.15**	**24.11**	**-5.96**	**16.37**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
FTSE Hi Div Yld Index	26.19	1.16	24.24	-5.85	16.51	16.96	0.39	13.58	30.34	12.75
Difference	-0.06	-0.01	-0.13	-0.11	-0.14	N/A	N/A	N/A	N/A	N/A
BlackRock R 1000 Index Fund (CF)	**26.36**	**20.94**	**31.25**	**-4.79**	**21.57**	**11.99**	**0.88**	**13.14**	**N/A**	**N/A**
Russell 1000 Index	26.45	20.96	31.43	-4.78	21.69	12.05	0.92	13.24	33.11	16.42
Difference	-0.09	-0.02	-0.18	-0.01	-0.12	-0.06	-0.04	-0.10	N/A	N/A
Silvercrest Small Cap Value (SA)	**25.78**	**6.20**	**25.34**	**-16.08**	**11.60**	**29.26**	**-2.82**	**5.01**	**37.79**	**15.14**
Russell 2000 Val Index	28.27	4.63	22.39	-12.86	7.84	31.74	-7.47	4.22	34.52	18.05
Difference	-2.49	1.57	2.95	-3.22	3.76	-2.48	4.65	0.79	3.27	-2.91
Harvest Fund Advisors MLP (SA)	**41.04**	**-24.25**	**14.03**	**-12.91**	**-5.49**	**19.22**	**-30.04**	**N/A**	**N/A**	**N/A**
S&P MLP Index (TR)	41.99	-28.75	9.78	-11.67	-5.58	21.95	-35.07	7.66	29.75	4.95
Difference	-0.95	4.50	4.25	-1.24	0.09	-2.73	5.03	N/A	N/A	N/A
Vanguard I HD Y;Adm (VIHAX)	**15.11**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
FTSE All Wrld Ex US Hi Div Yld Index	15.40	-0.65	18.63	-12.43	22.55	8.41	-9.44	-3.94	16.27	16.54
Difference	-0.29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanguard Tot I S;Ins + (VTPSX)	**8.71**	**11.28**	**21.56**	**-14.38**	**27.57**	**4.72**	**N/A**	**N/A**	**N/A**	**N/A**
Vanguard Spl Tot Int'l Stock Index	8.84	11.24	21.80	-14.61	27.41	4.72	-4.29	-3.39	15.76	17.04
Difference	-0.13	0.04	-0.24	0.23	0.16	0.00	N/A	N/A	N/A	N/A
Dodge & Cox Fixed Income (SA)	**-0.27**	**9.53**	**9.40**	**0.26**	**4.23**	**4.67**	**-0.03**	**5.95**	**0.64**	**7.85**
Bloomberg US Agg Bond Index	-1.55	7.51	8.72	0.01	3.54	2.65	0.55	5.97	-2.02	4.21
Difference	1.28	2.02	0.68	0.25	0.69	2.02	-0.58	-0.02	2.66	3.64
Insight Core Plus Select Income (SA)	**0.59**	**11.33**	**15.22**	**-2.41**	**7.72**	**7.54**	**-1.62**	**8.18**	**N/A**	**N/A**
Bloomberg US Crdt Index	-1.08	9.35	13.80	-2.11	6.18	5.63	-0.77	7.53	-2.01	9.37
Difference	1.67	1.98	1.42	-0.30	1.54	1.91	-0.85	0.65	N/A	N/A
Guggenheim (BBB) (SA)	**-0.06**	**15.32**	**9.68**	**-2.14**	**8.26**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Bloomberg US Corp Inv Grade Index	-1.04	9.89	14.54	-2.51	6.42	6.11	-0.68	7.46	-1.53	9.82
Difference	0.98	5.43	-4.86	0.37	1.84	N/A	N/A	N/A	N/A	N/A

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RVK

Commissioners of the Land Office, State of Oklahoma
Comparative Performance (Net of Fees) - Calendar Years

