OKLAHOMA STATE PENSION COMMISSION Q2 2021 EXECUTIVE SUMMARY

Economic and Capital Market Review

"According to the reports on business conditions in this district, received by us during the closing months of 1919, apparently few years opened with brighter business prospects than 1920. Labor was fully employed at the highest wages probably ever known, manufacturing plants were being operated at the greatest possible limit, supplies of goods were small, prices were continually advancing, the public was buying lavishly, and it was generally reported that goods were being consumed as fast as produced. The general opinion was that such business conditions would continue for at least 6 months. These conditions, which had been developing for some months, undoubtedly fostered overbuying and speculation in all kinds of commodities."

- Report of the Federal Reserve Bank of Philadelphia (1921)

Capital markets, as a whole, produced solid returns during the second quarter of 2021, continuing the trend from the prior year. However, in contrast to the first quarter, asset and sub-asset class returns more closely resembled those that we experienced in 2020. For example, growth-oriented equities substantially outperformed value-oriented equities, while fixed income markets posted solid, mid-single digit returns in response to a broad decline in interest rates. Key market index returns for Q2 2021 can be found in **Figure 1**, below.

Figure 1: Key Market Index Returns
Period Ending June 30, 2021

Index	Asset Class	QTD	CYTD	1 Year	5 Year	10 Year
S&P 500 Index	US Equity	8.55	15.25	40.79	17.65	14.84
MSCI ACW Ex-US Index (Net)	International Equity	5.48	9.16	35.72	11.08	5.45
NCREIF ODCE (AWA) (Net)	Core Real Estate	3.68	5.64	7.09	5.62	8.60
Bloomberg US Agg	US Fixed Income	1.83	-1.61	-0.34	3.03	3.39
Cambridge Private Equity ¹	Private Equity	10.05	10.05	48.11	17.51	14.43
HFRX Absolute Return Index	Hedge Funds	1.80	2.46	6.63	2.59	1.84
Bloomberg Commodity Index	Commodities	13.30	21.15	45.61	2.40	-4.44

¹ Private equity returns are as of March 31, 2021, as returns for June 30, 2021 are not yet available.

The most notable development during the second quarter was a meaningful uptick in inflation. Over the 12-month period ending June 30, 2021, non-seasonally adjusted CPI increased by 5.4%. This rise prompted many investors to question whether higher inflation is a temporary side-effect of increased, post-quarantine business activity, or if it signals a more durable trend. Thus far, market expectations and history suggest that higher inflation is more likely to be temporary. From a historical perspective, the sudden spike in inflation mirrors the experience of the United States during the aftermath of World War I and the Great Influenza. In 1919, many industries experienced supply shocks, as consumer spending rebounded, and businesses scrambled to adjust their supply chains to shift from a war economy back to a peacetime

¹ Seventh Annual Report of the Federal Reserve Board Covering Operations for the Year 1920. Washington, DC: Government Printing Office. (1921): pp. 404.

economy. This resulted in order backlogs, supply shortages, wage pressure, and a corresponding uptick in inflation. The Federal Reserve eventually reacted by raising rediscount rates by 125 basis points in January 1920 and again by 100 basis points in June 1920. As a result, economic activity seized up and inflation declined sharply, which more than erased the gains of 1919.²

The modern economy differs from the early 20th century economy in many ways, but the economic responses to the two pandemics show remarkable similarities. During both pandemics, massive fiscal and monetary stimulus counteracted intense downward pressure on economic activity. The main difference is that the impact of stimulus during the Great Influenza was less obvious because it took the form of increased war-related spending that just happened to coincide with the 1918 influenza pandemic. In contrast, fiscal stimulus in 2020 and 2021 was deliberately enacted to offset the negative economic effects of COVID-19. Regardless of intent, however, the effects of both stimulus efforts were nearly identical.

Now that COVID-related fiscal and monetary stimulus is largely behind us, the biggest remaining uncertainty is how the Federal Reserve will respond if elevated levels of inflation persist. In 1919, the Federal Reserve Banks reacted by raising rediscount rates suddenly, aggressively, and with almost no warning. Not only did this extinguish inflation, it prompted a sharp and undesirable reversal (i.e., deflation). In 1920, wholesale prices declined by nearly 30%, and the US economy entered a sharp (but short-lived) depression.³ While it is inconceivable that the Federal Reserve Board will act in such a reckless manner today, they have signaled quite clearly that they are unwilling to tolerate inflationary pressure beyond that which is considered temporary. It appears that the market believes in Fed's statements, as long-term breakeven inflation rates have remained relatively stable despite the recent uptick in inflation over the past year.

In summary, there is considerable discussion today about inflation and whether investors should shift their strategy in anticipation of potentially higher rates in the coming years. In general, our advice to clients is to design investment strategies that suit their long-term objectives and resist the temptation to shift the strategy based on short-term disruptions. Therefore, it is our belief that the current uptick in inflation does not warrant reconsideration of investors' long-term investment strategies.

Economic and Market Outlook

The Oklahoma State Pension Plans are designed to exist in perpetuity; therefore, the most important strategic priority is to establish sensible long-term asset allocation targets that maximize expected return without violating risk sensitivities and investment constraints. When viewed in this way, material changes in strategy do not seem advisable because long-term economic and market expectations have not meaningfully changed – even in the midst of a 100-year pandemic.

This philosophy does not suggest that short-term market events should be dismissed. On the contrary, it is important to maintain awareness of current events if only to prepare psychologically for outcomes that will appear shocking (and perhaps even unprecedented) to investors who are uninformed. This is particularly important today because uncertainty appears to be especially pronounced. These uncertainties include the longevity of the pandemic, the speed and nature of the re-opening process, the intensity and duration of inflationary pressures, and the timing and intensity of the Federal Reserve's reaction to all of these developments. Depending upon how these factors play out, markets may become guite volatile, and

² Board of Governors of the Federal Reserve System. Banking & Monetary Statistics, 1914-1941. (November 1943): pps. 439-441.

³ Davis, James. Wholesale Prices, 1890 to 1922: Bulletin of the United States Bureau of Labor Statistics, No. 335. (June 1923).

it is, therefore, important for investors to prepare psychologically for such a scenario.

In short, while we discourage clients from placing meaningful bets on short-term trends, we strongly encourage them to remain aware of the full range of potential outcomes. It is only by continuously maintaining a deep level of situational awareness that investors can establish the discipline they will need to remain committed to a long-term strategy when faced with persistent temptations to abandon it.

Performance Highlights

Total Fund Performance and Attribution

During the 2nd Quarter of 2021, the Oklahoma State Pension Funds produced strong returns, ranging between 4.9% to 7.2% net of fees. Similar to longer term trends, the primary performance drivers were strong public and private equity returns. Over the trailing year, absolute returns across the seven plans were exceptionally strong, ranging from 23% to 33%. Relative to policy benchmarks, performance was similarly strong, as five out of six plans outperformed their respective policy benchmarks net of fees.⁴ Detailed comparative performance of the seven plans can be found on **pages 11-14** of the performance report.

In terms of performance attribution, the fundamental drivers have not materially changed over the past year, which is unsurprising given the relatively short time period of analysis. In the case of the Oklahoma State Pension Funds, only a handful of high-level strategic decisions explain most of the strong performance. The more significant drivers are described below.

- 1. **High Allocation to Equities** Overall, the Pension Plans have a high allocation to public and private equity. This is a sensible approach given the Plans' extended time horizons, healthy funded statuses, and relatively strong psychological tolerance for risk. The plans benefitted significantly from these decisions, capturing a substantial portion of the extended bull market in equities.
- 2. **Bias Toward US Equities** In general, the Pension Plans are invested more heavily in US equities, which have substantially outperformed international equities for more than 10 years. In general, this strategic tilt drove higher absolute returns and strengthened performance relative to peers.
- 3. Avoidance of Dilutive Asset Classes Institutional investors are constantly bombarded with marketing pitches on new investment strategies. Despite their claims, many of these strategies primarily add unnecessary portfolio complexity and higher costs without providing commensurate benefits. In comparison to peers, the Oklahoma Pension Plans have resisted the temptation to invest in these products, which have kept fees low and avoided the unnecessary dilution of returns.
- 4. Selective Use of Active Management When evaluating the potential benefits and costs of active management, it is often the case that the costs outweigh the benefits. The relative magnitude of these tradeoffs varies by asset class and the unique attributes of the investors themselves. In general, the Oklahoma State Pension Plans have employed active management strategies in a manner that extracted benefits that have exceeded the associated costs. This has enhanced

⁴ Net of fees returns are unavailable for the Firefighters plan. All returns shown for the Firefighters plan are gross of fees.

absolute returns and performance relative to peers.

In summary, overall performance of the Oklahoma State Pension Plans is strong because of thoughtful, high-level strategic decisions, coupled with skillful execution. While there will undoubtedly be future periods of time in which these strategies suffer periods of underperformance, over the long term, they appear well-positioned for success in a manner that aligns with the Plans' objectives, risk tolerance, constraints, and unique competitive advantages.

Asset Class Performance - Q2 2021

All major asset classes generated positive returns for the quarter. Performance highlights for specific asset classes are provided below, and detailed performance numbers can be found on pages 15-26 of the performance report.

- 1. US Equity US equity generated strong returns for the quarter; however, all plans trailed their respective benchmarks due to a combination of style tilts (i.e., small/mid cap and value) and the relative performance of active managers. US equity returns ranged from approximately 7.0% (Firefighters)⁴ to 8.0% (Wildlife). As has been the case in recent quarters, longer term performance over 3-, 5-, 7-, and 10-year periods tended to trail the return produced by a broad indexes of US equities.
- 2. International Equity International equity returns generated positive absolute and mixed relative returns across the pension plan portfolios. Second quarter returns ranged from approximately 4.7% (Law Enforcement) to 6.4% (Firefighters).⁴ The use of active management in this asset class continues to generate meaningful value over long time periods as well, and five out of the six plans with dedicated international equity buckets outperformed their respective indices over time periods beyond 5 years. The Police plan measures total domestic and international equity against a broad, global benchmark of equities, and has outperformed over most trailing periods.
- 3. **Fixed Income** Fixed income produced solid low- to mid-single digit returns for the quarter, as yields declined and spreads contracted during the second quarter. Returns ranged from approximately 1.7% (Wildlife) to 3.7% (Teachers). Relative performance was strong, with six out of seven plans outperforming the Bloomberg US Aggregate Bond Index. Over longer periods of time, as measured by 7- and 10-year periods, most plans are exceeding or roughly flat against the index.
- 4. Real Estate Real estate returns were generally positive for the quarter, but were relatively weak over the trailing year. The asset class continues to struggle more so than others from the impact of the COVID-19 pandemic. The retail sector remains the hardest hit sector due to business closures throughout the country. Conversely, those sectors involved in e-commerce saw an increase in demand resulting from COVID-19. Warehousing saw the strongest returns of all sectors over the last year, with additional strong returns in the Industrial and Self-Storage sectors.
- 5. **Hedge Funds** Hedge funds generated mixed returns in the second quarter. Returns ranged from a low of approximately -7.1% (Firefighters)⁴ to a high of 3.2%. (Police). On a relative basis, all plans investing in Hedge Funds suffered, with underperformance ranging from approximately -4.2% (Police) to -9.0% (Firefighters).
- 6. Private Equity Private equity produced exceptional returns over the quarter but the level of

performance varied across the different pension plans. This variability is consistent with expectations given that each plan has different exposures by investment strategy and vintage year. Further, performance versus benchmarks varied considerably, but this is primarily due to the fact that one plan (Teachers) uses a public equity benchmark, while the others use a private benchmark.

Overall performance of the pension plans was solid for the quarter in both absolute and relative terms. As a result, the 5-Year and 10-Year return and risk-adjusted returns for most plans continue to compare favorably relative to indices and peers. Updated 5-Year and 10-Year return metrics are provided in **Figure 3** and **Figure 4**.

Figure 3: Five and Ten-Year Performance of Oklahoma Pension Plans
Ordered by Level of 10-Year Net-of-Fees Return as of June 30, 2021

Plan	5-Year Return	10-Year Return	10-Year Rank vs.
	Net of Fees	Net of Fees	All Public Plans ⁵
Firefighters (Gross of Fees) ⁶	13.55	10.62	3 rd
Teachers	12.16	9.97	4 th
Public Employees	11.57	9.20	25 th
Judges	11.57	9.08	34 th
Law Enforcement	10.74	8.54	49 th
Wildlife	10.49	8.36	53 rd
Police	10.37	8.12	55 th

Figure 4: 10-Year Risk-Adjusted Returns for Oklahoma Pension Plans
Ranked by Sharpe Ratio as of June 30, 2021

Plan	Sharpe Ratio	10-Year Rank vs. All Public Plans
Firefighters	0.97	14 th
Police	0.95	18 th
Wildlife	0.90	38 th
Teachers	0.88	42 nd
Public Employees	0.85	54 th
Law Enforcement	0.84	55 th
Judges	0.84	56 th

⁵ Peer ranking are based on gross of fees; therefore, it is possible for a Plan to be ranked higher relative to peers despite having a lower net of fees return.

⁶ The Firefighters Pension Plan only reports gross of fees returns.

Individual Plan Performance Highlights

Oklahoma Teachers' Retirement System (OTRS)

Detailed performance of the OTRS plan begins on **page 39** of the performance report. As of June 30, 2021, the market value of assets for OTRS was approximately **\$21.96 Billion**. A high-level summary of Total Plan Performance and brief commentary is provided below.

OTRS Annualized Net-of-Fees Returns

Period Ending June 30, 2021

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
OTRS Total Fund (Net)	7.22	11.97	32.95	32.95	12.12	12.16	8.63	9.97
OTRS Policy Index	5.82	10.10	31.33	31.33	13.31	12.35	9.16	9.86
Difference	1.40	1.87	1.62	1.62	-1.19	-0.19	-0.53	0.11
OTRS Actual Allocation Index	6.01	10.66	32.08	32.08	13.00	12.21	9.23	9.93
Difference	1.21	1.31	0.87	0.87	-0.88	-0.05	-0.60	0.04
All Public Plans – Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61
Rank	3	4	4	4	23	10	21	4

Commentary

The OTRS Total Fund returned 7.22% for the quarter, outperforming the policy index by 121 basis points. Over long-term periods, the Plan provided mixed returns relative to its policy index; however, the Plan outperformed its policy index by 11 basis points over the 10-year period. Relative to a broad group of pension plans, the Plan has ranked in the top quartile over all trailing periods up to 10 years. Favorable peer rankings were heavily influenced by the higher allocation to public equities (and US equity in particular) relative to other public plans. Returns relative to the policy and actual allocation index have been strong over the last year, boosted by strong active management in US equity. The largest source of underperformance over the quarter is the Real Estate allocation, which lagged its benchmark by 212 basis points. International equity returns continue to improve over the past year, outperforming the MSCI ACW Ex-US IM Index by 267 basis points.

In summary, while the OTRS Plan performance trailed its policy index by 119 basis points over the past three years, performance has improved over the last year and remains strong over the 10-year period. The Plan has continued to produce strong returns relative to peers over all trailing periods. On a risk-adjusted basis, the Plan has ranked above median relative to other public plans and at median against other Oklahoma plans, as illustrated in **Figure 3** on the previous page.

Oklahoma Public Employees Retirement System (OPERS)

Detailed performance of the OPERS plan begins on **page 59** of the performance report. As of June 30, 2021, the market value of assets for OPERS was approximately **\$12.51 Billion**. A high-level summary of Total Plan Performance and brief commentary is provided below.

OPERS Annualized Net-of-Fees Returns

Period Ending June 30, 2021

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
OPERS Total Fund (Net)	5.60	8.65	27.82	27.82	12.33	11.57	8.64	9.20
OPERS Policy Index	5.57	8.01	26.94	26.94	12.37	11.59	8.69	9.07
Difference	0.03	0.64	0.88	0.88	-0.04	-0.02	-0.05	0.13
OPERS Actual Allocation Index	5.69	8.55	27.49	27.49	14.44	12.75	9.52	9.56
Difference	-0.09	0.10	0.33	0.33	-2.11	-1.18	-0.88	-0.36
All Public Plans – Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.61	8.37
Rank	32	49	30	30	21	28	31	25

Commentary

The OPERS Total Fund provided returns in line with its policy index over all periods, and also ranked around the top third over all periods relative to a broad peer group of public plans. In aggregate, active management added value on a net of fees basis over the last year. This observation is supported by the outperformance of the plan versus the actual allocation index over the same period. The source of active manager value added varied by asset class. In general, US large cap equity managers contributed to relative performance, while US small cap managers detracted. International equity and fixed income managers generally outperformed their respective indices over most trailing periods.

In summary, the OPERS plan has generated solid long term returns relative to its policy index and peers over all trailing periods. On a risk-adjusted basis, the Plan has ranked slightly below median relative to other public plans and 5th among the group of seven Oklahoma plans.

Oklahoma Firefighters Pension & Retirement System (OFPRS)

Detailed performance of the OFPRS plan begins on **page 76** of the performance report. As noted earlier, net of fees returns for the Firefighters plan are not available. As of June 30, 2021, the market value of assets for OFPRS was approximately **\$3.72 Billion**. A high-level summary of Total Plan Performance and brief commentary is provided below.

OFPRS Annualized Gross-of-Fees Returns

Period Ending June 30, 2021

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
OFPRS Total Fund (Gross)	5.69	9.61	31.79	31.79	13.89	13.55	10.57	10.62
OFPRS Policy Index	6.54	10.53	29.17	29.17	13.38	12.53	9.97	10.46
Difference	-0.85	-0.92	2.62	2.62	0.51	1.02	0.60	0.16
OFPRS Actual Allocation Index	6.06	9.60	28.45	28.45	13.35	12.86	9.73	10.16
Difference	-0.37	0.01	3.34	3.34	0.54	0.69	0.84	0.46
All Public Plans – Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61
Rank	27	27	7	7	6	3	2	3

Commentary

The Firefighter's plan generated the strongest long-term return among the seven Oklahoma pension plans both on an absolute and risk-adjusted basis. In terms of absolute returns, the Plan exceeded its policy and actual allocation index over virtually all trailing periods and ranked in the top decile relative to a broad peer group of public plans over all trailing periods greater than 1 year. Over the trailing ten years, on a risk-adjusted basis, the Plan ranked in the 14th percentile relative to a broad peer group of public pension plans and 1st among the group of seven Oklahoma pension plans. Although performance is undoubtedly strong for the plan, it is overstated relative to other pension plans due to the absence of net-of-fees reporting.

Although the most significant drivers of performance relative to the Oklahoma plans were the asset allocation decisions, the plan also benefitted from active management value-added over all trailing periods, although his is to some extent overstated given the absence of net of fees reporting. In the US equity portfolio, active manager performance was mixed relative to their respective benchmarks over the last year, with small cap value managers struggling to keep pace with their benchmark. Over the past year, the portfolio also benefitted from a higher weighting to small cap equity relative to a broad US equity index. International equity outperformance was even more substantial, with the composite outperforming the index by 530 basis points over the past year. The fixed income portfolio also added significantly to performance over the past year, providing excess return of 536 basis points. Overall, the Firefighter's plan continues to perform exceptionally well relative to peers, benchmarks, and other Oklahoma plans.

Oklahoma Police Pension & Retirement System (OPPRS)

Detailed performance of the OPPRS plan begins on **page 93** of the performance report. As of June 30, 2021, the market value of assets for OPPRS was approximately **\$3.24 Billion**. A high-level summary of Total Plan Performance and brief commentary is provided below.

OPPRS Annualized Net-of-Fees Returns

Period Ending June 30, 2021

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
OPPRS Total Fund (Net)	5.81	10.45	28.00	28.00	10.79	10.37	7.71	8.12
OPPRS Policy Index	5.84	8.68	25.07	25.07	11.37	10.55	7.45	8.37
Difference	-0.03	1.77	2.93	2.93	-0.58	-0.18	0.26	-0.25
OPPRS Actual Allocation Index	5.71	8.25	24.53	24.53	12.53	11.34	8.27	8.58
Difference	0.10	2.20	3.47	3.47	-1.74	-0.97	-0.56	-0.46
All Public Plans – Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61
Rank	20	10	27	27	55	53	52	55

Commentary

The Police Plan provided absolute returns that ranked near median and generally trailed both the policy index and actual allocation index over all trailing periods longer than 3 years. It should be noted, however, that performance is heavily influenced by the intentional decision to reduce downside risk in the portfolio to protect the funded status of the plan. The risk-adjusted returns of the portfolio are more favorable and are consistent with this objective. As illustrated in **Figure 3** on page 4, the OPPRS 10-year Sharpe ratio is ranked 2nd relative to other Oklahoma Plans and in the 18th percentile relative to a broad peer group of public plans. Thus, on a risk-adjusted based, the OPPRS plan has performed relatively well over the long term and in a manner that is consistent with the stated objectives. In terms of return drivers relative to benchmarks, performance has varied, but the plan has performed roughly consistent with benchmarks overall.

In summary, the OPPRS plan has generally lagged the performance of peers and other Oklahoma pension plans in terms of absolute returns but still exceeded its required return of 7.5% over all trailing periods. On the other hand, the Plan has ranked relatively well on a risk-adjusted basis, which is consistent with its stated intention of managing a portfolio with less sensitivity to downside risk.

Oklahoma Law Enforcement Retirement System (OLERS)

The detailed performance of the OLERS plan begins on **page 108** of the performance report. As of June 30, 2021, the market value of assets for OLERS was approximately **\$1.24 Billion**. A high-level summary of Total Plan Performance and brief commentary is provided below.

OLERS Annualized Net-of-Fees Returns

Period Ending June 30, 2021

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
OLERS Total Fund (Net)	5.27	10.00	27.91	27.91	10.64	10.74	7.88	8.54
OLERS Policy Index	5.44	9.25	26.06	26.06	11.61	11.10	8.69	9.14
Difference	-0.17	0.75	1.85	1.85	-0.97	-0.36	-0.81	-0.60
OLERS Actual Allocation Index	5.33	9.45	27.40	27.40	12.08	11.27	8.74	9.03
Difference	-0.06	0.55	0.51	0.51	-1.44	-0.53	-0.86	-0.49
All Public Plans – Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61
Rank	48	16	29	29	64	50	57	49

Commentary

The Law Enforcement Plan generated a 10-year absolute return that ranked 5th relative to other Oklahoma Pension Plans and near or slightly below median relative to a broad peer group of public plans over all trailing periods greater than 3 years. Active management has been a drag on performance over most time periods, but has improved over the last year. Recent outperformance was driven primarily by US equity, which ended the year with a 52.68% return, outperforming the S&P 500 Index by 1,189 basis points. Emerging markets equity also provided strong performance, outperforming the MSCI Emerging Markets Index by 441 basis points over the last year. The biggest detractor from performance stemmed from the long/short equity allocation, which consists of two hedge funds-of-funds. Over the past year, the combined performance of these two funds underperformed by 2,029 basis points.

In summary, the OLERS Plan has been mixed relative to peers and lagged other Oklahoma plans in terms of absolute returns over various trailing periods, although relative returns have improved over the last year. The Plan has also ranked in line with peers on a risk-adjusted basis, as represented by a Sharpe ratio that ranks in the 55th percentile relative to peers.

Uniform Retirement System for Justices & Judges (URSJJ)

Detailed performance of the URSJJ plan begins on **page 124** of the performance report. As of June 30, 2021, the market value of assets for URSJJ was approximately **\$433.47 Million**. A high-level summary of Total Plan Performance and brief commentary is provided below.

URSJJ Annualized Net-of-Fees Returns

Period Ending June 30, 2021

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
URSJJ Total Fund (Net)	5.68	8.53	27.62	27.62	12.33	11.57	8.64	9.08
URSJJ Policy Index	5.57	8.01	26.94	26.94	12.39	11.60	8.70	9.08
Difference	0.11	0.52	0.68	0.68	-0.06	-0.03	-0.06	0.00
URSJJ Actual Allocation Index	5.70	8.54	27.45	27.45	14.39	12.71	9.39	9.57
Difference	-0.02	-0.01	0.17	0.17	-2.06	-1.14	-0.75	-0.49
All Public Plans – Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61
Rank	27	54	35	35	24	29	34	34

Commentary

The Judges Plan generated a 10-year absolute return that ranked 4th relative to other Oklahoma Pension Plans, and in the 34th percentile relative to a broad peer group of public plans over the trailing 10 years. Strong returns relative to peers was aided by a modest tilt toward US equity relative to international equity, as well as a dedicated small cap US equity allocation. The Plan also benefitted from strong relative performance in its fixed income portfolio over the long term, a large portion of which stemmed from its allocation to Hoisington US Long Duration Fixed Income. This strategy is interesting in that it rotates the portfolio between long duration fixed income securities and cash depending upon expectations of interest rate movements. The fund continues to benefit from the substantial decline in yields over the past 10 years, although it has significantly detracted from returns over the past year due to the recent increase in interest rates.

Overall, the URSJJ Plan performed well over the past 10 years relative to a broad peer group of public plans and roughly average relative to other Oklahoma plans. On a risk-adjusted basis, the Plan performed slightly below median over the past 10 years relative to peers (with a Sharpe ratio ranking in the 56th percentile) and ranked 7th relative to Oklahoma Plans.

Oklahoma Wildlife Conservation Retirement System (OWCRS)

Detailed performance of the OWCRS plan begins on **page 136** of the performance report. As of June 30, 2021, the market value of assets for OWCRS was approximately **\$141.67 Million**. A high-level summary of Total Plan Performance and brief commentary is provided below.

OWCRS Annualized Net-of-Fees Returns

Period Ending June 30, 2021

	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years
OWCRS Total Fund (Net)	4.85	7.59	22.82	22.82	11.22	10.49	8.09	8.36
OWCRS Policy Index	3.73	7.07	23.55	23.55	10.15	9.40	7.13	8.02
Difference	1.12	0.52	-0.73	-0.73	1.07	1.09	0.96	0.34
OWCRS Actual Allocation Index	3.84	7.74	25.47	25.47	12.01	10.99	8.64	8.80
Difference	1.01	-0.15	-2.65	-2.65	-0.79	-0.50	-0.55	-0.44
All Public Plans – Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61
Rank	68	75	81	81	48	57	47	53

Commentary

The Wildlife Plan provided 10-year absolute returns that ranked 6th relative to other Oklahoma Pension Plans, but roughly at median relative to a broad peer group of public plans over all trailing periods of at least three or more years. Strong returns relative to peers was aided by a heavy allocation to public equity over the long term. Over the past year, active managers tended to lag their respective indices.

Overall, the OWCRS Plan performed in line with, or slightly better than, a broad peer group of public plans over all periods greater than 3 years. On a risk-adjusted basis, the Plan also performed well over the past 10 years relative to peers (with a Sharpe ratio ranking in the 38th percentile) and ranking 3rd relative to the group of seven Oklahoma Plans.

Overview of Fundamental Investment Performance Drivers

When reviewing the performance of the Oklahoma Pension Plans, it is important to understand the key drivers of investment returns, which we will reference throughout this document. In short, the return of an investment portfolio can be attributed to the following three, fundamental factors.

- 1. Strategic Asset Allocation The long-term strategic asset allocation of a portfolio is by far the most significant driver of absolute returns in the long term. In other words, the percentages that a plan allocates to various asset classes, such as US equity, international equity, private equity, real estate, etc., tend to dominate. To this end, the most significant decision for pension plan boards is the extent of their exposure to various types of assets especially equities. To this point, the degree of equity exposure is primarily a function of a plan's risk tolerance and long-term return requirements; thus understanding these requirements is the most critical responsibility of pension plan sponsors and their advisors.
- 2. Tactical Asset Allocation Tactical asset allocation is a term that describes the return impact when a portfolio deviates from its long-term strategic asset allocation targets. In general, use of intentional tactical allocation at the total portfolio level is unlikely to add value, thus most institutional investors wisely avoid it. However, some degree of unintentional tactical allocation is inevitable due to the inability of institutional investors to match allocations with desired targets at all times. This is especially true in illiquid asset classes, such as private equity, as investors have limited control over the investment and distribution of capital from underlying funds. Nevertheless, even though some degree of tactical allocation is unavoidable, its overall impact on performance is generally modest.
- 3. Active Management The third driver of investment performance is active management. Active management involves the construction of a portfolio of securities that differs from the mix in a comparable reference index. Although active management is usually not the most important driver of long-term absolute returns, it is an important driver of relative returns in comparison to peer organizations with similar allocation strategies. In general, there are three primary ways in which active management is incorporated into an institutional investment strategy.
 - a. Use of Style Tilts within Asset Classes When all securities available for investment are aggregated within an asset class, the resulting portfolio can be categorized into various market segments. For example, the US equity market can be divided into small-, mid-, and large-sized companies, as well as value- and growth-oriented companies. Thus, one form of active management is to deliberately tilt a portfolio toward specific market segments in a manner that differs from the broad universe. For example, investors with a "small cap bias" make an active decision to favor investment in small companies rather than large companies. The degree to which this "style tilt" pays off is measured by evaluating an investor's asset class performance relative to a broad asset class index. After adjusting for manager performance relative to their individual benchmarks, this reveals whether the style tilt added or detracted value.
 - Use of Active Managers in Traditional Asset Classes with Index Fund Alternatives –
 In many traditional asset classes, such as US equity, investors can choose a low-cost index
 fund or a more expensive, actively managed fund. An actively managed fund holds

securities that differ from a reference index representative of the asset class. For example, an active US equity manager may hold a portfolio of stocks that have different weightings than the S&P 500 Index. If an investor chooses to invest in an actively managed fund, their objective is to outperform the reference index. This can be evaluated on an absolute return basis and/or a risk-adjusted basis (i.e., the manager may provide a lower return but with less risk).

c. Use of Alternative Asset Classes that Lack Index Funds – The final way in which active management is used is by investing in asset classes in which index funds are unavailable. Examples include private equity, hedge funds, private real estate, and several other niche market segments. In these situations, the key to evaluating performance is to gauge absolute and risk-adjusted returns versus a relatively comparable public market index or fundamental economic indicator (e.g., the consumer price index, which may be used as a proxy for inflation). In addition, peer rankings can be useful to gauge whether plans are selecting top tier managers relative to other institutional investors, as superior manager selection is essential in these asset classes. Although there are performance metrics that can be useful in these markets, it is also important to acknowledge that these metrics are considerably less precise that the metrics used in traditional asset classes. In addition, the metrics offer particularly limited value over shorter time periods.

In summary, it is important for institutional investors to be aware of the three factors that drive absolute and relative performance of institutional investment portfolios. When evaluating the performance of the Oklahoma pension plans, both individually and collectively, we will often refer to these three performance drivers.



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Addendum & Glossary



Capital Markets Metrics



Capital Markets Review As of June 30, 2021

Second Quarter Economic Environment

Optimism stemming from reopening efforts, lifted mask mandates, and a proposed bipartisan infrastructure spending bill in the US was balanced with concerns regarding emerging variants of the coronavirus and increasing inflation. Global equity markets provided strong gains in Q2 led by the US equity market. Joining equity markets in positive territory were commodities and REITs. Aggregate fixed income markets generally trailed, although issues with longer dated maturities or that are inflation-linked fared better. Key inflation indicators experienced significant year-over-year increases in Q2, but many forecasters view these elevated levels as transitory. Currently, Fed officials are projecting two rate increases by the end of 2023 but remain sensitive to repeating the taper tantrum experienced in 2013. Inflation is also rising outside of the US which notably led both the Bank of Canada and Bank of England to announce the tapering of their bond purchasing programs. Progress in the US labor market recovery was mixed in Q2. The jobs reports in April and May failed to meet expectations, but the gains in the June report outpaced most forecasts. The unemployment rate remains above target levels, although the Congressional Budget Office projected that the rate would decline to 3.6% by the end of 2022. Overall, the economic recovery continues to advance, with the International Monetary Fund forecasting global GDP growth of 6.0% and 4.4% in 2021 and 2022, respectively.

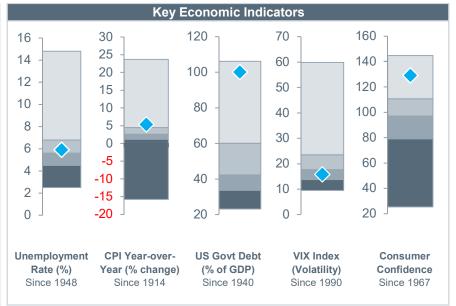
would decline to 3.6% by the end advance, with the International M and 4.4% in 2021 and 2022, resp	lonetary Fund for	l, the econ	omic reco	very conti	inues to
Economic Indicators	Jun-21	Mar-21	Jun-20	Jun-18	20 Yr
Federal Funds Rate (%)	0.08	0.06	0.08	1.91	1.37
Breakeven Infl 5 Yr (%)	2.50	2.60	1.17	2.08	1.83
Breakeven Infl 10 Yr (%)	2.34	2.37		2.13	2.02
CPI YoY (Headline) (%)	5.4	2.6		2.9	2.1
Unemployment Rate (%)	5.9 ▼	6.0		4.0	6.1
Real GDP YoY (%)	12.2	0.5		3.3	1.8
PMI - Manufacturing	60.6	64.7	52.2		53.1
USD Total Wtd Idx	112.85	114.13	120.78	113.26	103.17
WTI Crude Oil per Barrel (\$)	73.5	59.2	39.3	74.2	63.2
0 110 1 0 (0)	4 770				
Gold Spot per Oz (\$)	1,770 🔺	1,708	1,781	1,253	1,048
Gold Spot per Oz (\$) Market Performance (%)	1,770 ▲ QTD	1,708 CYTD	1,781 1 Yr	1,253 5 Yr	1,048 10 Yr
,	·				
Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
Market Performance (%) S&P 500 (Cap Wtd)	QTD 8.55	CYTD 15.25	1 Yr 40.79	5 Yr 17.65	10 Yr 14.84
Market Performance (%) S&P 500 (Cap Wtd) Russell 2000	QTD 8.55 4.29	CYTD 15.25 17.54	1 Yr 40.79 62.03	5 Yr 17.65 16.47	10 Yr 14.84 12.34
Market Performance (%) S&P 500 (Cap Wtd) Russell 2000 MSCI EAFE (Net)	QTD 8.55 4.29 5.17	15.25 17.54 8.83	1 Yr 40.79 62.03 32.35	5 Yr 17.65 16.47 10.28	10 Yr 14.84 12.34 5.89
Market Performance (%) S&P 500 (Cap Wtd) Russell 2000 MSCI EAFE (Net) MSCI EAFE SC (Net)	8.55 4.29 5.17 4.34	15.25 17.54 8.83 9.04	1 Yr 40.79 62.03 32.35 40.98 40.90	5 Yr 17.65 16.47 10.28 12.03 13.03	10 Yr 14.84 12.34 5.89 8.38

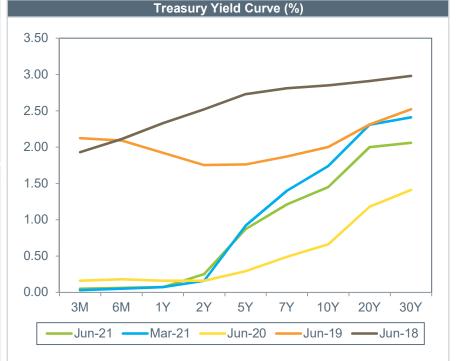
NCREIF ODCE (Gross)

Bloomberg Cmdty (TR)

HFRI FOF Comp

FTSE NAREIT Eq REIT (TR)







3.93

12.02

13.30

2.89

6.12

21.96

4.97

21.15

8.02

38.02

18.31

45.61

6.57

6.31

6.13

2.40

9.60

9.41

3.86

-4.44

US Equity Review As of June 30, 2021

Second Quarter Review

Broad Market

US equity markets built on the solid start to 2021, with strong performance in Q2 driven by continued monetary and fiscal stimulus, along with increasing vaccination rates leading to economic reopening efforts across the country. The S&P 500 Index finished Q2 up 8.5%. The forward P/E ratio of the S&P 500 Index continues to be above historical levels; however, it has seen a slight decrease relative to Q1.

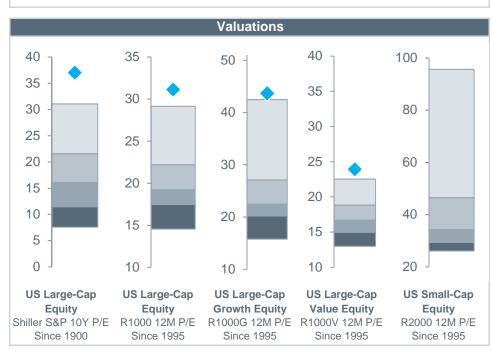
Market Cap

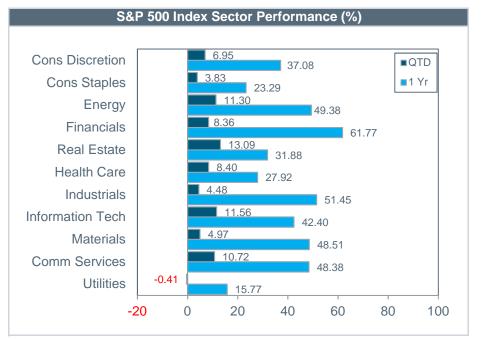
Large-cap stocks significantly outperformed their smaller-cap counterparts. The Russell 2000 Index returned 4.29% compared to 8.55% for the S&P 500.

Style and Sector

Large- and mid-cap growth stocks outperformed value in Q2, however, value stocks continued to lead growth stocks in the small-cap space. The Russell 1000 Growth Index returned 11.9% versus 5.2% for the Russell 1000 Value Index.









Non-US Equity Review
As of June 30, 2021

Second Quarter Review

Developed Markets

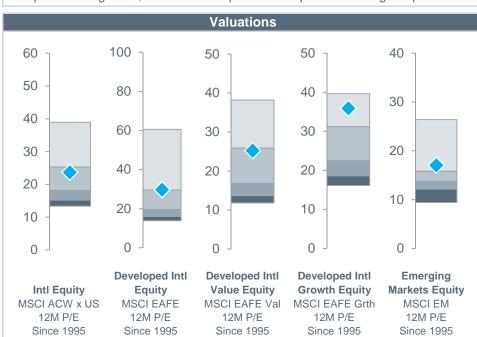
Developed international markets delivered positive returns in Q2, as growth outperformed value in a reversal of the value rally experienced in Q1, while small-cap stocks slightly trailed their large counterparts. Active management did well this quarter, with a majority of developed international equity managers beating their benchmarks in the large- and small-cap universes.

Emerging Markets

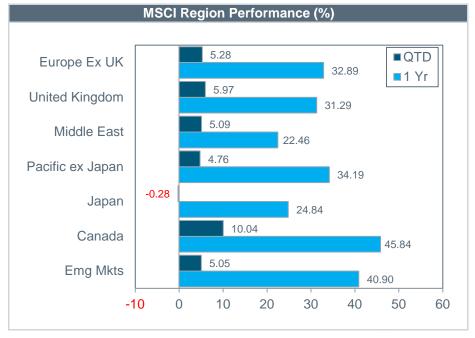
Emerging markets lagged developed markets in Q2 but still continued a trend of positive performance. Contrary to the reversal seen in developed markets, emerging market value stocks continued to outperform growth while small-cap stocks also continued their outperformance over large. Active manager results in emerging markets were mixed, with just under half outpacing their benchmarks for the quarter.

Market Cap & Style

In international markets, growth stocks outperformed value, while large-cap stocks outperformed small-cap. In emerging markets, value stocks outperformed growth, while small-cap stocks outperformed large-cap.









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.



Fixed Income Review As of June 30, 2021

Second Quarter Review

Broad Market

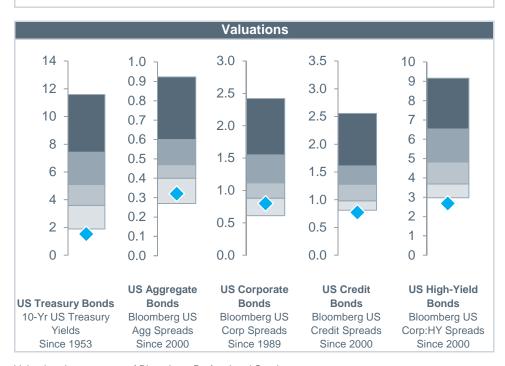
The Bloomberg US Aggregate Index returned 1.8% in Q2, partially retracing losses from Q1, while overall remaining down -1.6% YTD. Treasury yields fell back despite an easing of pandemic related restrictions which supported economic growth and rising inflationary pressures.

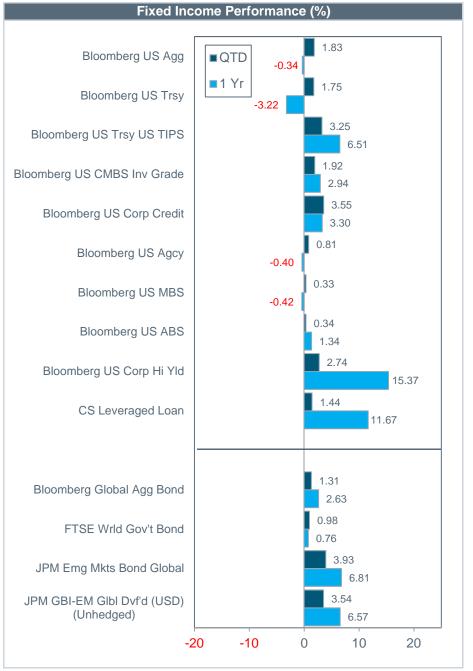
Credit Market

Lower quality investment grade debt rated BBB outperformed both the investment grade and high yield credit markets, a departure from the trend in past quarters of lowest quality credit outperforming higher grade debt. In Q2, the Bloomberg US Credit Index returned 3.3%, with the Bloomberg BBB Credit Index returning 3.7%.

Emerging Market Debt

Emerging market debt saw improved performance compared to Q1 on the heels of falling US Treasury yields and rising commodity prices, contributing to broadly positive emerging market debt performance.









Alternatives Review As of June 30, 2021

Second Quarter Review - Absolute Return

General Market - Hedge Funds

Diversified hedge funds posted another strong quarter, returning 4.0% and bringing YTD returns to 10.0% according to the HFRI Fund Weighted Composite Index. Heightened levels of activity across convertible bond issuance, IPOs, SPACs, and M&A provided fertile ground for event-driven funds, and equity beta tailwinds continued to add to returns in the hedged equity space. Event-driven strategies have outperformed relative value YTD, and directional strategies have outperformed low net exposure and market neutral approaches.

General Market - Global Tactical Asset Allocation (GTAA)

Global Tactical Asset Allocation strategies that RVK follows closely largely generated positive absolute returns in Q2, ranging from the low- to midsingle digits. Long-biased strategies produced mixed results versus a less diversified blended benchmark of 60% US equity and 40% US fixed income, which returned 5.8% in Q2. Generally, strategies that have maintained a value bias, especially within emerging markets, outperformed relative to peers.

HFRI Hedge Fund Performance (%) 2.89 HFRI FOF ■ QTD 18.31 0.77 Conv Arbitrage ■1 Yr 18.90 4.85 **Equity Hedge** 36.53 3.14 Mkt Neutral Eq 7.83 5.03 Distressed 31 98 3.99 Macro 14.93 2.73 Relative Value 15.46 3.92 **Event Driven** 30.07 3.74 Merger Arb 21.36 2.38 Credit Arb 19.79 -15 5 25 45

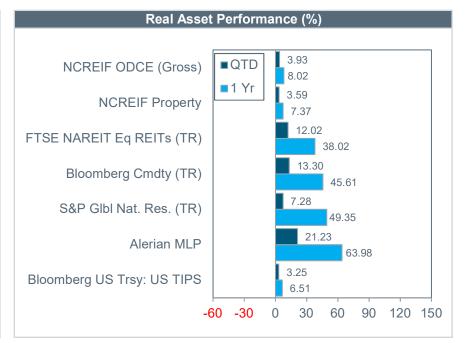
Second Quarter Review - Real Assets

General Market - Diversified Inflation Strategies (DIS)

Diversified Inflation Strategies that RVK follows closely primarily generated strong positive absolute performance, ranging from the midsingle digits to low double-digits. In Q2, commodities, listed infrastructure, natural resource equities, REITs, and TIPS all posted positive absolute returns. Commodities led the way, with the Bloomberg Commodity Index posting a 13.3% return, largely driven by energy, with metals and agriculture also posting strong returns.