As of December 31, 2022

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
JPMorgan MBS (SA)	**-0.35**	**5.45**	**6.51**	**1.80**	**2.67**	**2.06**	**1.75**	**5.32**	**-0.64**	**5.95**
Bloomberg US MBS Index (Unhgd)	-1.04	3.87	6.35	0.99	2.47	1.67	1.51	6.08	-1.41	2.59
Difference	0.69	1.58	0.16	0.81	0.20	0.39	0.24	-0.76	0.77	3.36
Guggenheim CMBS (SA)	**0.23**	**6.11**	**6.06**	**2.43**	**5.30**	**3.85**	**1.80**	**5.72**	**0.70**	**10.93**
Bloomberg US CMBS Inv Grade Aaa Index	-1.52	8.33	7.88	0.83	3.11	3.40	1.22	4.29	-0.56	6.85
Difference	1.75	-2.22	-1.82	1.60	2.19	0.45	0.58	1.43	1.26	4.08
Voya Investment Management US High Yield (SA)	**5.13**	**5.93**	**15.90**	**-3.17**	**5.94**	**12.86**	**-4.61**	**0.43**	**8.03**	**12.55**
ICE BofAML US Hi Yld Master II Index	5.35	6.17	14.41	-2.27	7.48	17.49	-4.64	2.50	7.42	15.58
Difference	-0.22	-0.24	1.49	-0.90	-1.54	-4.63	0.03	-2.07	0.61	-3.03
ICE BofAML US Hi Yld BB-B Cnst Index	4.58	6.28	15.11	-2.04	6.98	14.72	-2.79	3.49	6.31	14.58
Difference	0.55	-0.35	0.79	-1.13	-1.04	-1.86	-1.82	-3.06	1.72	-2.03
Fort Washington High Yield (SA)	**4.76**	**4.58**	**15.16**	**-2.42**	**7.33**	**12.72**	**N/A**	**N/A**	**N/A**	**N/A**
ICE BofAML US Cash Pay Hi Yld Index	5.28	6.21	14.40	-2.26	7.48	17.34	-4.55	2.44	7.38	15.44
Difference	-0.52	-1.63	0.76	-0.16	-0.15	-4.62	N/A	N/A	N/A	N/A
ICE BofAML US Hi Yld BB-B Cnst Index	4.58	6.28	15.11	-2.04	6.98	14.72	-2.79	3.49	6.31	14.58
Difference	0.18	-1.70	0.05	-0.38	0.35	-2.00	N/A	N/A	N/A	N/A
Cohen & Steers Preferreds (SA)	**3.41**	**8.64**	**19.00**	**-3.60**	**11.76**	**5.20**	**7.05**	**13.61**	**2.88**	**22.69**
50% ICE BofAML All Cap/50% ICE BofAML Fxd Pref Idx	2.13	7.92	17.76	-3.94	10.10	3.76	4.18	12.15	0.58	17.47
Difference	1.28	0.72	1.24	0.34	1.66	1.44	2.87	1.46	2.30	5.22
CenterSquare US REIT Total Return (SA)	**42.00**	**-4.29**	**26.80**	**-5.29**	**6.34**	**8.20**	**4.96**	**31.98**	**3.20**	**17.11**
FTSE NAREIT Eq REITs Index (TR)	43.24	-8.00	26.00	-4.62	5.23	8.52	3.20	30.14	2.47	18.06
Difference	-1.24	3.71	0.80	-0.67	1.11	-0.32	1.76	1.84	0.73	-0.95
Cohen & Steers Global Listed Infrastructure Fund, LP	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
FTSE Global Core Infrastructure 50/50 Index (Net)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Oklahoma Treasurer's Cash Pool	**1.20**	**2.18**	**2.59**	**2.09**	**1.73**	**1.77**	**1.77**	**1.82**	**2.01**	**2.32**
ICE BofAML 3 Mo US T-Bill Index	0.05	0.67	2.28	1.87	0.86	0.33	0.05	0.04	0.07	0.11
Difference	1.15	1.51	0.31	0.22	0.87	1.44	1.72	1.78	1.94	2.21
Bank of Oklahoma Cash	**0.01**	**0.38**	**3.89**	**2.37**	**0.83**	**0.31**	**0.12**	**0.03**	**0.05**	**0.08**
ICE BofAML 3 Mo US T-Bill Index	0.05	0.67	2.28	1.87	0.86	0.33	0.05	0.04	0.07	0.11
Difference	-0.04	-0.29	1.61	0.50	-0.03	-0.02	0.07	-0.01	-0.02	-0.03

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RVK

Performance Related Comments:

- RVK began monitoring the assets of Commissioners of the Land Office, State of Oklahoma as of 07/1/2005. Prior historical data was provided by the previous consultant.
- Performance may differ from manager-reported performance due to differences in pricing, as well as differences in calculation methodology.
- Performance for composites and investment managers uses different methodologies. For additional information, please see the Glossary.
- The inception dates shown represent the first full month of client-specific performance.
- Performance shown prior to client inception date is product-specific manager performance, and is illustrative of the strategies' long-term performance.
- Indices show N/A for since inception returns when the fund contains more history than the corresponding benchmark.
- Beginning in 01/2008, manager performance is used for periods when the differences in pricing methodologies between the manager and custodian lead to a considerable variance in client performance. Prior to this time period, custodian pricing was used for performance calculations where manager and custodian pricing differed.
- In 09/2008, the Robeco Boston Partners Mid Cap Value (SA) portfolio changed to the Premium Equity Product (PEP), an All Cap Value strategy. Thus, performance shown prior to September 2008 is reflective of the Mid Cap Value (SA) product.
- Vanguard Tot I S;Ins + (VTPSX) and Vanguard I HD Y;Adm (VIHAX) performance may deviate from the benchmark due to the fund's use of fair-value pricing.
- Performance shown for Vanguard Hi Dv Yld;Adm (VHYAX) is represented by Vanguard Hi Dv Yld;Inv (VHDYX) through 02/2019.
- The ending market value of BlackRock R 1000 Index Fund (CF) is provided by the manager due to the custodian reported value being lagged by one month.
- The ending market value of Cohen & Steers Global Listed Infrastructure Fund, LP is provided by the manager.

Custom Index Comments:

- The passive **Target Allocation Index** is calculated monthly and currently consists of 16% S&P 500 Index (Cap Wtd), 5% Russell 2000 Index, 5% MLP Custom Index, 9% Vanguard Spl Tot Int'l Stock Index, 35% Bloomberg US Agg Bond Index, 11% High Yield Custom Index, 11% 50% ICE BofAML All Cap/50% ICE BofAML Fxd Pref Idx, 3% FTSE NAREIT Eq REITs Index (TR), and 5% FTSE Global Core Infrastructure 50/50 Index (Net).
- The active **Actual Allocation Index** is calculated monthly using beginning of month investment weights applied to each corresponding primary benchmark return.
- The passive **Russell 3000 Val Custom Index** is calculated monthly and consists of 100% Russell Mid Cap Value Index from inception to 08/31/2008 and 100% Russell 3000 Val Index thereafter.
- The passive **MLP Custom Index i**s calculated monthly and consists of 50% S&P MLP Index (TR) and 50% Tortoise MLP Index (TR) through 12/31/2019, and 100% S&P MLP Index (TR) thereafter.
- The **Vanguard Spl Tot Int'l Stock Index** consists of Tot Int'l Comp Index (an asset-weighted blend of stocks in the MSCI Eur Index (USD) (Net), MSCI Pac Index (USD) (Net), and MSCI Emg Mkts Index (USD) (Net)) through 08/31/2006; MSCI EAFE + Emg Mkts Index (USD) (Net) through 12/15/2010; MSCI ACW Ex US IM Index (USD) (Net) through 06/02/2013; and FTSE Gbl All Cap Ex US Index (USD) (Net) thereafter.
- The passive **High Yield Custom Index** is calculated monthly and consists of 50% ICE BofAML US Hi Yld Master II Index and 50% ICE BofAML US Cash Pay Hi Yld Index.