General Market - Real Estate

Core private real estate generated a positive 3.9% return in Q2, as reported by the NFI-ODCE Index, with the total return comprising of 1.0% income and 2.9% price appreciation. While the income trends in line with historical levels, price appreciation rebounded meaningfully by 1.8% from the level recorded in Q1. Publicly traded real estate investments outperformed their private market counterparts by a meaningful margin.





Annual Asset Class Performance As of June 30, 2021

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	YTD
Best	39.38	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	21.96
1	16.23	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	21.15
	15.97	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	17.54
	11.63	-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	15.25
	11.17	-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	9.04
	10.25	-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	8.83
	6.97	-26.16	26.46	15.12	2.11	15.81	7.44	3.64	-0.27	8.52	7.77	-4.38	18.44	10.88	7.45
	6.60	-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	6.12
	5.49	-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	4.97
	5.00	-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	3.62
	1.87	-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	1.73
	1.45	-43.38	1.92	6.31	-13.32	4.21	-8.61		-4.47	1.00	3.01	-13.79	7.69	0.67	0.02
	-1.57	-47.01	0.21	5.70	-15.94	0.11	-8.83	-4.95	-14.92	0.51	1.70	-14.58	5.34	-3.12	-1.61
Worst	-15.70	-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	-4.64
S&P 500 US Larg Cap		mall (Net)		(Net) - (N	MSCI EM Net) - Int'l Img Mkts	Bloombrg US Agg Bond - Fl	Bloombrg US Corp H Yield - Fl	Bloombr i US Trsy l TIPS - F	JS Credit I	ov ODO	CE NAR	EIT Eq C	Cr	naty (TR)	ICE BofAML 3 Mo T-Bill - Cash Equiv



Oklahoma State Pension Commission



Oklahoma State Pension Commission All Plans Summary Asset Allocation & Performance - Net of Fees

	Allocation	า						Performa	ance (%)					
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017
Oklahoma State Pension Commission	39,521,726,226	100.00												
OTRS (Teachers) Total Fund	21,955,763,051	55.55	7.22	11.97	32.95	32.95	12.12	12.16	8.63	9.97	13.22	19.48	-5.29	15.83
OTRS Policy Index			5.82	10.10	31.33	31.33	13.31	12.35	9.16	9.86	15.24	21.72	-4.75	15.16
Difference			1.40	1.87	1.62	1.62	-1.19	-0.19	-0.53	0.11	-2.02	-2.24	-0.54	0.67
OTRS Actual Allocation Index			6.01	10.66	32.08	32.08	13.00	12.21	9.23	9.93	16.56	18.94	-4.70	14.35
Difference			1.21	1.31	0.87	0.87	-0.88	-0.05	-0.60	0.04	-3.34	0.54	-0.59	1.48
Actuarial Discount Rate (7.0%)			1.71	3.44	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Difference			5.51	8.53	25.95	25.95	5.12	5.16	1.63	2.97	6.22	12.48	-12.29	8.83
OPERS (Public Employees) Total Fund	12,513,220,842	31.66	5.60	8.65	27.82	27.82	12.33	11.57	8.64	9.20	15.18	21.23	-6.57	17.01
OPERS Policy Index			5.57	8.01	26.94	26.94	12.37	11.59	8.69	9.07	15.19	21.46	-6.09	16.86
Difference			0.03	0.64	0.88	0.88	-0.04	-0.02	-0.05	0.13	-0.01	-0.23	-0.48	0.15
OPERS Actual Allocation Index			5.69	8.55	27.49	27.49	14.44	12.75	9.52	9.56	22.04	20.87	-6.49	16.51
Difference			-0.09	0.10	0.33	0.33	-2.11	-1.18	-0.88	-0.36	-6.86	0.36	-0.08	0.50
Actuarial Discount Rate (6.5%)			1.59	3.20	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Difference			4.01	5.45	21.32	21.32	5.83	5.07	2.14	2.70	8.68	14.73	-13.07	10.51
OPPRS (Police) Total Fund	3,241,106,139	8.20	5.81	10.45	28.00	28.00	10.79	10.37	7.71	8.12	12.17	15.22	-2.85	12.91
OPPRS Policy Index			5.84	8.68	25.07	25.07	11.37	10.55	7.45	8.37	12.66	19.13	-5.34	15.45
Difference			-0.03	1.77	2.93	2.93	-0.58	-0.18	0.26	-0.25	-0.49	-3.91	2.49	-2.54
OPPRS Actual Allocation Index			5.71	8.25	24.53	24.53	12.53	11.34	8.27	8.58	20.43	15.02	-3.70	13.78
Difference			0.10	2.20	3.47	3.47	-1.74	-0.97	-0.56	-0.46	-8.26	0.20	0.85	-0.87
Actuarial Discount Rate (7.5%)			1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Difference			3.99	6.77	20.50	20.50	3.29	2.87	0.21	0.62	4.67	7.72	-10.35	5.41
OLERS (Law Enforcement) Total Fund	1,236,494,091	3.13	5.27	10.00	27.91	27.91	10.64	10.74	7.88	8.54	11.83	17.49	-4.75	14.53
OLERS Policy Index			5.44	9.25	26.06	26.06	11.61	11.10	8.69	9.14	12.77	19.12	-3.67	13.36
Difference			-0.17	0.75	1.85	1.85	-0.97	-0.36	-0.81	-0.60	-0.94	-1.63	-1.08	1.17
OLERS Actual Allocation Index			5.33	9.45	27.40	27.40	12.08	11.27	8.74	9.03	14.70	17.33	-3.47	14.63
Difference			-0.06	0.55	0.51	0.51	-1.44	-0.53	-0.86	-0.49	-2.87	0.16	-1.28	-0.10
Actuarial Discount Rate (7.5%)			1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Difference			3.45	6.32	20.41	20.41	3.14	3.24	0.38	1.04	4.33	9.99	-12.25	7.03



Oklahoma State Pension Commission All Plans Summary Asset Allocation & Performance - Net of Fees

	Allocation							Performa	ance (%)					
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017
URSJJ (Judges) Total Fund	433,468,169	1.10	5.68	8.53	27.62	27.62	12.33	11.57	8.64	9.08	15.06	21.36	-6.43	16.85
URSJJ Policy Index			5.57	8.01	26.94	26.94	12.39	11.60	8.70	9.08	15.19	21.51	-6.09	16.86
Difference			0.11	0.52	0.68	0.68	-0.06	-0.03	-0.06	0.00	-0.13	-0.15	-0.34	-0.01
URSJJ Actual Allocation Index			5.70	8.54	27.45	27.45	14.39	12.71	9.39	9.57	21.82	21.01	-6.52	16.63
Difference			-0.02	-0.01	0.17	0.17	-2.06	-1.14	-0.75	-0.49	-6.76	0.35	0.09	0.22
Actuarial Discount Rate (6.5%)			1.59	3.20	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Difference			4.09	5.33	21.12	21.12	5.83	5.07	2.14	2.58	8.56	14.86	-12.93	10.35
OWCRS (Wildlife) Total Fund	141,673,934	0.36	4.85	7.59	22.82	22.82	11.22	10.49	8.09	8.36	13.00	19.21	-3.85	13.93
OWCRS Policy Index			3.73	7.07	23.55	23.55	10.15	9.40	7.13	8.02	12.67	17.53	-4.95	12.96
Difference			1.12	0.52	-0.73	-0.73	1.07	1.09	0.96	0.34	0.33	1.68	1.10	0.97
OWCRS Actual Allocation Index			3.84	7.74	25.47	25.47	12.01	10.99	8.64	8.80	13.21	20.53	-3.71	14.38
Difference			1.01	-0.15	-2.65	-2.65	-0.79	-0.50	-0.55	-0.44	-0.21	-1.32	-0.14	-0.45
Actuarial Discount Rate (7.0%)			1.71	3.44	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Difference			3.14	4.15	15.82	15.82	4.22	3.49	1.09	1.36	6.00	12.21	-10.85	6.93



All Plans Summary

Asset Allocation & Performance - Gross of Fees

	Allocation	1						Performa	ance (%)					
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017
Oklahoma State Pension Commission	43,242,229,286	100.00												
All Public Plans-Total Fund Median			5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	12.57	18.59	-4.15	15.28
OTRS (Teachers) Total Fund	21,955,763,051	50.77	7.27	12.08	33.21	33.21	12.41	12.50	9.00	10.37	13.45	19.83	-4.98	16.20
OTRS Policy Index			5.82	10.10	31.33	31.33	13.31	12.35	9.16	9.86	15.24	21.72	-4.75	15.16
Difference			1.45	1.98	1.88	1.88	-0.90	0.15	-0.16	0.51	-1.79	-1.89	-0.23	1.04
OTRS Actual Allocation Index			6.01	10.66	32.08	32.08	13.00	12.21	9.23	9.93	16.56	18.94	-4.70	14.35
Difference			1.26	1.42	1.13	1.13	-0.59	0.29	-0.23	0.44	-3.11	0.89	-0.28	1.85
Actuarial Discount Rate (7.0%)			1.71	3.44	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Difference			5.56	8.64	26.21	26.21	5.41	5.50	2.00	3.37	6.45	12.83	-11.98	9.20
Rank			3	4	4	4	23	10	21	4	39	32	72	33
OPERS (Public Employees) Total Fund	12,513,220,842	28.94	5.62	8.70	27.99	27.99	12.46	11.69	8.76	9.32	15.34	21.38	-6.48	17.13
OPERS Policy Index			5.57	8.01	26.94	26.94	12.37	11.59	8.69	9.07	15.19	21.46	-6.09	16.86
Difference			0.05	0.69	1.05	1.05	0.09	0.10	0.07	0.25	0.15	-0.08	-0.39	0.27
OPERS Actual Allocation Index			5.69	8.55	27.49	27.49	14.44	12.75	9.52	9.56	22.04	20.87	-6.49	16.51
Difference			-0.07	0.15	0.50	0.50	-1.98	-1.06	-0.76	-0.24	-6.70	0.51	0.01	0.62
Actuarial Discount Rate (6.5%)			1.59	3.20	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Difference			4.03	5.50	21.49	21.49	5.96	5.19	2.26	2.82	8.84	14.88	-12.98	10.63
Rank			32	49	30	30	21	28	31	25	20	12	93	17
OFPRS (Firefighters) Total Fund	3,720,503,060	8.60	5.69	9.61	31.79	31.79	13.89	13.55	10.57	10.62	18.44	20.15	-2.46	18.67
OFPRS Policy Index			6.54	10.53	29.17	29.17	13.38	12.53	9.97	10.46	13.85	21.76	-3.80	16.41
Difference			-0.85	-0.92	2.62	2.62	0.51	1.02	0.60	0.16	4.59	-1.61	1.34	2.26
OFPRS Actual Allocation Index			6.06	9.60	28.45	28.45	13.35	12.86	9.73	10.16	17.69	20.30	-3.93	15.64
Difference			-0.37	0.01	3.34	3.34	0.54	0.69	0.84	0.46	0.75	-0.15	1.47	3.03
Actuarial Discount Rate (7.5%)			1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Difference			3.87	5.93	24.29	24.29	6.39	6.05	3.07	3.12	10.94	12.65	-9.96	11.17
Rank			27	27	7	7	6	3	2	3	6	28	18	5



All Plans Summary Asset Allocation & Performance - Gross of Fees

	Allocation							Performa	ance (%)					
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017
OPPRS (Police) Total Fund	3,241,106,139	7.50	5.90	10.64	28.44	28.44	11.20	10.80	8.14	8.54	12.54	15.68	-2.46	13.40
OPPRS Policy Index			5.84	8.68	25.07	25.07	11.37	10.55	7.45	8.37	12.66	19.13	-5.34	15.45
Difference			0.06	1.96	3.37	3.37	-0.17	0.25	0.69	0.17	-0.12	-3.45	2.88	-2.05
OPPRS Actual Allocation Index			5.71	8.25	24.53	24.53	12.53	11.34	8.27	8.58	20.43	15.02	-3.70	13.78
Difference			0.19	2.39	3.91	3.91	-1.33	-0.54	-0.13	-0.04	-7.89	0.66	1.24	-0.38
Actuarial Discount Rate (7.5%)			1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Difference			4.08	6.96	20.94	20.94	3.70	3.30	0.64	1.04	5.04	8.18	-9.96	5.90
Rank			20	10	27	27	55	53	52	55	51	85	18	82
OLERS (Law Enforcement) Total Fund	1,236,494,091	2.86	5.32	10.09	28.15	28.15	10.84	10.94	8.06	8.63	12.03	17.70	-4.55	14.71
OLERS Policy Index			5.44	9.25	26.06	26.06	11.61	11.10	8.69	9.14	12.77	19.12	-3.67	13.36
Difference			-0.12	0.84	2.09	2.09	-0.77	-0.16	-0.63	-0.51	-0.74	-1.42	-0.88	1.35
OLERS Actual Allocation Index			5.33	9.45	27.40	27.40	12.08	11.27	8.74	9.03	14.70	17.33	-3.47	14.63
Difference			-0.01	0.64	0.75	0.75	-1.24	-0.33	-0.68	-0.40	-2.67	0.37	-1.08	0.08
Actuarial Discount Rate (7.5%)			1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Difference			3.50	6.41	20.65	20.65	3.34	3.44	0.56	1.13	4.53	10.20	-12.05	7.21
Rank			48	16	29	29	64	50	57	49	58	62	59	61
URSJJ (Judges) Total Fund	433,468,169	1.00	5.69	8.55	27.67	27.67	12.37	11.62	8.68	9.13	15.10	21.40	-6.38	16.89
URSJJ Policy Index			5.57	8.01	26.94	26.94	12.39	11.60	8.70	9.08	15.19	21.51	-6.09	16.86
Difference			0.12	0.54	0.73	0.73	-0.02	0.02	-0.02	0.05	-0.09	-0.11	-0.29	0.03
URSJJ Actual Allocation Index			5.70	8.54	27.45	27.45	14.39	12.71	9.39	9.57	21.82	21.01	-6.52	16.63
Difference			-0.01	0.01	0.22	0.22	-2.02	-1.09	-0.71	-0.44	-6.72	0.39	0.14	0.26
Actuarial Discount Rate (6.5%)			1.59	3.20	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Difference			4.10	5.35	21.17	21.17	5.87	5.12	2.18	2.63	8.60	14.90	-12.88	10.39
Rank			27	54	35	35	24	29	34	34	22	11	91	21
OWCRS (Wildlife) Total Fund	141,673,934	0.33	4.93	7.77	23.23	23.23	11.50	10.74	8.33	8.58	13.34	19.46	-3.68	14.13
OWCRS Policy Index			3.73	7.07	23.55	23.55	10.15	9.40	7.13	8.02	12.67	17.53	-4.95	12.96
Difference			1.20	0.70	-0.32	-0.32	1.35	1.34	1.20	0.56	0.67	1.93	1.27	1.17
OWCRS Actual Allocation Index			3.84	7.74	25.47	25.47	12.01	10.99	8.64	8.80	13.21	20.53	-3.71	14.38
Difference			1.09	0.03	-2.24	-2.24	-0.51	-0.25	-0.31	-0.22	0.13	-1.07	0.03	-0.25
Actuarial Discount Rate (7.0%)			1.71	3.44	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Difference			3.22	4.33	16.23	16.23	4.50	3.74	1.33	1.58	6.34	12.46	-10.68	7.13
Rank			68	75	81	81	48	57	47	53	41	38	41	71



Oklahoma State Pension Commission All Plans Summary Asset Class Performance - Net of Fees

						Performa	ance (%)					
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017
US Equity												
OTRS US Equity	7.07	16.50	48.58	48.58	14.83	16.25	11.74	13.20	15.40	27.64	-8.27	20.72
Russell 3000 Index	8.24	15.11	44.16	44.16	18.73	17.89	13.95	14.70	20.89	31.02	-5.24	21.13
Difference	-1.17	1.39	4.42	4.42	-3.90	-1.64	-2.21	-1.50	-5.49	-3.38	-3.03	-0.41
OPERS US Equity	7.51	15.69	45.80	45.80	17.68	17.60	13.43	14.48	20.37	29.26	-6.45	21.27
OPERS US Equity Custom Index	7.90	15.38	45.90	45.90	18.38	17.82	13.83	14.63	20.97	30.56	-5.70	20.71
Difference	-0.39	0.31	-0.10	-0.10	-0.70	-0.22	-0.40	-0.15	-0.60	-1.30	-0.75	0.56
OLERS US Equity	7.16	17.84	52.68	52.68	17.71	18.57	13.53	14.31	19.60	32.84	-8.58	21.40
S&P 500 Index (Cap Wtd)	8.55	15.25	40.79	40.79	18.67	17.65	14.10	14.84	18.40	31.49	-4.38	21.83
Difference	-1.39	2.59	11.89	11.89	-0.96	0.92	-0.57	-0.53	1.20	1.35	-4.20	-0.43
URSJJ US Equity	7.71	15.34	45.94	45.94	18.29	17.78	13.79	14.55	21.02	30.49	-5.83	20.57
URSJJ US Equity Custom Index	7.90	15.38	45.90	45.90	18.38	17.82	13.83	14.63	20.97	30.56	-5.70	20.71
Difference	-0.19	-0.04	0.04	0.04	-0.09	-0.04	-0.04	-0.08	0.05	-0.07	-0.13	-0.14
OWCRS US Equity	7.95	15.22	40.12	40.12	17.08	17.29	13.24	14.14	18.87	28.92	-5.64	22.16
Russell 3000 Index	8.24	15.11	44.16	44.16	18.73	17.89	13.95	14.70	20.89	31.02	-5.24	21.13
Difference	-0.29	0.11	-4.04	-4.04	-1.65	-0.60	-0.71	-0.56	-2.02	-2.10	-0.40	1.03



Oklahoma State Pension Commission All Plans Summary

Asset Class Performance - Net of Fees

						Performa	ance (%)					
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017
International Equity												
OTRS International Equity	5.93	11.03	40.41	40.41	8.90	11.40	6.24	6.76	12.13	21.38	-16.32	31.43
MSCI ACW Ex US IM Index (USD) (Net)	5.60	9.58	37.18	37.18	9.42	11.20	5.56	5.65	11.12	21.63	-14.76	27.81
Difference	0.33	1.45	3.23	3.23	-0.52	0.20	0.68	1.11	1.01	-0.25	-1.56	3.62
OPERS International Equity	5.55	9.13	36.66	36.66	10.41	11.39	6.04	6.20	12.30	23.21	-13.81	27.32
MSCI ACW Ex US Index (USD) (Gross)	5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	11.13	22.13	-13.78	27.77
Difference	-0.09	-0.32	0.37	0.37	0.53	-0.20	0.23	0.27	1.17	1.08	-0.03	-0.45
OLERS International Equity	4.70	9.15	36.17	36.17	10.67	11.56	6.53	5.75	12.57	23.97	-14.43	30.46
MSCI ACW Ex US Index (USD) (Net)	5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	10.65	21.51	-14.20	27.19
Difference	-0.78	-0.01	0.45	0.45	1.29	0.48	1.20	0.30	1.92	2.46	-0.23	3.27
URSJJ International Equity	5.55	9.33	35.95	35.95	9.62	11.35	5.58	5.69	10.86	21.83	-13.97	27.54
MSCI ACW Ex US Index (USD) (Gross)	5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	11.13	22.13	-13.78	27.77
Difference	-0.09	-0.12	-0.34	-0.34	-0.26	-0.24	-0.23	-0.24	-0.27	-0.30	-0.19	-0.23
OWCRS International Equity	5.23	8.50	35.65	35.65	8.99	11.28	5.61	5.77	10.17	23.05	-13.82	29.05
MSCI ACW Ex US Index (USD) (Net)	5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	10.65	21.51	-14.20	27.19
Difference	-0.25	-0.66	-0.07	-0.07	-0.39	0.20	0.28	0.32	-0.48	1.54	0.38	1.86
Total Equity												
OPPRS Total Equity	7.95	15.34	43.89	43.89	15.55	14.79	10.88	10.89	18.46	21.98	-5.24	18.31
MSCI ACW Index (USD) (Gross)	7.53	12.56	39.87	39.87	15.14	15.20	10.32	10.48	16.82	27.30	-8.93	24.62
Difference	0.42	2.78	4.02	4.02	0.41	-0.41	0.56	0.41	1.64	-5.32	3.69	-6.31



Oklahoma State Pension Commission All Plans Summary Asset Class Performance - Net of Fees

						Performa	ance (%)					
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017
Fixed Income												
OTRS Fixed Income	3.69	-1.02	3.34	3.34	7.42	5.31	4.72	5.51	11.91	11.84	-1.44	6.44
Bloomberg US Unv Bond Index	1.96	-1.15	1.12	1.12	5.64	3.48	3.54	3.74	7.58	9.29	-0.25	4.09
Difference	1.73	0.13	2.22	2.22	1.78	1.83	1.18	1.77	4.33	2.55	-1.19	2.35
OPERS Fixed Income	2.75	-1.74	0.01	0.01	6.55	3.77	4.04	4.32	10.54	10.12	-0.33	4.42
OPERS Fixed Income Custom Index	2.58	-1.93	-0.75	-0.75	5.84	3.21	3.62	3.85	9.08	9.43	-0.33	4.08
Difference	0.17	0.19	0.76	0.76	0.71	0.56	0.42	0.47	1.46	0.69	0.00	0.34
OPPRS Fixed Income	1.94	1.24	6.33	6.33	4.87	4.04	2.80	N/A	6.63	7.24	-0.21	5.37
Bloomberg US Agg Bond Index	1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	7.51	8.72	0.01	3.54
Difference	0.11	2.85	6.67	6.67	-0.47	1.01	-0.48	N/A	-0.88	-1.48	-0.22	1.83
OLERS Fixed Income	1.93	-1.19	0.71	0.71	4.12	3.10	2.79	3.55	5.62	6.12	0.30	4.37
Bloomberg US Agg Bond Index	1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	7.51	8.72	0.01	3.54
Difference	0.10	0.42	1.05	1.05	-1.22	0.07	-0.49	0.16	-1.89	-2.60	0.29	0.83
URSJJ Fixed Income	2.75	-1.84	-0.17	-0.17	6.51	3.71	3.99	4.31	10.58	10.06	-0.32	4.37
URSJJ Fixed Income Custom Index	2.58	-1.93	-0.75	-0.75	5.84	3.21	3.62	3.85	9.08	9.43	-0.33	4.08
Difference	0.17	0.09	0.58	0.58	0.67	0.50	0.37	0.46	1.50	0.63	0.01	0.29
OWCRS Fixed Income	1.69	-0.37	2.62	2.62	5.78	3.17	3.23	3.29	8.29	7.94	0.76	3.02
Bloomberg US Agg Bond Index	1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	7.51	8.72	0.01	3.54
Difference	-0.14	1.24	2.96	2.96	0.44	0.14	-0.05	-0.10	0.78	-0.78	0.75	-0.52



Oklahoma State Pension Commission All Plans Summary

Asset Class Performance - Net of Fees

						Performa	ance (%)					
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017
Real Estate												
OTRS Real Estate	1.47	2.07	1.17	1.17	2.94	4.52	N/A	N/A	-2.48	5.59	7.43	6.47
NCREIF Property Index	3.59	5.37	7.37	7.37	5.50	6.13	7.72	8.79	1.60	6.42	6.72	6.96
Difference	-2.12	-3.30	-6.20	-6.20	-2.56	-1.61	N/A	N/A	-4.08	-0.83	0.71	-0.49
NCREIF ODCE Index (AWA) (Net)	3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	0.34	4.39	7.36	6.66
Difference	-2.21	-3.57	-5.92	-5.92	-1.66	-1.10	N/A	N/A	-2.82	1.20	0.07	-0.19
OPERS Real Estate	-9.01	-7.22	-5.51	-5.51	-4.86	-2.46	-0.51	N/A	-8.51	2.90	1.12	-2.11
NCREIF ODCE Index (AWA) (Net)	3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	0.34	4.39	7.36	6.66
Difference	-12.69	-12.86	-12.60	-12.60	-9.46	-8.08	-7.94	N/A	-8.85	-1.49	-6.24	-8.77
OLERS Real Estate	2.56	4.06	5.08	5.08	2.26	3.62	3.83	5.44	-0.12	2.76	3.23	5.55
NCREIF ODCE Index (AWA) (Net)	3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	0.34	4.39	7.36	6.66
Difference	-1.12	-1.58	-2.01	-2.01	-2.34	-2.00	-3.60	-3.16	-0.46	-1.63	-4.13	-1.11
Real Assets												
OPPRS Real Assets	2.46	4.77	5.73	5.73	2.29	3.94	3.77	4.89	-1.07	3.52	3.55	5.71
OPPRS Real Assets Blended Benchmark	3.68	5.64	7.09	7.09	2.90	3.69	1.56	4.41	0.34	4.43	0.98	5.05
Difference	-1.22	-0.87	-1.36	-1.36	-0.61	0.25	2.21	0.48	-1.41	-0.91	2.57	0.66



Oklahoma State Pension Commission All Plans Summary

Asset Class Performance - Net of Fees

						Performa	nce (%)					
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017
Hedge Funds												
OPPRS Long/Short Equity	3.20	4.57	26.26	26.26	11.22	10.59	7.71	7.35	22.33	16.34	-4.94	11.59
MSCI ACW Index (USD) (Net)	7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	16.25	26.60	-9.42	23.97
Difference	-4.19	-7.73	-13.00	-13.00	-3.35	-4.02	-2.04	-2.55	6.08	-10.26	4.48	-12.38
HFRI FOF: Strategic Index	3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	14.62	10.52	-6.67	11.22
Difference	-0.65	-1.00	2.45	2.45	3.70	3.04	2.90	2.88	7.71	5.82	1.73	0.37
OLERS Long/Short Equity	0.42	6.29	18.97	18.97	5.59	7.56	5.25	5.56	8.08	12.36	-5.53	11.66
MSCI ACW Index (USD) (Net)	7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	16.25	26.60	-9.42	23.97
Difference	-6.97	-6.01	-20.29	-20.29	-8.98	-7.05	-4.50	-4.34	-8.17	-14.24	3.89	-12.31
HFRI FOF: Strategic Index	3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	14.62	10.52	-6.67	11.22
Difference	-3.43	0.72	-4.84	-4.84	-1.93	0.01	0.44	1.09	-6.54	1.84	1.14	0.44



Oklahoma State Pension Commission All Plans Summary Asset Class Performance - Net of Fees

						Performa	ance (%)					
	QTD	CYTD	FYTD	1	3	5	7	10	2020	2019	2018	2017
				Year	Years	Years	Years	Years				
Private Equity												
OTRS Private Equity	28.40	31.20	52.06	52.06	26.38	23.05	19.63	17.84	17.27	17.73	23.03	13.89
R 2000 Index+4%	5.32	19.86	68.51	68.51	18.06	21.12	15.85	16.83	24.76	30.55	-7.45	19.23
Difference	23.08	11.34	-16.45	-16.45	8.32	1.93	3.78	1.01	-7.49	-12.82	30.48	-5.34
OPPRS Private Equity	18.99	31.33	58.50	58.50	22.67	16.87	14.99	13.80	15.87	10.51	15.22	9.65
MSCI ACW Index (USD) (Net)	7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	16.25	26.60	-9.42	23.97
Difference	11.60	19.03	19.24	19.24	8.10	2.26	5.24	3.90	-0.38	-16.09	24.64	-14.32
Cambridge US Prvt Eq Index	0.00	10.05	35.55	35.55	15.67	16.57	13.48	13.90	21.32	13.88	10.19	18.01
Difference	18.99	21.28	22.95	22.95	7.00	0.30	1.51	-0.10	-5.45	-3.37	5.03	-8.36
OLERS Private Equity	17.90	23.76	41.00	41.00	15.51	13.32	10.69	11.42	8.91	6.84	15.45	7.59
S&P 500 Index+5%	9.88	18.10	47.83	47.83	24.61	23.53	19.80	20.58	24.32	38.06	0.40	27.92
Difference	8.02	5.66	-6.83	-6.83	-9.10	-10.21	-9.11	-9.16	-15.41	-31.22	15.05	-20.33
Cambridge US Prvt Eq Index	0.00	10.05	35.55	35.55	15.67	16.57	13.48	13.90	21.32	13.88	10.19	18.01
Difference	17.90	13.71	5.45	5.45	-0.16	-3.25	-2.79	-2.48	-12.41	-7.04	5.26	-10.42
Other Alternatives												
OWCRS Alternative Investments	3.68	6.48	18.06	18.06	5.85	6.11	3.59	3.47	2.14	15.31	-6.07	9.36
OWCRS Alternatives Custom Index	2.89	4.97	18.31	18.31	6.32	5.61	3.32	N/A	10.88	8.38	-4.02	7.06
Difference	0.79	1.51	-0.25	-0.25	-0.47	0.50	0.27	N/A	-8.74	6.93	-2.05	2.30



Oklahoma State Pension Commission All Plans Summary

Asset Class Performance - Gross of Fees

						Performa	ance (%)					
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017
US Equity												
OTRS US Equity	7.11	16.59	48.83	48.83	15.12	16.61	12.06	13.43	15.62	28.03	-7.94	21.17
Russell 3000 Index	8.24	15.11	44.16	44.16	18.73	17.89	13.95	14.70	20.89	31.02	-5.24	21.13
Difference	-1.13	1.48	4.67	4.67	-3.61	-1.28	-1.89	-1.27	-5.27	-2.99	-2.70	0.04
OPERS US Equity	7.53	15.72	45.98	45.98	17.83	17.73	13.56	14.60	20.53	29.50	-6.38	21.39
OPERS US Equity Custom Index	7.90	15.38	45.90	45.90	18.38	17.82	13.83	14.63	20.97	30.56	-5.70	20.71
Difference	-0.37	0.34	0.08	0.08	-0.55	-0.09	-0.27	-0.03	-0.44	-1.06	-0.68	0.68
OFPRS US Equity	7.01	14.59	47.46	47.46	19.79	19.24	14.58	14.87	25.89	31.43	-4.96	22.96
Russell 3000 Index	8.24	15.11	44.16	44.16	18.73	17.89	13.95	14.70	20.89	31.02	-5.24	21.13
Difference	-1.23	-0.52	3.30	3.30	1.06	1.35	0.63	0.17	5.00	0.41	0.28	1.83
OLERS US Equity	7.16	17.84	52.69	52.69	17.72	18.58	13.53	14.31	19.61	32.84	-8.56	21.40
S&P 500 Index (Cap Wtd)	8.55	15.25	40.79	40.79	18.67	17.65	14.10	14.84	18.40	31.49	-4.38	21.83
Difference	-1.39	2.59	11.90	11.90	-0.95	0.93	-0.57	-0.53	1.21	1.35	-4.18	-0.43
URSJJ US Equity	7.72	15.35	45.95	45.95	18.30	17.79	13.81	14.56	21.03	30.51	-5.81	20.58
URSJJ US Equity Custom Index	7.90	15.38	45.90	45.90	18.38	17.82	13.83	14.63	20.97	30.56	-5.70	20.71
Difference	-0.18	-0.03	0.05	0.05	-0.08	-0.03	-0.02	-0.07	0.06	-0.05	-0.11	-0.13
OWCRS US Equity	7.99	15.32	40.36	40.36	17.34	17.57	13.49	14.34	19.18	29.17	-5.38	22.45
Russell 3000 Index	8.24	15.11	44.16	44.16	18.73	17.89	13.95	14.70	20.89	31.02	-5.24	21.13
Difference	-0.25	0.21	-3.80	-3.80	-1.39	-0.32	-0.46	-0.36	-1.71	-1.85	-0.14	1.32



Oklahoma State Pension Commission All Plans Summary

Asset Class Performance - Gross of Fees

						Performa	ance (%)					
	QTD	CYTD	FYTD	1	3	5	7	10	2020	2019	2018	2017
	QID	CIID	FIID	Year	Years	Years	Years	Years	2020	2019	2010	2017
International Equity												
OTRS International Equity	6.03	11.26	40.97	40.97	9.39	11.93	6.71	7.25	12.61	21.95	-15.88	32.00
MSCI ACW Ex US IM Index (USD) (Net)	5.60	9.58	37.18	37.18	9.42	11.20	5.56	5.65	11.12	21.63	-14.76	27.81
Difference	0.43	1.68	3.79	3.79	-0.03	0.73	1.15	1.60	1.49	0.32	-1.12	4.19
OPERS International Equity	5.58	9.20	36.92	36.92	10.57	11.56	6.21	6.36	12.53	23.34	-13.69	27.54
MSCI ACW Ex US Index (USD) (Gross)	5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	11.13	22.13	-13.78	27.77
Difference	-0.06	-0.25	0.63	0.63	0.69	-0.03	0.40	0.43	1.40	1.21	0.09	-0.23
OFPRS International Equity	6.45	7.85	41.02	41.02	16.44	16.34	10.69	8.36	32.50	27.22	-13.23	36.00
MSCI ACW Ex US Index (USD) (Net)	5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	10.65	21.51	-14.20	27.19
Difference	0.97	-1.31	5.30	5.30	7.06	5.26	5.36	2.91	21.85	5.71	0.97	8.81
OLERS International Equity	4.77	9.32	36.70	36.70	11.12	12.05	6.99	5.80	13.02	24.39	-14.03	31.05
MSCI ACW Ex US Index (USD) (Net)	5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	10.65	21.51	-14.20	27.19
Difference	-0.71	0.16	0.98	0.98	1.74	0.97	1.66	0.35	2.37	2.88	0.17	3.86
URSJJ International Equity	5.56	9.35	35.98	35.98	9.64	11.38	5.61	5.73	10.87	21.86	-13.93	27.58
MSCI ACW Ex US Index (USD) (Gross)	5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	11.13	22.13	-13.78	27.77
Difference	-0.08	-0.10	-0.31	-0.31	-0.24	-0.21	-0.20	-0.20	-0.26	-0.27	-0.15	-0.19
OWCRS International Equity	5.37	8.80	36.42	36.42	9.68	12.07	6.30	6.26	10.82	23.86	-13.14	30.11
MSCI ACW Ex US Index (USD) (Net)	5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	10.65	21.51	-14.20	27.19
Difference	-0.11	-0.36	0.70	0.70	0.30	0.99	0.97	0.81	0.17	2.35	1.06	2.92
Total Equity												
	2.00	45.54	44.00	44.00	45.00	45.43	44.04	44.00	40.04	00.00	4.04	40.70
OPPRS Total Equity	8.03	15.51	44.32	44.32	15.92	15.17	11.24	11.26	18.81	22.38	-4.91	18.72
MSCI ACW Index (USD) (Gross)	7.53	12.56	39.87	39.87	15.14	15.20	10.32	10.48	16.82	27.30	-8.93	24.62
Difference	0.50	2.95	4.45	4.45	0.78	-0.03	0.92	0.78	1.99	-4.92	4.02	-5.90



Oklahoma State Pension Commission All Plans Summary

	Performance (%)													
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017		
Fixed Income														
OTRS Fixed Income	3.73	-0.93	3.52	3.52	7.62	5.53	4.95	5.74	12.11	12.05	-1.23	6.68		
Bloomberg US Unv Bond Index	1.96	-1.15	1.12	1.12	5.64	3.48	3.54	3.74	7.58	9.29	-0.25	4.09		
Difference	1.77	0.22	2.40	2.40	1.98	2.05	1.41	2.00	4.53	2.76	-0.98	2.59		
OPERS Fixed Income	2.77	-1.71	0.10	0.10	6.65	3.86	4.13	4.41	10.65	10.19	-0.24	4.49		
Fixed Income Custom Index	2.58	-1.93	-0.75	-0.75	5.84	3.21	3.62	3.85	9.08	9.43	-0.33	4.08		
Difference	0.19	0.22	0.85	0.85	0.81	0.65	0.51	0.56	1.57	0.76	0.09	0.41		
OFPRS Fixed Income	2.16	-1.30	5.02	5.02	4.53	3.18	3.09	3.74	8.41	7.22	-2.41	7.10		
Bloomberg US Agg Bond Index	1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	7.51	8.72	0.01	3.54		
Difference	0.33	0.31	5.36	5.36	-0.81	0.15	-0.19	0.35	0.90	-1.50	-2.42	3.56		
OPPRS Fixed Income	2.03	1.39	6.66	6.66	5.29	4.48	3.26	4.11	6.98	7.74	0.24	5.84		
Bloomberg US Agg Bond Index	1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	7.51	8.72	0.01	3.54		
Difference	0.20	3.00	7.00	7.00	-0.05	1.45	-0.02	0.72	-0.53	-0.98	0.23	2.30		
OLERS Fixed Income	1.95	-1.13	0.82	0.82	4.25	3.19	2.86	3.60	5.73	6.27	0.44	4.38		
Bloomberg US Agg Bond Index	1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	7.51	8.72	0.01	3.54		
Difference	0.12	0.48	1.16	1.16	-1.09	0.16	-0.42	0.21	-1.78	-2.45	0.43	0.84		
URSJJ Fixed Income	2.77	-1.81	-0.08	-0.08	6.60	3.80	4.08	4.41	10.70	10.14	-0.23	4.45		
Fixed Income Custom Index	2.58	-1.93	-0.75	-0.75	5.84	3.21	3.62	3.85	9.08	9.43	-0.33	4.08		
Difference	0.19	0.12	0.67	0.67	0.76	0.59	0.46	0.56	1.62	0.71	0.10	0.37		
OWCRS Fixed Income	1.77	-0.22	2.95	2.95	5.92	3.25	3.29	3.34	8.56	7.94	0.76	3.02		
Bloomberg US Agg Bond Index	1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	7.51	8.72	0.01	3.54		
Difference	-0.06	1.39	3.29	3.29	0.58	0.22	0.01	-0.05	1.05	-0.78	0.75	-0.52		



Oklahoma State Pension Commission All Plans Summary

	Performance (%)												
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	
Real Estate													
OTRS Real Estate	1.53	2.19	1.40	1.40	3.13	4.71	N/A	N/A	-2.27	5.77	7.60	6.65	
NCREIF Property Index	3.59	5.37	7.37	7.37	5.50	6.13	7.72	8.79	1.60	6.42	6.72	6.96	
Difference	-2.06	-3.18	-5.97	-5.97	-2.37	-1.42	N/A	N/A	-3.87	-0.65	0.88	-0.31	
NCREIF ODCE Index (AWA) (Net)	3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	0.34	4.39	7.36	6.66	
Difference	-2.15	-3.45	-5.69	-5.69	-1.47	-0.91	N/A	N/A	-2.61	1.38	0.24	-0.01	
OPERS Real Estate	-9.01	-7.22	-5.51	-5.51	-4.86	-2.46	-0.51	N/A	-8.51	2.90	1.12	-2.11	
NCREIF ODCE Index (AWA) (Net)	3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	0.34	4.39	7.36	6.66	
Difference	-12.69	-12.86	-12.60	-12.60	-9.46	-8.08	-7.94	N/A	-8.85	-1.49	-6.24	-8.77	
OFPRS Real Estate	1.55	3.32	2.79	2.79	4.17	5.99	8.04	8.51	0.18	4.69	9.39	8.02	
NCREIF Property Index	3.59	5.37	7.37	7.37	5.50	6.13	7.72	8.79	1.60	6.42	6.72	6.96	
Difference	-2.04	-2.05	-4.58	-4.58	-1.33	-0.14	0.32	-0.28	-1.42	-1.73	2.67	1.06	
NCREIF ODCE Index (AWA) (Net)	3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	0.34	4.39	7.36	6.66	
Difference	-2.13	-2.32	-4.30	-4.30	-0.43	0.37	0.61	-0.09	-0.16	0.30	2.03	1.36	
OLERS Real Estate	2.79	4.53	6.04	6.04	3.11	4.46	4.67	6.51	0.76	3.58	4.02	6.38	
NCREIF ODCE Index (AWA) (Net)	3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	0.34	4.39	7.36	6.66	
Difference	-0.89	-1.11	-1.05	-1.05	-1.49	-1.16	-2.76	-2.09	0.42	-0.81	-3.34	-0.28	
Real Assets													
OPPRS Real Assets	2.68	5.20	6.53	6.53	2.98	4.68	4.47	5.68	-0.51	4.21	4.30	6.68	
OPPRS Real Assets Blended Benchmark	3.68	5.64	7.09	7.09	2.90	3.69	1.56	4.41	0.34	4.43	0.98	5.05	
Difference	-1.00	-0.44	-0.56	-0.56	0.08	0.99	2.91	1.27	-0.85	-0.22	3.32	1.63	



Oklahoma State Pension Commission All Plans Summary

	Performance (%)												
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	
Hedge Funds													
OFPRS Hedge Fund	-7.13	2.68	8.65	8.65	-0.90	2.27	1.08	2.14	-4.62	3.52	-2.86	10.18	
HFRI FOF: Cnsvt Index	1.99	5.66	14.81	14.81	5.26	5.02	3.46	3.46	6.47	6.30	-0.87	4.12	
Difference	-9.12	-2.98	-6.16	-6.16	-6.16	-2.75	-2.38	-1.32	-11.09	-2.78	-1.99	6.06	
OPPRS Long/Short Equity	3.21	4.60	26.42	26.42	11.57	11.01	8.14	7.79	22.68	16.85	-4.52	12.10	
HFRI FOF: Strategic Index	3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	14.62	10.52	-6.67	11.22	
Difference	-0.64	-0.97	2.61	2.61	4.05	3.46	3.33	3.32	8.06	6.33	2.15	0.88	
OLERS Long/Short Equity	0.42	6.29	18.97	18.97	5.59	7.56	5.25	5.56	8.08	12.36	-5.53	11.66	
HFRI FOF: Strategic Index	3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	14.62	10.52	-6.67	11.22	
Difference	-3.43	0.72	-4.84	-4.84	-1.93	0.01	0.44	1.09	-6.54	1.84	1.14	0.44	

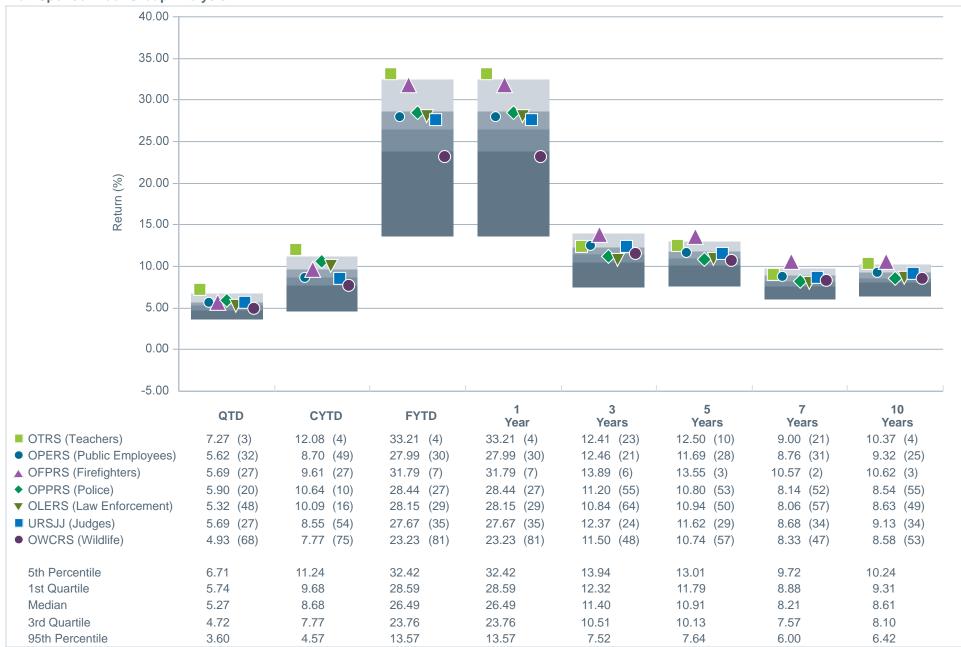


Oklahoma State Pension Commission All Plans Summary

						Performa	ance (%)					
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017
Private Equity												
OTRS Private Equity	28.40	31.20	52.06	52.06	26.38	23.05	19.63	17.84	17.27	17.73	23.03	13.89
R 2000 Index+4%	5.32	19.86	68.51	68.51	18.06	21.12	15.85	16.83	24.76	30.55	-7.45	19.23
Difference	23.08	11.34	-16.45	-16.45	8.32	1.93	3.78	1.01	-7.49	-12.82	30.48	-5.34
OFPRS Private Equity	15.87	29.23	41.83	41.83	16.93	16.75	15.45	N/A	7.49	6.45	18.91	19.03
Cambridge US Prvt Eq Index	0.00	10.05	35.55	35.55	15.67	16.57	13.48	13.90	21.32	13.88	10.19	18.01
Difference	15.87	19.18	6.28	6.28	1.26	0.18	1.97	N/A	-13.83	-7.43	8.72	1.02
OPPRS Private Equity	18.99	31.33	58.50	58.50	22.67	16.87	14.99	13.80	15.87	10.51	15.22	9.65
Cambridge US Prvt Eq Index	0.00	10.05	35.55	35.55	15.67	16.57	13.48	13.90	21.32	13.88	10.19	18.01
Difference	18.99	21.28	22.95	22.95	7.00	0.30	1.51	-0.10	-5.45	-3.37	5.03	-8.36
OLERS Private Equity	17.90	23.75	40.98	40.98	15.50	13.32	10.69	11.42	8.91	6.84	15.45	7.59
Cambridge US Prvt Eq Index	0.00	10.05	35.55	35.55	15.67	16.57	13.48	13.90	21.32	13.88	10.19	18.01
Difference	17.90	13.70	5.43	5.43	-0.17	-3.25	-2.79	-2.48	-12.41	-7.04	5.26	-10.42
Other Alternatives												
OWCRS Alternative Investments	3.91	6.95	19.04	19.04	6.21	6.33	3.74	3.57	2.74	15.31	-6.07	9.36
OWCRS Alternatives Custom Index	2.89	4.97	18.31	18.31	6.32	5.61	3.32	N/A	10.88	8.38	-4.02	7.06
Difference	1.02	1.98	0.73	0.73	-0.11	0.72	0.42	N/A	-8.14	6.93	-2.05	2.30



Oklahoma State Pension Commission All Public Plans-Total Fund Plan Sponsor Peer Group Analysis



Performance shown is gross of fees. Parentheses contain percentile ranks. Oklahoma State Pension Commission fiscal year begins on 07/01.