Miscellaneous Comments:

- Robeco BPAM Premium Eq (SA) is included in the Large Cap Equity market value.
- Domestic Fixed Income consists of Dodge & Cox Fixed Income (SA), Cutwater Core Plus Select Income (SA), Guggenheim (BBB) (SA), JPMorgan MBS (SA), and Guggenheim CMBS (SA).
- Guggenheim (BBB) (SA) began active management in 04/2016. Prior performance is representative of assets transferred in kind from Atlantic Asset (BBB).
- In July 2022, Allianz Global Investors US High Yield (SA) transitioned to Voya Investment Management US High Yield (SA).

Glossary

Active Return - The difference between the investment manager/composite performance relative to the performance of an appropriate market benchmark.

Active Share - Measures the degree to which the holdings of a fund differ from the holdings of the benchmark. Active share is calculated by taking the sum of the absolute value of the differences of the weight of each holding in the fund versus the weight of each holding in the benchmark and dividing by two.

Alpha - A measure of the difference between a portfolio's actual returns and its expected performance, given its level of risk as measured by beta. It is a measure of the portfolio's historical performance not explained by movements of the market or a portfolio's non-systematic return.

Alpha Ratio - A measure of a portfolio's non-systematic return per unit of downside risk. It is measured by dividing the alpha of a portfolio by the downside risk. The non-systematic return is a measure of a portfolio's historical performance not explained by movements of the market.

Average Quality - Bond quality ratings are reported using the investment managers' and the index providers' preferred rating agency. *Average Quality for managers unable to provide this statistic is instead provided by Morningstar; if unavailable on Morningstar, it has been estimated using a credit quality distribution provided by the manager.* There are two primary rating agencies in the US. *Moody's* assigns ratings on a system that employs up to four symbols (consisting of letters and numbers), such as, Aaa, Aa2, etc., with Aaa being the highest or safest rating. S*tandard & Poor's (S&P)* employs a system that uses + and - along with letters, such as AAA, AA+, etc. The two rating agencies' systems are summarized below:

S&P	Moody's	Explanation	S&P	Moody's	Explanation
Higher Credit Quality – Investment Grade			**Lower Credit Quality – Below Investment Grade**		
AAA	Aaa	Prime/Highest credit quality	BB+	Ba1	Speculative/Low credit quality
AA+	Aa1	High credit quality	BB	Ba2	
AA	Aa2		BB-	Ba3	
AA-	Aa3		B+	B1	Highly speculative
A+	A1	Upper-medium credit quality	B	B2	
A	A2		B-	B3	
A-	A3		CCC+	Caa1	Substantial credit/default risk
BBB+	Baa1	Lower-medium credit quality	CCC	Caa2	Extremely speculative
BBB	Baa2		CCC-	Caa3	
BBB-	Baa3		CC	Ca	Vulnerable to default
			C	Ca	
			D	C	In default

Benchmark Effect - The difference between the blended return of each respective managers' benchmark within a composite and the composite's benchmark return.

Beta - A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of a portfolio's non-diversifiable or systematic risk.

Box Plots - A graphical representation of the distribution of observations. From top to bottom, the four boxes represent the spread between the maximum value and the minimum value in each quartile. A quartile represents the values that divide the observations into four quarters (i.e., 1st quartile, 2nd quartile, 3rd quartile, and 4th quartile). The median observation is where the 2nd quartile and 3rd quartile meet.

Buy and Hold Attribution - At the beginning of the time period under analysis, the manager and benchmark portfolios are broken down into segments (i.e., styles, sectors, countries, and regions) based on the desired type of attribution. The formula assumes zero turn-over to the manager and benchmark portfolios throughout the period and calculates the segment returns ("buy and hold returns") to arrive at performance attribution. Due to portfolio turnover, buy and hold attribution may not accurately represent quarterly performance relative to the benchmark. Country, region, sector, and style allocations are as of the date one quarter prior to the reporting date, and the returns shown are for those segments throughout the quarter reported. Due to disclosure guidelines set by each investment manager, equity characteristics shown are as of the most recent date available. The following is the methodology for segment classification:

Sector - Attribution is calculated using the Global Industry Classification Standard (GICS), which is a detailed and comprehensive structure for sector and industry analysis. Stocks are classified by their primary sector as defined by S&P Capital IQ data. Attribution to "other" is the result of securities based in industries that do not fit into any GICS classification.