Oklahoma State Pension Commission All Public Plans-Total Fund Plan Sponsor Peer Group Analysis

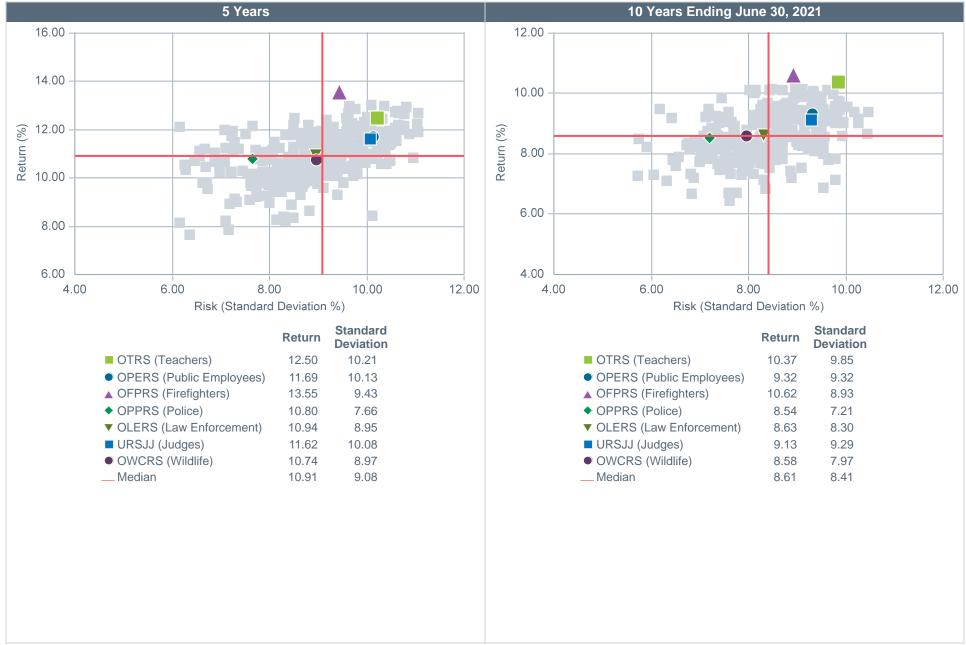


Performance shown is gross of fees. Parentheses contain percentile ranks. Oklahoma State Pension Commission fiscal year begins on 07/01.



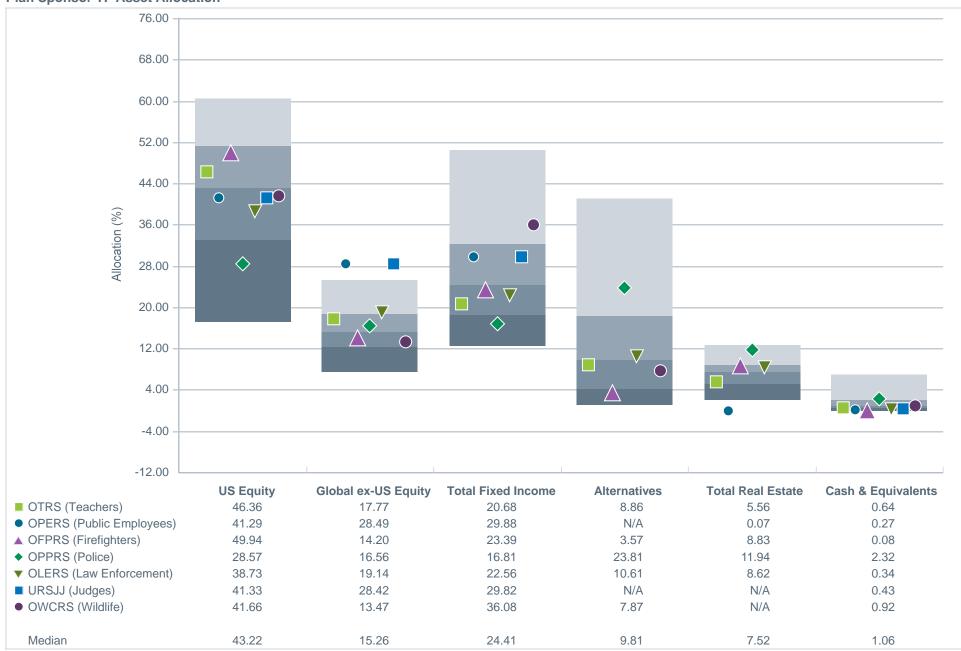
Oklahoma State Pension Commission All Plans

Total Fund Risk & Return vs. All Public Plans-Total Fund



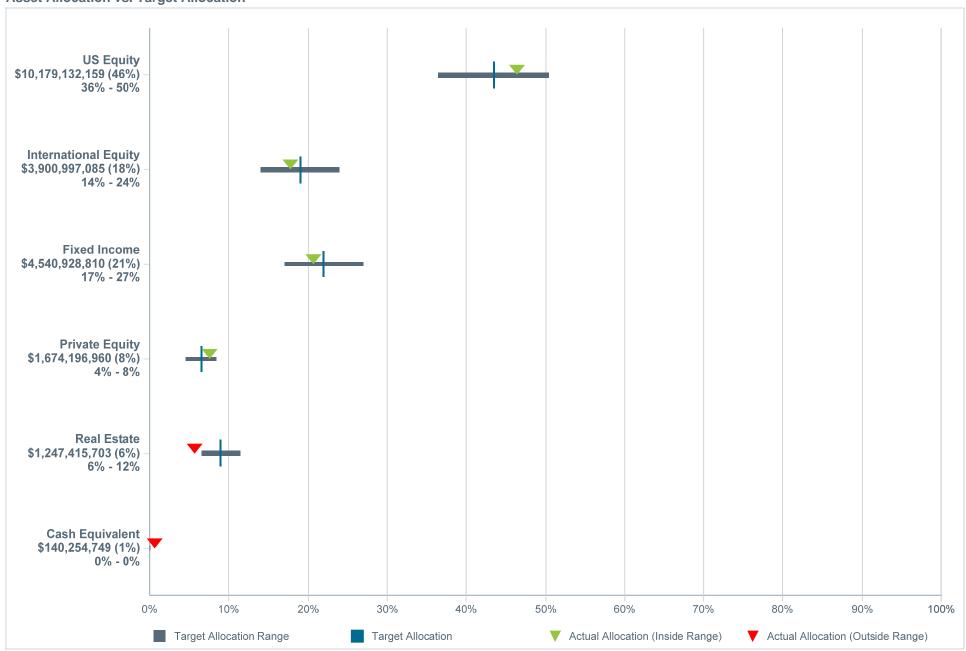


Oklahoma State Pension Commission All Plans Total Fund vs. All Public Plans-Total Fund Plan Sponsor TF Asset Allocation



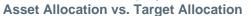
Parentheses contain percentile ranks.

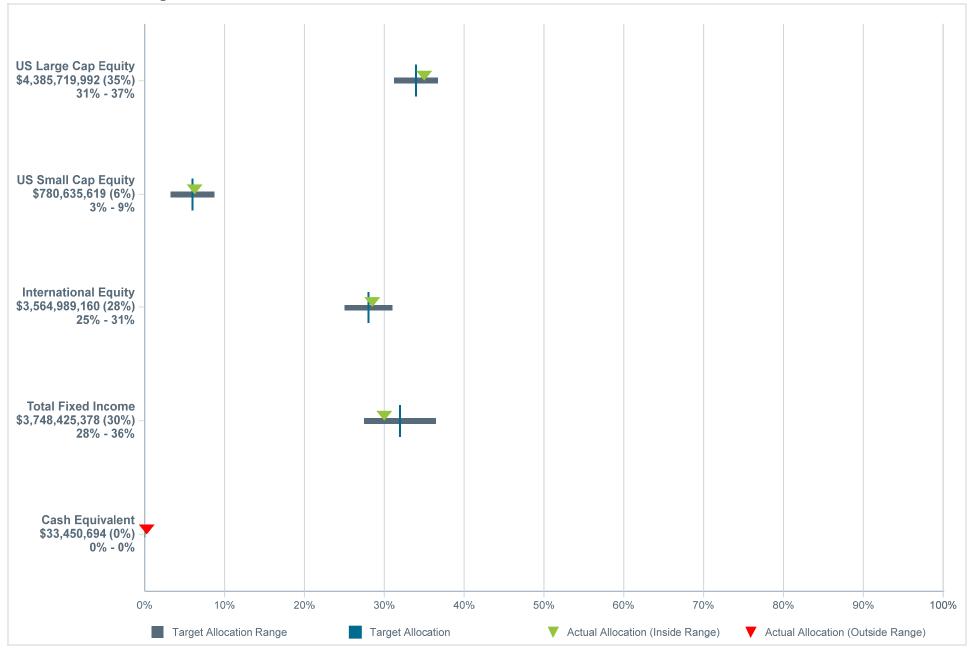




Allocations shown may not sum up to 100% exactly due to rounding. Allocation to Private Equity includes Private Credit. Cash held in short-term investments with the Custodian shall be considered as domestic fixed income for rebalancing purposes.

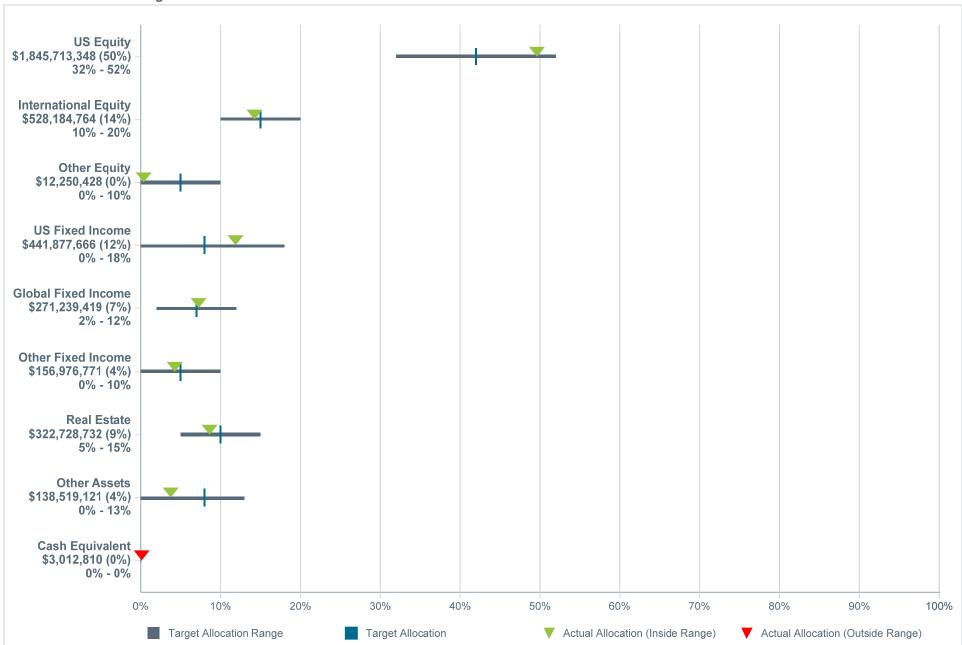






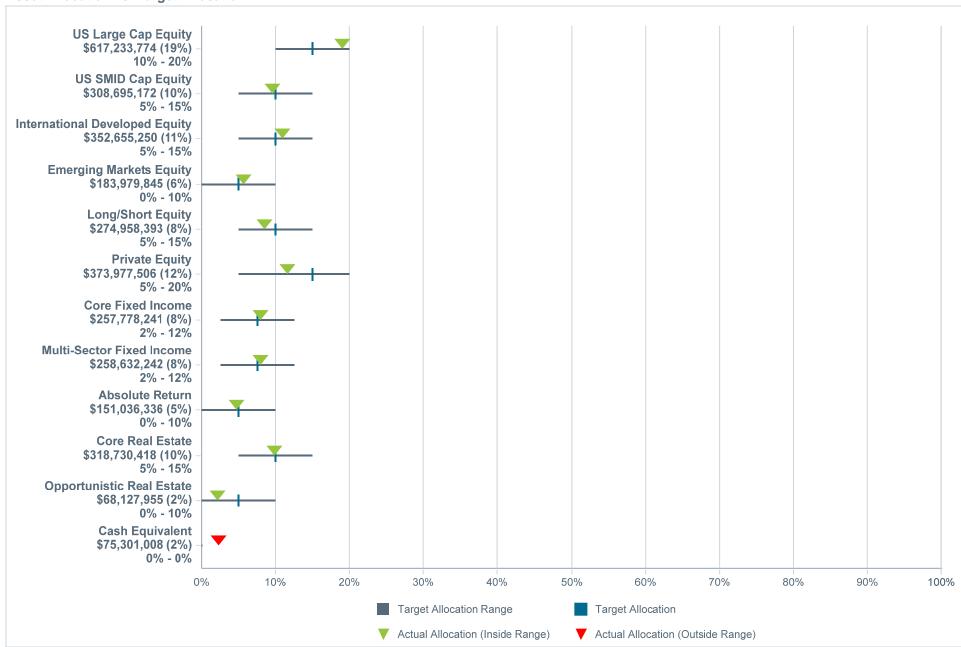
Allocations shown may not sum up to 100% exactly due to rounding. Cash held in short-term investments with the Master Custodian and direct real estate holdings shall be considered as U.S. fixed income for rebalancing purposes.





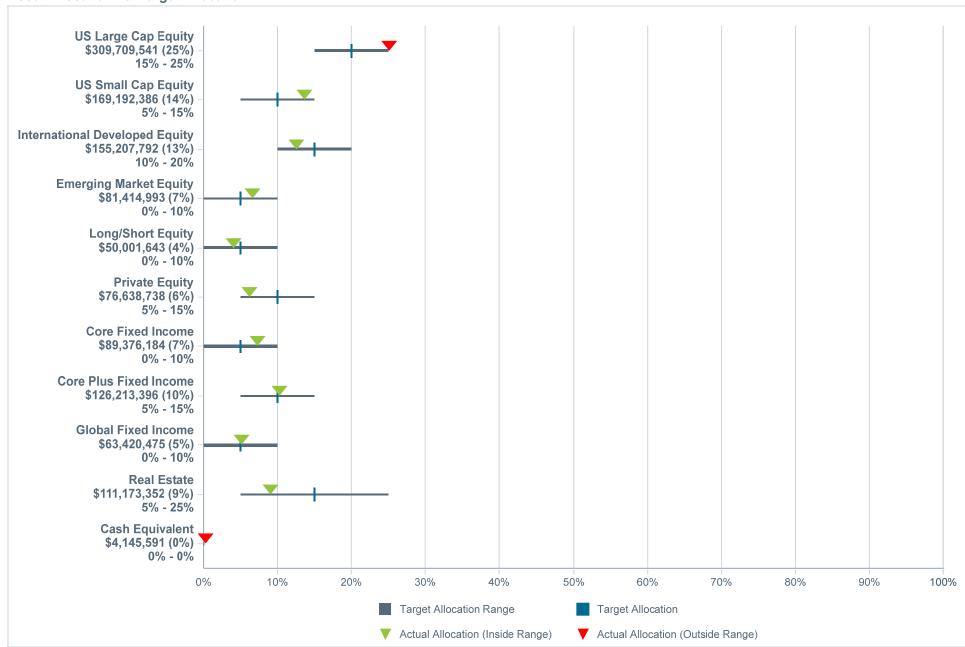
Allocations shown may not sum up to 100% exactly due to rounding. Allocation to Other Equity includes opportunistic equity; Other Fixed Income includes non-core Fixed Income; and Other Assets include Hedge Funds and Private Equity.





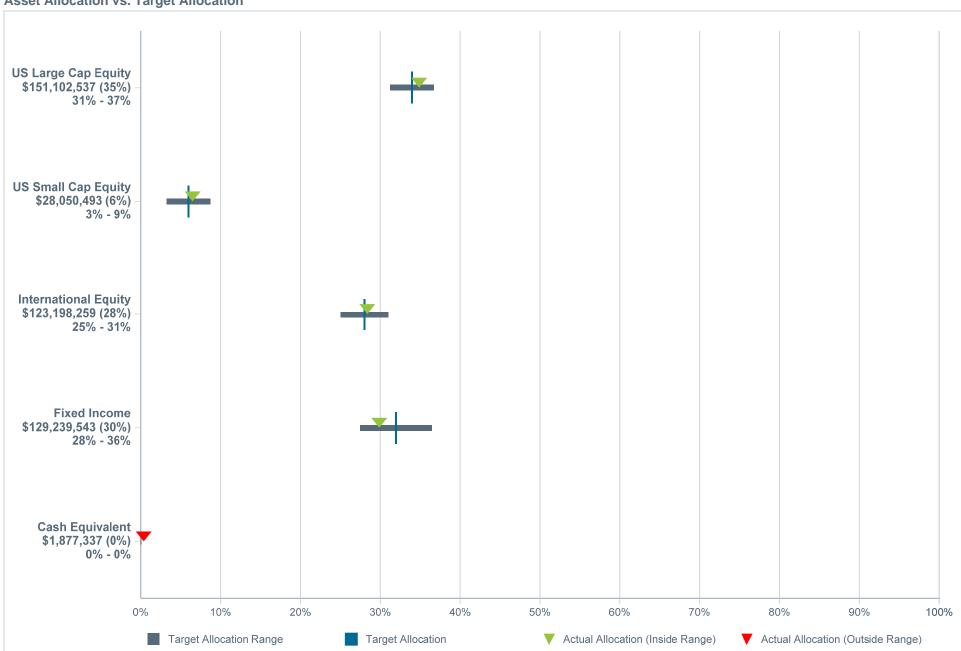






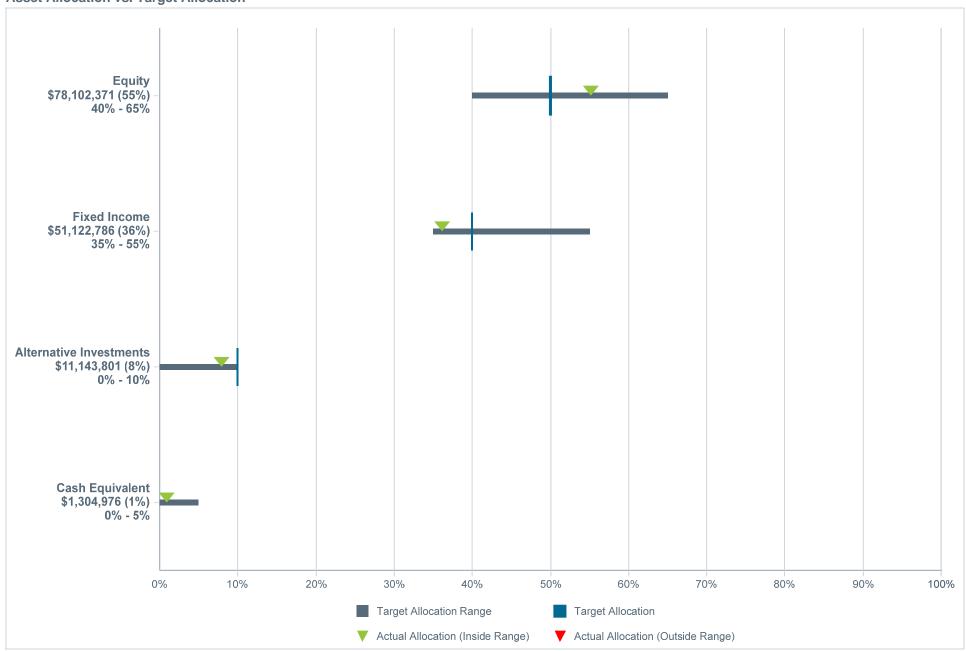
















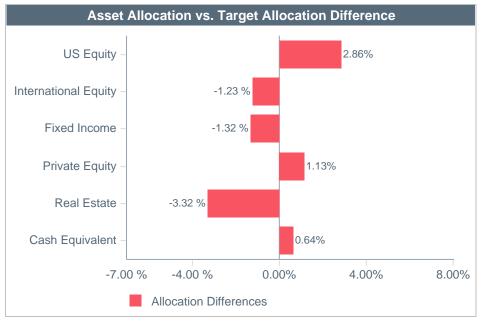
Oklahoma Teachers' Retirement System (OTRS)



Oklahoma State Pension Commission Oklahoma Teachers' Retirement System Total Fund Summary

Performance (%)													
			Trailir	ng						Calenda	r Year		
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
OTRS Total Fund (Net)	7.22	11.97	32.95	32.95	12.12	12.16	8.63	9.97	13.22	19.48	-5.29	15.83	11.02
OTRS Policy Index	5.82	10.10	31.33	31.33	13.31	12.35	9.16	9.86	15.24	21.72	-4.75	15.16	10.65
Difference	1.40	1.87	1.62	1.62	-1.19	-0.19	-0.53	0.11	-2.02	-2.24	-0.54	0.67	0.37
OTRS Actual Allocation Index	6.01	10.66	32.08	32.08	13.00	12.21	9.23	9.93	16.56	18.94	-4.70	14.35	10.93
Difference	1.21	1.31	0.87	0.87	-0.88	-0.05	-0.60	0.04	-3.34	0.54	-0.59	1.48	0.09
Actuarial Discount Rate (7.0%)	1.71	3.44	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Difference	5.51	8.53	25.95	25.95	5.12	5.16	1.63	2.97	6.22	12.48	-12.29	8.83	4.02
OTRS Total Fund (Gross)	7.27	12.08	33.21	33.21	12.41	12.50	9.00	10.37	13.45	19.83	-4.98	16.20	11.54
OTRS Policy Index	5.82	10.10	31.33	31.33	13.31	12.35	9.16	9.86	15.24	21.72	-4.75	15.16	10.65
Difference	1.45	1.98	1.88	1.88	-0.90	0.15	-0.16	0.51	-1.79	-1.89	-0.23	1.04	0.89
OTRS Actual Allocation Index	6.01	10.66	32.08	32.08	13.00	12.21	9.23	9.93	16.56	18.94	-4.70	14.35	10.93
Difference	1.26	1.42	1.13	1.13	-0.59	0.29	-0.23	0.44	-3.11	0.89	-0.28	1.85	0.61
All Public Plans-Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	12.57	18.59	-4.15	15.28	7.65
Rank	3	4	4	4	23	10	21	4	39	32	72	33	1

Asset Allocation vs. Target Allocation												
	Asset Allocation (\$)	Asset Allocation (%)	Target Allocation (%)									
OTRS (Teachers)	21,955,763,051	100.00	100.00									
US Equity	10,179,132,159	46.36	43.50									
International Equity	3,900,997,085	17.77	19.00									
Fixed Income	4,540,928,810	20.68	22.00									
Private Equity	1,674,196,960	7.63	6.50									
Real Estate	1,247,415,703	5.68	9.00									
Cash Equivalent	140,254,749	0.64	0.00									







	Allocation	า					Perfor	mance (%)				
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
OTRS Total Fund	21,955,763,051	100.00	7.22	11.97	32.95	32.95	12.12	12.16	8.63	9.97	9.41	12/01/199 ⁻
OTRS Policy Index			5.82	10.10	31.33	31.33	13.31	12.35	9.16	9.86	9.49	
Difference			1.40	1.87	1.62	1.62	-1.19	-0.19	-0.53	0.11	-0.08	
OTRS Actual Allocation Index			6.01	10.66	32.08	32.08	13.00	12.21	9.23	9.93	N/A	
Difference			1.21	1.31	0.87	0.87	-0.88	-0.05	-0.60	0.04	N/A	
Actuarial Discount Rate (7.0%)			1.71	3.44	7.00	7.00	7.00	7.00	7.00	7.00	7.00	
Difference			5.51	8.53	25.95	25.95	5.12	5.16	1.63	2.97	2.41	
US Equity	10,179,132,159	46.36	7.07	16.50	48.58	48.58	14.83	16.25	11.74	13.20	11.31	04/01/199
Russell 3000 Index			8.24	15.11	44.16	44.16	18.73	17.89	13.95	14.70	10.89	
Difference			-1.17	1.39	4.42	4.42	-3.90	-1.64	-2.21	-1.50	0.42	
US Active Equity	3,495,407,623	15.92	6.06	18.91	62.30	62.30	16.18	17.32	12.34	13.52	9.65	12/01/1998
Russell 3000 Index			8.24	15.11	44.16	44.16	18.73	17.89	13.95	14.70	8.39	
Difference			-2.18	3.80	18.14	18.14	-2.55	-0.57	-1.61	-1.18	1.26	
Hotchkis & Wiley Mid Cap Value Equity (SA)	518,739,120	2.36	4.54	31.56	95.32	95.32	4.84	10.48	5.34	10.32	11.11	08/01/200
Russell Mid Cap Val Index			5.66	19.45	53.06	53.06	11.86	11.79	9.34	11.75	11.17	
Difference			-1.12	12.11	42.26	42.26	-7.02	-1.31	-4.00	-1.43	-0.06	
Wellington Mid Cap Growth (SA)	596,316,809	2.72	8.13	10.66	40.14	40.14	22.33	22.60	14.89	13.97	11.85	09/01/199
Russell Mid Cap Grth Index			11.07	10.44	43.77	43.77	22.39	20.52	15.39	15.13	11.11	
Difference			-2.94	0.22	-3.63	-3.63	-0.06	2.08	-0.50	-1.16	0.74	
Frontier Small Cap Value Equity (SA)	295,313,470	1.35	6.49	27.03	75.96	75.96	10.06	13.01	9.40	N/A	11.22	06/01/201
Russell 2000 Val Index			4.56	26.69	73.28	73.28	10.27	13.62	9.26	10.85	10.66	
Difference			1.93	0.34	2.68	2.68	-0.21	-0.61	0.14	N/A	0.56	
Neumeier Poma Small Cap Equity (SA)	338,486,623	1.54	2.61	14.92	50.63	50.63	10.93	15.20	12.55	N/A	13.83	06/01/201
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	12.64	
Difference			-1.68	-2.62	-11.40	-11.40	-2.59	-1.27	1.16	N/A	1.19	
Shapiro Enhanced Small Cap Equity (SA)	1,048,814,286	4.78	7.06	25.28	81.64	81.64	11.48	15.88	10.19	12.69	10.43	02/01/199
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	8.87	
Difference			2.77	7.74	19.61	19.61	-2.04	-0.59	-1.20	0.35	1.56	
Geneva US Small Cap Growth Equity (SA)	323,030,451	1.47	4.99	8.21	37.89	37.89	18.15	19.73	16.41	N/A	16.51	06/01/201
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	14.25	
Difference			1.07	-0.77	-13.47	-13.47	2.21	0.97	3.30	N/A	2.26	





	Allocation	1					Perfori	mance (%)				
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Wasatch Small Cap Core Growth (SA)	374,706,864	1.71	8.63	14.87	55.27	55.27	24.10	24.60	18.20	N/A	17.61	06/01/2013
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	14.25	
Difference			4.71	5.89	3.91	3.91	8.16	5.84	5.09	N/A	3.36	
US Passive Equity (Cap Wgt)	3,547,908,977	16.16	8.19	15.45	45.37	45.37	18.75	17.39	13.89	N/A	15.05	04/01/2012
Northern Trust Russell 1000 Index (SA)	2,200,646,588	10.02	8.62	15.07	43.18	43.18	19.11	N/A	N/A	N/A	17.04	12/01/2017
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	17.08	
Difference			0.08	0.12	0.11	0.11	-0.05	N/A	N/A	N/A	-0.04	
Northern Trust Russell Mid Cap Index (CF)	1,347,262,389	6.14	7.46	16.27	49.80	49.80	N/A	N/A	N/A	N/A	35.79	03/01/2020
Russell Mid Cap Index			7.50	16.25	49.80	49.80	16.45	15.62	12.03	13.24	35.73	
Difference			-0.04	0.02	0.00	0.00	N/A	N/A	N/A	N/A	0.06	
US Passive Equity (Non-Cap Wgt)	3,135,815,541	14.28	6.92	14.87	37.82	37.82	14.11	14.88	11.72	N/A	14.13	04/01/2012
NTGI SciBetUS HF Ex MulBeEW Gr			6.94	14.91	37.90	37.90	14.15	N/A	N/A	N/A	N/A	
Difference			-0.02	-0.04	-0.08	-0.08	-0.04	N/A	N/A	N/A	N/A	
SciBeta US High FactorExposure Index (SA)	3,135,815,541	14.28	6.92	14.87	37.82	37.82	14.11	N/A	N/A	N/A	12.18	12/01/2017
NTGI SciBetUS HF Ex MulBeEW Gr			6.94	14.91	37.90	37.90	14.15	N/A	N/A	N/A	12.21	
Difference			-0.02	-0.04	-0.08	-0.08	-0.04	N/A	N/A	N/A	-0.03	



	Allocation	ı					Perfor	mance (%)				
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
International Equity	3,900,997,085	17.77	5.93	11.03	40.41	40.41	8.90	11.40	6.24	6.76	8.25	02/01/1996
MSCI ACW Ex US IM Index (USD) (Gross)			5.76	9.86	37.74	37.74	9.91	11.69	6.03	6.12	6.10	
Difference			0.17	1.17	2.67	2.67	-1.01	-0.29	0.21	0.64	2.15	
Causeway Intl Opportunities (SA)	642,089,634	2.92	2.65	9.49	39.71	39.71	7.47	10.53	4.77	5.98	8.66	05/01/2003
MSCI ACW Ex US Val Index (USD) (Gross)			4.53	12.06	38.32	38.32	5.83	9.17	3.01	4.07	8.25	
Difference			-1.88	-2.57	1.39	1.39	1.64	1.36	1.76	1.91	0.41	
Allianz Best Styles AC Intl Equity (SA)	1,326,236,260	6.04	4.80	10.95	36.28	36.28	7.52	10.57	N/A	N/A	10.57	07/01/2016
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	11.59	
Difference			-0.84	1.50	-0.01	-0.01	-2.36	-1.02	N/A	N/A	-1.02	
Wellington Intl Quality Growth (SA)	755,025,773	3.44	7.02	10.41	38.98	38.98	14.94	15.55	N/A	N/A	15.55	07/01/2016
MSCI ACW Ex US Grth Index (USD) (Gross)			6.73	6.73	34.06	34.06	13.60	13.75	8.43	7.65	13.75	
Difference			0.29	3.68	4.92	4.92	1.34	1.80	N/A	N/A	1.80	
Wasatch International Small Cap Growth (SA)	449,551,411	2.05	8.57	6.95	36.81	36.81	11.76	13.27	10.31	N/A	13.39	12/01/2011
MSCI ACW Ex US Sm Cap Index (USD) (Gross)			6.49	12.47	47.58	47.58	10.20	12.39	7.46	7.41	10.02	
Difference			2.08	-5.52	-10.77	-10.77	1.56	0.88	2.85	N/A	3.37	
Wellington International Small Cap Equity (CF)	342,388,464	1.56	5.28	11.07	47.18	47.18	5.12	8.90	4.80	N/A	9.82	12/01/2011
MSCI EAFE Sm Cap Index (USD) (Gross)			4.49	9.29	41.49	41.49	8.80	12.44	8.14	8.76	11.35	
Difference			0.79	1.78	5.69	5.69	-3.68	-3.54	-3.34	N/A	-1.53	
SSGA Emerging Market Small Cap (CF)	385,705,543	1.76	11.14	20.86	60.03	60.03	10.79	N/A	N/A	N/A	10.56	09/01/2016
MSCI Emg Mkts Sm Cap Index (USD) (Gross)			11.36	19.95	64.38	64.38	12.74	12.24	6.64	4.88	11.27	
Difference			-0.22	0.91	-4.35	-4.35	-1.95	N/A	N/A	N/A	-0.71	
Fixed Income	4,540,928,810	20.68	3.69	-1.02	3.34	3.34	7.42	5.31	4.72	5.51	6.92	04/01/1990
OTRS Fixed Income Blended Benchmark			2.11	-0.04	4.24	4.24	5.97	4.35	3.95	4.37	N/A	
Difference			1.58	-0.98	-0.90	-0.90	1.45	0.96	0.77	1.14	N/A	
Loomis Sayles Multisector Full Discretion (SA)	1,227,557,701	5.59	2.16	1.13	9.23	9.23	8.15	5.74	4.66	5.44	6.30	07/01/1999
OTRS Fixed Income Blended Benchmark			2.11	-0.04	4.24	4.24	5.97	4.35	3.95	4.37	5.55	
Difference			0.05	1.17	4.99	4.99	2.18	1.39	0.71	1.07	0.75	
Mackay Shields Core+ Extended Discretion (SA)	1,183,786,882	5.39	2.93	1.43	7.89	7.89	7.36	4.80	3.84	4.56	5.26	11/01/2004
OTRS Fixed Income Blended Benchmark			2.11	-0.04	4.24	4.24	5.97	4.35	3.95	4.37	5.09	
Difference			0.82	1.47	3.65	3.65	1.39	0.45	-0.11	0.19	0.17	
Lord Abbett Core Plus Full Discretion (SA)	1,154,465,556	5.26	2.38	0.92	6.57	6.57	6.25	4.02	3.87	4.42	5.15	11/01/2004
OTRS Fixed Income Blended Benchmark	, , , ,		2.11	-0.04	4.24	4.24	5.97	4.35	3.95	4.37	5.09	



	Allocation						Perfor	mance (%)				
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Hoisington Active Duration Long Bonds (SA)	975,118,670	4.44	8.00	-9.04	-11.58	-11.58	8.97	3.51	6.55	8.02	7.26	11/01/2004
Bloomberg US Trsy Index			1.75	-2.58	-3.22	-3.22	4.66	2.15	2.75	2.84	3.62	
Difference			6.25	-6.46	-8.36	-8.36	4.31	1.36	3.80	5.18	3.64	
Private Equity	1,674,196,960	7.63	28.40	31.20	52.06	52.06	26.38	23.05	19.63	17.84	20.00	07/01/2015
R 2000 Index+4%			5.32	19.86	68.51	68.51	18.06	21.12	15.85	16.83	16.72	
Difference			23.08	11.34	-16.45	-16.45	8.32	1.93	3.78	1.01	3.28	
Franklin Park Private Equity LP	1,661,764,317	7.57	28.42	31.24	52.29	52.29	26.63	23.35	19.77	9.54	20.11	07/01/2015
Legacy Private Equity LP	12,432,643	0.06	26.29	26.03	28.29	28.29	6.43	4.96	4.81	7.60	4.12	10/01/2008
Special Opportunities	271,548,547	1.24	4.20	10.33	21.36	21.36	5.48	8.13	N/A	N/A	7.17	07/01/2015
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	3.52	
Difference			2.37	11.94	21.70	21.70	0.14	5.10	N/A	N/A	3.65	
PIMCO Bravo LP	82,887	0.00	-35.24	-26.61	-18.29	-18.29	-48.49	-21.67	-132.64	-148.67	-149.88	03/01/2011
PIMCO Bravo II LP	45,732,765	0.21	9.91	22.41	23.68	23.68	2.22	5.35	6.49	N/A	7.84	03/01/2013
PIMCO Bravo III LP	184,295,432	0.84	3.72	7.97	19.34	19.34	7.97	N/A	N/A	N/A	9.66	04/01/2017
PIMCO COF II LP	41,437,463	0.19	1.44	9.86	26.01	26.01	7.65	N/A	N/A	N/A	10.00	10/01/2016
Bloomberg US Unv Bond Index			1.96	-1.15	1.12	1.12	5.64	3.48	3.54	3.74	3.46	
Difference			-0.52	11.01	24.89	24.89	2.01	N/A	N/A	N/A	6.54	
Real Estate	1,247,415,703	5.68	1.47	2.07	1.17	1.17	2.94	4.52	N/A	N/A	5.99	07/01/2015
NCREIF Property Index			3.59	5.37	7.37	7.37	5.50	6.13	7.72	8.79	6.87	
Difference			-2.12	-3.30	-6.20	-6.20	-2.56	-1.61	N/A	N/A	-0.88	
AEW Core Property Trust (CF)	340,174,677	1.55	1.95	3.65	3.70	3.70	4.81	5.48	6.72	7.16	7.16	07/01/2011
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	8.60	
Difference			-1.73	-1.99	-3.39	-3.39	0.21	-0.14	-0.71	-1.44	-1.44	
Heitman America Real Estate (CF)	329,203,875	1.50	1.70	3.42	2.76	2.76	1.97	4.55	6.52	7.68	7.55	05/01/2011
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	8.91	
Difference			-1.98	-2.22	-4.33	-4.33	-2.63	-1.07	-0.91	-0.92	-1.36	
L&B Core Income Partners LP	69,321,554	0.32	-2.50	-3.61	-6.97	-6.97	-5.14	-0.30	3.61	4.40	4.28	04/01/2011
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	8.84	
Difference			-6.18	-9.25	-14.06	-14.06	-9.74	-5.92	-3.82	-4.20	-4.56	



	Allocation						Perfori	mance (%)				
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
American Strategic Value Realty (CF)	78,381,809	0.36	2.30	3.19	3.47	3.47	6.39	7.39	N/A	N/A	8.26	12/01/2014
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.44	
Difference			-1.38	-2.45	-3.62	-3.62	1.79	1.77	N/A	N/A	0.82	
Angelo Gordon Value X LP	29,511,356	0.13	1.12	9.49	21.75	21.75	N/A	N/A	N/A	N/A	-2.66	07/01/2019
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.17	
Difference			-2.56	3.85	14.66	14.66	N/A	N/A	N/A	N/A	-6.83	
Artemis Real Estate III LP	19,042,483	0.09	3.16	4.33	26.22	26.22	N/A	N/A	N/A	N/A	N/A	02/01/2019
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.28	
Difference			-0.52	-1.31	19.13	19.13	N/A	N/A	N/A	N/A	N/A	
Dune Real Estate III LP	40,265,526	0.18	3.15	1.66	-16.45	-16.45	-2.60	2.69	N/A	N/A	3.80	11/01/2014
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.34	
Difference			-0.53	-3.98	-23.54	-23.54	-7.20	-2.93	N/A	N/A	-3.54	
Dune Real Estate IV LP	13,411,947	0.06	-22.87	-24.05	-32.08	-32.08	N/A	N/A	N/A	N/A	-30.35	09/01/2019
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.55	
Difference			-26.55	-29.69	-39.17	-39.17	N/A	N/A	N/A	N/A	-34.90	
FCP Realty IV LP	27,097,958	0.12	1.91	10.22	12.14	12.14	N/A	N/A	N/A	N/A	-11.84	12/01/2018
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.61	
Difference			-1.77	4.58	5.05	5.05	N/A	N/A	N/A	N/A	-16.45	
GreenOak US II LP	22,649,659	0.10	-0.35	-26.22	-28.40	-28.40	-13.04	-6.10	N/A	N/A	-4.98	10/01/2014
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.25	
Difference			-4.03	-31.86	-35.49	-35.49	-17.64	-11.72	N/A	N/A	-12.23	
GreenOak US III LP	24,874,132	0.11	0.12	-11.95	-13.85	-13.85	-18.20	N/A	N/A	N/A	-17.75	06/01/2018
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	5.08	
Difference			-3.56	-17.59	-20.94	-20.94	-22.80	N/A	N/A	N/A	-22.83	
Harbert European Real Estate V LP	26,997,224	0.12	1.91	3.65	5.68	5.68	N/A	N/A	N/A	N/A	-6.29	12/01/2018
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.61	
Difference			-1.77	-1.99	-1.41	-1.41	N/A	N/A	N/A	N/A	-10.90	
Invesco Strategic Opportunity (CF)	14,335,489	0.07	4.61	9.45	13.52	13.52	N/A	N/A	N/A	N/A	60.48	10/01/2019
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.14	
Difference			0.93	3.81	6.43	6.43	N/A	N/A	N/A	N/A	56.34	
L&B Gloden Driller (SA)	74,080,904	0.34	-2.56	-2.56	-2.56	-2.56	10.14	7.07	N/A	N/A	N/A	07/01/2014
NCREIF ODCE Index (AWA) (Net)	,,		3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.43	
Difference			-6.24	-8.20	-9.65	-9.65	5.54	1.45	N/A	N/A	N/A	



	Allocation						Perfori	mance (%)				
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Landmark Real Estate VII LP	9,680,448	0.04	-1.59	-0.95	-5.59	-5.59	-2.51	1.19	N/A	N/A	8.55	12/01/2014
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.44	
Difference			-5.27	-6.59	-12.68	-12.68	-7.11	-4.43	N/A	N/A	1.11	
Lyrical-OTRS Realty Partner IV LP	62,706,673	0.29	3.38	3.38	11.48	11.48	20.95	8.99	N/A	N/A	4.49	11/01/2014
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.34	
Difference			-0.30	-2.26	4.39	4.39	16.35	3.37	N/A	N/A	-2.85	
Starwood Opportunity X LP	15,110,037	0.07	9.77	13.97	7.93	7.93	6.98	10.72	N/A	N/A	10.07	07/01/2015
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	6.47	
Difference			6.09	8.33	0.84	0.84	2.38	5.10	N/A	N/A	3.60	
Starwood Opportunity XI LP	40,489,952	0.18	6.90	17.61	9.55	9.55	N/A	N/A	N/A	N/A	22.47	08/01/2018
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.73	
Difference			3.22	11.97	2.46	2.46	N/A	N/A	N/A	N/A	17.74	
Property ACQ Fund	10,080,000	0.05	38.08	38.08	38.04	38.04	-7.95	N/A	N/A	N/A	-12.98	08/01/2017



	Allocatio	n						mance (%)				
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
OTRS Total Fund	21,955,763,051	100.00	7.27	12.08	33.21	33.21	12.41	12.50	9.00	10.37	9.75	12/01/1991
OTRS Policy Index			5.82	10.10	31.33	31.33	13.31	12.35	9.16	9.86	9.49	
Difference			1.45	1.98	1.88	1.88	-0.90	0.15	-0.16	0.51	0.26	
OTRS Actual Allocation Index			6.01	10.66	32.08	32.08	13.00	12.21	9.23	9.93	N/A	
Difference			1.26	1.42	1.13	1.13	-0.59	0.29	-0.23	0.44	N/A	
Actuarial Discount Rate (7.0%)			1.71	3.44	7.00	7.00	7.00	7.00	7.00	7.00	7.00	
Difference			5.56	8.64	26.21	26.21	5.41	5.50	2.00	3.37	2.75	
All Public Plans-Total Fund Median			5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	8.37	
Rank			3	4	4	4	23	10	21	4	2	
US Equity	10,179,132,159	46.36	7.11	16.59	48.83	48.83	15.12	16.61	12.06	13.43	11.38	04/01/1990
Russell 3000 Index			8.24	15.11	44.16	44.16	18.73	17.89	13.95	14.70	10.89	
Difference			-1.13	1.48	4.67	4.67	-3.61	-1.28	-1.89	-1.27	0.49	
IM U.S. Equity (SA+CF) Median			6.51	16.33	47.65	47.65	16.16	16.71	12.64	13.81	11.85	
Rank			43	48	47	47	56	51	55	56	66	
US Active Equity	3,495,407,623	15.92	6.17	19.14	62.99	62.99	16.70	17.83	12.77	13.98	10.13	12/01/1998
Russell 3000 Index			8.24	15.11	44.16	44.16	18.73	17.89	13.95	14.70	8.39	
Difference			-2.07	4.03	18.83	18.83	-2.03	-0.06	-1.18	-0.72	1.74	
IM U.S. Equity (SA+CF) Median			6.51	16.33	47.65	47.65	16.16	16.71	12.64	13.81	10.49	
Rank			54	33	19	19	48	41	50	48	56	
Hotchkis & Wiley Mid Cap Value Equity (SA)	518,739,120	2.36	4.58	31.67	95.64	95.64	5.16	10.92	5.79	10.82	11.64	08/01/2002
Russell Mid Cap Val Index			5.66	19.45	53.06	53.06	11.86	11.79	9.34	11.75	11.17	
Difference			-1.08	12.22	42.58	42.58	-6.70	-0.87	-3.55	-0.93	0.47	
IM U.S. Mid Cap Value Equity (SA+CF) Median			4.96	19.70	54.14	54.14	12.60	13.28	9.99	12.29	12.18	
Rank			63	1	1	1	100	93	100	86	71	
Wellington Mid Cap Growth (SA)	596,316,809	2.72	8.22	10.81	40.48	40.48	22.63	22.89	15.22	14.34	12.29	09/01/1998
Russell Mid Cap Grth Index			11.07	10.44	43.77	43.77	22.39	20.52	15.39	15.13	11.11	
Difference			-2.85	0.37	-3.29	-3.29	0.24	2.37	-0.17	-0.79	1.18	
IM U.S. Mid Cap Growth Equity (SA+CF) Median			8.29	9.73	44.26	44.26	22.35	21.20	15.90	15.35	12.33	
Rank			54	36	63	63	43	29	64	71	54	
Frontier Small Cap Value Equity (SA)	295,313,470	1.35	6.63	27.37	77.01	77.01	10.89	13.94	10.33	N/A	12.17	06/01/2013
Russell 2000 Val Index			4.56	26.69	73.28	73.28	10.27	13.62	9.26	10.85	10.66	
Difference			2.07	0.68	3.73	3.73	0.62	0.32	1.07	N/A	1.51	
IM U.S. Small Cap Value Equity (SA+CF) Median			4.12	23.83	66.55	66.55	10.85	13.75	9.72	11.79	11.43	
Rank			13	30	22	22	49	47	38	N/A	34	



	Allocation	1					Perfor	mance (%))			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Neumeier Poma Small Cap Equity (SA)	338,486,623	1.54	2.76	15.23	51.44	51.44	11.58	15.90	13.26	N/A	14.55	06/01/2013
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	12.64	
Difference			-1.53	-2.31	-10.59	-10.59	-1.94	-0.57	1.87	N/A	1.91	
IM U.S. Small Cap Equity (SA+CF) Median			4.63	18.75	61.57	61.57	13.88	16.46	11.87	13.26	13.31	
Rank			87	71	81	81	68	55	35	N/A	36	
Shapiro Enhanced Small Cap Equity (SA)	1,048,814,286	4.78	7.16	25.49	82.44	82.44	12.09	16.58	10.93	13.48	11.33	02/01/1998
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	8.87	
Difference			2.87	7.95	20.41	20.41	-1.43	0.11	-0.46	1.14	2.46	
IM U.S. Small Cap Equity (SA+CF) Median			4.63	18.75	61.57	61.57	13.88	16.46	11.87	13.26	11.48	
Rank			15	24	9	9	65	48	63	47	54	
Geneva US Small Cap Growth Equity (SA)	323,030,451	1.47	5.16	8.54	38.73	38.73	18.93	20.55	17.09	N/A	17.10	06/01/2013
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	14.25	
Difference			1.24	-0.44	-12.63	-12.63	2.99	1.79	3.98	N/A	2.85	
IM U.S. Small Cap Growth Equity (SA+CF) Median			5.14	12.04	54.91	54.91	21.05	22.71	16.07	15.98	17.15	
Rank			50	72	94	94	60	63	36	N/A	51	
Wasatch Small Cap Core Growth (SA)	374,706,864	1.71	8.83	15.26	56.41	56.41	25.04	25.61	19.19	N/A	18.60	06/01/2013
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	14.25	
Difference			4.91	6.28	5.05	5.05	9.10	6.85	6.08	N/A	4.35	
IM U.S. Small Cap Growth Equity (SA+CF) Median			5.14	12.04	54.91	54.91	21.05	22.71	16.07	15.98	17.15	
Rank			9	33	44	44	26	34	20	N/A	28	
US Passive Equity (Cap Wgt)	3,547,908,977	16.16	8.19	15.46	45.38	45.38	18.76	17.40	13.89	N/A	15.06	04/01/2012
Northern Trust Russell 1000 Index (SA)	2,200,646,588	10.02	8.63	15.07	43.19	43.19	19.12	N/A	N/A	N/A	17.05	12/01/2017
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	17.08	
Difference			0.09	0.12	0.12	0.12	-0.04	N/A	N/A	N/A	-0.03	
IM U.S. Large Cap Index Equity (SA+CF) Median			8.52	15.25	42.57	42.57	18.71	17.80	14.10	14.83	16.65	
Rank			21	68	35	35	31	N/A	N/A	N/A	33	
Northern Trust Russell Mid Cap Index (CF)	1,347,262,389	6.14	7.46	16.27	49.81	49.81	N/A	N/A	N/A	N/A	35.80	03/01/2020
Russell Mid Cap Index			7.50	16.25	49.80	49.80	16.45	15.62	12.03	13.24	35.73	
Difference			-0.04	0.02	0.01	0.01	N/A	N/A	N/A	N/A	0.07	



	Allocation	1		Performance (%)										
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date		
US Passive Equity (Non-Cap Wgt)	3,135,815,541	14.28	6.94	14.91	37.91	37.91	14.19	14.93	11.76	N/A	14.17	04/01/2012		
NTGI SciBetUS HF Ex MulBeEW Gr			6.94	14.91	37.90	37.90	14.15	N/A	N/A	N/A	N/A			
Difference			0.00	0.00	0.01	0.01	0.04	N/A	N/A	N/A	N/A			
SciBeta US High FactorExposure Index (SA)	3,135,815,541	14.28	6.94	14.91	37.91	37.91	14.19	N/A	N/A	N/A	12.25	12/01/2017		
NTGI SciBetUS HF Ex MulBeEW Gr			6.94	14.91	37.90	37.90	14.15	N/A	N/A	N/A	12.21			
Difference			0.00	0.00	0.01	0.01	0.04	N/A	N/A	N/A	0.04			
IM U.S. Large Cap Index Equity (SA+CF) Median			8.52	15.25	42.57	42.57	18.71	17.80	14.10	14.83	16.65			
Rank			79	81	98	98	83	N/A	N/A	N/A	84			
International Equity	3,900,997,085	17.77	6.03	11.26	40.97	40.97	9.39	11.93	6.71	7.25	8.69	02/01/1996		
MSCI ACW Ex US IM Index (USD) (Gross)			5.76	9.86	37.74	37.74	9.91	11.69	6.03	6.12	6.10			
Difference			0.27	1.40	3.23	3.23	-0.52	0.24	0.68	1.13	2.59			
IM International Equity (SA+CF) Median			5.65	9.69	40.33	40.33	10.73	12.38	7.03	7.29	8.41			
Rank			44	36	48	48	62	56	55	51	38			
Causeway Intl Opportunities (SA)	642,089,634	2.92	2.72	9.65	40.12	40.12	7.82	10.90	5.08	6.20	8.78	05/01/2003		
MSCI ACW Ex US Val Index (USD) (Gross)			4.53	12.06	38.32	38.32	5.83	9.17	3.01	4.07	8.25			
Difference			-1.81	-2.41	1.80	1.80	1.99	1.73	2.07	2.13	0.53			
IM ACWI Ex US Value (SA+CF) Median			4.36	10.81	40.76	40.76	9.05	11.74	5.97	6.61	9.40			
Rank			82	62	53	53	63	62	71	69	67			
Allianz Best Styles AC Intl Equity (SA)	1,326,236,260	6.04	4.86	11.09	36.62	36.62	7.80	10.87	N/A	N/A	10.87	07/01/2016		
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	11.59			
Difference			-0.78	1.64	0.33	0.33	-2.08	-0.72	N/A	N/A	-0.72			
IM ACWI Ex US Core (SA+CF) Median			5.33	9.62	37.83	37.83	10.62	12.09	6.67	7.03	12.09			
Rank			68	23	64	64	75	67	N/A	N/A	67			
Wellington Intl Quality Growth (SA)	755,025,773	3.44	7.16	10.69	39.68	39.68	15.56	16.19	N/A	N/A	16.19	07/01/2016		
MSCI ACW Ex US Grth Index (USD) (Gross)			6.73	6.73	34.06	34.06	13.60	13.75	8.43	7.65	13.75			
Difference			0.43	3.96	5.62	5.62	1.96	2.44	N/A	N/A	2.44			
IM ACWI Ex US Growth (SA+CF) Median			6.74	7.45	36.91	36.91	13.16	14.76	9.28	9.29	14.76			
Rank			44	9	36	36	32	34	N/A	N/A	34			
Wasatch International Small Cap Growth (SA)	449,551,411	2.05	8.76	7.33	37.69	37.69	12.58	14.14	11.18	N/A	14.33	12/01/2011		
MSCI ACW Ex US Sm Cap Index (USD) (Gross)			6.49	12.47	47.58	47.58	10.20	12.39	7.46	7.41	10.02			
Difference			2.27	-5.14	-9.89	-9.89	2.38	1.75	3.72	N/A	4.31			
IM International Small Cap Equity (SA+CF) Median			6.83	12.26	45.15	45.15	9.76	13.36	8.16	9.58	11.94			
Rank			20	83	86	86	27	38	22	N/A	11			



Wallue (s) % QTD CYTD FYTD Years Years Years Inc Wellington International Small Cap Equity (CF) 342,388,464 1.56 5.38 11.27 47.77 47.77 47.77 5.68 9.56 5.46 N/A Inc MSCI EAFE Sm Cap Index (USD) (Gross) 4.49 9.29 41.49 41.49 8.80 12.44 8.14 8.76 11 Difference 0.89 1.98 6.28 6.28 -3.12 -2.88 -2.68 N/A -0 IM EAFE Core (SA+CF) Median 5.63 9.75 34.22 38.33 10.84 6.02 7.26 8 SSGA Emerging Market Small Cap (CF) 385,705,543 1.76 11.31 21.22 60.98 60.98 11.53 N/A N/A N/A SSGA Emerging Market Small Cap (CF) 385,705,543 1.76 11.31 21.22 60.98 60.98 11.53 N/A N/A N/A MSCI Emg Mikts Sm Cap Index (USD) (Gross) 385,705,543 <th< th=""><th>) Incontice</th><th></th><th colspan="9">Allocation Performance (%)</th><th></th></th<>) Incontice		Allocation Performance (%)										
MSCI EAFE Sm Cap Index (USD) (Gross)		Since Incep.		-	_	_	-	FYTD	CYTD	QTD	%		
Difference 0.89 1.98 6.28 6.28 -3.12 -2.88 -2.68 N/A -0.08 N/A N/A -0.08 N/A N/A N/A N/A N/A N/A N/A N/A N/A -0.08 N/A N/A	6 12/01/2011	10.56	N/A	5.46	9.56	5.68	47.77	47.77	11.27	5.38	1.56	342,388,464	Wellington International Small Cap Equity (CF)
MEAFE Core (SA+CF) Median 5.63 9.75 34.22 34.22 8.83 10.84 6.02 7.26 9 Rank 62 24 5 5 91 74 67 N/A	5	11.35	8.76	8.14	12.44	8.80	41.49	41.49	9.29	4.49			MSCI EAFE Sm Cap Index (USD) (Gross)
Rank 62 24 5 5 91 74 67 N/A SSGA Emerging Market Small Cap (CF) 385,705,543 1.76 11.31 21.22 60.98 60.98 11.53 N/A N/A N/A N/A N/A 11 MSCI Emg Mkts Sm Cap Index (USD) (Gross) 11.36 19.95 64.38 64.38 12.74 12.24 6.64 4.88 11 Difference -0.05 1.27 -3.40 -3.40 -1.21 N/A	Э	-0.79	N/A	-2.68	-2.88	-3.12	6.28	6.28	1.98	0.89			Difference
SSGA Emerging Market Small Cap (CF) 385,705,543 1.76 11.31 21.22 60.98 60.98 11.53 N/A N/A N/A N/A 11.30 11.36 19.95 64.38 64.38 12.74 12.24 6.64 4.88 11 Difference -0.05 1.27 -3.40 -3.40 -1.21 N/A N/A N/A N/A -0.00 1.27 -3.40 -1.21 N/A 1.22 4.24 2.22 7	3	9.26	7.26	6.02	10.84	8.83	34.22	34.22	9.75	5.63			IM EAFE Core (SA+CF) Median
MSCI Emg Mkts Sm Cap Index (USD) (Gross) 11.36 19.95 64.38 64.38 12.74 12.24 6.64 4.88 11 Difference -0.05 1.27 -3.40 -3.40 -1.21 N/A N/A N/A N/A IM Emerging Markets Equity (SA+CF) Median 5.49 9.36 45.35 45.35 12.07 13.49 7.12 5.83 12 Rank 14 7 8 8 56 N/A N/A N/A Fixed Income 4,540,928,810 20.68 3.73 -0.93 3.52 3.52 7.62 5.53 4.95 5.74 7 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 In IM U.S. Fixed Income (SA+CF) Median 1.87 0.02 2.56 2.56 5.74 3.90 3.81 4.13 6 Rank 12 76 42 42 22 27 27 COTRS Fixed Income Blended Benchmark 12 76 42 42 22 27 27 COTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.11 1.28 5.24 5.24 2.43 1.60 0.90 1.25 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 5.03 4.97 5.00 IM U.S. Broad Market Core+ Extended Discretion (SA) 1,183,786,882 5.39 2.98 1.53 8.11 8.11 7.59 5.03 4.07 4.79 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 5.03 4.07 4.79 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 6.35 3.95 4.37 5 Difference 0.11 1.28 5.24 5.24 2.43 1.60 0.90 1.25 0 IM U.S. Broad Market Core+ Extended Discretion (SA) 1,183,786,882 5.39 2.98 1.53 8.11 8.11 7.59 5.03 4.07 4.79 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 6.06 0.12 0.42 0 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 6.06 0.12 0.42 0 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 6.06 0.12 0.42 0 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 6.06 0.12 0.42 0 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 6.06 0.12 0.42 0 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 6.06 0.12 0.42 0 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 6.06 0.12 0.42 0 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 6.06 0.12 0.42 0	3	13	N/A	67	74	91	5	5	24	62			Rank
Difference -0.05 1.27 -3.40 -3.40 -1.21 N/A	3 09/01/2016	11.23	N/A	N/A	N/A	11.53	60.98	60.98	21.22	11.31	1.76	385,705,543	
M Emerging Markets Equity (SA+CF) Median 5.49 9.36 45.35 45.35 12.07 13.49 7.12 5.83 14.47 5.97 4.35 3.95 4.37 5.07 4.35 3.95 4.37 5.07 4.35 3.95 4.37 5.07 4.35 3.95 4.37 5.07 4.35 3.95 4.37 5.07 4.35 3.35 4.37 5.07 4.35 4		11.27	4.88				64.38	64.38	19.95	11.36			MSCI Emg Mkts Sm Cap Index (USD) (Gross)
Rank 14 7 8 8 56 N/A N/A N/A Fixed Income 4,540,928,810 20.68 3.73 -0.93 3.52 3.52 7.62 5.53 4.95 5.74 7 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 N IM U.S. Fixed Income (SA+CF) Median 1.87 0.02 2.56 2.56 5.74 3.90 3.81 4.13 6 Rank 12 76 42 42 22 27 27 Loomis Sayles Multisector Full Discretion (SA) 1,227,557,701 5.59 2.22 1.24 9.48 9.48 8.40 5.95 4.85 5.62 6 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.11 1.28 5.24 5.24 2.43 1.60 0.90 1.25 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38	4	-0.04	N/A	N/A	N/A	-1.21	-3.40	-3.40	1.27	-0.05			Difference
Fixed Income 4,540,928,810 20.68 3.73 -0.93 3.52 7.62 5.53 4.95 5.74 7 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 N Difference 1.62 -0.89 -0.72 -0.72 1.65 1.18 1.00 1.37 N IM U.S. Fixed Income (SA+CF) Median 1.87 0.02 2.56 2.56 5.74 3.90 3.81 4.13 6 Rank 12 76 42 42 22 27 27 27 Loomis Sayles Multisector Full Discretion (SA) 1,227,557,701 5.59 2.22 1.24 9.48 9.48 8.40 5.95 4.85 5.62 6 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71<)	12.30	5.83	7.12	13.49	12.07	45.35	45.35	9.36	5.49			IM Emerging Markets Equity (SA+CF) Median
OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 No Difference 1.62 -0.89 -0.72 -0.72 1.65 1.18 1.00 1.37 No IM U.S. Fixed Income (SA+CF) Median 1.87 0.02 2.56 2.56 5.74 3.90 3.81 4.13 6 Rank 12 76 42 42 22 27 27 27 Loomis Sayles Multisector Full Discretion (SA) 1,227,557,701 5.59 2.22 1.24 9.48 9.48 8.40 5.95 4.85 5.62 6 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.11 1.28 5.24 5.24 2.43 1.60 0.90 1.25 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5 OTRS Fixed Income Blended Benchmark 2.11	3	66	N/A	N/A	N/A	56	8	8	7	14			Rank
Difference 1.62 -0.89 -0.72 -0.72 1.65 1.18 1.00 1.37 N IM U.S. Fixed Income (SA+CF) Median 1.87 0.02 2.56 2.56 5.74 3.90 3.81 4.13 6 Rank 12 76 42 42 22 27 27 27 Loomis Sayles Multisector Full Discretion (SA) 1,227,557,701 5.59 2.22 1.24 9.48 9.48 8.40 5.95 4.85 5.62 6 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.11 1.28 5.24 5.24 2.43 1.60 0.90 1.25 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5 Mackay Shields Core+ Extended Discretion (SA) 1,183,786,882 5.39 2.98 1.53 8.11 8.11 7.59 5.03 4.07 4.79 5 <t< td=""><td>0 04/01/1990</td><td>7.10</td><td>5.74</td><td>4.95</td><td>5.53</td><td>7.62</td><td>3.52</td><td>3.52</td><td>-0.93</td><td>3.73</td><td>20.68</td><td>4,540,928,810</td><td>Fixed Income</td></t<>	0 04/01/1990	7.10	5.74	4.95	5.53	7.62	3.52	3.52	-0.93	3.73	20.68	4,540,928,810	Fixed Income
IM U.S. Fixed Income (SA+CF) Median 1.87 0.02 2.56 5.74 3.90 3.81 4.13 6 Rank 12 76 42 42 22 27 27 27 Loomis Sayles Multisector Full Discretion (SA) 1,227,557,701 5.59 2.22 1.24 9.48 9.48 8.40 5.95 4.85 5.62 6 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.11 1.28 5.24 5.24 2.43 1.60 0.90 1.25 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5 Mackay Shields Core+ Extended Discretion (SA) 1,183,786,882 5.39 2.98 1.53 8.11 8.11 7.59 5.03 4.07 4.79 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5	4	N/A	4.37	3.95	4.35	5.97	4.24	4.24	-0.04	2.11			OTRS Fixed Income Blended Benchmark
Rank 12 76 42 42 22 27 27 Loomis Sayles Multisector Full Discretion (SA) 1,227,557,701 5.59 2.22 1.24 9.48 9.48 8.40 5.95 4.85 5.62 6 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.11 1.28 5.24 5.24 2.43 1.60 0.90 1.25 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5 Rank 54 14 8 8 5 13 16 12 Mackay Shields Core+ Extended Discretion (SA) 1,183,786,882 5.39 2.98 1.53 8.11 8.11 7.59 5.03 4.07 4.79 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.87 1.57	A	N/A	1.37	1.00	1.18	1.65	-0.72	-0.72	-0.89	1.62			Difference
Loomis Sayles Multisector Full Discretion (SA) 1,227,557,701 5.59 2.22 1.24 9.48 9.48 8.40 5.95 4.85 5.62 6 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.11 1.28 5.24 5.24 2.43 1.60 0.90 1.25 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5 Rank 54 14 8 8 5 13 16 12 Mackay Shields Core+ Extended Discretion (SA) 1,183,786,882 5.39 2.98 1.53 8.11 8.11 7.59 5.03 4.07 4.79 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.87 1.57 3.87	7	6.17	4.13	3.81	3.90	5.74	2.56	2.56	0.02	1.87			IM U.S. Fixed Income (SA+CF) Median
OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.11 1.28 5.24 5.24 2.43 1.60 0.90 1.25 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5 Rank 54 14 8 8 5 13 16 12 Mackay Shields Core+ Extended Discretion (SA) 1,183,786,882 5.39 2.98 1.53 8.11 8.11 7.59 5.03 4.07 4.79 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.87 1.57 3.87 3.87 1.62 0.68 0.12 0.42 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5		21	27	27	27	22	42	42	76	12			Rank
Difference 0.11 1.28 5.24 5.24 2.43 1.60 0.90 1.25 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5 Rank 54 14 8 8 5 13 16 12 Mackay Shields Core+ Extended Discretion (SA) 1,183,786,882 5.39 2.98 1.53 8.11 8.11 7.59 5.03 4.07 4.79 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.87 1.57 3.87 3.87 1.62 0.68 0.12 0.42 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5	9 07/01/1999	6.49	5.62	4.85	5.95	8.40	9.48	9.48	1.24	2.22	5.59	1,227,557,701	Loomis Sayles Multisector Full Discretion (SA)
IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5 Rank 54 14 8 8 5 13 16 12 Mackay Shields Core+ Extended Discretion (SA) 1,183,786,882 5.39 2.98 1.53 8.11 8.11 7.59 5.03 4.07 4.79 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.87 1.57 3.87 3.87 1.62 0.68 0.12 0.42 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5	5	5.55	4.37	3.95	4.35	5.97	4.24	4.24	-0.04	2.11			OTRS Fixed Income Blended Benchmark
Rank 54 14 8 8 5 13 16 12 Mackay Shields Core+ Extended Discretion (SA) 1,183,786,882 5.39 2.98 1.53 8.11 8.11 7.59 5.03 4.07 4.79 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.87 1.57 3.87 3.87 1.62 0.68 0.12 0.42 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5	4	0.94	1.25	0.90	1.60	2.43	5.24	5.24	1.28	0.11			Difference
Mackay Shields Core+ Extended Discretion (SA) 1,183,786,882 5.39 2.98 1.53 8.11 8.11 7.59 5.03 4.07 4.79 5 OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.87 1.57 3.87 3.87 1.62 0.68 0.12 0.42 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5	3	5.78	4.57	4.21	4.43	6.71	3.38	3.38	-0.43	2.24			IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median
OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5 Difference 0.87 1.57 3.87 3.87 1.62 0.68 0.12 0.42 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5	2	12	12	16	13	5	8	8	14	54			Rank
Difference 0.87 1.57 3.87 3.87 1.62 0.68 0.12 0.42 0 IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5	0 11/01/2004	5.50	4.79	4.07	5.03	7.59	8.11	8.11	1.53	2.98	5.39	1,183,786,882	Mackay Shields Core+ Extended Discretion (SA)
IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5	Э	5.09	4.37	3.95	4.35	5.97	4.24	4.24	-0.04	2.11			OTRS Fixed Income Blended Benchmark
		0.41	0.42	0.12	0.68	1.62	3.87	3.87	1.57	0.87			Difference
Rank 12 12 13 13 13 28 59 35	7	5.17	4.57	4.21	4.43	6.71	3.38	3.38	-0.43				IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median
)	30	35	59	28	13	13	13	12	12			Rank
Lord Abbett Core Plus Full Discretion (SA) 1,154,465,556 5.26 2.42 1.00 6.75 6.75 6.44 4.20 4.05 4.59 5	2 11/01/2004	5.32	4.59	4.05	4.20	6.44	6.75	6.75	1.00	2.42	5.26	1,154,465,556	Lord Abbett Core Plus Full Discretion (SA)
OTRS Fixed Income Blended Benchmark 2.11 -0.04 4.24 4.24 5.97 4.35 3.95 4.37 5	9	5.09	4.37	3.95	4.35	5.97	4.24	4.24	-0.04	2.11			OTRS Fixed Income Blended Benchmark
Difference 0.31 1.04 2.51 2.51 0.47 -0.15 0.10 0.22 0	3	0.23	0.22	0.10	-0.15	0.47	2.51	2.51	1.04	0.31			Difference
IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median 2.24 -0.43 3.38 3.38 6.71 4.43 4.21 4.57 5	7	5.17	4.57	4.21	4.43	6.71	3.38	3.38	-0.43	2.24			IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median
Rank 31 16 16 16 63 62 60 50	3	38	50	60	62	63	16	16	16	31			Rank
		7.40	8.16	6.68	3.62	9.07	-11.51	-11.51	-9.00	8.02	4.44	975,118,670	Hoisington Active Duration Long Bonds (SA)
Bloomberg US Trsy Index 1.75 -2.58 -3.22 -3.22 4.66 2.15 2.75 2.84 3	2	3.62	2.84	2.75	2.15	4.66	-3.22	-3.22	-2.58	1.75			Bloomberg US Trsy Index
Difference 6.27 -6.42 -8.29 -8.29 4.41 1.47 3.93 5.32 3	3	3.78	5.32	3.93	1.47	4.41	-8.29	-8.29	-6.42	6.27			Difference
IM U.S. Long Duration (SA+CF) Median 6.61 -3.65 1.04 1.04 10.88 6.35 6.99 7.91 7	4	7.44	7.91	6.99	6.35	10.88	1.04	1.04	-3.65	6.61			IM U.S. Long Duration (SA+CF) Median
Rank 3 100 100 100 87 100 79 36	4	54	36	79	100	87	100	100	100	3			Rank



	Allocation	<u> </u>					Perfor	mance (%)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Private Equity	1,674,196,960	7.63	28.40	31.20	52.06	52.06	26.38	23.05	19.63	17.84	20.00	07/01/2015
R 2000 Index+4%			5.32	19.86	68.51	68.51	18.06	21.12	15.85	16.83	16.72	
Difference			23.08	11.34	-16.45	-16.45	8.32	1.93	3.78	1.01	3.28	
Franklin Park Private Equity LP	1,661,764,317	7.57	28.42	31.24	52.29	52.29	26.63	23.42	19.95	9.65	20.31	07/01/2015
Legacy Private Equity LP	12,432,643	0.06	26.29	26.03	28.29	28.29	6.43	5.00	4.87	7.63	4.15	10/01/2008
Special Opportunities	271,548,547	1.24	4.20	10.33	21.36	21.36	5.48	8.13	N/A	N/A	7.17	07/01/2015
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	3.52	
Difference			2.37	11.94	21.70	21.70	0.14	5.10	N/A	N/A	3.65	
PIMCO Bravo LP	82,887	0.00	-35.24	-26.61	-18.29	-18.29	-48.49	-21.60	-14.54	-4.14	-3.84	03/01/2011
PIMCO Bravo II LP	45,732,765	0.21	9.91	22.41	23.68	23.68	2.22	5.45	6.99	N/A	8.51	03/01/2013
PIMCO Bravo III LP	184,295,432	0.84	3.72	7.97	19.34	19.34	7.97	N/A	N/A	N/A	9.66	04/01/2017
PIMCO COF II LP	41,437,463	0.19	1.44	9.86	26.01	26.01	7.65	N/A	N/A	N/A	10.00	10/01/2016
Bloomberg US Unv Bond Index			1.96	-1.15	1.12	1.12	5.64	3.48	3.54	3.74	3.46	
Difference			-0.52	11.01	24.89	24.89	2.01	N/A	N/A	N/A	6.54	
Real Estate	1,247,415,703	5.68	1.53	2.19	1.40	1.40	3.13	4.71	N/A	N/A	6.17	07/01/2015
NCREIF Property Index			3.59	5.37	7.37	7.37	5.50	6.13	7.72	8.79	6.87	
Difference			-2.06	-3.18	-5.97	-5.97	-2.37	-1.42	N/A	N/A	-0.70	
AEW Core Property Trust (CF)	340,174,677	1.55	1.95	3.65	3.70	3.70	4.81	5.54	7.31	7.84	7.84	07/01/2011
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	8.60	
Difference			-1.73	-1.99	-3.39	-3.39	0.21	-0.08	-0.12	-0.76	-0.76	
Heitman America Real Estate (CF)	329,203,875	1.50	1.89	3.79	3.50	3.50	2.64	5.27	7.28	8.48	8.33	05/01/2011
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	8.91	
Difference			-1.79	-1.85	-3.59	-3.59	-1.96	-0.35	-0.15	-0.12	-0.58	
L&B Core Income Partners LP	69,321,554	0.32	-2.58	-3.77	-7.28	-7.28	-5.51	-0.63	3.48	4.41	4.30	04/01/2011
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	8.84	
Difference			-6.26	-9.41	-14.37	-14.37	-10.11	-6.25	-3.95	-4.19	-4.54	
American Strategic Value Realty (CF)	78,381,809	0.36	2.59	3.78	4.65	4.65	7.62	8.58	N/A	N/A	9.57	12/01/2014
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.44	
Difference			-1.09	-1.86	-2.44	-2.44	3.02	2.96	N/A	N/A	2.13	



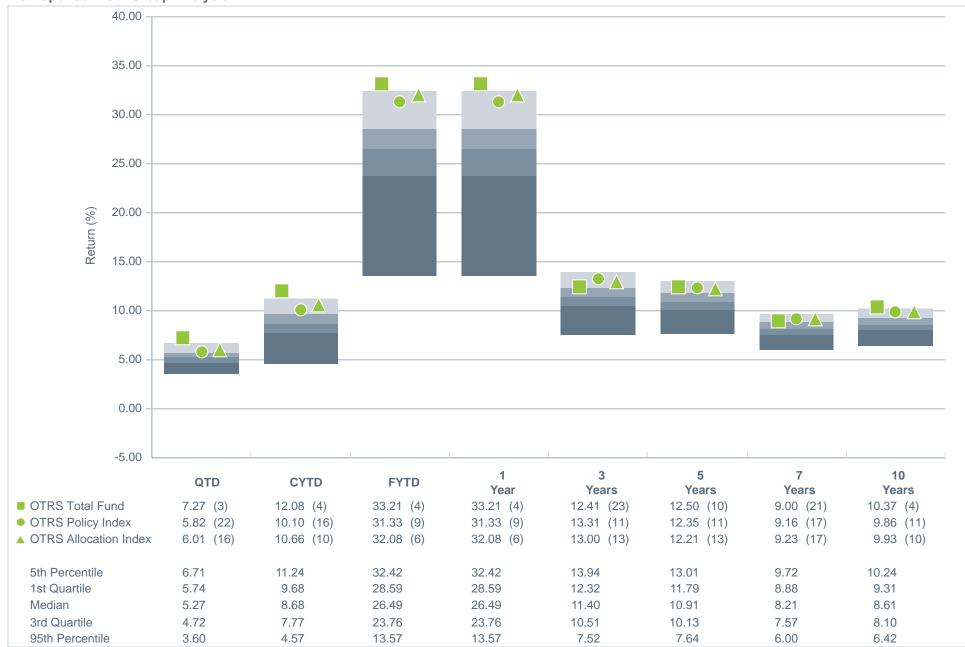
	Allocation	<u> </u>					Perfor	mance (%)	<u> </u>			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Angelo Gordon Value X LP	29,511,356	0.13	1.12	9.49	21.75	21.75	N/A	N/A	N/A	N/A	-2.66	07/01/2019
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.17	
Difference			-2.56	3.85	14.66	14.66	N/A	N/A	N/A	N/A	-6.83	
Artemis Real Estate III LP	19,042,483	0.09	3.16	4.33	26.22	26.22	N/A	N/A	N/A	N/A	N/A	02/01/2019
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.28	
Difference			-0.52	-1.31	19.13	19.13	N/A	N/A	N/A	N/A	N/A	
Dune Real Estate III LP	40,265,526	0.18	3.15	1.66	-16.45	-16.45	-2.60	2.78	N/A	N/A	4.97	11/01/2014
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.34	
Difference			-0.53	-3.98	-23.54	-23.54	-7.20	-2.84	N/A	N/A	-2.37	
Dune Real Estate IV LP	13,411,947	0.06	-22.87	-24.05	-32.08	-32.08	N/A	N/A	N/A	N/A	-30.35	09/01/2019
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.55	
Difference			-26.55	-29.69	-39.17	-39.17	N/A	N/A	N/A	N/A	-34.90	
FCP Realty IV LP	27,097,958	0.12	1.91	10.22	12.14	12.14	N/A	N/A	N/A	N/A	-11.84	12/01/2018
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.61	
Difference			-1.77	4.58	5.05	5.05	N/A	N/A	N/A	N/A	-16.45	
GreenOak US II LP	22,649,659	0.10	-0.35	-26.22	-28.40	-28.40	-13.04	-6.02	N/A	N/A	-3.92	10/01/2014
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.25	
Difference			-4.03	-31.86	-35.49	-35.49	-17.64	-11.64	N/A	N/A	-11.17	
GreenOak US III LP	24,874,132	0.11	0.12	-11.95	-13.85	-13.85	-18.20	N/A	N/A	N/A	-17.75	06/01/2018
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	5.08	
Difference			-3.56	-17.59	-20.94	-20.94	-22.80	N/A	N/A	N/A	-22.83	
Harbert European Real Estate V LP	26,997,224	0.12	1.91	3.65	5.68	5.68	N/A	N/A	N/A	N/A	-6.29	12/01/2018
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.61	
Difference			-1.77	-1.99	-1.41	-1.41	N/A	N/A	N/A	N/A	-10.90	
Invesco Strategic Opportunity (CF)	14,335,489	0.07	4.61	9.45	13.52	13.52	N/A	N/A	N/A	N/A	60.48	10/01/2019
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.14	
Difference			0.93	3.81	6.43	6.43	N/A	N/A	N/A	N/A	56.34	
L&B Gloden Driller (SA)	74,080,904	0.34	-2.56	-2.56	-2.56	-2.56	10.14	7.13	4.73	N/A	4.73	07/01/2014
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.43	
Difference			-6.24	-8.20	-9.65	-9.65	5.54	1.51	-2.70	N/A	-2.70	
Landmark Real Estate VII LP	9,680,448	0.04	-1.59	-0.95	-5.59	-5.59	-2.51	1.32	N/A	N/A	10.74	12/01/2014
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.44	
Difference			-5.27	-6.59	-12.68	-12.68	-7.11	-4.30	N/A	N/A	3.30	



	Allocation				Performance (%)								
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date	
Lyrical-OTRS Realty Partner IV LP	62,706,673	0.29	3.38	3.38	11.48	11.48	20.95	9.14	N/A	N/A	6.78	11/01/2014	
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.34		
Difference			-0.30	-2.26	4.39	4.39	16.35	3.52	N/A	N/A	-0.56		
Starwood Opportunity X LP	15,110,037	0.07	9.77	13.97	7.93	7.93	6.98	10.88	N/A	N/A	11.02	07/01/2015	
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	6.47		
Difference			6.09	8.33	0.84	0.84	2.38	5.26	N/A	N/A	4.55		
Starwood Opportunity XI LP	40,489,952	0.18	6.90	17.61	9.55	9.55	N/A	N/A	N/A	N/A	22.47	08/01/2018	
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.73		
Difference			3.22	11.97	2.46	2.46	N/A	N/A	N/A	N/A	17.74		
Property ACQ Fund	10,080,000	0.05	38.08	38.08	38.08	38.08	-7.91	N/A	N/A	N/A	-5.80	08/01/2017	



Oklahoma State Pension Commission Oklahoma Teachers' Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis



Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



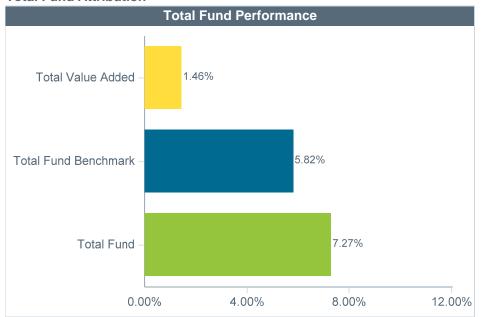
Oklahoma State Pension Commission Oklahoma Teachers' Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis

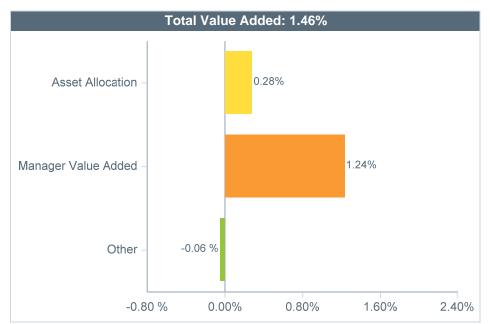


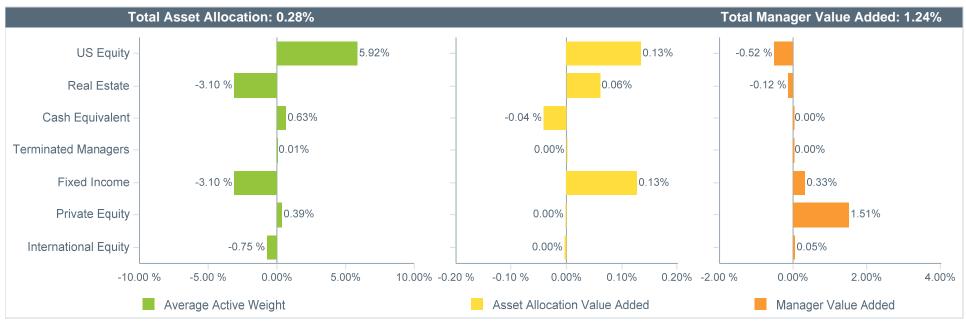
Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments.