Country/Region - Attribution is calculated using the Morgan Stanley Capital International (MSCI) region standards. Stocks are classified by their domicile country/region, as defined by S&P Capital IQ data, and thus may differ from the classification of the investment manager and/or index provider. Attribution to "other" is the result of securities based in countries/regions that do not fit into any MSCI classification.

Style - Stocks are classified into the following style boxes: large/mid/small vs. growth/neutral/value. Stocks are classified along large/mid/small categories at the time of the Russell index rebalancing, using the index market cap boundaries as cutoff points. Stocks are classified along growth/neutral/value categories at the time of the Russell index rebalancing, using the price/book ratio as supplied by S&P Capital IQ. Stocks in the Russell 3000 Index portfolio are sorted by price/book ratio; names with the highest price/book ratio that make up 1/3 of the total market capitalization are assigned to the growth category, and names that make up the subsequent 1/3 of the total market capitalization are assigned to the neutral category, while the balance of the names are assigned to the value category. Stocks are unclassified when there is not enough data to determine a size and style metric.

Portfolio Characteristics and Buy and Hold Attribution reports utilize product-specific data for all mutual funds and commingled funds.

Capital Markets Review -

Breakeven Inflation - Measures the expected inflation rate at each stated maturity by taking the difference between the real yield of the inflation-linked maturity curve and the yield of the closest nominal Treasury maturity.

Consumer Confidence - Measures domestic consumer confidence as defined by the degree of optimism on the state of the economy that consumers express through saving and spending.

Consumer Price Index (CPI) - Measures the change in the price level of consumer goods and services.

Glossary

Federal Funds Rate - The interest rate at which a depository institution lends funds maintained at the Federal Reserve to another depository institution overnight. It is one of the most influential interest rates in the US economy, since it affects monetary and financial conditions, which in turn have a bearing on key aspects of the broad economy including employment, growth and inflation.
Option-Adjusted Spread - Measures the flat spread of an index or bond to the Treasury yield curve after removing the effect of any embedded options.
Purchasing Managers Index (PMI) - Measures economic activity by surveying purchasing managers on a monthly basis as to whether business conditions have improved, worsened, or stayed the same.
Real Gross Domestic Product (Real GDP) - An inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year.
Unemployment Rate - The percentage of the total labor force that is unemployed but actively seeking employment.
US Dollar Total Weighted Index - Measures the value of the US Dollar relative to a basket of other world currencies. It is calculated as the weighted geometric mean of the dollar's value versus the EUR, GBP, CAD, SEK, CHF, and JPY.
VIX - Measures the implied volatility of S&P 500 Index options by looking at the market's expectation of the S&P 500 Index volatility over the next 30 day period. Commonly referred to as the "fear index" or the "fear gauge."

Cash Flow Effect – The composite's active return minus the sum of each managers' active return minus the benchmark effect.

Consistency - The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. The higher the consistency figure, the more value a manager has contributed to the product's performance.

Convexity - A measure of the shape of the curve that describes the relationship between bond prices and bond yields.

Correlation - A statistical measure of the relationship between asset class returns. A value of 1.00 is a perfect correlation; that is, the asset classes always move in the same direction. A value of -1.00 indicates a perfect negative correlation, in which the asset classes always move in opposite directions of each other. A value of 0 indicates there is no relationship between the direction of returns of the two asset classes. Correlation calculations only consider the direction of changes relative to two variables and not the magnitude of those changes.

Coupon Rate - The percentage rate of interest paid on a bond or fixed income security; it is typically paid twice per year.

Current Yield - The annual income of a security divided by the security's current price.

Down Market Capture - Down market by definition is negative benchmark return and down market capture represents the ratio in % terms of the average portfolios return over the benchmark during the down market period. The lower the value of the down market capture the better the product's performance.

Downside Risk - A measure similar to standard deviation that focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative returns for the selected periodicity. The higher the factor, the riskier the product.

Earnings Per Share - It is backward looking, calculated using the one year current EPS divided by the one year EPS five years ago.

Effective Duration - The approximate percentage change in a bond's price for a 100 basis point change in yield.