Oklahoma State Pension Commission Oklahoma Teachers' Retirement System Total Fund Attribution





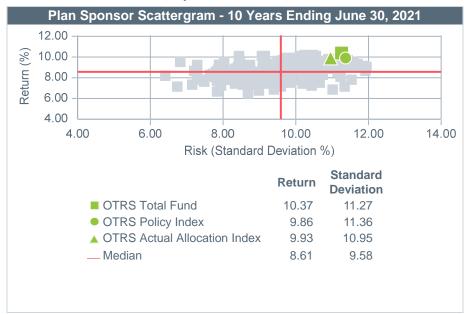


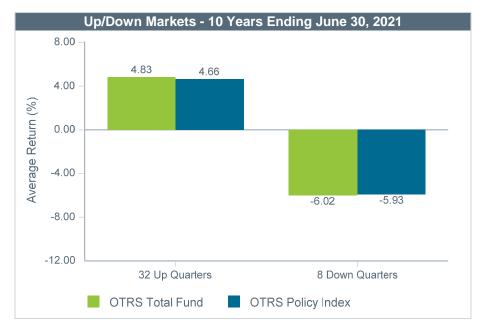


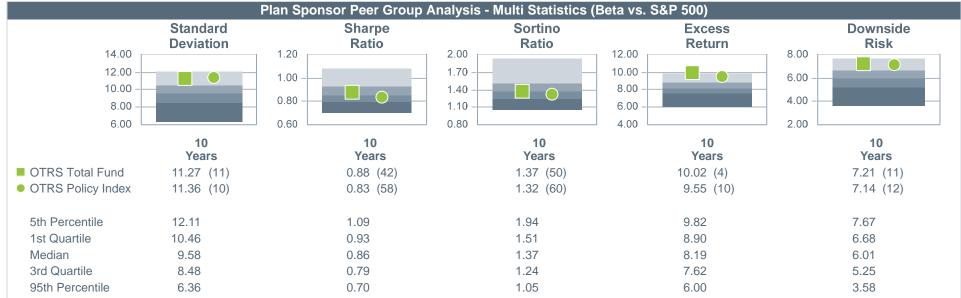


Oklahoma State Pension Commission Oklahoma Teachers' Retirement System

Total Fund Risk & Return, Up/Down Markets, and Multi Statistics

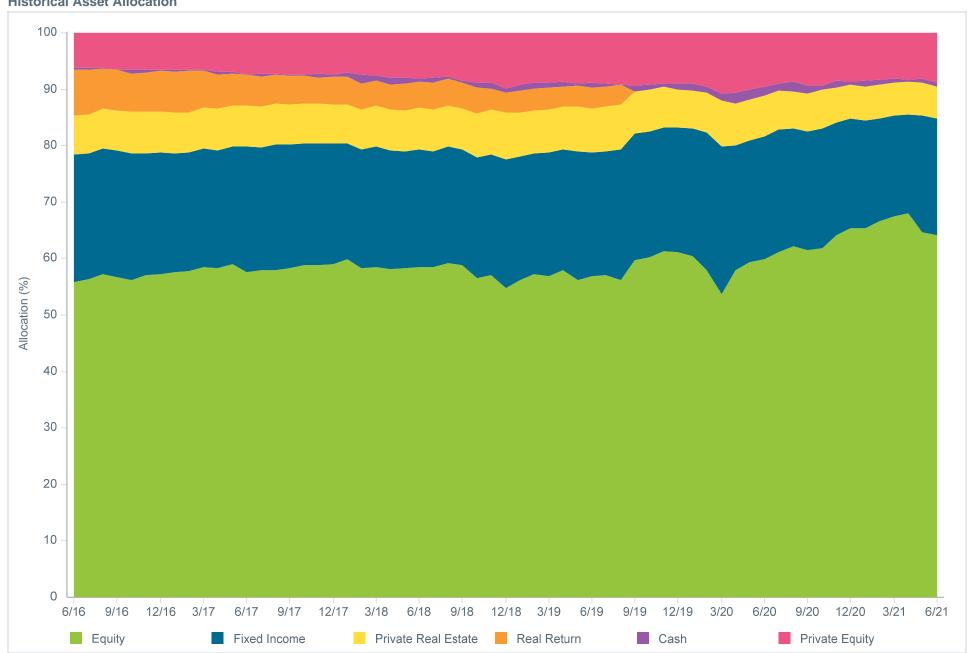














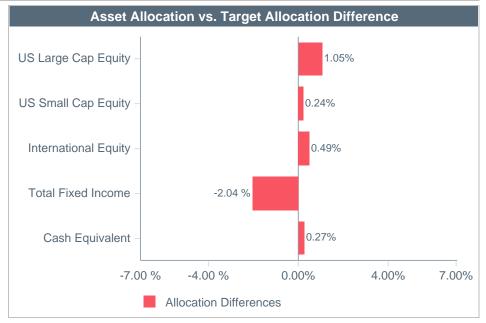
Oklahoma Public Employees Retirement System (OPERS)



Oklahoma State Pension Commission Oklahoma Public Employees Retirement System Total Fund Summary

Performance (%)														
			Trailir	ng						Calenda	r Year			
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	
OPERS Total Fund (Net)	5.60	8.65	27.82	27.82	12.33	11.57	8.64	9.20	15.18	21.23	-6.57	17.01	7.59	
OPERS Policy Index	5.57	8.01	26.94	26.94	12.37	11.59	8.69	9.07	15.19	21.46	-6.09	16.86	8.12	
Difference	0.03	0.64	0.88	0.88	-0.04	-0.02	-0.05	0.13	-0.01	-0.23	-0.48	0.15	-0.53	
OPERS Actual Allocation Index	5.69	8.55	27.49	27.49	14.44	12.75	9.52	9.56	22.04	20.87	-6.49	16.51	8.09	
Difference	-0.09	0.10	0.33	0.33	-2.11	-1.18	-0.88	-0.36	-6.86	0.36	-0.08	0.50	-0.50	
Actuarial Discount Rate (6.5%)	1.59	3.20	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	
Difference	4.01	5.45	21.32	21.32	5.83	5.07	2.14	2.70	8.68	14.73	-13.07	10.51	1.09	
OPERS Total Fund (Gross)	5.62	8.70	27.99	27.99	12.46	11.69	8.76	9.32	15.34	21.38	-6.48	17.13	7.69	
OPERS Policy Index	5.57	8.01	26.94	26.94	12.37	11.59	8.69	9.07	15.19	21.46	-6.09	16.86	8.12	
Difference	0.05	0.69	1.05	1.05	0.09	0.10	0.07	0.25	0.15	-0.08	-0.39	0.27	-0.43	
OPERS Actual Allocation Index	5.69	8.55	27.49	27.49	14.44	12.75	9.52	9.56	22.04	20.87	-6.49	16.51	8.09	
Difference	-0.07	0.15	0.50	0.50	-1.98	-1.06	-0.76	-0.24	-6.70	0.51	0.01	0.62	-0.40	
All Public Plans-Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	12.57	18.59	-4.15	15.28	7.65	
Rank	32	49	30	30	21	28	31	25	20	12	93	17	49	

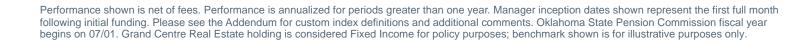
Asset Allo	cation vs. Target A	Allocation	
	Asset Allocation (\$)	Asset Allocation (%)	Target Allocation (%)
OPERS (Public Employees)	12,513,220,842	100.00	100.00
US Large Cap Equity	4,385,719,992	35.05	34.00
US Small Cap Equity	780,635,619	6.24	6.00
International Equity	3,564,989,160	28.49	28.00
Total Fixed Income	3,748,425,378	29.96	32.00
Cash Equivalent	33,450,694	0.27	0.00



Parentheses contain percentile ranks. Allocations shown may not sum up to 100% exactly due to rounding. Fixed Income includes the Grand Centre Real Estate allocation for Pc see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



	Allocation	1					Perfor	mance (%	(a)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
OPERS Total Fund	12,513,220,842	100.00	5.60	8.65	27.82	27.82	12.33	11.57	8.64	9.20	N/A	03/01/1987
OPERS Policy Index			5.57	8.01	26.94	26.94	12.37	11.59	8.69	9.07	8.62	
Difference			0.03	0.64	0.88	0.88	-0.04	-0.02	-0.05	0.13	N/A	
OPERS Actual Allocation Index			5.69	8.55	27.49	27.49	14.44	12.75	9.52	9.56	8.76	
Difference			-0.09	0.10	0.33	0.33	-2.11	-1.18	-0.88	-0.36	N/A	
Actuarial Discount Rate (6.5%)			1.59	3.20	6.50	6.50	6.50	6.50	6.50	6.50	6.50	
Difference			4.01	5.45	21.32	21.32	5.83	5.07	2.14	2.70	N/A	
US Equity	5,166,355,611	41.29	7.51	15.69	45.80	45.80	17.68	17.60	13.43	14.48	N/A	09/01/1988
OPERS US Equity Custom Index			7.90	15.38	45.90	45.90	18.38	17.82	13.83	14.63	N/A	
Difference			-0.39	0.31	-0.10	-0.10	-0.70	-0.22	-0.40	-0.15	N/A	
US Active Large Cap Equity	391,386,348	3.13	11.00	13.83	39.08	39.08	15.66	17.48	12.09	13.72	N/A	08/01/2003
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	11.02	
Difference			2.46	-1.12	-3.99	-3.99	-3.50	-0.51	-2.07	-1.18	N/A	
Westfield Large Cap Growth Equity (SA)	391,386,348	3.13	11.00	13.82	42.12	42.12	24.29	N/A	N/A	N/A	24.30	02/01/2017
Russell 1000 Grth Index			11.93	12.99	42.50	42.50	25.14	23.66	18.56	17.87	24.67	
Difference			-0.93	0.83	-0.38	-0.38	-0.85	N/A	N/A	N/A	-0.37	
US Large Cap Enhanced Index Equity	1,458,336,450	11.65	8.58	16.66	41.05	41.05	16.62	16.47	12.86	14.33	N/A	03/01/2000
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	7.76	
Difference			0.04	1.71	-2.02	-2.02	-2.54	-1.52	-1.30	-0.57	N/A	
State Street Large Cap Enhanced Index (SA)	727,444,209	5.81	7.63	16.68	42.04	42.04	18.09	17.22	13.69	14.76	10.37	09/01/2004
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	10.92	
Difference			-0.91	1.73	-1.03	-1.03	-1.07	-0.77	-0.47	-0.14	-0.55	
Mellon EB DV Large Cap Stock Index (SA)	730,892,241	5.84	9.54	16.64	40.08	40.08	15.14	15.72	12.02	13.89	9.73	06/01/2004
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	10.67	
Difference			1.00	1.69	-2.99	-2.99	-4.02	-2.27	-2.14	-1.01	-0.94	
US Large Cap Passive Equity	2,535,997,195	20.27	7.99	15.22	43.04	43.04	19.18	18.01	14.24	14.94	N/A	01/01/2003
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	11.47	
Difference			-0.55	0.27	-0.03	-0.03	0.02	0.02	0.08	0.04	N/A	





	Allocation	1					Perfor	mance (%	6)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
BlackRock Russell 1000 Value (CF)	371,727,064	2.97	5.21	17.07	N/A	N/A	N/A	N/A	N/A	N/A	17.07	01/01/2021
Russell 1000 Val Index			5.21	17.05	43.68	43.68	12.42	11.87	9.41	11.61	17.05	
Difference			0.00	0.02	N/A	N/A	N/A	N/A	N/A	N/A	0.02	
Blackrock Russell 1000 Index (CF)	2,164,270,131	17.30	8.53	14.96	43.08	43.08	19.19	18.03	14.20	14.93	16.42	09/01/2010
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	16.39	
Difference			-0.01	0.01	0.01	0.01	0.03	0.04	0.04	0.03	0.03	
US Active Small Cap Equity	780,635,619	6.24	3.47	16.93	68.16	68.16	17.29	19.25	12.80	13.97	N/A	08/01/2003
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	10.67	
Difference			-0.82	-0.61	6.13	6.13	3.77	2.78	1.41	1.63	N/A	
BHMS Small Cap Value Equity (SA)	244,381,079	1.95	-0.21	13.82	68.71	68.71	12.73	16.27	11.13	12.57	11.53	12/01/2004
Russell 2000 Val Index			4.56	26.69	73.28	73.28	10.27	13.62	9.26	10.85	8.22	
Difference			-4.77	-12.87	-4.57	-4.57	2.46	2.65	1.87	1.72	3.31	
UBS US Small Cap Growth Equity (SA)	261,143,919	2.09	4.00	9.93	62.39	62.39	24.25	24.97	16.44	16.63	N/A	06/01/2003
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	11.83	
Difference			0.08	0.95	11.03	11.03	8.31	6.21	3.33	3.11	N/A	
DePrince Race & Zollo Small Cap Value (SA)	275,110,621	2.20	7.20	28.95	71.73	71.73	13.60	15.57	10.12	12.12	11.49	03/01/2011
Russell 2000 Val Index			4.56	26.69	73.28	73.28	10.27	13.62	9.26	10.85	10.34	
Difference			2.64	2.26	-1.55	-1.55	3.33	1.95	0.86	1.27	1.15	
International Equity	3,564,989,160	28.49	5.55	9.13	36.66	36.66	10.41	11.39	6.04	6.20	N/A	05/01/1994
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	6.16	
Difference			-0.09	-0.32	0.37	0.37	0.53	-0.20	0.23	0.27	N/A	
International Core Active Equity	732,858,612	5.86	4.79	11.70	37.58	37.58	7.20	8.05	3.66	5.00	N/A	08/01/2003
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	8.37	
Difference			-0.85	2.25	1.29	1.29	-2.68	-3.54	-2.15	-0.93	N/A	
Mondrian ACWI ex US Equity (SA)	732,858,612	5.86	4.79	11.70	37.58	37.58	7.20	8.05	3.66	5.00	N/A	08/01/2001
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	7.07	
Difference			-0.85	2.25	1.29	1.29	-2.68	-3.54	-2.15	-0.93	N/A	



	Allocation	า					Perfor	mance (%	(o)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
International Core Passive Equity	2,006,224,936	16.03	5.59	9.37	36.00	36.00	9.64	11.36	5.58	5.70	N/A	08/01/2003
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	8.37	
Difference			-0.05	-0.08	-0.29	-0.29	-0.24	-0.23	-0.23	-0.23	N/A	
Blackrock ACWI Ex US Index (CF)	2,006,224,936	16.03	5.59	9.37	36.00	36.00	9.64	11.36	5.58	5.70	6.64	11/01/2009
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	6.88	
Difference			-0.05	-0.08	-0.29	-0.29	-0.24	-0.23	-0.23	-0.23	-0.24	
International Growth Equity	825,905,612	6.60	6.09	6.99	37.35	37.35	14.68	14.44	8.94	7.94	8.03	05/01/2005
MSCI ACW Ex US Grth Index (USD) (Gross)			6.73	6.73	34.06	34.06	13.60	13.75	8.43	7.65	7.87	
Difference			-0.64	0.26	3.29	3.29	1.08	0.69	0.51	0.29	0.16	
Baille Gifford Intl Growth Equity (SA)	425,615,833	3.40	6.72	7.48	41.03	41.03	17.20	16.25	10.51	N/A	10.74	10/01/2013
MSCI ACW Ex US Grth Index (USD) (Gross)			6.73	6.73	34.06	34.06	13.60	13.75	8.43	7.65	8.91	
Difference			-0.01	0.75	6.97	6.97	3.60	2.50	2.08	N/A	1.83	
Blackrock ACWI Ex US Growth (CF)	400,289,779	3.20	6.60	7.68	34.58	34.58	12.22	12.65	7.39	6.88	7.92	11/01/2009
MSCI ACW Ex US Grth Index (USD) (Gross)			6.73	6.73	34.06	34.06	13.60	13.75	8.43	7.65	8.62	
Difference			-0.13	0.95	0.52	0.52	-1.38	-1.10	-1.04	-0.77	-0.70	
Fixed Income	3,739,140,378	29.88	2.75	-1.74	0.01	0.01	6.55	3.77	4.04	4.32	N/A	04/01/1989
OPERS Fixed Income Custom Index			2.58	-1.93	-0.75	-0.75	5.84	3.21	3.62	3.85	N/A	
Difference			0.17	0.19	0.76	0.76	0.71	0.56	0.42	0.47	N/A	
Active Fixed Income	1,494,438,627	11.94	3.39	-3.11	-2.18	-2.18	7.22	3.96	4.64	5.24	N/A	08/01/2003
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.25	
Difference			1.56	-1.50	-1.84	-1.84	1.88	0.93	1.36	1.85	N/A	
MetWest Core Plus Fixed Income (SA)	1,107,520,459	8.85	1.96	-0.97	1.37	1.37	6.40	3.98	3.86	4.15	N/A	09/01/2001
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.43	
Difference			0.13	0.64	1.71	1.71	1.06	0.95	0.58	0.76	N/A	
Hoisington Long Duration Fixed Income (SA)	386,918,168	3.09	7.85	-8.94	-11.36	-11.36	8.83	3.42	6.64	8.03	N/A	10/01/1991
Bloomberg US Trsy Lng Trm Bond Index			6.46	-7.92	-10.58	-10.58	7.99	3.13	5.76	6.66	7.48	
Difference			1.39	-1.02	-0.78	-0.78	0.84	0.29	0.88	1.37	N/A	



	Allocation	1					Perfori	mance (%	b)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Enhanced Fixed Income	1,818,615,193	14.53	2.05	-1.44	0.35	0.35	5.91	3.44	3.63	3.73	N/A	06/01/2000
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.95	
Difference			0.22	0.17	0.69	0.69	0.57	0.41	0.35	0.34	N/A	
Blackrock Enhanced Core (SA)	1,818,615,193	14.53	2.05	-1.44	0.35	0.35	5.91	3.44	3.63	3.73	N/A	06/01/2000
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.95	
Difference			0.22	0.17	0.69	0.69	0.57	0.41	0.35	0.34	N/A	
Passive Fixed Income	426,086,558	3.41	3.26	1.75	6.62	6.62	6.65	4.33	3.47	3.52	4.07	03/01/2010
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	3.64	
Difference			1.43	3.36	6.96	6.96	1.31	1.30	0.19	0.13	0.43	
Blackrock TIPS (CF)	426,086,558	3.41	3.26	1.75	6.62	6.62	6.65	4.33	3.47	3.52	4.07	03/01/2010
Bloomberg US Trsy US TIPS Index			3.25	1.73	6.51	6.51	6.53	4.17	3.34	3.40	4.03	
Difference			0.01	0.02	0.11	0.11	0.12	0.16	0.13	0.12	0.04	
Real Estate	9,285,000	0.07	-9.01	-7.22	-5.51	-5.51	-4.86	-2.46	-0.51	N/A	-0.64	12/01/2015
NCREIF ODCE Index (EWA) (Net)			4.17	6.33	7.97	7.97	5.19	6.09	7.86	8.86	6.82	
Difference			-13.18	-13.55	-13.48	-13.48	-10.05	-8.55	-8.37	N/A	-7.46	
Grand Centre	9,285,000	0.07	-9.01	-7.22	-5.51	-5.51	-4.86	-2.46	N/A	N/A	-0.64	12/01/2015
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	6.32	
Difference			-12.69	-12.86	-12.60	-12.60	-9.46	-8.08	N/A	N/A	-6.96	



	Allocation			Perfor	mance (%)						
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
OPERS Total Fund	12,513,220,842	100.00	5.62	8.70	27.99	27.99	12.46	11.69	8.76	9.32	8.77	03/01/1987
OPERS Policy Index			5.57	8.01	26.94	26.94	12.37	11.59	8.69	9.07	8.62	
Difference			0.05	0.69	1.05	1.05	0.09	0.10	0.07	0.25	0.15	
OPERS Actual Allocation Index			5.69	8.55	27.49	27.49	14.44	12.75	9.52	9.56	8.76	
Difference			-0.07	0.15	0.50	0.50	-1.98	-1.06	-0.76	-0.24	0.01	
Actuarial Discount Rate (6.5%)			1.59	3.20	6.50	6.50	6.50	6.50	6.50	6.50	6.50	
Difference			4.03	5.50	21.49	21.49	5.96	5.19	2.26	2.82	2.27	
All Public Plans-Total Fund Median			5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	8.45	
Rank			32	49	30	30	21	28	31	25	22	
US Equity	5,166,355,611	41.29	7.53	15.72	45.98	45.98	17.83	17.73	13.56	14.60	10.94	09/01/1988
OPERS US Equity Custom Index			7.90	15.38	45.90	45.90	18.38	17.82	13.83	14.63	N/A	
Difference			-0.37	0.34	0.08	0.08	-0.55	-0.09	-0.27	-0.03	N/A	
IM U.S. Equity (SA+CF) Median			6.51	16.33	47.65	47.65	16.16	16.71	12.64	13.81	12.01	
Rank			38	55	55	55	41	42	42	41	93	
US Active Large Cap Equity	391,386,348	3.13	11.03	13.88	39.18	39.18	15.73	17.58	12.26	13.86	10.08	08/01/2003
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	11.02	
Difference			2.49	-1.07	-3.89	-3.89	-3.43	-0.41	-1.90	-1.04	-0.94	
IM U.S. Large Cap Equity (SA+CF) Median			8.03	15.34	42.22	42.22	18.31	17.57	13.72	14.67	11.15	
Rank			16	71	75	75	66	50	64	61	82	
Westfield Large Cap Growth Equity (SA)	391,386,348	3.13	11.03	13.87	42.25	42.25	24.40	N/A	N/A	N/A	24.51	02/01/2017
Russell 1000 Grth Index			11.93	12.99	42.50	42.50	25.14	23.66	18.56	17.87	24.67	
Difference			-0.90	0.88	-0.25	-0.25	-0.74	N/A	N/A	N/A	-0.16	
IM U.S. Large Cap Growth Equity (SA+CF) Median			10.89	13.32	40.81	40.81	23.63	22.35	17.50	16.99	23.30	
Rank			47	41	38	38	41	N/A	N/A	N/A	38	



	Allocation						Perfor	mance (%)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
US Large Cap Enhanced Index Equity	1,458,336,450	11.65	8.59	16.67	41.08	41.08	16.65	16.50	12.89	14.36	6.64	03/01/2000
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	7.76	
Difference			0.05	1.72	-1.99	-1.99	-2.51	-1.49	-1.27	-0.54	-1.12	
IM U.S. Large Cap Enhanced Index Equity (SA+CF) Median			8.23	15.82	41.10	41.10	17.44	17.47	13.94	14.95	8.14	
Rank			24	39	52	52	60	60	67	71	100	
State Street Large Cap Enhanced Index (SA)	727,444,209	5.81	7.64	16.70	42.07	42.07	18.12	17.25	13.72	14.79	10.43	09/01/2004
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	10.92	
Difference			-0.90	1.75	-1.00	-1.00	-1.04	-0.74	-0.44	-0.11	-0.49	
IM U.S. Large Cap Enhanced Index Equity (SA+CF) Median			8.23	15.82	41.10	41.10	17.44	17.47	13.94	14.95	10.89	
Rank			68	38	36	36	46	53	59	54	80	
Mellon EB DV Large Cap Stock Index (SA)	730,892,241	5.84	9.54	16.65	40.10	40.10	15.17	15.74	12.04	13.92	9.77	06/01/2004
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	10.67	
Difference			1.00	1.70	-2.97	-2.97	-3.99	-2.25	-2.12	-0.98	-0.90	
IM U.S. Large Cap Enhanced Index Equity (SA+CF) Median			8.23	15.82	41.10	41.10	17.44	17.47	13.94	14.95	10.64	
Rank			5	39	77	77	75	76	75	79	91	
US Large Cap Passive Equity	2,535,997,195	20.27	7.99	15.23	43.05	43.05	19.19	18.02	14.24	14.94	11.65	01/01/2003
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	11.47	
Difference			-0.55	0.28	-0.02	-0.02	0.03	0.03	0.08	0.04	0.18	
BlackRock Russell 1000 Value (CF)	371,727,064	2.97	5.21	17.07	N/A	N/A	N/A	N/A	N/A	N/A	17.07	01/01/2021
Russell 1000 Val Index			5.21	17.05	43.68	43.68	12.42	11.87	9.41	11.61	17.05	
Difference			0.00	0.02	N/A	N/A	N/A	N/A	N/A	N/A	0.02	
IM U.S. Large Cap Value Equity (SA+CF) Median			5.86	18.42	45.78	45.78	13.48	13.58	10.44	12.48	18.42	
Rank			65	66	N/A	N/A	N/A	N/A	N/A	N/A	66	
Blackrock Russell 1000 Index (CF)	2,164,270,131	17.30	8.54	14.97	43.09	43.09	19.20	18.04	14.21	14.94	16.43	09/01/2010
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	16.39	
Difference			0.00	0.02	0.02	0.02	0.04	0.05	0.05	0.04	0.04	
IM U.S. Large Cap Index Equity (SA+CF) Median			8.52	15.25	42.57	42.57	18.71	17.80	14.10	14.83	16.26	
Rank			36	70	37	37	20	25	24	21	22	



	Allocation	1					Perfor	mance (%)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
US Active Small Cap Equity	780,635,619	6.24	3.54	17.09	69.38	69.38	18.14	19.92	13.46	14.61	13.25	08/01/2003
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	10.67	
Difference			-0.75	-0.45	7.35	7.35	4.62	3.45	2.07	2.27	2.58	
IM U.S. Small Cap Equity (SA+CF) Median			4.63	18.75	61.57	61.57	13.88	16.46	11.87	13.26	12.14	
Rank			75	60	28	28	25	26	33	31	32	
BHMS Small Cap Value Equity (SA)	244,381,079	1.95	-0.06	14.10	69.49	69.49	13.31	16.86	11.70	13.15	12.17	12/01/2004
Russell 2000 Val Index			4.56	26.69	73.28	73.28	10.27	13.62	9.26	10.85	8.22	
Difference			-4.62	-12.59	-3.79	-3.79	3.04	3.24	2.44	2.30	3.95	
IM U.S. Small Cap Value Equity (SA+CF) Median			4.12	23.83	66.55	66.55	10.85	13.75	9.72	11.79	10.15	
Rank			97	94	43	43	22	15	16	23	11	
UBS US Small Cap Growth Equity (SA)	261,143,919	2.09	4.00	9.97	64.24	64.24	25.32	25.68	17.18	17.30	13.73	06/01/2003
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	11.83	
Difference			0.08	0.99	12.88	12.88	9.38	6.92	4.07	3.78	1.90	
IM U.S. Small Cap Growth Equity (SA+CF) Median			5.14	12.04	54.91	54.91	21.05	22.71	16.07	15.98	14.09	
Rank			73	63	27	27	26	34	35	27	66	
DePrince Race & Zollo Small Cap Value (SA)	275,110,621	2.20	7.27	29.11	72.31	72.31	14.41	16.22	10.75	12.77	12.12	03/01/2011
Russell 2000 Val Index			4.56	26.69	73.28	73.28	10.27	13.62	9.26	10.85	10.34	
Difference			2.71	2.42	-0.97	-0.97	4.14	2.60	1.49	1.92	1.78	
IM U.S. Micro Cap Equity (SA+CF) Median			6.09	28.55	78.88	78.88	14.56	19.05	13.15	14.85	14.24	
Rank			39	45	64	64	53	70	72	72	87	
International Equity	3,564,989,160	28.49	5.58	9.20	36.92	36.92	10.57	11.56	6.21	6.36	6.51	05/01/1994
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	5.79	
Difference			0.10	0.04	1.20	1.20	1.19	0.48	0.88	0.91	0.72	
IM All ACWI Ex US (SA+CF) Median			5.43	9.42	38.44	38.44	11.03	12.33	6.90	7.45	7.84	
Rank			47	55	62	62	55	61	63	76	99	
International Core Active Equity	732,858,612	5.86	4.88	11.88	38.03	38.03	7.58	8.44	4.04	5.39	7.75	08/01/2003
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	7.89	
Difference			-0.60	2.72	2.31	2.31	-1.80	-2.64	-1.29	-0.06	-0.14	
IM All ACWI Ex US (SA+CF) Median			5.43	9.42	38.44	38.44	11.03	12.33	6.90	7.45	9.44	
Rank			60	19	54	54	80	93	93	93	88	
Mondrian ACWI ex US Equity (SA)	732,858,612	5.86	4.88	11.88	38.03	38.03	7.58	8.44	4.04	5.39	7.50	08/01/2001
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	6.61	
Difference			-0.60	2.72	2.31	2.31	-1.80	-2.64	-1.29	-0.06	0.89	
IM ACWI Ex US Core (SA+CF) Median			5.33	9.62	37.83	37.83	10.62	12.09	6.67	7.03	N/A	
Rank			68	19	49	49	85	97	100	100	N/A	

Performance shown is gross of fees. Performance is annualized for periods greater than one year. Manager inception dates shown represent the first full month following initial funding. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01. Grand Centre Real Estate holding is considered Fixed Income for policy purposes; benchmark shown is for illustrative purposes only.



	Allocation						Perfor	mance (%))			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
International Core Passive Equity	2,006,224,936	16.03	5.60	9.39	36.04	36.04	9.66	11.39	5.62	5.74	7.59	08/01/2003
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	7.89	
Difference			0.12	0.23	0.32	0.32	0.28	0.31	0.29	0.29	-0.30	
Blackrock ACWI Ex US Index (CF)	2,006,224,936	16.03	5.60	9.39	36.04	36.04	9.66	11.39	5.62	5.74	6.69	11/01/2009
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	6.39	
Difference			0.12	0.23	0.32	0.32	0.28	0.31	0.29	0.29	0.30	
International Growth Equity	825,905,612	6.60	6.14	7.07	37.88	37.88	14.91	14.71	9.17	8.12	8.17	05/01/2005
MSCI ACW Ex US Grth Index (USD) (Net)			6.60	6.52	33.68	33.68	13.23	13.37	8.06	7.28	7.51	
Difference			-0.46	0.55	4.20	4.20	1.68	1.34	1.11	0.84	0.66	
IM ACWI Ex US Growth (SA+CF) Median			6.74	7.45	36.91	36.91	13.16	14.76	9.28	9.29	9.08	
Rank			62	63	48	48	38	51	54	73	85	
Baille Gifford Intl Growth Equity (SA)	425,615,833	3.40	6.78	7.59	41.95	41.95	17.61	16.71	10.91	N/A	11.13	10/01/2013
MSCI ACW Ex US Grth Index (USD) (Net)			6.60	6.52	33.68	33.68	13.23	13.37	8.06	7.28	8.53	
Difference			0.18	1.07	8.27	8.27	4.38	3.34	2.85	N/A	2.60	
IM ACWI Ex US Growth (SA+CF) Median			6.74	7.45	36.91	36.91	13.16	14.76	9.28	9.29	9.80	
Rank			50	47	31	31	16	21	21	N/A	24	
Blackrock ACWI Ex US Growth (CF)	400,289,779	3.20	6.63	7.73	34.67	34.67	12.27	12.70	7.44	6.93	7.98	11/01/2009
MSCI ACW Ex US Grth Index (USD) (Net)			6.60	6.52	33.68	33.68	13.23	13.37	8.06	7.28	8.25	
Difference			0.03	1.21	0.99	0.99	-0.96	-0.67	-0.62	-0.35	-0.27	
IM ACWI Ex US Growth (SA+CF) Median			6.74	7.45	36.91	36.91	13.16	14.76	9.28	9.29	10.27	
Rank			54	44	68	68	71	77	83	94	99	



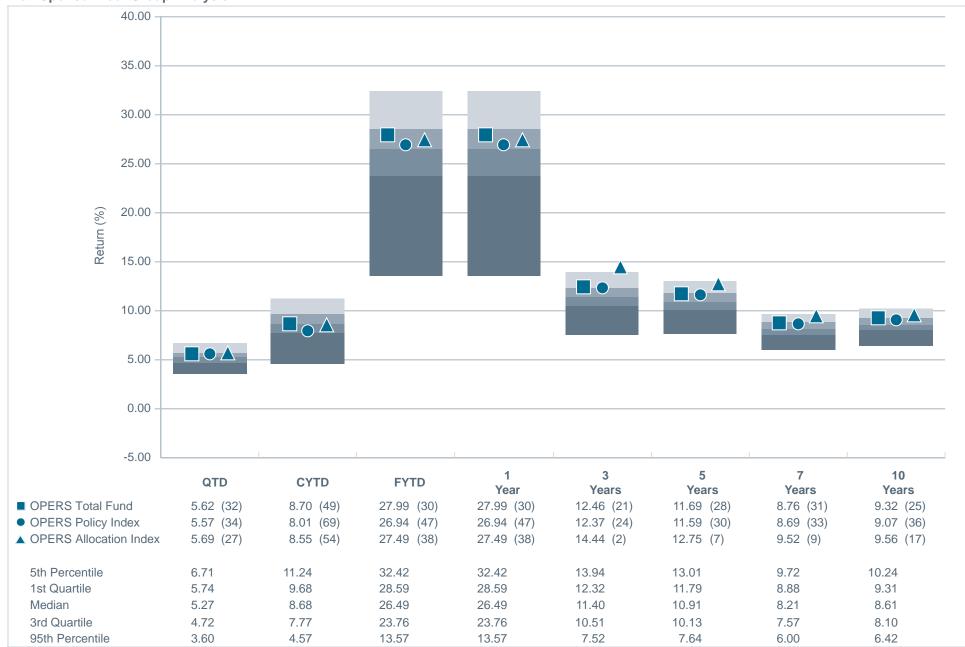
	Allocation						Perfor	mance (%))			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Fixed Income	3,739,140,378	29.88	2.77	-1.71	0.10	0.10	6.65	3.86	4.13	4.41	6.85	04/01/1989
OPERS Fixed Income Custom Index			2.58	-1.93	-0.75	-0.75	5.84	3.21	3.62	3.85	N/A	
Difference			0.19	0.22	0.85	0.85	0.81	0.65	0.51	0.56	N/A	
IM U.S. Broad Market Fixed Income (SA+CF) Median			2.16	-0.86	2.04	2.04	6.25	3.97	3.96	4.21	6.56	
Rank			10	94	84	84	33	55	36	39	15	
Active Fixed Income	1,494,438,627	11.94	3.42	-3.08	-2.05	-2.05	7.35	4.06	4.75	5.37	6.43	08/01/2003
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.25	
Difference			1.59	-1.47	-1.71	-1.71	2.01	1.03	1.47	1.98	2.18	
IM U.S. Broad Market Fixed Income (SA+CF) Median			2.16	-0.86	2.04	2.04	6.25	3.97	3.96	4.21	5.00	
Rank			3	100	100	100	13	48	11	10	6	
MetWest Core Plus Fixed Income (SA)	1,107,520,459	8.85	1.99	-0.95	1.51	1.51	6.52	4.07	3.96	4.28	5.60	09/01/2001
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.43	
Difference			0.16	0.66	1.85	1.85	1.18	1.04	0.68	0.89	1.17	
IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median			2.24	-0.43	3.38	3.38	6.71	4.43	4.21	4.57	5.42	
Rank			83	75	84	84	59	71	65	66	38	
Hoisington Long Duration Fixed Income (SA)	386,918,168	3.09	7.88	-8.88	-11.25	-11.25	8.97	3.56	6.78	8.18	8.35	10/01/1991
Bloomberg US Trsy Lng Trm Bond Index			6.46	-7.92	-10.58	-10.58	7.99	3.13	5.76	6.66	7.48	
Difference			1.42	-0.96	-0.67	-0.67	0.98	0.43	1.02	1.52	0.87	
IM U.S. Long Duration (SA+CF) Median			6.61	-3.65	1.04	1.04	10.88	6.35	6.99	7.91	N/A	
Rank			3	100	100	100	87	100	68	35	N/A	
Enhanced Fixed Income	1,818,615,193	14.53	2.06	-1.40	0.43	0.43	5.99	3.53	3.71	3.82	5.18	06/01/2000
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.95	
Difference			0.23	0.21	0.77	0.77	0.65	0.50	0.43	0.43	0.23	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			1.97	-1.23	1.05	1.05	6.07	3.67	3.80	3.96	5.41	
Rank			38	63	66	66	55	61	56	64	75	
Blackrock Enhanced Core (SA)	1,818,615,193	14.53	2.06	-1.40	0.43	0.43	5.99	3.53	3.71	3.82	5.18	06/01/2000
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.95	
Difference			0.23	0.21	0.77	0.77	0.65	0.50	0.43	0.43	0.23	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			1.97	-1.23	1.05	1.05	6.07	3.67	3.80	3.96	5.41	
Rank			38	63	66	66	55	61	56	64	75	



	Allocation				Perform	mance (%)						
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Passive Fixed Income	426,086,558	3.41	3.26	1.76	6.64	6.64	6.66	4.34	3.48	3.53	4.08	03/01/2010
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	3.64	
Difference			1.43	3.37	6.98	6.98	1.32	1.31	0.20	0.14	0.44	
Blackrock TIPS (CF)	426,086,558	3.41	3.26	1.76	6.64	6.64	6.66	4.34	3.48	3.53	4.08	03/01/2010
Bloomberg US Trsy US TIPS Index			3.25	1.73	6.51	6.51	6.53	4.17	3.34	3.40	4.03	
Difference			0.01	0.03	0.13	0.13	0.13	0.17	0.14	0.13	0.05	
IM U.S. TIPS (SA+CF) Median			3.24	1.77	6.60	6.60	6.54	4.22	3.35	3.43	4.07	
Rank			42	51	40	40	33	35	33	37	41	
Real Estate	9,285,000	0.07	-9.01	-7.22	-5.51	-5.51	-4.86	-2.46	-0.51	N/A	-0.64	12/01/2015
NCREIF ODCE Index (EWA) (Net)			4.17	6.33	7.97	7.97	5.19	6.09	7.86	8.86	6.82	
Difference			-13.18	-13.55	-13.48	-13.48	-10.05	-8.55	-8.37	N/A	-7.46	
Grand Centre	9,285,000	0.07	-9.01	-7.22	-5.51	-5.51	-4.86	-2.46	N/A	N/A	-0.64	12/01/2015
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	6.32	
Difference			-12.69	-12.86	-12.60	-12.60	-9.46	-8.08	N/A	N/A	-6.96	



Oklahoma State Pension Commission Oklahoma Public Employees Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis



Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



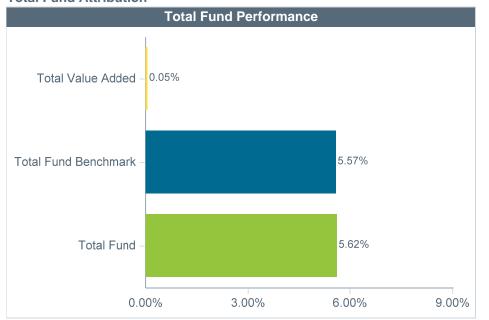
Oklahoma State Pension Commission Oklahoma Public Employees Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis

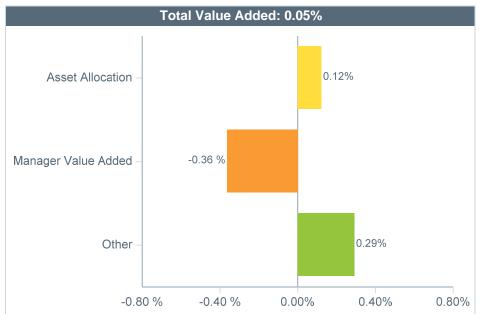


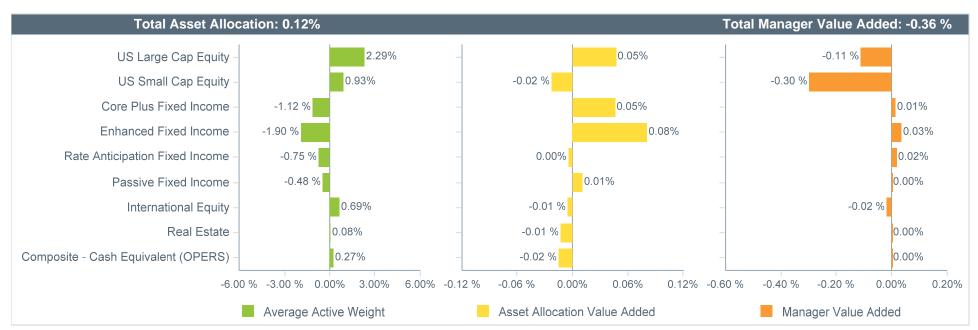
Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments.



Oklahoma State Pension Commission Oklahoma Public Employees Retirement System Total Fund Attribution







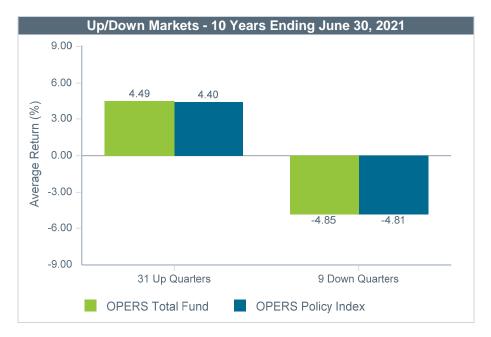
Performance shown is gross of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution calculation.

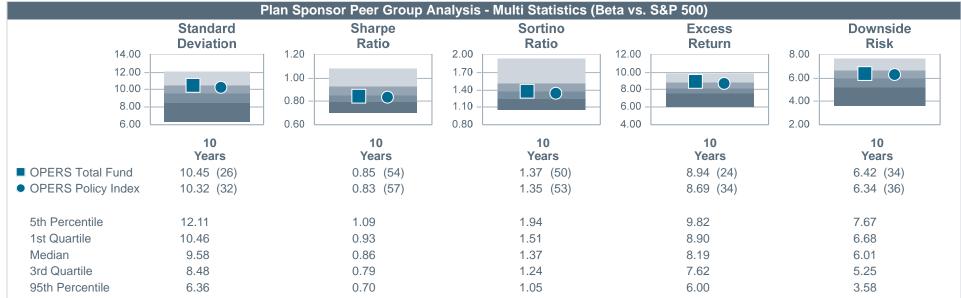


Oklahoma State Pension Commission Oklahoma Public Employees Retirement System

Total Fund Risk & Return, Up/Down Markets, and Multi Statistics

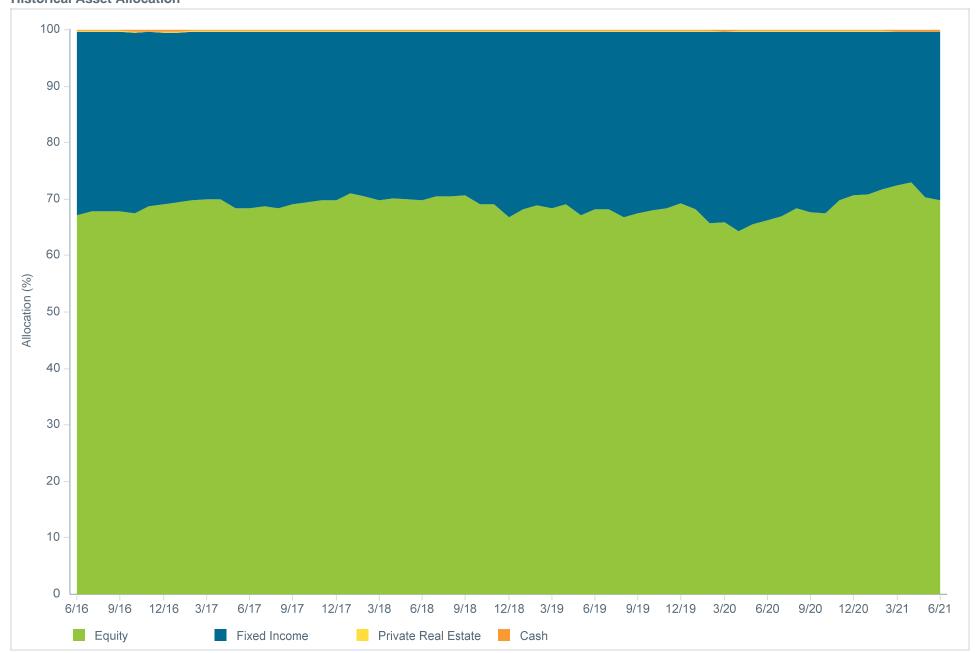














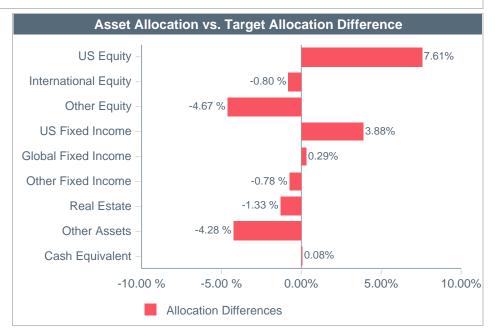
Oklahoma Firefighters Pension & Retirement System (OFPRS)



Oklahoma State Pension Commission Oklahoma Firefighters Pension & Retirement System Total Fund Summary

Performance (%)														
			Trailin	ng						Calenda	r Year			
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016	
OFPRS Total Fund (Gross)	5.69	9.61	31.79	31.79	13.89	13.55	10.57	10.62	18.44	20.15	-2.46	18.67	7.42	
OFPRS Policy Index	6.54	10.53	29.17	29.17	13.38	12.53	9.97	10.46	13.85	21.76	-3.80	16.41	8.76	
Difference	-0.85	-0.92	2.62	2.62	0.51	1.02	0.60	0.16	4.59	-1.61	1.34	2.26	-1.34	
OFPRS Actual Allocation Index	6.06	9.60	28.45	28.45	13.35	12.86	9.73	10.16	17.69	20.30	-3.93	15.64	9.45	
Difference	-0.37	0.01	3.34	3.34	0.54	0.69	0.84	0.46	0.75	-0.15	1.47	3.03	-2.03	
All Public Plans-Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	12.57	18.59	-4.15	15.28	7.65	
Rank	27	27	7	7	6	3	2	3	6	28	18	5	58	

Asset Allocation vs. Target Allocation												
	Asset Allocation (\$)	Asset Allocation (%)	Target Allocation (%)									
OFPRS (Firefighters)	3,720,503,060	100.00	100.00									
US Equity	1,845,713,348	49.61	42.00									
International Equity	528,184,764	14.20	15.00									
Other Equity	12,250,428	0.33	5.00									
US Fixed Income	441,877,666	11.88	8.00									
Global Fixed Income	271,239,419	7.29	7.00									
Other Fixed Income	156,976,771	4.22	5.00									
Real Estate	322,728,732	8.67	10.00									
Other Assets	138,519,121	3.72	8.00									
Cash Equivalent	3,012,810	0.08	0.00									





	Allocation	on					Perfor	mance (%))			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
OFPRS Total Fund	3,720,503,060	100.00	5.69	9.61	31.79	31.79	13.89	13.55	10.57	10.62	8.87	07/01/1989
OFPRS Policy Index			6.54	10.53	29.17	29.17	13.38	12.53	9.97	10.46	N/A	
Difference			-0.85	-0.92	2.62	2.62	0.51	1.02	0.60	0.16	N/A	
OFPRS Actual Allocation Index			6.06	9.60	28.45	28.45	13.35	12.86	9.73	10.16	8.69	
Difference			-0.37	0.01	3.34	3.34	0.54	0.69	0.84	0.46	0.18	
Actuarial Discount Rate (7.5%)			1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	
Difference			3.87	5.93	24.29	24.29	6.39	6.05	3.07	3.12	1.37	
All Public Plans-Total Fund Median			5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	8.50	
Rank			27	27	7	7	6	3	2	3	22	
Total Equity	2,373,898,112	63.81	6.88	12.77	45.70	45.70	19.01	18.60	13.67	13.47	10.10	07/01/1989
Wilshire 5000 Index			8.42	15.45	44.24	44.24	18.89	17.96	14.10	14.76	10.82	
Difference			-1.54	-2.68	1.46	1.46	0.12	0.64	-0.43	-1.29	-0.72	
US Equity	1,845,713,348	49.61	7.01	14.59	47.46	47.46	19.79	19.24	14.58	14.87	10.55	07/01/1989
Wilshire 5000 Index			8.42	15.45	44.24	44.24	18.89	17.96	14.10	14.76	10.82	
Difference			-1.41	-0.86	3.22	3.22	0.90	1.28	0.48	0.11	-0.27	
IM U.S. Equity (SA+CF) Median			6.51	16.33	47.65	47.65	16.16	16.71	12.64	13.81	11.77	
Rank			45	66	51	51	28	30	30	35	92	
US Large Cap Equity	1,351,600,991	36.33	8.15	15.66	43.67	43.67	18.75	17.94	13.96	14.77	10.76	07/01/1989
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	10.96	
Difference			-0.39	0.71	0.60	0.60	-0.41	-0.05	-0.20	-0.13	-0.20	
IM U.S. Large Cap Equity (SA+CF) Median			8.03	15.34	42.22	42.22	18.31	17.57	13.72	14.67	11.33	
Rank			48	46	39	39	44	42	47	49	85	
US Large Cap Core Equity	868,068,938	23.33	7.84	16.05	44.60	44.60	17.94	16.87	13.65	14.55	10.45	11/01/1996
S&P 500 Index (Cap Wtd)			8.55	15.25	40.79	40.79	18.67	17.65	14.10	14.84	9.64	
Difference			-0.71	0.80	3.81	3.81	-0.73	-0.78	-0.45	-0.29	0.81	
IM U.S. Large Cap Core Equity (SA+CF) Median			7.95	15.47	40.92	40.92	17.81	17.49	13.72	14.65	10.33	
Rank			53	41	25	25	48	59	53	53	46	
SSgA Equity Index (CF)	278,192,087	7.48	8.53	15.24	40.83	40.83	18.68	17.67	14.13	14.87	9.66	11/01/1996
S&P 500 Index (Cap Wtd)			8.55	15.25	40.79	40.79	18.67	17.65	14.10	14.84	9.64	
Difference			-0.02	-0.01	0.04	0.04	0.01	0.02	0.03	0.03	0.02	
IM U.S. Large Cap Index Equity (SA+CF) Median			8.52	15.25	42.57	42.57	18.71	17.80	14.10	14.83	9.70	
Rank			47	51	70	70	54	57	39	35	73	





	Allocation	n					Perfor	mance (%)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
SSgA Eq Wtd S&P Index (CF)	275,252,027	7.40	6.93	19.02	50.62	50.62	16.16	15.54	12.25	13.72	10.79	12/01/2001
S&P 500 Index (Eq Wtd)			6.90	19.18	50.71	50.71	16.41	15.68	12.34	13.76	10.81	
Difference			0.03	-0.16	-0.09	-0.09	-0.25	-0.14	-0.09	-0.04	-0.02	
IM U.S. Large Cap Index Equity (SA+CF) Median			8.52	15.25	42.57	42.57	18.71	17.80	14.10	14.83	9.35	
Rank			79	4	5	5	82	80	80	81	2	
Liquidity Pool - SSgA Equity Index (CF)	64,122,666	1.72	8.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.53	04/01/2021
S&P 500 Index (Cap Wtd)			8.55	15.25	40.79	40.79	18.67	17.65	14.10	14.84	8.55	
Difference			-0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.02	
IM U.S. Large Cap Core Equity (SA+CF) Median			7.95	15.47	40.92	40.92	17.81	17.49	13.72	14.65	7.95	
Rank			31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31	
Liquidity Pool - SSgA Eq Wtd S&P Index (CF)	15,793,313	0.42	6.93	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.93	04/01/2021
S&P 500 Index (Eq Wtd)			6.90	19.18	50.71	50.71	16.41	15.68	12.34	13.76	6.90	
Difference			0.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.03	
IM U.S. Large Cap Core Equity (SA+CF) Median			7.95	15.47	40.92	40.92	17.81	17.49	13.72	14.65	7.95	
Rank			76	N/A	N/A	N/A	N/A	N/A	N/A	N/A	76	
Intech Enhanced Investment Tech (SA)	234,708,847	6.31	7.96	13.78	41.99	41.99	18.66	17.23	14.25	14.86	10.18	02/01/2002
S&P 500 Index (Cap Wtd)			8.55	15.25	40.79	40.79	18.67	17.65	14.10	14.84	9.28	
Difference			-0.59	-1.47	1.20	1.20	-0.01	-0.42	0.15	0.02	0.90	
IM U.S. Large Cap Index Equity (SA+CF) Median			8.52	15.25	42.57	42.57	18.71	17.80	14.10	14.83	9.41	
Rank			75	88	61	61	63	76	23	38	16	
US Large Cap Value Equity	251,559,791	6.76	6.44	16.78	42.95	42.95	13.88	14.06	9.74	11.60	9.76	06/01/1990
Russell 1000 Val Index			5.21	17.05	43.68	43.68	12.42	11.87	9.41	11.61	10.07	
Difference			1.23	-0.27	-0.73	-0.73	1.46	2.19	0.33	-0.01	-0.31	
IM U.S. Large Cap Value Equity (SA+CF) Median			5.86	18.42	45.78	45.78	13.48	13.58	10.44	12.48	11.23	
Rank			33	68	63	63	46	45	62	71	96	
Beutel Goodman American Equity (SA)	134,158,614	3.61	6.42	16.45	41.67	41.67	18.64	16.39	N/A	N/A	16.49	05/01/2016
Russell 1000 Val Index			5.21	17.05	43.68	43.68	12.42	11.87	9.41	11.61	11.99	
Difference			1.21	-0.60	-2.01	-2.01	6.22	4.52	N/A	N/A	4.50	
IM U.S. Large Cap Value Equity (SA+CF) Median			5.86	18.42	45.78	45.78	13.48	13.58	10.44	12.48	13.40	
Rank			34	70	69	69	14	23	N/A	N/A	18	
Aristotle US Equity (SA)	117,401,177	3.16	6.46	17.16	N/A	N/A	N/A	N/A	N/A	N/A	32.82	09/01/2020
Russell 1000 Val Index			5.21	17.05	43.68	43.68	12.42	11.87	9.41	11.61	32.73	
Difference			1.25	0.11	N/A	N/A	N/A	N/A	N/A	N/A	0.09	
IM U.S. Large Cap Value Equity (SA+CF) Median			5.86	18.42	45.78	45.78	13.48	13.58	10.44	12.48	33.69	
Rank			33	66	N/A	N/A	N/A	N/A	N/A	N/A	55	



	Allocation						Perfor	mance (%)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
US Large Cap Growth Equity	231,972,262	6.23	10.98	12.81	40.83	40.83	25.46	24.67	18.96	18.47	10.99	07/01/1989
Russell 1000 Grth Index			11.93	12.99	42.50	42.50	25.14	23.66	18.56	17.87	11.39	
Difference			-0.95	-0.18	-1.67	-1.67	0.32	1.01	0.40	0.60	-0.40	
IM U.S. Large Cap Growth Equity (SA+CF) Median			10.89	13.32	40.81	40.81	23.63	22.35	17.50	16.99	12.53	
Rank			48	63	50	50	29	23	24	20	100	
Fred Alger Capital Appreciation (SA)	231,972,262	6.23	10.98	12.81	40.83	40.83	25.46	24.64	18.94	18.45	19.37	08/01/2010
Russell 1000 Grth Index			11.93	12.99	42.50	42.50	25.14	23.66	18.56	17.87	18.74	
Difference			-0.95	-0.18	-1.67	-1.67	0.32	0.98	0.38	0.58	0.63	
IM U.S. Large Cap Growth Equity (SA+CF) Median			10.89	13.32	40.81	40.81	23.63	22.35	17.50	16.99	18.09	
Rank			48	63	50	50	29	24	24	21	20	
US Small Cap Equity	494,112,356	13.28	3.83	11.39	55.85	55.85	22.00	22.05	15.90	15.59	11.16	07/01/1992
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	10.52	
Difference			-0.46	-6.15	-6.18	-6.18	8.48	5.58	4.51	3.25	0.64	
IM U.S. Small Cap Equity (SA+CF) Median			4.63	18.75	61.57	61.57	13.88	16.46	11.87	13.26	13.31	
Rank			71	83	67	67	15	18	19	21	94	
Liqiduity Pool - SSgA Small Cap Completeness Index (CF)	33,755,926	0.91	6.88	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.88	04/01/2021
Russell Sm Cap Compl Index			6.93	14.71	61.69	61.69	18.64	18.91	13.26	14.02	6.93	
Difference			-0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.05	
IM U.S. Small Cap Equity (SA+CF) Median			4.63	18.75	61.57	61.57	13.88	16.46	11.87	13.26	4.63	
Rank			19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19	
US Small Cap Value Equity	237,657,705	6.39	3.52	18.72	55.46	55.46	15.73	16.65	12.57	13.42	11.39	09/01/1992
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	10.56	
Difference			-0.77	1.18	-6.57	-6.57	2.21	0.18	1.18	1.08	0.83	
IM U.S. Small Cap Value Equity (SA+CF) Median			4.12	23.83	66.55	66.55	10.85	13.75	9.72	11.79	13.30	
Rank			64	77	79	79	11	16	12	20	90	
Earnest Partner Small Cap Value Equity (SA)	122,980,344	3.31	3.10	19.67	60.83	60.83	18.14	18.17	13.34	14.28	10.70	09/01/2005
Russell 2000 Val Index			4.56	26.69	73.28	73.28	10.27	13.62	9.26	10.85	8.18	
Difference			-1.46	-7.02	-12.45	-12.45	7.87	4.55	4.08	3.43	2.52	
IM U.S. Small Cap Value Equity (SA+CF) Median			4.12	23.83	66.55	66.55	10.85	13.75	9.72	11.79	9.93	
Rank			73	72	65	65	4	9	6	6	31	
River Road Small Cap Value Equity (SA)	114,677,361	3.08	3.02	16.73	48.20	48.20	12.72	14.76	11.55	12.37	8.43	05/01/2007
Russell 2000 Val Index			4.56	26.69	73.28	73.28	10.27	13.62	9.26	10.85	7.35	
Difference			-1.54	-9.96	-25.08	-25.08	2.45	1.14	2.29	1.52	1.08	
IM U.S. Small Cap Value Equity (SA+CF) Median			4.12	23.83	66.55	66.55	10.85	13.75	9.72	11.79	9.25	
Rank			74	85	90	90	29	35	17	35	74	



	Allocatio				Perfor	mance (%)					
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
US Small Cap Growth Equity	222,698,726	5.99	4.65	5.79	55.55	55.55	27.73	27.61	19.43	17.89	10.08	07/01/1992
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	9.43	
Difference			0.73	-3.19	4.19	4.19	11.79	8.85	6.32	4.37	0.65	
IM U.S. Small Cap Growth Equity (SA+CF) Median			5.14	12.04	54.91	54.91	21.05	22.71	16.07	15.98	13.97	
Rank			63	88	47	47	16	22	17	19	100	
Lord Abbett Small Cap Growth Equity (SA)	112,072,240	3.01	3.13	5.98	57.89	57.89	28.41	29.75	17.97	17.65	16.92	05/01/2011
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	12.83	
Difference			-0.79	-3.00	6.53	6.53	12.47	10.99	4.86	4.13	4.09	
IM U.S. Small Cap Growth Equity (SA+CF) Median			5.14	12.04	54.91	54.91	21.05	22.71	16.07	15.98	15.40	
Rank			84	87	38	38	15	14	30	21	23	
Delaware SMID Focus Growth Equity (SA)	110,626,485	2.97	6.25	5.61	53.31	53.31	27.04	25.77	20.71	17.95	17.66	05/01/2011
Russell 2500 Grth Index			6.04	8.67	49.63	49.63	20.15	20.68	14.81	14.83	14.23	
Difference			0.21	-3.06	3.68	3.68	6.89	5.09	5.90	3.12	3.43	
IM U.S. SMID Cap Growth Equity (SA+CF) Median			6.56	10.45	47.78	47.78	21.70	21.51	15.74	15.52	14.94	
Rank			57	82	31	31	22	13	4	8	8	
Other Equity												
Tortoise Direct Opportunities (CF)	12,250,428	0.33	18.81	33.36	72.81	72.81	-3.88	N/A	N/A	N/A	-1.04	10/01/2016
Alerian MLP Index			21.23	47.84	63.98	63.98	-0.33	-1.05	-5.74	1.07	-1.33	
Difference			-2.42	-14.48	8.83	8.83	-3.55	N/A	N/A	N/A	0.29	
International Equity	528,184,764	14.20	6.45	7.85	41.02	41.02	16.44	16.34	10.69	8.36	N/A	07/01/1989
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	N/A	
Difference			0.97	-1.31	5.30	5.30	7.06	5.26	5.36	2.91	N/A	
IM International Equity (SA+CF) Median			5.65	9.69	40.33	40.33	10.73	12.38	7.03	7.29	9.06	
Rank			39	69	47	47	13	16	15	35	N/A	
International Developed Equity	357,930,638	9.62	7.69	8.66	41.95	41.95	19.36	18.37	12.75	10.26	7.53	04/01/1994
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	5.90	
Difference			2.21	-0.50	6.23	6.23	9.98	7.29	7.42	4.81	1.63	
IM International Equity Developed Markets (SA+CF) Median			5.64	9.80	37.74	37.74	9.73	12.11	7.11	7.85	8.24	
Rank			19	65	33	33	5	6	5	14	66	
Liquidity Pool - SSgA MSCI ACWI ex US (CF)	33,049,256	0.89	5.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.57	04/01/2021
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	5.48	
Difference			0.09	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.09	
IM All ACWI Ex US (SA+CF) Median			5.43	9.42	38.44	38.44	11.03	12.33	6.90	7.45	5.43	
Rank			48	N/A	N/A	N/A	N/A	N/A	N/A	N/A	48	



	Allocation	1					Perfor	mance (%)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Chautauqua Intl Growth Equity (CF)	173,007,245	4.65	5.05	6.52	42.21	42.21	15.49	16.28	10.59	N/A	12.27	09/01/2012
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	7.67	
Difference			-0.43	-2.64	6.49	6.49	6.11	5.20	5.26	N/A	4.60	
IM All ACWI Ex US (SA+CF) Median			5.43	9.42	38.44	38.44	11.03	12.33	6.90	7.45	9.63	
Rank			57	83	28	28	17	15	13	N/A	11	
WCM Berkeley Street Intl Equity (SA)	184,890,807	4.97	10.95	11.72	43.43	43.43	23.31	20.48	15.24	N/A	16.17	09/01/2012
MSCI EAFE Index (USD) (Net)			5.17	8.83	32.35	32.35	8.27	10.28	4.96	5.89	8.04	
Difference			5.78	2.89	11.08	11.08	15.04	10.20	10.28	N/A	8.13	
IM EAFE Core (SA+CF) Median			5.63	9.75	34.22	34.22	8.83	10.84	6.02	7.26	9.23	
Rank			1	14	7	7	1	1	1	N/A	1	
Emerging Markets Equity	137,204,870	3.69	3.02	6.33	39.44	39.44	8.49	10.62	5.08	N/A	5.52	09/01/2012
MSCI Emg Mkts Index (USD) (Net)			5.05	7.45	40.90	40.90	11.27	13.03	6.35	4.29	6.75	
Difference			-2.03	-1.12	-1.46	-1.46	-2.78	-2.41	-1.27	N/A	-1.23	
IM Emerging Markets Equity (SA+CF) Median			5.49	9.36	45.35	45.35	12.07	13.49	7.12	5.83	8.17	
Rank			85	79	78	78	85	80	83	N/A	92	
RBC GAM Emerging Markets Equity (CF)	65,905,800	1.77	0.42	3.51	34.02	34.02	N/A	N/A	N/A	N/A	12.11	02/01/2019
MSCI Emg Mkts Index (USD) (Net)			5.05	7.45	40.90	40.90	11.27	13.03	6.35	4.29	14.40	
Difference			-4.63	-3.94	-6.88	-6.88	N/A	N/A	N/A	N/A	-2.29	
IM Emerging Markets Equity (SA+CF) Median			5.49	9.36	45.35	45.35	12.07	13.49	7.12	5.83	16.78	
Rank			97	92	91	91	N/A	N/A	N/A	N/A	80	
Wellington Emerging Markets (CF)	71,299,070	1.92	5.55	9.08	44.86	44.86	N/A	N/A	N/A	N/A	15.83	02/01/2019
MSCI Emg Mkts Index (USD) (Net)			5.05	7.45	40.90	40.90	11.27	13.03	6.35	4.29	14.40	
Difference			0.50	1.63	3.96	3.96	N/A	N/A	N/A	N/A	1.43	
IM Emerging Markets Equity (SA+CF) Median			5.49	9.36	45.35	45.35	12.07	13.49	7.12	5.83	16.78	
Rank			50	53	54	54	N/A	N/A	N/A	N/A	55	



	Allocatio	n					Perfor	mance (%))			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Fixed Income	713,117,085	19.17	2.16	-1.30	5.02	5.02	4.53	3.18	3.09	3.74	5.89	07/01/1989
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	5.87	
Difference			0.33	0.31	5.36	5.36	-0.81	0.15	-0.19	0.35	0.02	
IM Global Fixed Income (SA+CF) Median			2.06	0.00	7.97	7.97	5.78	4.99	3.84	3.94	N/A	
Rank			50	72	66	66	82	80	62	56	N/A	
Garcia Hamilton Core Fixed Income (SA)	200,652,859	5.39	1.24	-2.07	-0.52	-0.52	4.65	3.12	3.64	N/A	3.63	08/01/2014
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	3.35	
Difference			-0.59	-0.46	-0.18	-0.18	-0.69	0.09	0.36	N/A	0.28	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			1.97	-1.23	1.05	1.05	6.07	3.67	3.80	3.96	3.88	
Rank			98	100	93	93	100	82	62	N/A	71	
Orleans Core Fixed Income (SA)	156,976,915	4.22	2.08	-1.27	0.80	0.80	5.70	3.43	3.42	N/A	3.54	08/01/2014
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	3.35	
Difference			0.25	0.34	1.14	1.14	0.36	0.40	0.14	N/A	0.19	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			1.97	-1.23	1.05	1.05	6.07	3.67	3.80	3.96	3.88	
Rank			37	52	60	60	71	68	80	N/A	77	
Liquidity Pool - SSgA Aggregate Bond (CF)	74,866,450	2.01	1.83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.83	04/01/2021
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	1.83	
Difference			0.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			1.97	-1.23	1.05	1.05	6.07	3.67	3.80	3.96	1.97	
Rank			83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	83	
Garrison Middle Market Funding (CF)	1,418,009	0.04	3.32	26.24	44.38	44.38	5.49	4.44	4.65	N/A	4.89	08/01/2013
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	3.43	
Difference			1.49	27.85	44.72	44.72	0.15	1.41	1.37	N/A	1.46	
IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median			2.24	-0.43	3.38	3.38	6.71	4.43	4.21	4.57	4.45	
Rank			6	1	1	1	90	50	22	N/A	26	
Medley Opportunity II (CF)	7,963,433	0.21	12.86	12.86	-1.69	-1.69	-11.12	-6.49	-3.09	N/A	-2.86	08/01/2013
CS Lvg'd Loan Index			1.44	3.48	11.67	11.67	4.36	5.04	4.03	4.52	4.19	
Difference			11.42	9.38	-13.36	-13.36	-15.48	-11.53	-7.12	N/A	-7.05	
Brandywine Global Fixed Income (CF)	271,239,419	7.29	2.71	-1.27	13.13	13.13	5.93	4.40	3.22	4.63	5.44	10/01/2009
FTSE Wrld Gov't Bond Index			0.98	-4.75	0.76	0.76	3.59	1.66	1.36	1.42	1.82	
Difference			1.73	3.48	12.37	12.37	2.34	2.74	1.86	3.21	3.62	
IM Global Fixed Income (SA+CF) Median			2.06	0.00	7.97	7.97	5.78	4.99	3.84	3.94	4.31	
Rank			31	71	31	31	47	59	60	36	33	



	Allocation	า					Perfori	mance (%)				
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Other Fixed Income												
DIMCO Corporate Opp II (CE)	14,635,101	0.39	1.31	8.68	24.99	24.99	7.53	N/A	N/A	N/A	9.54	01/01/2017
PIMCO Corporate Opp II (CF) Bloomberg US Corp Hi Yld Index	14,033,101	0.39	2.74	3.62	15.37	15.37	7.33	7.48	5.47	6.66	6.64	01/01/2017
Difference			-1.43	5.06	9.62	9.62	0.08	7.46 N/A	0.47 N/A	N/A	2.90	
Dillerence			-1.43	5.00	9.02	9.02	0.00	IN/A	IN/A	IN/A	2.90	
PIMCO Bravo III (CF)	52,655,987	1.42	4.16	8.40	19.74	19.74	7.71	N/A	N/A	N/A	9.08	12/01/2017
Bloomberg US Corp Hi Yld Index			2.74	3.62	15.37	15.37	7.45	7.48	5.47	6.66	6.33	
Difference			1.42	4.78	4.37	4.37	0.26	N/A	N/A	N/A	2.75	
PIMCO Private Income (CF)	89,685,683	2.41	5.03	9.24	23.21	23.21	N/A	N/A	N/A	N/A	9.38	05/01/2019
Bloomberg US Corp Hi Yld Index	,,		2.74	3.62	15.37	15.37	7.45	7.48	5.47	6.66	7.36	
Difference			2.29	5.62	7.84	7.84	N/A	N/A	N/A	N/A	2.02	
Hedge Fund	803.389	0.02	-7.13	2.68	8.65	8.65	-0.90	2.27	1.08	2.14	1.20	06/01/2015
HFRI FOF: Cnsvt Index	,		1.99	5.66	14.81	14.81	5.26	5.02	3.46	3.46	3.43	
Difference			-9.12	-2.98	-6.16	-6.16	-6.16	-2.75	-2.38	-1.32	-2.23	
Glouston Capital Partners Permal (CF)	803,389	0.02	-7.13	2.68	8.65	8.65	-1.16	2.21	N/A	N/A	0.86	06/01/2015
HFRI FOF: Cnsvt Index	000,000	0.02	1.99	5.66	14.81	14.81	5.26	5.02	3.46	3.46	3.43	00/01/2010
Difference			-9.12	-2.98	-6.16	-6.16	-6.42	-2.81	N/A	N/A	-2.57	
Real Estate	322,728,732	8.67	1.55	3.32	2.79	2.79	4.17	5.99	8.04	8.51	6.51	05/01/2005
NCREIF ODCE Index (Appreciation) (AWA) (Net)	322,120,132	0.07	2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	2.15	03/01/2003
Difference			-1.39	-0.77	-1.22	-1.22	2.73	3.66	4.11	3.71	4.36	
Billerence			1.00	-0.11	-1.22	-1.22	2.10	3.00	7.11	0.71	4.50	
JP Morgan Strategic Property (CF)	100,814,000	2.71	2.92	4.69	6.68	6.68	4.74	6.00	7.75	9.43	7.59	05/01/2005
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	2.15	
Difference			-0.02	0.60	2.67	2.67	3.30	3.67	3.82	4.63	5.44	
Portfolio Advisors Real Estate III LP	1,976,409	0.05	-3.92	-6.82	-20.83	-20.83	-11.00	-4.31	1.54	2.83	-2.42	08/01/2008
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	0.41	
Difference			-6.86	-10.91	-24.84	-24.84	-12.44	-6.64	-2.39	-1.97	-2.83	
Portfolio Advisors Real Estate IV LP	1,275,141	0.03	0.87	4.26	-3.88	-3.88	1.03	5.29	7.86	6.43	6.49	08/01/2011
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	4.84	
Difference			-2.07	0.17	-7.89	-7.89	-0.41	2.96	3.93	1.63	1.65	
Angelo Gordon Net Lease III LP	23,826,874	0.64	1.63	4.28	7.46	7.46	6.97	7.81	6.43	N/A	4.92	04/01/2014
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	4.03	
Difference			-1.31	0.19	3.45	3.45	5.53	5.48	2.50	N/A	0.89	



	Allocation	Allocation					Perfor	mance (%))			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Mesirow Real Estate (CF)	21,525,377	0.58	0.74	7.59	11.94	11.94	11.67	11.02	9.10	N/A	8.88	05/01/2014
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	4.08	
Difference			-2.20	3.50	7.93	7.93	10.23	8.69	5.17	N/A	4.80	
Mesirow Real Estate Value IV LP (OFPRS)	2,892,868	0.08	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	06/01/2021
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	2.94	
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Dune Real Estate III LP	19,378,254	0.52	3.15	1.66	-16.23	-16.23	-2.98	3.38	5.51	N/A	5.45	06/01/2014
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	4.13	
Difference			0.21	-2.43	-20.24	-20.24	-4.42	1.05	1.58	N/A	1.32	
Portfolio Advisors Real Estate LP	4,459,801	0.12	-3.92	-4.71	-18.34	-18.34	-6.96	-2.71	2.42	N/A	2.42	07/01/2014
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	3.93	
Difference			-6.86	-8.80	-22.35	-22.35	-8.40	-5.04	-1.51	N/A	-1.51	
Landmark Real Estate VII LP	6,914,607	0.19	-1.59	-1.04	-5.59	-5.59	-2.50	1.28	N/A	N/A	10.33	10/01/2014
NCREIF ODCE Index (Appreciation) (AWA) (Net)	, ,		2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	3.77	
Difference			-4.53	-5.13	-9.60	-9.60	-3.94	-1.05	N/A	N/A	6.56	
JP Morgan Special Situation Property (CF)	61,248,567	1.65	4.65	6.56	9.78	9.78	7.37	8.37	N/A	N/A	10.94	12/01/2014
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	3.87	
Difference			1.71	2.47	5.77	5.77	5.93	6.04	N/A	N/A	7.07	
Hall Capital III LP	9,174,496	0.25	12.29	12.29	12.12	12.12	8.34	9.07	N/A	N/A	3.29	12/01/2014
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	3.87	
Difference			9.35	8.20	8.11	8.11	6.90	6.74	N/A	N/A	-0.58	
Portfolio Advisors Real Estate VI LP	17,224,406	0.46	3.59	6.78	3.01	3.01	6.89	N/A	N/A	N/A	8.44	02/01/2017
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	2.18	
Difference			0.65	2.69	-1.00	-1.00	5.45	N/A	N/A	N/A	6.26	
Dune Real Estate IV LP	11,061,565	0.30	-23.10	-24.34	-32.52	-32.52	N/A	N/A	N/A	N/A	-24.23	09/01/2019
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	1.16	
Difference			-26.04	-28.43	-36.53	-36.53	N/A	N/A	N/A	N/A	-25.39	
Hall Capital Real Estate LP	6,067,977	0.16	15.81	15.81	19.71	19.71	N/A	N/A	N/A	N/A	9.42	10/01/2018
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	1.18	
Difference			12.87	11.72	15.70	15.70	N/A	N/A	N/A	N/A	8.24	





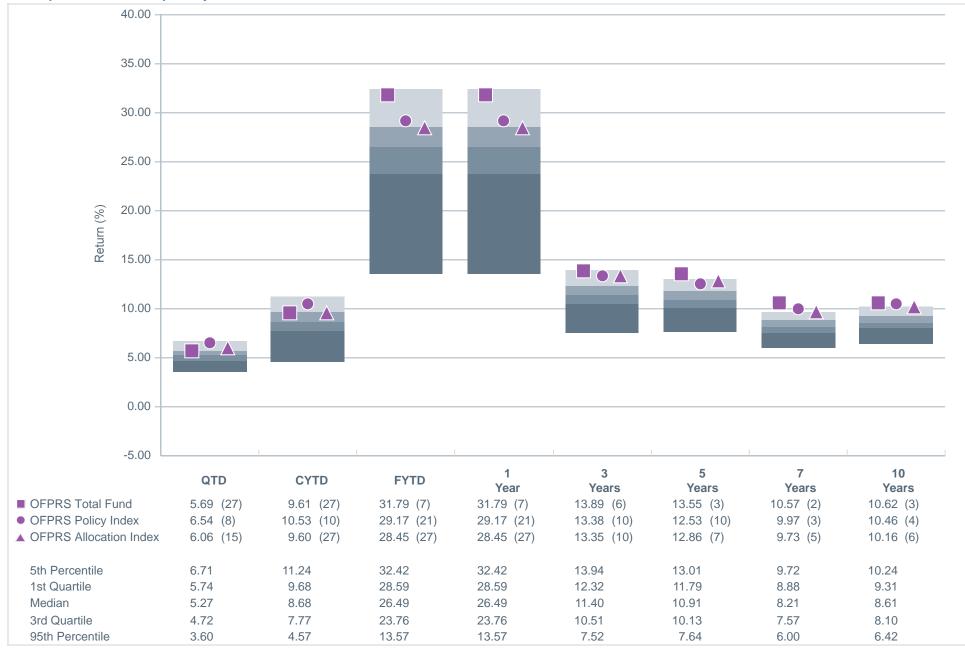
	Allocation	1					Perforr	nance (%)				
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Terracap Partners V LP (OFPRS)	34,888,388	0.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	05/01/2021
NCREIF ODCE Index (Appreciation) (AWA) (Net)			2.94	4.09	4.01	4.01	1.44	2.33	3.93	4.80	2.94	
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	



	Allocation	Allocation					Perfori	mance (%))			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Private Equity	137,715,733	3.70	15.87	29.23	41.83	41.83	16.93	16.75	15.45	N/A	17.19	04/01/2014
Pomona Captial VIII LP	5,297,106	0.14	41.89	41.89	103.14	103.14	23.54	20.78	17.68	N/A	20.44	04/01/2014
Capital Dynamics Global Secondaries IV	30,792,136	0.83	7.03	21.90	32.78	32.78	13.25	14.67	N/A	N/A	12.54	01/01/2015
Ardian AESF VI LP	29,332,094	0.79	9.28	25.81	24.17	24.17	12.37	N/A	N/A	N/A	12.95	04/01/2017
Pomona Capital IX LP	30,795,162	0.83	38.42	38.42	68.15	68.15	24.35	N/A	N/A	N/A	43.94	03/01/2018
Argonaut Private Equity IV LP	12,392,786	0.33	12.70	12.70	-1.34	-1.34	N/A	N/A	N/A	N/A	3.11	09/01/2018
Ardian ASF VIII LP	23,293,925	0.63	13.26	37.66	64.86	64.86	N/A	N/A	N/A	N/A	53.49	05/01/2020
Ardian Real Estate (CF)	5,812,524	0.16	9.84	33.22	44.86	44.86	14.43	13.91	14.50	N/A	14.19	05/01/2014



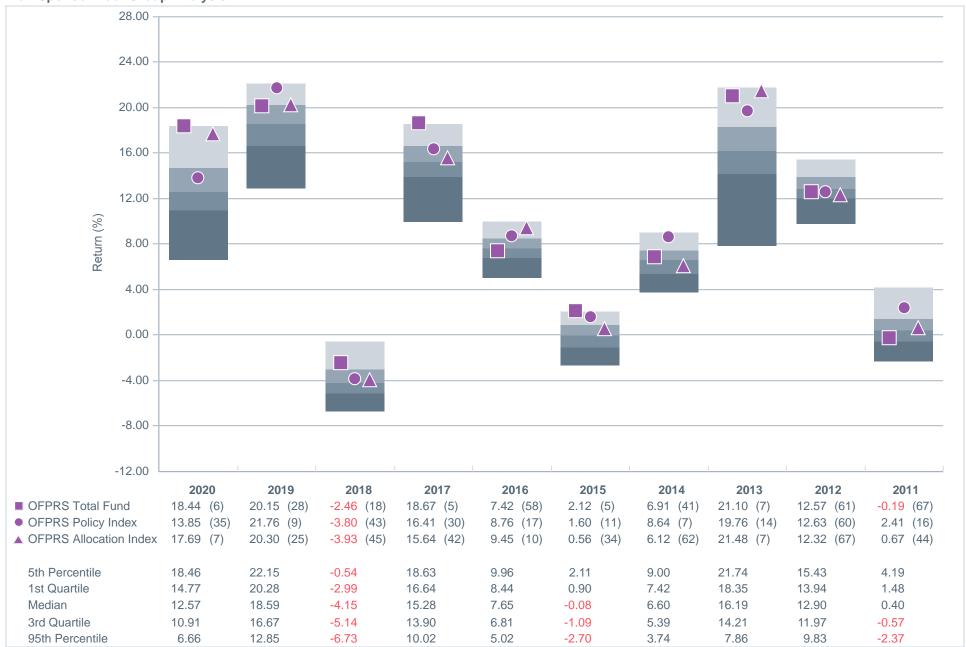
Oklahoma State Pension Commission Oklahoma Firefighters Pension & Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis



Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



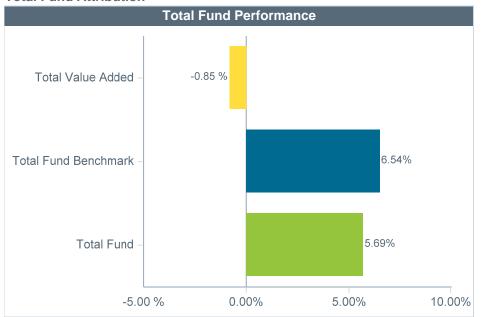
Oklahoma State Pension Commission Oklahoma Firefighters Pension & Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis

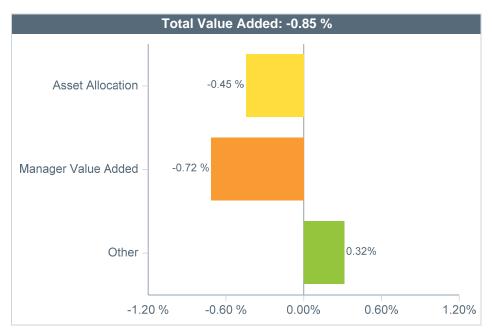


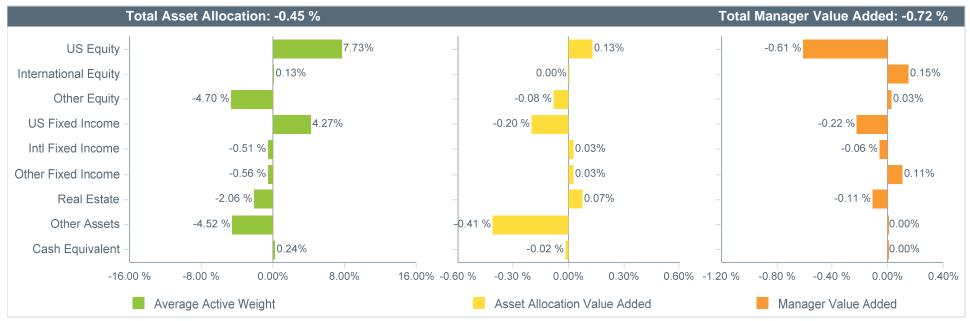
Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments.



Oklahoma State Pension Commission Oklahoma Firefighters Pension & Retirement System Total Fund Attribution







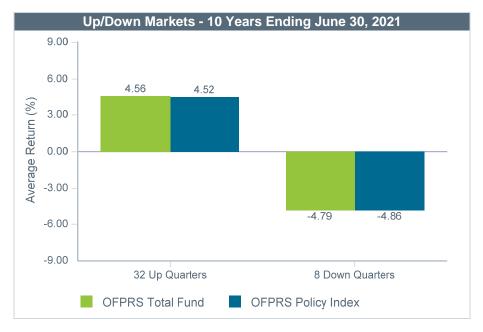
Performance shown is gross of fees. Calculation is based on quarterly periodicity. See Glossary for additional information regarding the Total Fund Attribution calculation. Allocation to Other Equity includes opportunistic equity; Other Fixed Income includes non-core Fixed Income; and Other Assets include Hedge Funds and Private Equity.

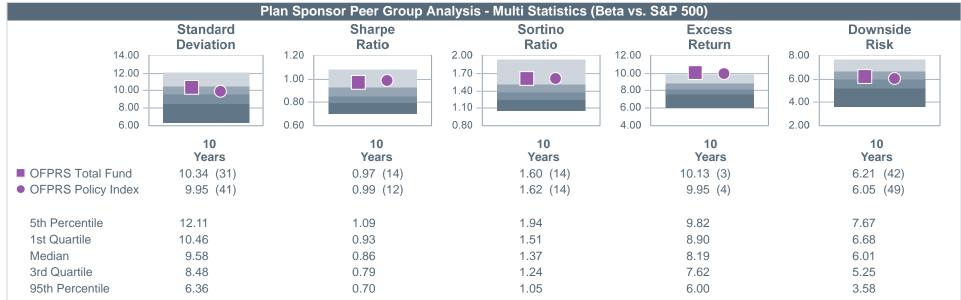


Oklahoma State Pension Commission Oklahoma Firefighters Pension & Retirement System

Total Fund Risk & Return, Up/Down Markets, and Multi Statistics

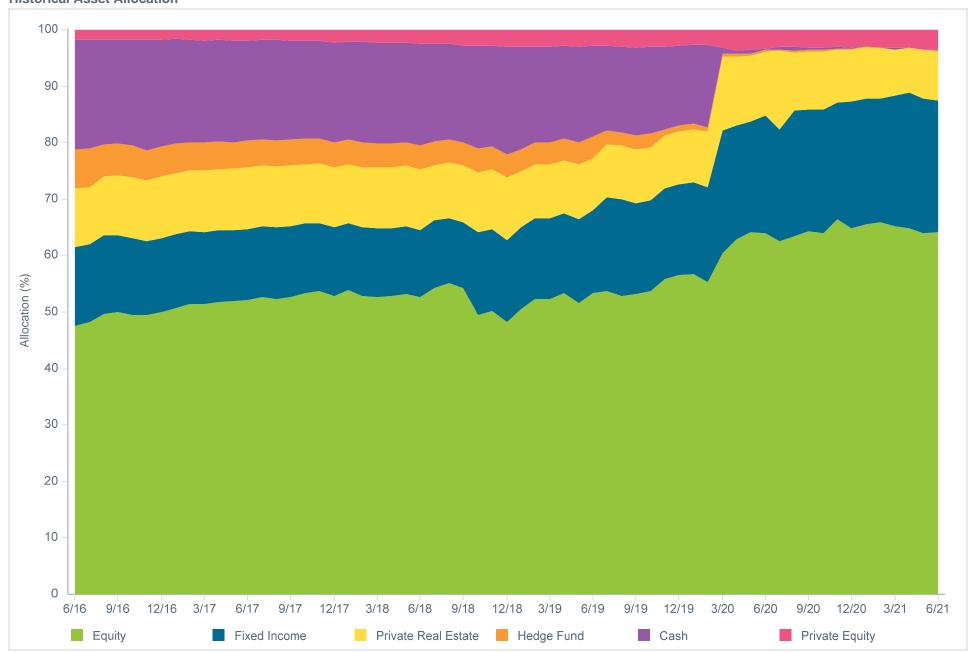














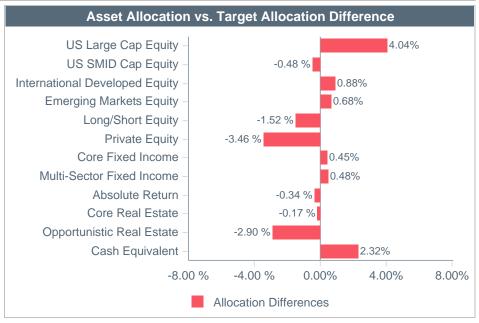
Oklahoma Police Pension & Retirement System (OPPRS)



Oklahoma State Pension Commission Oklahoma Police Pension & Retirement System Total Fund Summary

Performance (%)															
	Trailing							Calendar Year							
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016		
OPPRS Total Fund (Net)	5.81	10.45	28.00	28.00	10.79	10.37	7.71	8.12	12.17	15.22	-2.85	12.91	7.04		
OPPRS Policy Index	5.84	8.68	25.07	25.07	11.37	10.55	7.45	8.37	12.66	19.13	-5.34	15.45	7.07		
Difference	-0.03	1.77	2.93	2.93	-0.58	-0.18	0.26	-0.25	-0.49	-3.91	2.49	-2.54	-0.03		
OPPRS Actual Allocation Index	5.71	8.25	24.53	24.53	12.53	11.34	8.27	8.58	20.43	15.02	-3.70	13.78	6.66		
Difference	0.10	2.20	3.47	3.47	-1.74	-0.97	-0.56	-0.46	-8.26	0.20	0.85	-0.87	0.38		
Actuarial Discount Rate (7.5%)	1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50		
Difference	3.99	6.77	20.50	20.50	3.29	2.87	0.21	0.62	4.67	7.72	-10.35	5.41	-0.46		
OPPRS Total Fund (Gross)	5.90	10.64	28.44	28.44	11.20	10.80	8.14	8.54	12.54	15.68	-2.46	13.40	7.47		
OPPRS Policy Index	5.84	8.68	25.07	25.07	11.37	10.55	7.45	8.37	12.66	19.13	-5.34	15.45	7.07		
Difference	0.06	1.96	3.37	3.37	-0.17	0.25	0.69	0.17	-0.12	-3.45	2.88	-2.05	0.40		
OPPRS Actual Allocation Index	5.71	8.25	24.53	24.53	12.53	11.34	8.27	8.58	20.43	15.02	-3.70	13.78	6.66		
Difference	0.19	2.39	3.91	3.91	-1.33	-0.54	-0.13	-0.04	-7.89	0.66	1.24	-0.38	0.81		
All Public Plans-Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	12.57	18.59	-4.15	15.28	7.65		
Rank	20	10	27	27	55	53	52	55	51	85	18	82	56		

Asset Allocation vs. Target Allocation									
	Asset Allocation (\$)	Asset Allocation (%)	Target Allocation (%)						
OPPRS (Police)	3,241,106,139	100.00	100.00						
US Large Cap Equity	617,233,774	19.04	15.00						
US SMID Cap Equity	308,695,172	9.52	10.00						
International Developed Equity	352,655,250	10.88	10.00						
Emerging Markets Equity	183,979,845	5.68	5.00						
Long/Short Equity	274,958,393	8.48	10.00						
Private Equity	373,977,506	11.54	15.00						
Core Fixed Income	257,778,241	7.95	7.50						
Multi-Sector Fixed Income	258,632,242	7.98	7.50						
Absolute Return	151,036,336	4.66	5.00						
Core Real Estate	318,730,418	9.83	10.00						
Opportunistic Real Estate	68,127,955	2.10	5.00						
Cash Equivalent	75,301,008	2.32	0.00						



Parentheses contain percentile ranks. Allocations shown may not sum up to 100% exactly due to rounding. Please see the Addendum for custom index definitions and additional Oklahoma State Pension Commission fiscal year begins on 07/01.