Excess Return vs. Market - Average of the monthly arithmetic difference between the manager's return and the benchmark return over a specified time period, shown on an annualized basis.

Excess Return vs. Risk Free - Average of the monthly arithmetic difference between the manager's return and the risk-free return (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise) over a specified time period, shown on an annualized basis.

Excess Risk - A measure of the standard deviation of a portfolio's performance relative to the risk-free return.

Expense Ratios - Morningstar is the source for mutual fund expense ratios.

Gain/Loss - The net increase or decrease in the market value of a portfolio excluding its Net Cash Flow for a given period.

Indices - All indices and related information are considered intellectual property and are licensed by each index provider. The indices may not be copied, used, or distributed without the index provider's prior written approval. Index providers make no warranties and bear no liability with respect to the indices, any related data, their quality, accuracy, suitability, and/or completeness.

Information Ratio - Measured by dividing the active rate of return by the tracking error. The higher the information ratio, the more value-added contribution by the manager.

Liability Driven Investing (LDI) - A method to optimally structure asset investments relative to liabilities. The change in liabilities is estimated by the Ryan Labs Generic PPA Index of appropriate duration for that Plan. This benchmark is based on generic data and is therefore an approximation. RVK is not an actuarial firm, and does not have actuarial expertise.
Estimated Funded Status - The estimated ratio of a Plan's assets relative to its future liabilities. This is calculated by dividing the Plan's asset market value by the estimated present value of its liabilities. The higher the estimated funded status, the better the Plan's ability to cover its projected benefit obligations. An estimated funded status of 100% indicates a Plan that is fully funded.
Estimated PV of Liabilities - An estimate of a Plan's future liabilities in present value terms. The beginning of the period liability is provided by the Plan's actuary. The period-end present value liability estimate provided in this report is derived by applying the estimated percentage change generated using the Ryan Labs Generic PPA Index with duration similar to that reported on the most recent actuarial valuation report.
Duration of Liabilities - The sensitivity of the value of a Plan's liabilities to changes in interest rates, as calculated by the Plan's actuary.
Duration of Assets - The dollar-weighted average duration of all the individual Plan assets.
Estimated Plan Hedge Ratio - The estimate of how well a Plan's investment portfolio is hedged against changes in interest rates - a primary driver of funded status movements. This is calculated by dividing the dollar-weighted values of both the Plan asset duration by the liability duration and

multiplying by the estimated funded status. An estimated plan hedge ratio of zero indicates that the Plan's liabilities have not been hedged, whereas a value of one indicates fully hedged.

Modified Duration - The approximate percentage change in a bond's price for a 100 basis point change in yield, assuming the bonds' expected cash flows do not change.

Mutual Fund Performance - Whenever possible, manager performance is extended for any share class that does not have 10 years of history. Using Morningstar's methodology, a single ticker within the same fund family (often the oldest share class) is chosen to append historical performance.

Net Cash Flow - The sum, in dollars, of a portfolio's contributions and withdrawals. This includes all management fees and expenses only when performance shown is gross of fees.

Peer Groups -

Plan Sponsor Peer Groups - RVK utilizes the Mellon Analytical Solutions Trust Universe along with the Investment Metrics Plan Sponsor Universe. The combined Mellon Analytical Solutions Trust Universe and Investment Metrics Plan Sponsor Universe is used for comparison of total fund composite results and utilizes actual client performance compiled from consultant and custodian data. The Plan Sponsor Peer Group database includes performance and other quantitative data for over 2,100 plans which include corporate, endowment, foundation, public, and Taft Hartley plans.

Investment Manager Peer Groups - RVK utilizes Investment Metrics' Peer Groups for investment manager peer comparison and ranking. The Investment Metrics Peer Group database includes performance and other quantitative data for over 840 investment management firms and 29,000 investments products, across more than 160 standard peer groups. Mutual Fund Peer Groups are net of fees.

Percentile Rankings - Percentile rank compares an individual fund's performance with those of other funds within a defined peer group of managers possessing a similar investment style. Percentile rank identifies the percentage of a fund's peer group that has a higher return (or other comparative measurement) than the fund being ranked. Conversely, 100 minus the individual fund's ranking will identify the percentage of funds within the peer group that have a lower return than the fund being ranked.

1 - Highest Statistical Value 100 - Lowest Statistical Value

Example: American Funds AMCP;R-4 (RAFEX) is ranked in the 4th percentile within the IM US Equity Large-Cap Growth Funds (MF) Peer Group for the Sharpe Ratio. Within the IM US Equity Large-Cap Growth Funds peer group, 4% of the other funds performed better than American Funds AMCP;R-4 (RAFEX), while 96% of the funds performed worse.

Performance Methodology - RVK calculates performance for investment managers and composites using different methodologies.

Investment Managers - Performance is calculated for interim periods between all large external cash flows for a given month and geometrically linked to calculate period returns. An external cash flow is defined as cash, securities, or assets that enter or exit a portfolio. RVK defines a "large cash flow" as a net aggregate cash flow of ≥10% of the beginning-period portfolio market value or any cash flow that causes RVK calculated performance to deviate from manager/custodian reported performance in excess of 5 basis points for a given month.

Composites - The Modified Dietz methodology is utilized to calculate asset class, sub-asset class, and total fund composite performance. The Modified Dietz method calculates a time-weighted total rate of return that considers the timing of external cash flows; however, it does not utilize interim period performance to mitigate the impact of significant cash in- and outflows to the composite.

RVK calculates performance beginning with the first full month following inception. Since inception performance may vary from manager reported performance due to RVK using the first full month of returns as the inception date. Performance for both managers and composites is annualized for periods greater than one year.

Portfolio Characteristics - Due to disclosure guidelines set by each investment manager, portfolio characteristics shown are as of the most recent date available.

Price to Earnings Ratio - The ratio valuing a company's current share price relative to its trailing 12-month per-share earnings (EPS).

Private Equity Quartile Ranks - Private Equity quartile ranks are generated using vintage year peer group data provided by Thomson Reuters, and are based on each fund's annualized, since inception internal rate of return (IRR). Three Private Equity peer groups are available via Thomson Reuters: Buyout, Venture, and All Private Equity. Ranks are available quarterly, at a one-quarter lag.

R-Squared - The percentage of a portfolio's performance explained by the behavior of the appropriate benchmark. High R-Squared means a higher correlation of the portfolio's performance to the appropriate benchmark.

Return - Compounded rate of return for the period.

% Return - The time-weighted rate of return of a portfolio for a given period.

Risk Free Benchmark – ICE BofAML 3 Mo US T-Bill Index unless specified otherwise.

Glossary

RVK Liquidity Rating - A qualitative method for determining the relative amount of liquidity in a portfolio. The characteristics considered when determining relative liquidity include trading volume, gates for redemption, leverage, nature of transactions, and pricing mechanisms. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating.

Asset Class	RVK Liquidity Rating
Liquid Investments	
T-Bills and Treasurys	100
Cash Equivalents	98
TIPS	95
US Large Cap Equity	95
Diversified Real Return	93
Stable Value (Participant Directed)	91
Global Equity	90
Non-US Large Cap Equity	90
Global Tactical Asset Allocation	88
MLPs	85
US Mid Cap Equity	85
US SMid Cap Equity	85
US Small Cap Equity	85
REITs	85
Non-US Small Cap Equity	85
Emerging Markets Equity	85
Core Fixed Income	85
Core Plus Fixed Income	80

Asset Class	RVK Liquidity Rating
Less Liquid Investments	
Fixed Income Plus Sector	50
Stable Value (Plan Sponsor Directed)	50
Hedge Funds of Funds	35
Not Liquid Investments	
Core Real Estate	25
Core Plus Real Estate	15
Non-Core Real Estate	5
Private Equity Funds of Funds	5

Sector Allocation - Negative fixed income sector allocation reflects manager's use of derivatives, short selling, or interest rate swaps.

Sharpe Ratio - Represents the excess rate of return over the risk-free return (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise), divided by the standard deviation of the excess return to the risk free asset. The result is the absolute rate of return per unit of risk. The higher the value, the better the product's historical risk-adjusted performance.