	Allocation											
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
OPPRS Total Fund	3,241,106,139	100.00	5.81	10.45	28.00	28.00	10.79	10.37	7.71	8.12	7.19	07/01/2005
OPPRS Policy Index	2, , 22, 22		5.84	8.68	25.07	25.07	11.37	10.55	7.45	8.37	7.02	
Difference			-0.03	1.77	2.93	2.93	-0.58	-0.18	0.26	-0.25	0.17	
OPPRS Actual Allocation Index			5.71	8.25	24.53	24.53	12.53	11.34	8.27	8.58	7.46	
Difference			0.10	2.20	3.47	3.47	-1.74	-0.97	-0.56	-0.46	-0.27	
Actuarial Discount Rate (7.5%)			1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	
Difference			3.99	6.77	20.50	20.50	3.29	2.87	0.21	0.62	-0.31	
Total Equity	2,111,499,940	65.15	7.95	15.34	43.89	43.89	15.55	14.79	10.88	10.89	8.72	07/01/2005
MSCI ACW Index (USD) (Net)			7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	8.23	
Difference			0.56	3.04	4.63	4.63	0.98	0.18	1.13	0.99	0.49	
US Equity												
Northern Trust Russell 1000 Index (SA)	617,233,774	19.04	8.52	14.96	43.03	43.03	19.14	17.98	14.15	14.88	N/A	07/01/1998
Russell 1000 Index	, ,		8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	8.28	
Difference			-0.02	0.01	-0.04	-0.04	-0.02	-0.01	-0.01	-0.02	N/A	
Boston Partners SMID Value Equity (SA)	148,540,860	4.58	5.19	23.84	71.07	71.07	10.87	13.15	9.03	11.36	N/A	06/01/1997
Russell 2500 Val Index			5.00	22.68	63.23	63.23	10.60	12.29	8.82	10.93	9.98	
Difference			0.19	1.16	7.84	7.84	0.27	0.86	0.21	0.43	N/A	
Silvercrest Small Cap Growth Equity (SA)	160,154,312	4.94	6.92	22.21	78.14	78.14	24.66	26.41	16.93	N/A	13.39	01/01/2014
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	12.52	
Difference			3.00	13.23	26.78	26.78	8.72	7.65	3.82	N/A	0.87	
International Equity												
Mondrian International Value Equity (SA)	164,709,744	5.08	5.20	12.58	34.19	34.19	5.53	7.37	3.10	4.89	N/A	04/01/2004
MSCI EAFE Val Index (USD) (Gross)			3.25	11.10	34.22	34.22	4.37	8.43	2.52	4.45	5.36	
Difference			1.95	1.48	-0.03	-0.03	1.16	-1.06	0.58	0.44	N/A	
Barings Focused EAFE Plus Equity (SA)	187,945,506	5.80	2.14	5.79	26.36	26.36	7.48	10.26	6.45	N/A	6.28	02/01/2012
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	7.64	
Difference			-3.50	-3.66	-9.93	-9.93	-2.40	-1.33	0.64	N/A	-1.36	



Performance shown is net of fees. Performance is annualized for periods greater than one year. Manager inception dates shown represent the first full month following initial funding. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01. Total Equity includes Public Equity, Private Equity, and Long/Short Equity.

	Allocation	n					Perfor	mance (%)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
AB EM Strategic Core Equity (CF)	117,541,068	3.63	1.70	5.26	34.94	34.94	8.48	N/A	N/A	N/A	8.68	10/01/2016
MSCI Emg Mkts Index (USD) (Gross)			5.12	7.58	41.36	41.36	11.67	13.43	6.74	4.65	12.10	
Difference			-3.42	-2.32	-6.42	-6.42	-3.19	N/A	N/A	N/A	-3.42	
Wasatch EM Small Cap (SA)	66,438,778	2.05	13.19	18.60	57.47	57.47	22.02	17.15	10.50	N/A	9.56	08/01/2012
MSCI Emg Mkts Sm Cap Index (USD) (Gross)			11.36	19.95	64.38	64.38	12.74	12.24	6.64	4.88	7.97	
Difference			1.83	-1.35	-6.91	-6.91	9.28	4.91	3.86	N/A	1.59	
Fixed Income	516,410,483	15.93	1.94	1.24	6.33	6.33	4.87	4.04	2.80	N/A	N/A	07/01/2005
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.09	
Difference			0.11	2.85	6.67	6.67	-0.47	1.01	-0.48	N/A	N/A	
Agincourt Core Fixed Income (SA)	257,778,241	7.95	2.08	-1.76	-0.24	-0.24	5.88	3.49	3.60	3.78	N/A	07/01/1998
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.78	
Difference			0.25	-0.15	0.10	0.10	0.54	0.46	0.32	0.39	N/A	
Loomis Sayles Global World Bond (SA)	89,667,942	2.77	1.36	-4.19	4.89	4.89	5.22	3.28	2.28	2.42	3.45	05/01/2008
FTSE Wrld Gov't Bond Index			0.98	-4.75	0.76	0.76	3.59	1.66	1.36	1.42	2.31	
Difference			0.38	0.56	4.13	4.13	1.63	1.62	0.92	1.00	1.14	
Oaktree Global Credit (SA)	132,992,514	4.10	2.24	4.19	14.77	14.77	4.36	5.24	3.73	5.20	5.67	01/01/1998
Oaktree Global Credit Custom Index			2.00	2.98	13.65	13.65	5.19	2.93	3.21	3.35	N/A	
Difference			0.24	1.21	1.12	1.12	-0.83	2.31	0.52	1.85	N/A	
Private Credit	35,971,786	1.11	6.80	18.09	24.75	24.75	11.97	N/A	N/A	N/A	11.01	10/01/2016
Real Assets	386,858,373	11.94	2.46	4.77	5.73	5.73	2.29	3.94	3.77	4.89	N/A	01/01/1998
OPPRS Real Assets Blended Benchmark			3.68	5.64	7.09	7.09	2.90	3.69	1.56	4.41	5.71	
Difference			-1.22	-0.87	-1.36	-1.36	-0.61	0.25	2.21	0.48	N/A	
JP Morgan Strategic Property (CF)	159,717,605	4.93	2.70	4.38	5.94	5.94	3.89	5.11	6.81	8.46	4.73	11/01/2007
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.41	
Difference			-0.98	-1.26	-1.15	-1.15	-0.71	-0.51	-0.62	-0.14	0.32	
Blackstone Property Partners (CF)	159,012,813	4.91	1.98	3.94	4.36	4.36	4.47	6.05	N/A	N/A	8.28	12/01/2014
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.44	
Difference			-1.70	-1.70	-2.73	-2.73	-0.13	0.43	N/A	N/A	0.84	





	Allocation	1					Perfor	mance (%	5)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Private Real Estate	68,127,955	2.10	2.90	7.83	8.64	8.64	7.97	8.53	10.00	N/A	8.66	08/01/2011
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	8.67	
Difference			-0.78	2.19	1.55	1.55	3.37	2.91	2.57	N/A	-0.01	
Columbus Square (SA)	4,571,320	0.14	0.95	0.19	-7.10	-7.10	1.22	3.37	5.45	5.88	N/A	03/01/1995
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.84	
Difference			-2.73	-5.45	-14.19	-14.19	-3.38	-2.25	-1.98	-2.72	N/A	
Long/Short Equity	274,958,393	8.48	3.20	4.57	26.26	26.26	11.22	10.59	7.71	7.35	8.05	05/01/2012
MSCI ACW Index (USD) (Net)			7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	11.10	
Difference			-4.19	-7.73	-13.00	-13.00	-3.35	-4.02	-2.04	-2.55	-3.05	
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	5.24	
Difference			-0.65	-1.00	2.45	2.45	3.70	3.04	2.90	2.88	2.81	
Grosvenor Long/Short Equity (CF)	3,272,402	0.10	13.21	7.97	35.36	35.36	12.49	11.34	8.23	7.70	N/A	09/01/2003
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	4.59	
Difference			9.36	2.40	11.55	11.55	4.97	3.79	3.42	3.23	N/A	
K2 Mauna Kea (CF)	271,685,991	8.38	3.19	4.83	25.43	25.43	N/A	N/A	N/A	N/A	24.58	06/01/2020
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	24.84	
Difference			-0.66	-0.74	1.62	1.62	N/A	N/A	N/A	N/A	-0.26	
Absolute Return												
PAAMCO (CF)	7,261,112	0.22	2.70	5.64	11.65	11.65	2.32	3.07	1.04	2.74	N/A	10/01/2002
HFRI FOF: Cnsvt Index	7,201,112	U.LL	1.99	5.66	14.81	14.81	5.26	5.02	3.46	3.46	3.47	10/01/2002
Difference			0.71	-0.02	-3.16	-3.16	-2.94	-1.95	-2.42	-0.72	N/A	
Wellington Global Total Return (CF)	79,449,724	2.45	-0.58	2.23	2.03	2.03	2.94	N/A	N/A	N/A	3.12	12/01/2016
ICE BofAML 3 Mo US T-Bill Index+4%	, , , , ,		0.98	2.00	4.10	4.10	5.39	5.22	4.90	4.65	5.30	
Difference			-1.56	0.23	-2.07	-2.07	-2.45	N/A	N/A	N/A	-2.18	
TCW MetWest Unconstrained (SA)	64,325,500	1.98	1.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01/01/2021
ICE BofAML 3 Mo US T-Bill Index+3%	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		0.74	1.51	3.10	3.10	4.38	4.21	3.89	3.65	1.51	
Difference			0.36	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	



	Allocation	n					Perfor	mance (%	o)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Private Equity	373,977,506	11.54	18.99	31.33	58.50	58.50	22.67	16.87	14.99	13.80	13.50	07/01/2003
MSCI ACW Index (USD) (Net)			7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	9.23	
Difference			11.60	19.03	19.24	19.24	8.10	2.26	5.24	3.90	4.27	
Cambridge US Prvt Eq Index			0.00	10.05	35.55	35.55	15.67	16.57	13.48	13.90	14.96	
Difference			18.99	21.28	22.95	22.95	7.00	0.30	1.51	-0.10	-1.46	



	Allocatio	n					Perfor	mance (%))			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
OPPRS Total Fund	3,241,106,139	100.00	5.90	10.64	28.44	28.44	11.20	10.80	8.14	8.54	7.53	07/01/2005
OPPRS Policy Index			5.84	8.68	25.07	25.07	11.37	10.55	7.45	8.37	7.02	
Difference			0.06	1.96	3.37	3.37	-0.17	0.25	0.69	0.17	0.51	
OPPRS Actual Allocation Index			5.71	8.25	24.53	24.53	12.53	11.34	8.27	8.58	7.46	
Difference			0.19	2.39	3.91	3.91	-1.33	-0.54	-0.13	-0.04	0.07	
Actuarial Discount Rate (7.5%)			1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	
Difference			4.08	6.96	20.94	20.94	3.70	3.30	0.64	1.04	0.03	
All Public Plans-Total Fund Median			5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	7.51	
Rank			20	10	27	27	55	53	52	55	49	
Total Equity	2,111,499,940	65.15	8.03	15.51	44.32	44.32	15.92	15.17	11.24	11.26	9.01	07/01/2005
MSCI ACW Index (USD) (Net)			7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	8.23	
Difference			0.64	3.21	5.06	5.06	1.35	0.56	1.49	1.36	0.78	
IM Global Equity (SA+CF) Median			6.84	12.69	40.16	40.16	14.54	14.72	10.10	10.93	9.27	
Rank			32	23	33	33	39	47	37	48	54	
US Equity												
Northern Trust Russell 1000 Index (SA)	617,233,774	19.04	8.52	14.97	43.04	43.04	N/A	N/A	N/A	N/A	N/A	07/01/1998
Russell 1000 Index	011,200,111	10101	8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	8.28	0170171000
Difference			-0.02	0.02	-0.03	-0.03	N/A	N/A	N/A	N/A	N/A	
IM U.S. Large Cap Index Equity (SA+CF) Median			8.52	15.25	42.57	42.57	18.71	17.80	14.10	14.83	8.06	
Rank			51	73	44	44	N/A	N/A	N/A	N/A	N/A	
Boston Partners SMID Value Equity (SA)	148.540.860	4.58	5.43	24.29	72.14	72.14	N/A	N/A	N/A	N/A	N/A	06/01/1997
Russell 2500 Val Index	, ,		5.00	22.68	63.23	63.23	10.60	12.29	8.82	10.93	9.98	
Difference			0.43	1.61	8.91	8.91	N/A	N/A	N/A	N/A	N/A	
IM U.S. SMID Cap Value Equity (SA+CF) Median			4.74	20.62	60.07	60.07	12.42	13.71	9.76	11.86	11.68	
Rank			32	31	24	24	N/A	N/A	N/A	N/A	N/A	
Silvercrest Small Cap Growth Equity (SA)	160,154,312	4.94	7.14	22.71	79.62	79.62	N/A	N/A	N/A	N/A	N/A	01/01/2014
Russell 2000 Grth Index	, ,		3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	12.52	
Difference			3.22	13.73	28.26	28.26	N/A	N/A	N/A	N/A	N/A	
IM U.S. Small Cap Growth Equity (SA+CF) Median			5.14	12.04	54.91	54.91	21.05	22.71	16.07	15.98	15.05	
Rank			22	8	9	9	N/A	N/A	N/A	N/A	N/A	



	Allocation	n					Perfor	mance (%))			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
International Equity												
Mondrian International Value Equity (SA)	164,709,744	5.08	5.30	12.82	34.77	34.77	N/A	N/A	N/A	N/A	N/A	04/01/2004
MSCI EAFE Val Index (USD) (Gross)			3.25	11.10	34.22	34.22	4.37	8.43	2.52	4.45	5.36	
Difference			2.05	1.72	0.55	0.55	N/A	N/A	N/A	N/A	N/A	
IM International Value Equity (SA+CF) Median			4.62	11.40	40.04	40.04	7.91	10.43	5.57	6.81	7.82	
Rank			35	35	74	74	N/A	N/A	N/A	N/A	N/A	
Barings Focused EAFE Plus Equity (SA)	187,945,506	5.80	2.24	6.10	27.33	27.33	N/A	N/A	N/A	N/A	N/A	02/01/2012
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	7.64	
Difference			-3.40	-3.35	-8.96	-8.96	N/A	N/A	N/A	N/A	N/A	
IM International Equity (SA+CF) Median			5.65	9.69	40.33	40.33	10.73	12.38	7.03	7.29	9.00	
Rank			92	84	92	92	N/A	N/A	N/A	N/A	N/A	
AB EM Strategic Core Equity (CF)	117,541,068	3.63	1.89	5.60	35.82	35.82	N/A	N/A	N/A	N/A	N/A	10/01/2016
MSCI Emg Mkts Index (USD) (Gross)			5.12	7.58	41.36	41.36	11.67	13.43	6.74	4.65	12.10	
Difference			-3.23	-1.98	-5.54	-5.54	N/A	N/A	N/A	N/A	N/A	
IM Emerging Markets Equity (SA+CF) Median			5.49	9.36	45.35	45.35	12.07	13.49	7.12	5.83	12.23	
Rank			93	82	87	87	N/A	N/A	N/A	N/A	N/A	
Wasatch EM Small Cap (SA)	66,438,778	2.05	13.58	19.40	59.61	59.61	N/A	N/A	N/A	N/A	N/A	08/01/2012
MSCI Emg Mkts Sm Cap Index (USD) (Gross)			11.36	19.95	64.38	64.38	12.74	12.24	6.64	4.88	7.97	
Difference			2.22	-0.55	-4.77	-4.77	N/A	N/A	N/A	N/A	N/A	
IM Emerging Markets Equity (SA+CF) Median			5.49	9.36	45.35	45.35	12.07	13.49	7.12	5.83	8.15	
Rank			6	9	9	9	N/A	N/A	N/A	N/A	N/A	
Fixed Income	516,410,483	15.93	2.03	1.39	6.66	6.66	5.29	4.48	3.26	4.11	5.05	07/01/200
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.09	
Difference			0.20	3.00	7.00	7.00	-0.05	1.45	-0.02	0.72	0.96	
IM U.S. Fixed Income (SA+CF) Median			1.87	0.02	2.56	2.56	5.74	3.90	3.81	4.13	4.56	
Rank			45	28	26	26	60	40	67	51	37	
Agincourt Core Fixed Income (SA)	257,778,241	7.95	2.11	-1.69	-0.10	-0.10	N/A	N/A	N/A	N/A	N/A	07/01/1998
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.78	
Difference			0.28	-0.08	0.24	0.24	N/A	N/A	N/A	N/A	N/A	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median			1.97	-1.23	1.05	1.05	6.07	3.67	3.80	3.96	5.19	
Rank			36	95	80	80	N/A	N/A	N/A	N/A	N/A	



	Allocation	n					Perfor	mance (%)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inceptior Date
Loomis Sayles Global World Bond (SA)	89,667,942	2.77	1.44	-4.04	5.24	5.24	N/A	N/A	N/A	N/A	N/A	05/01/200
FTSE Wrld Gov't Bond Index			0.98	-4.75	0.76	0.76	3.59	1.66	1.36	1.42	2.31	
Difference			0.46	0.71	4.48	4.48	N/A	N/A	N/A	N/A	N/A	
IM Global Fixed Income (SA+CF) Median			2.06	0.00	7.97	7.97	5.78	4.99	3.84	3.94	4.33	
Rank			70	93	62	62	N/A	N/A	N/A	N/A	N/A	
Oaktree Global Credit (SA)	132,992,514	4.10	2.39	4.49	15.43	15.43	4.99	5.88	4.35	5.73	6.15	01/01/199
Oaktree Global Credit Custom Index			2.00	2.98	13.65	13.65	5.19	2.93	3.21	3.35	N/A	
Difference			0.39	1.51	1.78	1.78	-0.20	2.95	1.14	2.38	N/A	
Private Credit	35,971,786	1.11	6.80	18.09	24.75	24.75	11.97	N/A	N/A	N/A	11.01	10/01/2010
Real Assets	386,858,373	11.94	2.68	5.20	6.53	6.53	2.98	4.68	4.47	5.68	5.46	01/01/1998
OPPRS Real Assets Blended Benchmark			3.68	5.64	7.09	7.09	2.90	3.69	1.56	4.41	5.71	
Difference			-1.00	-0.44	-0.56	-0.56	0.08	0.99	2.91	1.27	-0.25	
JP Morgan Strategic Property (CF)	159,717,605	4.93	2.92	4.83	6.84	6.84	N/A	N/A	N/A	N/A	N/A	11/01/200
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	4.41	
Difference			-0.76	-0.81	-0.25	-0.25	N/A	N/A	N/A	N/A	N/A	
Blackstone Property Partners (CF)	159,012,813	4.91	2.30	4.57	5.44	5.44	N/A	N/A	N/A	N/A	N/A	12/01/201
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.44	
Difference			-1.38	-1.07	-1.65	-1.65	N/A	N/A	N/A	N/A	N/A	
Private Real Estate	68,127,955	2.10	2.90	7.83	8.64	8.64	7.97	8.53	10.00	N/A	8.66	08/01/201
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	8.67	
Difference			-0.78	2.19	1.55	1.55	3.37	2.91	2.57	N/A	-0.01	
Columbus Square (SA)	4,571,320	0.14	0.95	0.19	-7.10	-7.10	N/A	N/A	N/A	N/A	N/A	03/01/199
NCREIF ODCE Index (AWA) (Net)			3.68	5.64	7.09	7.09	4.60	5.62	7.43	8.60	7.84	
Difference			-2.73	-5.45	-14.19	-14.19	N/A	N/A	N/A	N/A	N/A	
Long/Short Equity	274,958,393	8.48	3.21	4.60	26.42	26.42	11.57	11.01	8.14	7.79	8.52	05/01/2012
MSCI ACW Index (USD) (Net)			7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	11.10	
Difference			-4.18	-7.70	-12.84	-12.84	-3.00	-3.60	-1.61	-2.11	-2.58	
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	5.24	
Difference			-0.64	-0.97	2.61	2.61	4.05	3.46	3.33	3.32	3.28	
Grosvenor Long/Short Equity (CF)	3,272,402	0.10	13.46	8.43	36.52	36.52	N/A	N/A	N/A	N/A	N/A	09/01/200
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	4.59	
Difference			9.61	2.86	12.71	12.71	N/A	N/A	N/A	N/A	N/A	

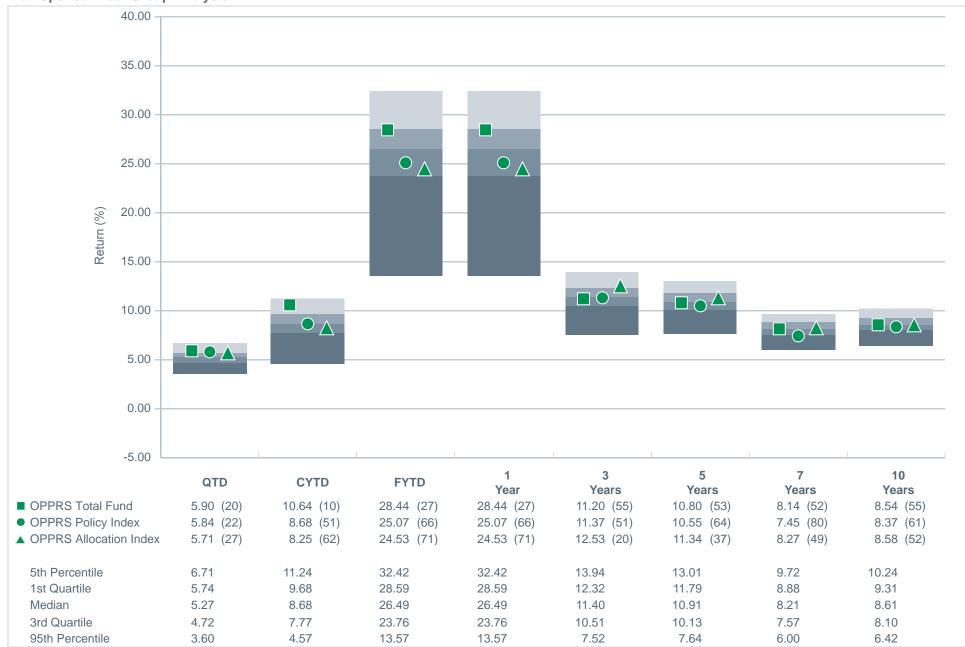
Performance shown is gross of fees. Performance is annualized for periods greater than one year. Manager inception dates shown represent the first full month following initial funding. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01. Total Equity includes Public Equity, Private Equity, and Long/Short Equity.



	Allocation	1					Perfor	mance (%))			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
K2 Mauna Kea (CF)	271,685,991	8.38	3.19	4.83	25.43	25.43	N/A	N/A	N/A	N/A	24.58	06/01/2020
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	24.84	
Difference			-0.66	-0.74	1.62	1.62	N/A	N/A	N/A	N/A	-0.26	
Absolute Return												
PAAMCO (CF)	7,261,112	0.22	2.94	6.12	12.66	12.66	N/A	N/A	N/A	N/A	N/A	10/01/2002
HFRI FOF: Cnsvt Index			1.99	5.66	14.81	14.81	5.26	5.02	3.46	3.46	3.47	
Difference			0.95	0.46	-2.15	-2.15	N/A	N/A	N/A	N/A	N/A	
Wellington Global Total Return (CF)	79,449,724	2.45	-0.52	2.35	2.28	2.28	N/A	N/A	N/A	N/A	N/A	12/01/2016
ICE BofAML 3 Mo US T-Bill Index+4%			0.98	2.00	4.10	4.10	5.39	5.22	4.90	4.65	5.30	
Difference			-1.50	0.35	-1.82	-1.82	N/A	N/A	N/A	N/A	N/A	
TCW MetWest Unconstrained (SA)	64,325,500	1.98	1.32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	01/01/2021
ICE BofAML 3 Mo US T-Bill Index+3%			0.74	1.51	3.10	3.10	4.38	4.21	3.89	3.65	1.51	
Difference			0.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Private Equity	373,977,506	11.54	18.99	31.33	58.50	58.50	22.67	16.87	14.99	13.80	13.50	07/01/2003
MSCI ACW Index (USD) (Net)			7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	9.23	
Difference			11.60	19.03	19.24	19.24	8.10	2.26	5.24	3.90	4.27	
Cambridge US Prvt Eq Index			0.00	10.05	35.55	35.55	15.67	16.57	13.48	13.90	14.96	
Difference			18.99	21.28	22.95	22.95	7.00	0.30	1.51	-0.10	-1.46	



Oklahoma State Pension Commission Oklahoma Police Pension & Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis



Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



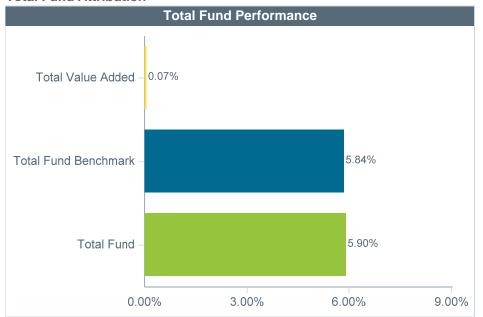
Oklahoma State Pension Commission Oklahoma Police Pension & Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis

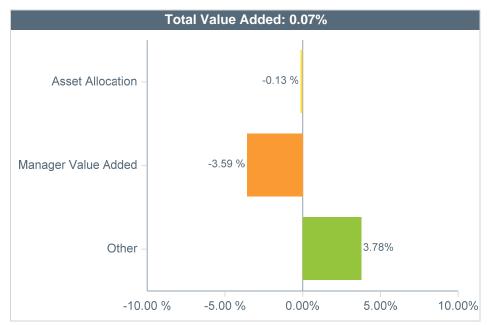


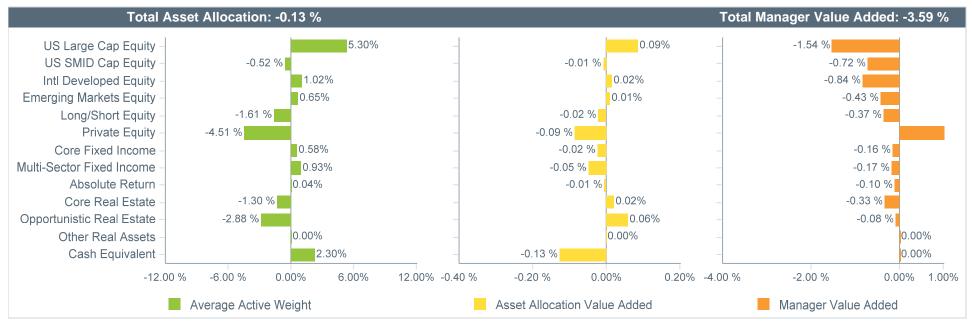
Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments.



Oklahoma State Pension Commission Oklahoma Police Pension & Retirement Fund Total Fund Attribution





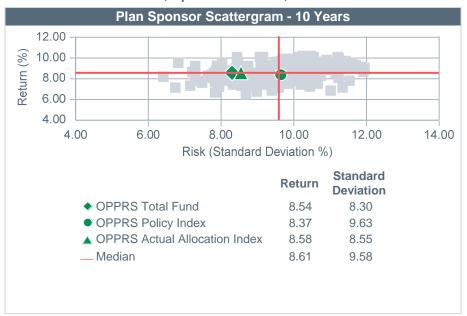


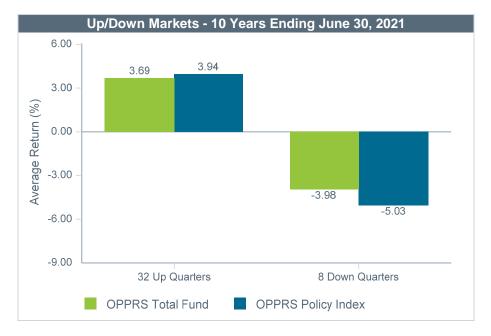
Performance shown is gross of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution calculation. Allocation to Multi-Sector Fixed Income includes Private Credit.

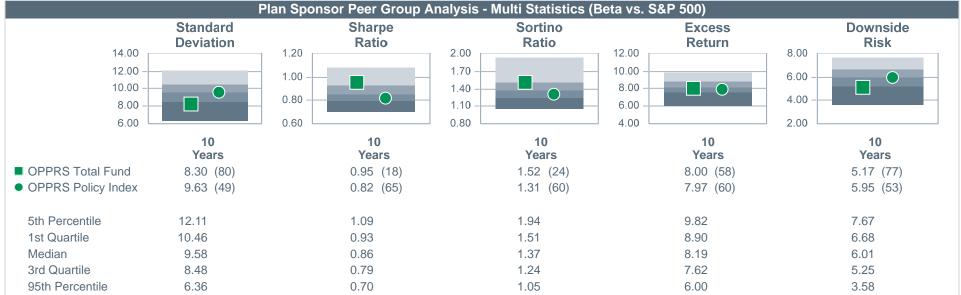


Oklahoma State Pension Commission Oklahoma Police Pension & Retirement System

Total Fund Risk & Return, Up/Down Markets, and Multi Statistics



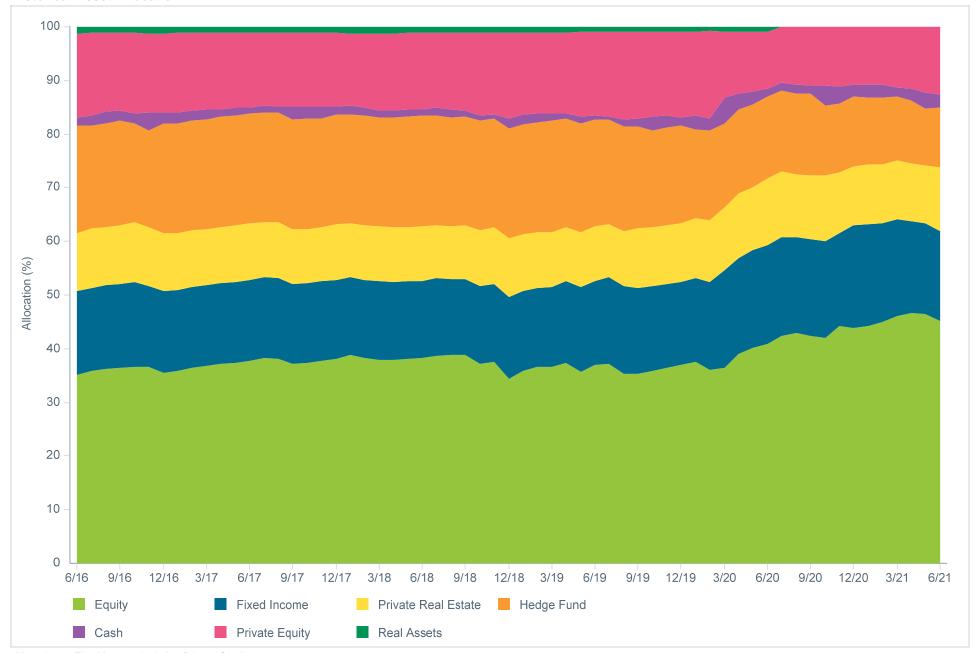








Oklahoma State Pension Commission Oklahoma Police Pension & Retirement Fund Historical Asset Allocation



Allocation to Fixed Income includes Private Credit.



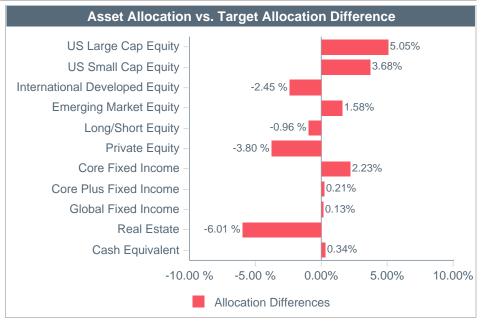
Oklahoma Law Enforcement Retirement System (OLERS)



Oklahoma State Pension Commission Oklahoma Law Enforcement Retirement System Total Fund Summary

	Performance (%)														
			Trailir	ng						Calenda	r Year				
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016		
OLERS Total Fund (Net)	5.27	10.00	27.91	27.91	10.64	10.74	7.88	8.54	11.83	17.49	-4.75	14.53	7.16		
OLERS Policy Index	5.44	9.25	26.06	26.06	11.61	11.10	8.69	9.14	12.77	19.12	-3.67	13.36	8.64		
Difference	-0.17	0.75	1.85	1.85	-0.97	-0.36	-0.81	-0.60	-0.94	-1.63	-1.08	1.17	-1.48		
OLERS Actual Allocation Index	5.33	9.45	27.40	27.40	12.08	11.27	8.74	9.03	14.70	17.33	-3.47	14.63	8.27		
Difference	-0.06	0.55	0.51	0.51	-1.44	-0.53	-0.86	-0.49	-2.87	0.16	-1.28	-0.10	-1.11		
Actuarial Discount Rate (7.5%)	1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50		
Difference	3.45	6.32	20.41	20.41	3.14	3.24	0.38	1.04	4.33	9.99	-12.25	7.03	-0.34		
OLERS Total Fund (Gross)	5.32	10.09	28.15	28.15	10.84	10.94	8.06	8.63	12.03	17.70	-4.55	14.71	7.32		
OLERS Policy Index	5.44	9.25	26.06	26.06	11.61	11.10	8.69	9.14	12.77	19.12	-3.67	13.36	8.64		
Difference	-0.12	0.84	2.09	2.09	-0.77	-0.16	-0.63	-0.51	-0.74	-1.42	-0.88	1.35	-1.32		
OLERS Actual Allocation Index	5.33	9.45	27.40	27.40	12.08	11.27	8.74	9.03	14.70	17.33	-3.47	14.63	8.27		
Difference	-0.01	0.64	0.75	0.75	-1.24	-0.33	-0.68	-0.40	-2.67	0.37	-1.08	0.08	-0.95		
All Public Plans-Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	12.57	18.59	-4.15	15.28	7.65		
Rank	48	16	29	29	64	50	57	49	58	62	59	61	61		

Asset Alloc	ation vs. Target A	Allocation	
	Asset Allocation (\$)	Asset Allocation (%)	Target Allocation (%)
OLERS (Law Enforcement)	1,236,494,091	100.00	100.00
US Large Cap Equity	309,709,541	25.05	20.00
US Small Cap Equity	169,192,386	13.68	10.00
International Developed Equity	155,207,792	12.55	15.00
Emerging Market Equity	81,414,993	6.58	5.00
Long/Short Equity	50,001,643	4.04	5.00
Private Equity	76,638,738	6.20	10.00
Core Fixed Income	89,376,184	7.23	5.00
Core Plus Fixed Income	126,213,396	10.21	10.00
Global Fixed Income	63,420,475	5.13	5.00
Real Estate	111,173,352	8.99	15.00
Cash Equivalent	4,145,591	0.34	0.00



Parentheses contain percentile ranks. Allocations shown may not sum up to 100% exactly due to rounding. Please see the Addendum for custom index definitions and additional Oklahoma State Pension Commission fiscal year begins on 07/01.



	Allocation						Perfor	mance (%	6)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
OLERS Total Fund	1,236,494,091	100.00	5.27	10.00	27.91	27.91	10.64	10.74	7.88	8.54	12.10	10/01/1990
OLERS Policy Index			5.44	9.25	26.06	26.06	11.61	11.10	8.69	9.14	N/A	
Difference			-0.17	0.75	1.85	1.85	-0.97	-0.36	-0.81	-0.60	N/A	
OLERS Actual Allocation Index			5.33	9.45	27.40	27.40	12.08	11.27	8.74	9.03	8.83	
Difference			-0.06	0.55	0.51	0.51	-1.44	-0.53	-0.86	-0.49	3.27	
Actuarial Discount Rate (7.5%)			1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	
Difference			3.45	6.32	20.41	20.41	3.14	3.24	0.38	1.04	4.60	
US Equity	478,901,927	38.73	7.16	17.84	52.68	52.68	17.71	18.57	13.53	14.31	N/A	10/01/1990
S&P 500 Index (Cap Wtd)			8.55	15.25	40.79	40.79	18.67	17.65	14.10	14.84	11.25	
Difference			-1.39	2.59	11.89	11.89	-0.96	0.92	-0.57	-0.53	N/A	
Hotchkis Wiley Large Cap Value Equity (SA)	99,973,064	8.09	5.33	24.94	64.51	64.51	12.57	15.08	10.64	13.34	12.41	11/01/1990
Russell 1000 Val Index			5.21	17.05	43.68	43.68	12.42	11.87	9.41	11.61	10.89	
Difference			0.12	7.89	20.83	20.83	0.15	3.21	1.23	1.73	1.52	
Kennedy Capital Small Cap Value Equity (SA)	83,265,323	6.73	5.28	28.59	71.50	71.50	11.56	14.22	10.34	12.18	22.80	02/01/1996
Russell 2000 Val Index			4.56	26.69	73.28	73.28	10.27	13.62	9.26	10.85	10.17	
Difference			0.72	1.90	-1.78	-1.78	1.29	0.60	1.08	1.33	12.63	
NTGI S&P 500 Index (CF)	118,266,672	9.56	8.54	15.24	40.77	40.77	18.64	17.62	14.09	14.80	11.82	08/01/2008
S&P 500 Index (Cap Wtd)			8.55	15.25	40.79	40.79	18.67	17.65	14.10	14.84	12.23	
Difference			-0.01	-0.01	-0.02	-0.02	-0.03	-0.03	-0.01	-0.04	-0.41	
Polen Focus Growth (CF)	91,469,805	7.40	13.23	15.24	39.53	39.53	N/A	N/A	N/A	N/A	35.57	01/01/2019
Russell 1000 Grth Index			11.93	12.99	42.50	42.50	25.14	23.66	18.56	17.87	35.42	
Difference			1.30	2.25	-2.97	-2.97	N/A	N/A	N/A	N/A	0.15	
Wellington Small Cap Growth (CF)	85,927,063	6.95	3.31	6.20	48.87	48.87	16.61	N/A	N/A	N/A	17.94	08/01/2016
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	17.59	
Difference			-0.61	-2.78	-2.49	-2.49	0.67	N/A	N/A	N/A	0.35	



	Allocation	n					Perfor	mance (%	5)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
International Equity	236,622,785	19.14	4.70	9.15	36.17	36.17	10.67	11.56	6.53	5.75	N/A	10/01/1990
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	N/A	
Difference			-0.78	-0.01	0.45	0.45	1.29	0.48	1.20	0.30	N/A	
International Developed Equity	155,207,792	12.55	3.68	9.07	30.12	30.12	6.45	8.67	4.52	4.49	N/A	11/01/1995
MSCI EAFE Index (USD) (Net)			5.17	8.83	32.35	32.35	8.27	10.28	4.96	5.89	5.51	
Difference			-1.49	0.24	-2.23	-2.23	-1.82	-1.61	-0.44	-1.40	N/A	
Barings Focused Intl Equity (SA)	75,884,563	6.14	2.14	5.90	26.48	26.48	7.51	10.28	6.45	N/A	6.69	02/01/2012
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	7.14	
Difference			-3.34	-3.26	-9.24	-9.24	-1.87	-0.80	1.12	N/A	-0.45	
Mondrian International Equity (SA)	79,323,229	6.42	5.19	12.48	34.01	34.01	5.38	7.19	2.94	4.72	5.01	01/01/2005
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	5.97	
Difference			-0.29	3.32	-1.71	-1.71	-4.00	-3.89	-2.39	-0.73	-0.96	
Emerging Market Equity	81,414,993	6.58	6.70	8.78	45.31	45.31	17.75	16.40	9.65	N/A	8.93	07/01/2012
MSCI Emg Mkts Index (USD) (Net)			5.05	7.45	40.90	40.90	11.27	13.03	6.35	4.29	6.81	
Difference			1.65	1.33	4.41	4.41	6.48	3.37	3.30	N/A	2.12	
Wasatch EM Small Cap CI A (CF)	22,781,942	1.84	13.19	18.60	57.47	57.47	22.01	17.14	10.49	N/A	9.58	07/01/2012
MSCI Emg Mkts Index (USD) (Net)			5.05	7.45	40.90	40.90	11.27	13.03	6.35	4.29	6.81	
Difference			8.14	11.15	16.57	16.57	10.74	4.11	4.14	N/A	2.77	
William Blair Emerging Markets Leaders (CF)	58,633,051	4.74	4.37	5.39	41.08	41.08	16.26	N/A	N/A	N/A	15.18	09/01/2016
MSCI Emg Mkts Index (USD) (Net)			5.05	7.45	40.90	40.90	11.27	13.03	6.35	4.29	11.79	
Difference			-0.68	-2.06	0.18	0.18	4.99	N/A	N/A	N/A	3.39	
Fixed Income	279,010,054	22.56	1.93	-1.19	0.71	0.71	4.12	3.10	2.79	3.55	N/A	10/01/1990
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	5.83	
Difference			0.10	0.42	1.05	1.05	-1.22	0.07	-0.49	0.16	N/A	
NTGI Aggregate Index (SA)	89,376,184	7.23	1.93	-1.64	-0.37	-0.37	5.36	3.01	3.29	3.42	4.08	04/01/2004
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.04	
Difference			0.10	-0.03	-0.03	-0.03	0.02	-0.02	0.01	0.03	0.04	
TCW Core Plus Fixed Income (SA)	126,213,396	10.21	2.04	-0.66	2.29	2.29	6.80	4.52	4.33	5.01	6.30	03/01/1996
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	5.06	
Difference			0.21	0.95	2.63	2.63	1.46	1.49	1.05	1.62	1.24	

Performance shown is net of fees. Performance is annualized for periods greater than one year. Manager inception dates shown represent the first full month following initial funding. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



	Allocation	n					Perfor	mance (%	o)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Franklin Templeton Global Bonds (SA)	63,420,475	5.13	1.70	-1.59	-0.83	-0.83	-1.50	0.75	-0.10	N/A	0.76	06/01/2013
Bloomberg Gbl Agg Bond Index			1.31	-3.21	2.63	2.63	4.23	2.34	1.83	2.05	2.33	
Difference			0.39	1.62	-3.46	-3.46	-5.73	-1.59	-1.93	N/A	-1.57	
Long/Short Equity	50,001,643	4.04	0.42	6.29	18.97	18.97	5.59	7.56	5.25	5.56	N/A	01/01/2008
MSCI ACW Index (USD) (Net)			7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	6.56	
Difference			-6.97	-6.01	-20.29	-20.29	-8.98	-7.05	-4.50	-4.34	N/A	
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	2.46	
Difference			-3.43	0.72	-4.84	-4.84	-1.93	0.01	0.44	1.09	N/A	
Grosvenor (CF)	709,078	0.06	-0.27	-1.54	9.99	9.99	2.86	5.88	4.08	4.74	4.06	01/01/2008
MSCI ACW Index (USD) (Net)			7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	6.56	
Difference			-7.66	-13.84	-29.27	-29.27	-11.71	-8.73	-5.67	-5.16	-2.50	
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	2.46	
Difference			-4.12	-7.11	-13.82	-13.82	-4.66	-1.67	-0.73	0.27	1.60	
Mauna Kea (CF)	49,292,565	3.99	0.47	7.60	N/A	N/A	N/A	N/A	N/A	N/A	18.69	08/01/2020
MSCI ACW Index (USD) (Net)			7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	32.27	
Difference			-6.92	-4.70	N/A	N/A	N/A	N/A	N/A	N/A	-13.58	
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	20.12	
Difference			-3.38	2.03	N/A	N/A	N/A	N/A	N/A	N/A	-1.43	
Real Estate	111,173,352	8.99	2.56	4.06	5.08	5.08	2.26	3.62	3.83	5.44	N/A	04/01/1999
NCREIF Property Index			3.59	5.37	7.37	7.37	5.50	6.13	7.72	8.79	8.54	
Difference			-1.03	-1.31	-2.29	-2.29	-3.24	-2.51	-3.89	-3.35	N/A	
JPMCB Strategic Property (CF)	91,350,936	7.39	2.67	4.31	5.78	5.78	3.87	5.06	6.76	N/A	8.25	04/01/2012
NCREIF Property Index			3.59	5.37	7.37	7.37	5.50	6.13	7.72	8.79	8.51	
Difference			-0.92	-1.06	-1.59	-1.59	-1.63	-1.07	-0.96	N/A	-0.26	
UBS Trumbull Property (SA)	15,262,416	1.23	2.70	3.83	1.32	1.32	-0.47	1.90	4.58	N/A	5.10	01/01/2013
NCREIF Property Index			3.59	5.37	7.37	7.37	5.50	6.13	7.72	8.79	8.33	
Difference			-0.89	-1.54	-6.05	-6.05	-5.97	-4.23	-3.14	N/A	-3.23	
Colcord Center (CF)	4,560,000	0.37	0.00	0.00	3.77	3.77	5.05	3.53	4.99	3.30	3.36	05/01/2008