Simple Alpha - The difference between the manager's return and the benchmark's return.

Spread Duration - The approximate percentage change in a bond's price for a 100 basis point change in its spread over a Treasury of the same maturity.

Standard Deviation - A statistical measure of the range of a portfolio's performance. The variability of a return around its average return over a specified time period.

Thematic Classification - Represents dedicated manager allocations; as such, thematic allocations are approximations. RVK categorizes the following asset classes as Alpha, Capital Appreciation, Capital Preservation, and Inflation:

Alpha	Capital Appreciation	Capital Preservation	Inflation
Absolute Return Strategies	Public Equity	Core Fixed Income	TIPS
Currency Overlay	Private Equity	CMBS Fixed Income	Bank Loans
	Preferred Securities	Asset Backed Fixed Income	Core Real Estate
	High Yield	Domestic Core Plus Fixed Income	Real Return
	Convertible Fixed Income	Mortgage Backed Fixed Income	Inflation Hedges
	TALF Funds	International Developed Fixed Income	REITs
	Distressed Debt	Cash Equivalents	Commodities
	Emerging Market Fixed Income	Stable Value	
	Value Added Real Estate		
	Opportunistic Real Estate		

Time Period Abbreviations - **QTD** - Quarter-to-Date. **CYTD** - Calendar Year-to-Date. **FYTD** - Fiscal Year-to-Date. **YOY** - Year Over Year.

Total Fund Attribution – The Investment Decision Process (IDP) model provides an approach to evaluating investment performance that applies to all asset classes and investment styles. The IDP model is based on a top-down hierarchy framework of investment decisions, with each decision contributing to the overall profit or loss. The IDP approach starts from the strategic asset allocation and follows the flow of the investments down to the manager's skill.

Strategic Asset Allocation (SAA) – The percentage return gained or lost from the long-term strategic asset allocation decision, the most significant determinant of long-term performance. SAA is the product of the target asset allocation multiplied by the corresponding benchmark returns.

Tactical Asset Allocation (TAA) – The percentage return gained or lost from not having been precisely allocated at the target asset allocation mix, whether by deviations that are tactical in nature or a by-product of moving towards the target mix. TAA is the product of the actual asset allocation multiplied by the broad asset class benchmarks, less the SAA.

Style Selection (SS) – The percentage return gained or lost from intentional style biases within each asset class (e.g. value rather than core or overweight to emerging markets relative to benchmark). SS is the product of the actual manager allocation within each asset class multiplied by their specific benchmark, less TAA.

Manager's Skill (MS) – The percentage return gained or lost from manager value added relative to their specific benchmark. MS is the product of the actual manager allocation multiplied by their achieved excess return.

Total Fund Beta - Total Fund Beta is calculated using the S&P 500 as the benchmark. It represents a measure of the sensitivity of the total fund to movements in the S&P 500 and is a measure of the Total Fund's non-diversifiable or systematic risk.

Glossary

Tracking Error - A measure of the standard deviation of a portfolio's performance relative to the performance of an appropriate market benchmark.

Treynor Ratio - Similar to Sharpe ratio, but focuses on beta rather than excess risk (standard deviation). Treynor ratio represents the excess rate of return over the risk-free rate (i.e., ICE BofAML 3 Mo US T-Bill Index unless specified otherwise) divided by the beta. The result is the absolute rate of return per unit of risk. The higher the value, the better historical risk-adjusted performance.

Unit Value - The dollar value of a portfolio, assuming an initial nominal investment of $100, growing at the compounded rate of %Return for a given period.

Up Market Capture - Up market by definition is positive benchmark return and up market capture represents the ratio in % terms of the average portfolio's return over the benchmark during the up market period. The higher the value of the up market capture the better the product's performance.

Yield to Maturity - The rate of return achieved on a bond or other fixed income security assuming the security is bought and held to maturity and that the coupon interest paid over the life of the bond will be reinvested at the same rate of return. The 30-Day SEC Yield is similar to the Yield to Maturity and is reported for mutual funds.

Yield to Worst - The bond yield calculated by using the worst possible yield taking into consideration all call, put, and optional sink dates.

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