	Allocation	1					Perfori	mance (%	5)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Private Equity	76,638,738	6.20	17.90	23.76	41.00	41.00	15.51	13.32	10.69	11.42	N/A	10/01/1990
S&P 500 Index+5%			9.88	18.10	47.83	47.83	24.61	23.53	19.80	20.58	16.81	
Difference			8.02	5.66	-6.83	-6.83	-9.10	-10.21	-9.11	-9.16	N/A	
Cambridge US Prvt Eq Index			0.00	10.05	35.55	35.55	15.67	16.57	13.48	13.90	14.73	
Difference			17.90	13.71	5.45	5.45	-0.16	-3.25	-2.79	-2.48	N/A	
American Private Equity II LP	475,079	0.04	15.04	13.49	-7.61	-7.61	-8.53	-3.74	-2.42	1.93	2.90	02/01/2006
Apollo IX LP	4,333,294	0.35	26.60	41.67	55.02	55.02	N/A	N/A	N/A	N/A	4.88	03/01/2019
Apollo VIII LP	6,489,986	0.52	15.19	25.12	46.65	46.65	10.63	13.88	11.58	N/A	5.21	02/01/2014
Carval CR Value (CF)	2,445,827	0.20	8.58	8.58	8.58	8.58	N/A	N/A	N/A	N/A	8.58	08/01/2020
FirstMark Capital Opportunity III LP	3,933,947	0.32	26.52	37.17	40.58	40.58	N/A	N/A	N/A	N/A	36.95	06/01/2020
FirstMark V LP	1,306,325	0.11	-1.21	-3.85	-17.65	-17.65	N/A	N/A	N/A	N/A	-17.65	07/01/2020
Francisco PTRS-AGI-SL (CF)	1,322,703	0.11	3.81	1.43	N/A	N/A	N/A	N/A	N/A	N/A	-10.17	10/01/2020
Francisco Partners SL (CF)	360,717	0.03	-5.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02/01/2021
Knightsbridge VI LP	2,873,115	0.23	87.42	87.42	131.81	131.81	42.13	26.61	18.38	17.88	11.24	12/01/2004
Knightsbridge VII LP	9,707,123	0.79	43.75	43.75	98.75	98.75	37.18	25.02	20.25	18.69	11.71	09/01/2008
Oaktree Opp XI LP	1,774,903	0.14	14.17	20.72	N/A	N/A	N/A	N/A	N/A	N/A	19.15	08/01/2020
Warburg Pincus Global Growth LP	28,919,102	2.34	8.52	12.14	15.36	15.36	N/A	N/A	N/A	N/A	-13.38	03/01/2019
Warburg Pincus XII LP	12,696,617	1.03	13.54	25.40	45.16	45.16	19.82	16.07	N/A	N/A	4.40	12/01/2015



	Allocatio	n					Perfor	mance (%)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
OLERS Total Fund	1,236,494,091	100.00	5.32	10.09	28.15	28.15	10.84	10.94	8.06	8.63	11.61	10/01/1990
OLERS Policy Index			5.44	9.25	26.06	26.06	11.61	11.10	8.69	9.14	N/A	
Difference			-0.12	0.84	2.09	2.09	-0.77	-0.16	-0.63	-0.51	N/A	
OLERS Actual Allocation Index			5.33	9.45	27.40	27.40	12.08	11.27	8.74	9.03	8.83	
Difference			-0.01	0.64	0.75	0.75	-1.24	-0.33	-0.68	-0.40	2.78	
Actuarial Discount Rate (7.5%)			1.82	3.68	7.50	7.50	7.50	7.50	7.50	7.50	7.50	
Difference			3.50	6.41	20.65	20.65	3.34	3.44	0.56	1.13	4.11	
All Public Plans-Total Fund Median			5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	8.72	
Rank			48	16	29	29	64	50	57	49	1	
US Equity	478,901,927	38.73	7.16	17.84	52.69	52.69	17.72	18.58	13.53	14.31	N/A	10/01/1990
S&P 500 Index (Cap Wtd)			8.55	15.25	40.79	40.79	18.67	17.65	14.10	14.84	11.25	
Difference			-1.39	2.59	11.90	11.90	-0.95	0.93	-0.57	-0.53	N/A	
IM U.S. Equity (SA+CF) Median			6.51	16.33	47.65	47.65	16.16	16.71	12.64	13.81	12.54	
Rank			42	40	38	38	42	34	42	44	N/A	
Hotchkis Wiley Large Cap Value Equity (SA)	99,973,064	8.09	5.33	24.94	64.51	64.51	12.57	15.08	10.64	13.34	12.00	11/01/1990
Russell 1000 Val Index			5.21	17.05	43.68	43.68	12.42	11.87	9.41	11.61	10.89	
Difference			0.12	7.89	20.83	20.83	0.15	3.21	1.23	1.73	1.11	
IM U.S. Large Cap Value Equity (SA+CF) Median			5.86	18.42	45.78	45.78	13.48	13.58	10.44	12.48	11.91	
Rank			63	4	4	4	62	32	48	29	48	
Kennedy Capital Small Cap Value Equity (SA)	83,265,323	6.73	5.28	28.59	71.50	71.50	11.56	14.22	10.34	12.18	22.80	02/01/1996
Russell 2000 Val Index			4.56	26.69	73.28	73.28	10.27	13.62	9.26	10.85	10.17	
Difference			0.72	1.90	-1.78	-1.78	1.29	0.60	1.08	1.33	12.63	
IM U.S. Small Cap Value Equity (SA+CF) Median			4.12	23.83	66.55	66.55	10.85	13.75	9.72	11.79	12.57	
Rank			29	22	38	38	40	41	38	39	1	
NTGI S&P 500 Index (CF)	118,266,672	9.56	8.55	15.25	40.80	40.80	18.67	17.66	14.11	14.82	12.24	08/01/2008
S&P 500 Index (Cap Wtd)			8.55	15.25	40.79	40.79	18.67	17.65	14.10	14.84	12.23	
Difference			0.00	0.00	0.01	0.01	0.00	0.01	0.01	-0.02	0.01	
IM U.S. Large Cap Index Equity (SA+CF) Median			8.52	15.25	42.57	42.57	18.71	17.80	14.10	14.83	12.32	
Rank			27	45	78	78	55	60	43	54	70	
Polen Focus Growth (CF)	91,469,805	7.40	13.23	15.24	39.53	39.53	N/A	N/A	N/A	N/A	35.57	01/01/2019
Russell 1000 Grth Index			11.93	12.99	42.50	42.50	25.14	23.66	18.56	17.87	35.42	
Difference			1.30	2.25	-2.97	-2.97	N/A	N/A	N/A	N/A	0.15	
IM U.S. Large Cap Growth Equity (SA+CF) Median			10.89	13.32	40.81	40.81	23.63	22.35	17.50	16.99	33.09	
Rank			12	22	64	64	N/A	N/A	N/A	N/A	32	

Performance shown is gross of fees. Performance is annualized for periods greater than one year. Manager inception dates shown represent the first full month following initial funding. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



	Allocation				Perfor	mance (%)						
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Wellington Small Cap Growth (CF)	85,927,063	6.95	3.31	6.20	48.87	48.87	16.61	N/A	N/A	N/A	17.94	08/01/2016
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	17.59	
Difference			-0.61	-2.78	-2.49	-2.49	0.67	N/A	N/A	N/A	0.35	
IM U.S. Small Cap Growth Equity (SA+CF) Median			5.14	12.04	54.91	54.91	21.05	22.71	16.07	15.98	21.73	
Rank			83	86	73	73	77	N/A	N/A	N/A	74	
International Equity	236,622,785	19.14	4.77	9.32	36.70	36.70	11.12	12.05	6.99	5.80	N/A	10/01/1990
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	N/A	
Difference			-0.71	0.16	0.98	0.98	1.74	0.97	1.66	0.35	N/A	
IM International Equity (SA+CF) Median			5.65	9.69	40.33	40.33	10.73	12.38	7.03	7.29	9.14	
Rank			66	56	64	64	47	55	51	76	N/A	
International Developed Equity	155,207,792	12.55	3.78	9.34	30.95	30.95	7.14	9.41	5.18	4.69	N/A	11/01/1995
MSCI EAFE Index (USD) (Net)			5.17	8.83	32.35	32.35	8.27	10.28	4.96	5.89	5.51	
Difference			-1.39	0.51	-1.40	-1.40	-1.13	-0.87	0.22	-1.20	N/A	
IM International Equity Developed Markets (SA+CF) Median			5.64	9.80	37.74	37.74	9.73	12.11	7.11	7.85	8.33	
Rank			80	58	83	83	77	81	79	98	N/A	
Barings Focused Intl Equity (SA)	75,884,563	6.14	2.24	6.10	27.33	27.33	8.26	11.15	7.27	N/A	7.49	02/01/2012
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	7.14	
Difference			-3.24	-3.06	-8.39	-8.39	-1.12	0.07	1.94	N/A	0.35	
IM All ACWI Ex US (SA+CF) Median			5.43	9.42	38.44	38.44	11.03	12.33	6.90	7.45	9.42	
Rank			96	88	96	96	70	67	45	N/A	83	
Mondrian International Equity (SA)	79,323,229	6.42	5.30	12.82	34.77	34.77	5.99	7.82	3.54	5.35	5.56	01/01/2005
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	5.97	
Difference			-0.18	3.66	-0.95	-0.95	-3.39	-3.26	-1.79	-0.10	-0.41	
IM All ACWI Ex US (SA+CF) Median			5.43	9.42	38.44	38.44	11.03	12.33	6.90	7.45	7.70	
Rank			52	15	75	75	93	96	96	93	92	



Allocation	n					Perfor	mance (%)			
Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
81,414,993	6.58	6.70	8.78	45.31	45.31	17.75	16.41	9.66	N/A	8.93	07/01/2012
		5.05	7.45	40.90	40.90	11.27	13.03	6.35	4.29	6.81	
		1.65	1.33	4.41	4.41	6.48	3.38	3.31	N/A	2.12	
		5.49	9.36	45.35	45.35	12.07	13.49	7.12	5.83	8.32	
		38	55	51	51	15	22	19	N/A	42	
22,781,942	1.84	13.19	18.60	57.47	57.47	22.01	17.14	10.49	N/A	9.58	07/01/2012
		5.05	7.45	40.90	40.90	11.27	13.03	6.35	4.29	6.81	
		8.14	11.15	16.57	16.57	10.74	4.11	4.14	N/A	2.77	
		5.49	9.36	45.35	45.35	12.07	13.49	7.12	5.83	8.32	
		7	9	12	12	4	15	13	N/A	30	
58,633,051	4.74	4.37	5.39	41.08	41.08	16.26	N/A	N/A	N/A	15.18	09/01/2016
		5.05	7.45	40.90	40.90	11.27	13.03	6.35	4.29	11.79	
		-0.68	-2.06	0.18	0.18	4.99	N/A	N/A	N/A	3.39	
		5.49	9.36	45.35	45.35	12.07	13.49	7.12	5.83	12.30	
		67	84	72	72	20	N/A	N/A	N/A	21	
279,010,054	22.56	1.95	-1.13	0.82	0.82	4.25	3.19	2.86	3.60	N/A	10/01/1990
		1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	5.83	
		0.12	0.48	1.16	1.16	-1.09	0.16	-0.42	0.21	N/A	
		2.06	0.00	7.97	7.97	5.78	4.99	3.84	3.94	N/A	
		54	69	98	98	87	80	65	57	N/A	
89,376,184	7.23	1.94	-1.63	-0.35	-0.35	5.39	3.05	3.32	3.43	4.09	04/01/2004
		1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.04	
		0.11	-0.02	-0.01	-0.01	0.05	0.02	0.04	0.04	0.05	
		1.97	-1.23	1.05	1.05	6.07	3.67	3.80	3.96	4.54	
		59	85	87	87	89	90	86	88	88	
126,213,396	10.21	2.04	-0.66	2.29	2.29	6.80	4.52	4.33	5.01	6.30	03/01/1996
		1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	5.06	
		0.21	0.95	2.63	2.63	1.46	1.49	1.05	1.62	1.24	
		2.24	-0.43	3.38	3.38	6.71	4.43	4.21	4.57	5.77	
		77	60	73	73	45	47	40	27	27	
63,420,475	5.13	1.81	-1.37	-0.38	-0.38	-1.06	1.06	0.12	N/A	0.95	06/01/2013
		1.31	-3.21	2.63	2.63	4.23	2.34	1.83	2.05	2.33	
		0.50	1.84	-3.01	-3.01	-5.29	-1.28	-1.71	N/A	-1.38	
		0.50	1.04	-5.01	0.01	0.20	1.20		1 1/ / 1		
		2.06	0.00	7.97	7.97	5.78	4.99	3.84	3.94	3.84	
	Allocation Market Value (\$) 81,414,993 22,781,942 279,010,054 89,376,184	Allocation Market Value (\$) % 81,414,993 6.58 222,781,942 1.84 58,633,051 4.74 279,010,054 22.56 89,376,184 7.23	Allocation Market Walue (\$)	Market Value (\$)	Market Value (\$)	Market Value (\$)	Market Value (\$) % QTD CYTD FYTD 1 Year Years 81,414,993 6.58 6.70 8.78 45.31 45.31 17.75 5.05 7.45 40.90 40.90 11.27 1.68 1.33 4.41 4.41 6.48 5.49 9.36 45.35 45.35 12.07 38 55 51 51 15 22,781,942 1.84 13.19 18.60 57.47 57.47 22.01 5.05 7.45 40.90 40.90 11.27 8.14 11.15 16.57 16.57 10.74 5.49 9.36 45.35 45.35 12.07 7 9 12 12 4 58,633,051 4.74 4.37 5.39 41.08 41.08 16.26 16.26 5.49 9.36 45.35 45.35 12.07 7 9 12 12 4 42 272 20 279,010,054 22.56 1.95 -1.13 0.82 </td <td>Market Value (\$) % QTD CYTD FYTD 1 Year Years Years 5 Years 81,414,993 6.58 6.70 8.78 45.31 17.75 16.41 5.05 7.45 40.90 40.90 11.27 13.03 1.65 1.33 4.41 4.41 6.48 3.38 5.49 9.36 45.35 45.35 12.07 13.49 38 55 51 51 15 22 22,781,942 1.84 13.19 18.60 57.47 57.47 22.01 17.14 5.05 7.45 40.90 40.90 11.27 13.03 13.49 8.14 11.15 16.57 10.74 4.11 5.49 9.36 45.35 45.35 12.07 13.49 7 9 12 12 4 15 58,633,051 4.74 4.37 5.39 41.08 41.08 16.26 N/A 5.49 9.36</td> <td>Market Value (\$) % QTD CYTD FYTD 1 Year Years Years 7 Years Years 7 Years Years 8 1,414,993 6.58 6.70 8.78 45.31 45.31 17.75 16.41 9.66 5.05 7.45 40.90 40.90 41.90 11.27 13.03 6.35 5.49 9.36 45.35 45.35 12.07 13.49 7.12 38 55 51 51 15 22 19 22,781,942 1.84 13.19 18.60 57.47 57.47 22.01 17.14 10.49 5.05 7.45 40.90 40.90 11.27 13.03 6.35 8.14 11.15 16.57 16.57 10.74 4.11 4.14 5.49 9.36 45.35 45.35 12.07 13.49 7.12 7 9 12 12 4 15 13 58,633,051 4.74 4.37 5.39 41.08</td> <td>Market Value (\$) % QTD CYTD FYTD 1 Year Vears Vears Vears Vears Vears Vears 7 Years Vears V</td> <td> Market Walue (\$)</td>	Market Value (\$) % QTD CYTD FYTD 1 Year Years Years 5 Years 81,414,993 6.58 6.70 8.78 45.31 17.75 16.41 5.05 7.45 40.90 40.90 11.27 13.03 1.65 1.33 4.41 4.41 6.48 3.38 5.49 9.36 45.35 45.35 12.07 13.49 38 55 51 51 15 22 22,781,942 1.84 13.19 18.60 57.47 57.47 22.01 17.14 5.05 7.45 40.90 40.90 11.27 13.03 13.49 8.14 11.15 16.57 10.74 4.11 5.49 9.36 45.35 45.35 12.07 13.49 7 9 12 12 4 15 58,633,051 4.74 4.37 5.39 41.08 41.08 16.26 N/A 5.49 9.36	Market Value (\$) % QTD CYTD FYTD 1 Year Years Years 7 Years Years 7 Years Years 8 1,414,993 6.58 6.70 8.78 45.31 45.31 17.75 16.41 9.66 5.05 7.45 40.90 40.90 41.90 11.27 13.03 6.35 5.49 9.36 45.35 45.35 12.07 13.49 7.12 38 55 51 51 15 22 19 22,781,942 1.84 13.19 18.60 57.47 57.47 22.01 17.14 10.49 5.05 7.45 40.90 40.90 11.27 13.03 6.35 8.14 11.15 16.57 16.57 10.74 4.11 4.14 5.49 9.36 45.35 45.35 12.07 13.49 7.12 7 9 12 12 4 15 13 58,633,051 4.74 4.37 5.39 41.08	Market Value (\$) % QTD CYTD FYTD 1 Year Vears Vears Vears Vears Vears Vears 7 Years Vears V	Market Walue (\$)

Performance shown is gross of fees. Performance is annualized for periods greater than one year. Manager inception dates shown represent the first full month following initial funding. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



	Allocation	1					Perfor	mance (%)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Long/Short Equity	50,001,643	4.04	0.42	6.29	18.97	18.97	5.59	7.56	5.25	5.56	N/A	01/01/2008
MSCI ACW Index (USD) (Net)			7.39	12.30	39.26	39.26	14.57	14.61	9.75	9.90	6.56	
Difference			-6.97	-6.01	-20.29	-20.29	-8.98	-7.05	-4.50	-4.34	N/A	
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	2.46	
Difference			-3.43	0.72	-4.84	-4.84	-1.93	0.01	0.44	1.09	N/A	
Grosvenor (CF)	709,078	0.06	-0.27	-1.54	9.99	9.99	2.86	5.88	4.08	4.74	3.50	01/01/2008
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	2.46	
Difference			-4.12	-7.11	-13.82	-13.82	-4.66	-1.67	-0.73	0.27	1.04	
Mauna Kea (CF)	49,292,565	3.99	0.47	7.60	N/A	N/A	N/A	N/A	N/A	N/A	18.69	08/01/2020
HFRI FOF: Strategic Index			3.85	5.57	23.81	23.81	7.52	7.55	4.81	4.47	20.12	
Difference			-3.38	2.03	N/A	N/A	N/A	N/A	N/A	N/A	-1.43	
Real Estate	111,173,352	8.99	2.79	4.53	6.04	6.04	3.11	4.46	4.67	6.51	5.89	04/01/1999
NCREIF Property Index			3.59	5.37	7.37	7.37	5.50	6.13	7.72	8.79	8.54	
Difference			-0.80	-0.84	-1.33	-1.33	-2.39	-1.67	-3.05	-2.28	-2.65	
JPMCB Strategic Property (CF)	91,350,936	7.39	2.92	4.83	6.85	6.85	4.88	6.08	7.80	N/A	9.24	04/01/2012
NCREIF Property Index			3.59	5.37	7.37	7.37	5.50	6.13	7.72	8.79	8.51	
Difference			-0.67	-0.54	-0.52	-0.52	-0.62	-0.05	0.08	N/A	0.73	
UBS Trumbull Property (SA)	15,262,416	1.23	2.87	4.19	2.02	2.02	0.34	2.83	5.66	N/A	6.14	01/01/2013
NCREIF Property Index			3.59	5.37	7.37	7.37	5.50	6.13	7.72	8.79	8.33	
Difference			-0.72	-1.18	-5.35	-5.35	-5.16	-3.30	-2.06	N/A	-2.19	
Colcord Center (CF)	4,560,000	0.37	0.00	0.00	3.77	3.77	5.05	3.53	4.99	3.30	3.36	05/01/2008
Private Equity	76,638,738	6.20	17.90	23.75	40.98	40.98	15.50	13.32	10.69	11.42	N/A	10/01/1990
S&P 500 Index+5%			9.88	18.10	47.83	47.83	24.61	23.53	19.80	20.58	16.81	
Difference			8.02	5.65	-6.85	-6.85	-9.11	-10.21	-9.11	-9.16	N/A	
Cambridge US Prvt Eq Index			0.00	10.05	35.55	35.55	15.67	16.57	13.48	13.90	14.73	
Difference			17.90	13.70	5.43	5.43	-0.17	-3.25	-2.79	-2.48	N/A	
American Private Equity II LP	475,079	0.04	15.04	13.49	-7.61	-7.61	-8.53	-3.74	-2.42	1.93	2.90	02/01/2006
Apollo IX LP	4,333,294	0.35	26.60	41.67	55.02	55.02	N/A	N/A	N/A	N/A	4.88	03/01/2019
Apollo VIII LP	6,489,986	0.52	15.19	25.02	46.53	46.53	10.59	13.86	11.57	N/A	5.20	02/01/2014
Carval CR Value (CF)	2,445,827	0.20	8.58	8.58	8.58	8.58	N/A	N/A	N/A	N/A	8.58	08/01/2020
FirstMark Capital Opportunity III LP	3,933,947	0.32	26.52	37.17	40.58	40.58	N/A	N/A	N/A	N/A	36.95	06/01/2020

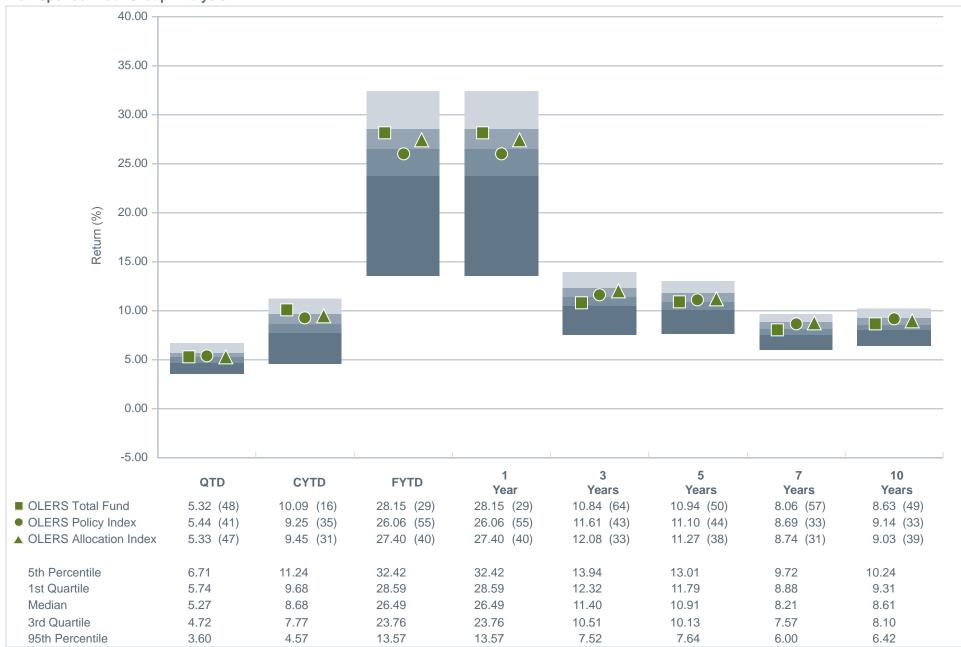
Performance shown is gross of fees. Performance is annualized for periods greater than one year. Manager inception dates shown represent the first full month following initial funding. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



	Allocation	1					Perfor	mance (%))			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
FirstMark V LP	1,306,325	0.11	-1.21	-3.85	-17.65	-17.65	N/A	N/A	N/A	N/A	-17.65	07/01/2020
Francisco Partners SL (CF)	360,717	0.03	-5.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	02/01/2021
Francisco PTRS-AGI-SL (CF)	1,322,703	0.11	3.81	1.43	N/A	N/A	N/A	N/A	N/A	N/A	-10.17	10/01/2020
Knightsbridge VI LP	2,873,115	0.23	87.42	87.42	131.81	131.81	42.13	26.61	18.38	17.88	11.24	12/01/2004
Knightsbridge VII LP	9,707,123	0.79	43.75	43.75	98.75	98.75	37.18	25.02	20.25	18.69	11.14	09/01/2008
Oaktree Opp XI LP	1,774,903	0.14	14.17	20.72	N/A	N/A	N/A	N/A	N/A	N/A	19.15	08/01/2020
Warburg Pincus Global Growth LP	28,919,102	2.34	8.52	12.14	15.36	15.36	N/A	N/A	N/A	N/A	-13.38	03/01/2019
Warburg Pincus XII LP	12,696,617	1.03	13.54	25.40	45.16	45.16	19.82	16.07	N/A	N/A	4.40	12/01/2015



Oklahoma State Pension Commission Oklahoma Law Enforcement Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis



Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



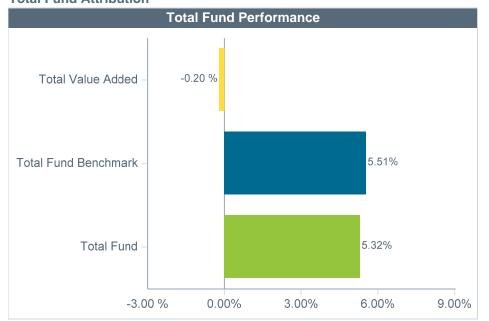
Oklahoma State Pension Commission Oklahoma Law Enforcement Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis

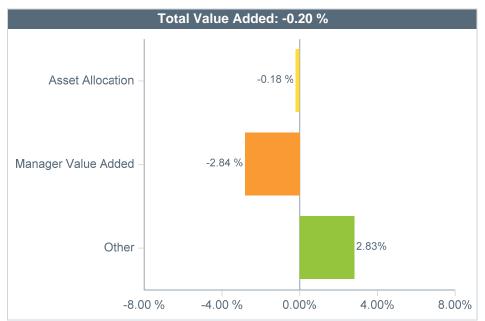


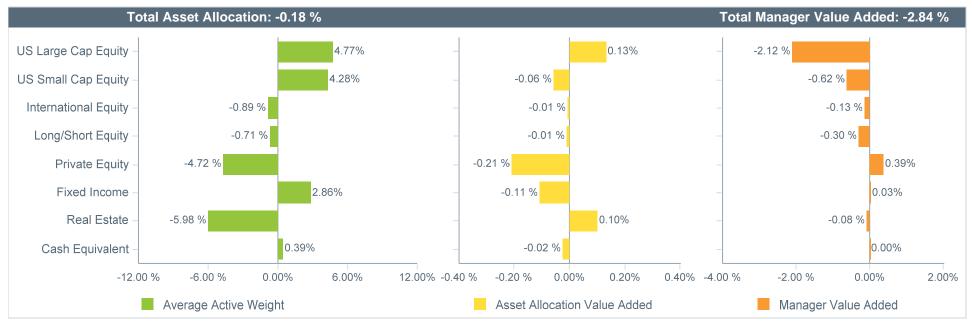
Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments.



Oklahoma State Pension Commission Oklahoma Law Enforcement Retirement System Total Fund Attribution







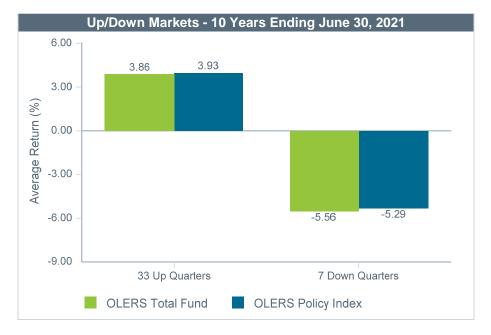
Performance shown is gross of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution calculation.

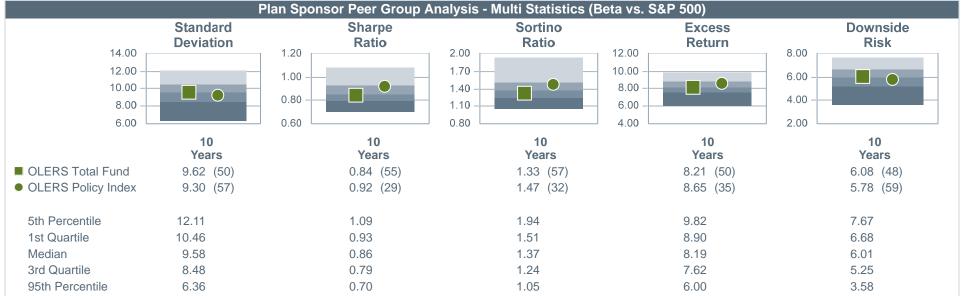


Oklahoma State Pension Commission Oklahoma Law Enforcement Retirement System

Total Fund Risk & Return, Up/Down Markets, and Multi Statistics

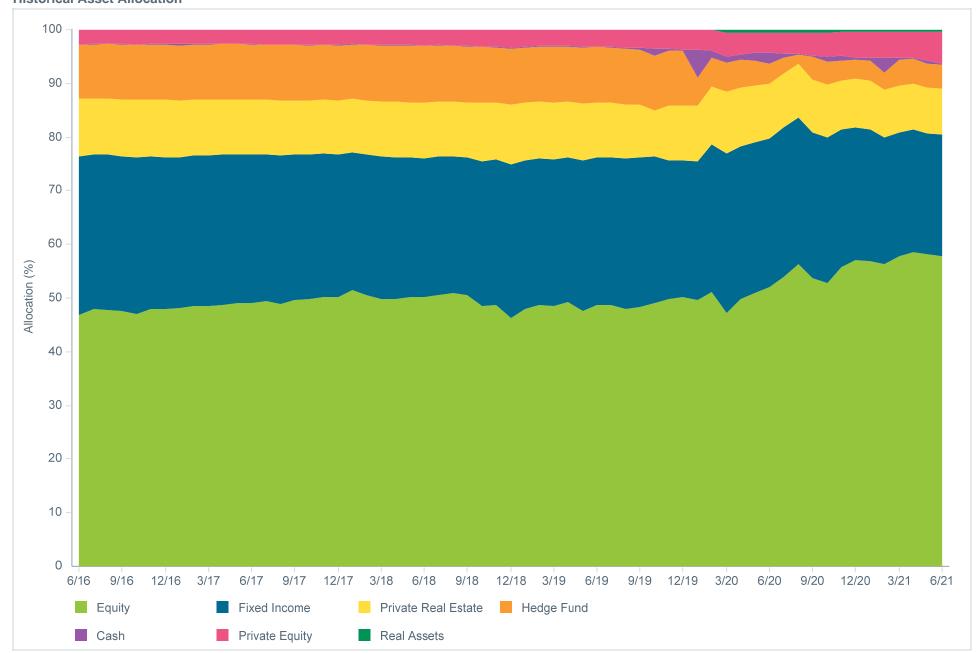














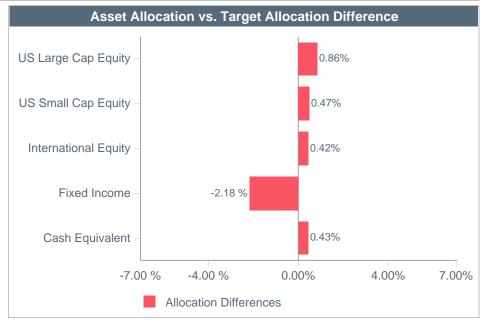
Uniform Retirement System for Justices & Judges (URSJJ)

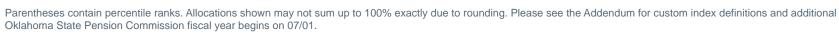


Oklahoma State Pension Commission Uniform Retirement System for Justices & Judges Total Fund Summary

	Performance (%)														
			Trailir	ng						Calenda	r Year				
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016		
URSJJ Total Fund (Net)	5.68	8.53	27.62	27.62	12.33	11.57	8.64	9.08	15.06	21.36	-6.43	16.85	8.05		
URSJJ Policy Index	5.57	8.01	26.94	26.94	12.39	11.60	8.70	9.08	15.19	21.51	-6.09	16.86	8.12		
Difference	0.11	0.52	0.68	0.68	-0.06	-0.03	-0.06	0.00	-0.13	-0.15	-0.34	-0.01	-0.07		
URSJJ Actual Allocation Index	5.70	8.54	27.45	27.45	14.39	12.71	9.39	9.57	21.82	21.01	-6.52	16.63	7.90		
Difference	-0.02	-0.01	0.17	0.17	-2.06	-1.14	-0.75	-0.49	-6.76	0.35	0.09	0.22	0.15		
Actuarial Discount Rate (6.5%)	1.59	3.20	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50		
Difference	4.09	5.33	21.12	21.12	5.83	5.07	2.14	2.58	8.56	14.86	-12.93	10.35	1.55		
URSJJ Total Fund (Gross)	5.69	8.55	27.67	27.67	12.37	11.62	8.68	9.13	15.10	21.40	-6.38	16.89	8.09		
URSJJ Policy Index	5.57	8.01	26.94	26.94	12.39	11.60	8.70	9.08	15.19	21.51	-6.09	16.86	8.12		
Difference	0.12	0.54	0.73	0.73	-0.02	0.02	-0.02	0.05	-0.09	-0.11	-0.29	0.03	-0.03		
URSJJ Actual Allocation Index	5.70	8.54	27.45	27.45	14.39	12.71	9.39	9.57	21.82	21.01	-6.52	16.63	7.90		
Difference	-0.01	0.01	0.22	0.22	-2.02	-1.09	-0.71	-0.44	-6.72	0.39	0.14	0.26	0.19		
All Public Plans-Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	12.57	18.59	-4.15	15.28	7.65		
Rank	27	54	35	35	24	29	34	34	22	11	91	21	37		

Allocation (\$) (%) (%) URSJJ (Judges) 433,468,169 100.00 100.00 US Large Cap Equity 151,102,537 34.86 34.00 US Small Cap Equity 28,050,493 6.47 6.00 International Equity 123,198,259 28.42 28.00										
	Allocation	Allocation	Target Allocation (%)							
URSJJ (Judges)	433,468,169	100.00	100.00							
US Large Cap Equity	151,102,537	34.86	34.00							
US Small Cap Equity	28,050,493	6.47	6.00							
International Equity	123,198,259	28.42	28.00							
Fixed Income	129,239,543	29.82	32.00							
Cash Equivalent	1,877,337	0.43	0.00							







Oklahoma State Pension Commission Uniform Retirement System for Justices & Judges Asset Allocation & Performance - Net of Fees

	Allocati			Perfor	mance (%	5)						
	Market	%	QTD	CYTD	FYTD	1	3	5	7	10	Since	Inception
	Value (\$)					Year	Years	Years	Years	Years	Incep.	Date
URSJJ Total Fund	433,468,169	100.00	5.68	8.53	27.62	27.62	12.33	11.57	8.64	9.08	N/A	06/01/1986
URSJJ Policy Index			5.57	8.01	26.94	26.94	12.39	11.60	8.70	9.08	9.17	
Difference			0.11	0.52	0.68	0.68	-0.06	-0.03	-0.06	0.00	N/A	
URSJJ Actual Allocation Index			5.70	8.54	27.45	27.45	14.39	12.71	9.39	9.57	8.81	
Difference			-0.02	-0.01	0.17	0.17	-2.06	-1.14	-0.75	-0.49	N/A	
Actuarial Discount Rate (6.5%)			1.59	3.20	6.50	6.50	6.50	6.50	6.50	6.50	6.50	
Difference			4.09	5.33	21.12	21.12	5.83	5.07	2.14	2.58	N/A	
US Equity	179,153,030	41.33	7.71	15.34	45.94	45.94	18.29	17.78	13.79	14.55	N/A	10/01/1989
URSJJ US Equity Custom Index			7.90	15.38	45.90	45.90	18.38	17.82	13.83	14.63	N/A	
Difference			-0.19	-0.04	0.04	0.04	-0.09	-0.04	-0.04	-0.08	N/A	
BlackRock Russell 1000 Index (CF)	151,102,537	34.86	8.53	14.95	43.08	43.08	19.17	18.02	14.19	14.92	15.59	07/01/2009
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	16.26	
Difference			-0.01	0.00	0.01	0.01	0.01	0.03	0.03	0.02	-0.67	
BlackRock Russell 2000 Index (CF)	28,050,493	6.47	4.30	17.57	62.21	62.21	13.63	16.63	11.59	12.54	15.15	07/01/2009
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	14.99	
Difference			0.01	0.03	0.18	0.18	0.11	0.16	0.20	0.20	0.16	
International Equity	123,198,259	28.42	5.55	9.33	35.95	35.95	9.62	11.35	5.58	5.69	N/A	05/01/1994
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	6.16	
Difference			-0.09	-0.12	-0.34	-0.34	-0.26	-0.24	-0.23	-0.24	N/A	
BlackRock MSCI ACWI Ex US (CF)	123,198,259	28.42	5.55	9.33	35.95	35.95	9.62	11.35	5.58	5.69	6.59	10/01/2009
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	6.71	
Difference			-0.09	-0.12	-0.34	-0.34	-0.26	-0.24	-0.23	-0.24	-0.12	



Oklahoma State Pension Commission Uniform Retirement System for Justices & Judges Asset Allocation & Performance - Net of Fees

	Allocatio	n					Perfor	mance (%	6)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Fixed Income	129,239,543	29.82	2.75	-1.84	-0.17	-0.17	6.51	3.71	3.99	4.31	N/A	10/01/1989
URSJJ Fixed Income Custom Index			2.58	-1.93	-0.75	-0.75	5.84	3.21	3.62	3.85	N/A	
Difference			0.17	0.09	0.58	0.58	0.67	0.50	0.37	0.46	N/A	
BlackRock US Fixed Income (SA)	63,101,912	14.56	1.94	-1.56	0.17	0.17	5.81	3.37	3.57	3.68	N/A	06/01/2000
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.95	
Difference			0.11	0.05	0.51	0.51	0.47	0.34	0.29	0.29	N/A	
MetWest US Fixed Income (SA)	38,301,565	8.84	1.95	-0.90	1.47	1.47	6.41	3.95	3.83	4.12	N/A	09/01/2001
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.43	
Difference			0.12	0.71	1.81	1.81	1.07	0.92	0.55	0.73	N/A	
Hoisington US Long Duration Fixed Income (SA)	13,655,927	3.15	8.11	-8.83	-11.37	-11.37	8.90	3.49	6.50	7.97	N/A	10/01/1991
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	5.51	
Difference			6.28	-7.22	-11.03	-11.03	3.56	0.46	3.22	4.58	N/A	
BlackRock TIPS (CF)	14,180,138	3.27	3.26	1.75	6.62	6.62	6.65	4.33	3.47	3.52	4.08	03/01/2010
Bloomberg US Trsy US TIPS Index			3.25	1.73	6.51	6.51	6.53	4.17	3.34	3.40	4.03	
Difference			0.01	0.02	0.11	0.11	0.12	0.16	0.13	0.12	0.05	



Oklahoma State Pension Commission Uniform Retirement System for Justices & Judges Asset Allocation & Performance - Gross of Fees

	Allocation						Perfor	mance (%	6)			
	Market	%	QTD	CYTD	FYTD	1	3	5	7	10	Since	Inception
	Value (\$)					Year	Years	Years	Years	Years	Incep.	Date
URSJJ Total Fund	433,468,169	100.00	5.69	8.55	27.67	27.67	12.37	11.62	8.68	9.13	8.87	06/01/1986
URSJJ Policy Index			5.57	8.01	26.94	26.94	12.39	11.60	8.70	9.08	9.17	
Difference			0.12	0.54	0.73	0.73	-0.02	0.02	-0.02	0.05	-0.30	
URSJJ Actual Allocation Index			5.70	8.54	27.45	27.45	14.39	12.71	9.39	9.57	8.81	
Difference			-0.01	0.01	0.22	0.22	-2.02	-1.09	-0.71	-0.44	0.06	
Actuarial Discount Rate (7.0%)			1.71	3.44	7.00	7.00	7.00	7.00	7.00	7.00	7.00	
Difference			3.98	5.11	20.67	20.67	5.37	4.62	1.68	2.13	1.87	
All Public Plans-Total Fund Median			5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	8.53	
Rank			27	54	35	35	24	29	34	34	20	
US Equity	179,153,030	41.33	7.72	15.35	45.95	45.95	18.30	17.79	13.81	14.56	10.29	10/01/1989
URSJJ US Equity Custom Index			7.90	15.38	45.90	45.90	18.38	17.82	13.83	14.63	N/A	
Difference			-0.18	-0.03	0.05	0.05	-0.08	-0.03	-0.02	-0.07	N/A	
All Public Plans-US Equity Segment Median			8.01	15.31	44.45	44.45	17.51	17.20	13.26	14.11	N/A	
Rank			58	50	38	38	31	34	30	30	N/A	
BlackRock Russell 1000 Index (CF)	151,102,537	34.86	8.54	14.96	43.09	43.09	19.18	18.02	14.20	14.93	15.59	07/01/2009
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	16.26	
Difference			0.00	0.01	0.02	0.02	0.02	0.03	0.04	0.03	-0.67	
IM U.S. Large Cap Core Equity (SA+CF) Median			7.95	15.47	40.92	40.92	17.81	17.49	13.72	14.65	15.89	
Rank			30	63	34	34	30	32	39	35	60	
BlackRock Russell 2000 Index (CF)	28,050,493	6.47	4.31	17.58	62.23	62.23	13.65	16.66	11.62	12.57	15.18	07/01/2009
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	14.99	
Difference			0.02	0.04	0.20	0.20	0.13	0.19	0.23	0.23	0.19	
IM U.S. Small Cap Core Equity (SA+CF) Median			5.15	19.60	61.53	61.53	14.01	16.53	12.24	13.41	16.39	
Rank			66	61	46	46	60	47	61	69	77	



Oklahoma State Pension Commission Uniform Retirement System for Justices & Judges Asset Allocation & Performance - Gross of Fees

	Allocation						Perfor	mance (%	(o)			
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
International Equity	123,198,259	28.42	5.56	9.35	35.98	35.98	9.64	11.38	5.61	5.73	6.18	05/01/1994
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	6.16	
Difference			-0.08	-0.10	-0.31	-0.31	-0.24	-0.21	-0.20	-0.20	0.02	
All Public Plans-Intl. Equity Segment Median			5.85	10.23	39.50	39.50	11.24	12.29	6.99	7.12	N/A	
Rank			70	69	80	80	88	82	93	96	N/A	
BlackRock MSCI ACWI Ex US (CF)	123,198,259	28.42	5.56	9.35	35.98	35.98	9.64	11.38	5.61	5.73	6.68	11/01/2009
MSCI ACW Ex US Index (USD) (Gross)			5.64	9.45	36.29	36.29	9.88	11.59	5.81	5.93	6.88	
Difference			-0.08	-0.10	-0.31	-0.31	-0.24	-0.21	-0.20	-0.20	-0.20	
IM All ACWI Ex US (SA+CF) Median			5.43	9.42	38.44	38.44	11.03	12.33	6.90	7.45	8.63	
Rank			48	54	67	67	61	65	70	88	88	
Fixed Income	129,239,543	29.82	2.77	-1.81	-0.08	-0.08	6.60	3.80	4.08	4.41	6.62	10/01/1989
OPERS Fixed Income Custom Index			2.58	-1.93	-0.75	-0.75	5.84	3.21	3.62	3.85	N/A	
Difference			0.19	0.12	0.67	0.67	0.76	0.59	0.46	0.56	N/A	
BlackRock US Fixed Income (SA)	63,101,912	14.56	1.96	-1.52	0.25	0.25	5.90	3.46	3.66	3.77	5.23	06/01/2000
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.95	
Difference			0.13	0.09	0.59	0.59	0.56	0.43	0.38	0.38	0.28	
IM U.S. Broad Market Fixed Income (SA+CF) Median			2.16	-0.86	2.04	2.04	6.25	3.97	3.96	4.21	5.63	
Rank			70	82	81	81	70	77	73	82	80	
MetWest US Fixed Income (SA)	38,301,565	8.84	1.97	-0.87	1.61	1.61	6.52	4.04	3.92	4.24	5.45	09/01/2001
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.43	
Difference			0.14	0.74	1.95	1.95	1.18	1.01	0.64	0.85	1.02	
IM U.S. Broad Market Fixed Income (SA+CF) Median			2.16	-0.86	2.04	2.04	6.25	3.97	3.96	4.21	5.14	
Rank			68	51	58	58	39	48	54	48	27	
Hoisington US Long Duration Fixed Income (SA)	13,655,927	3.15	8.14	-8.76	-11.25	-11.25	9.04	3.63	6.65	8.12	8.31	10/01/1991
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	5.51	
Difference			6.31	-7.15	-10.91	-10.91	3.70	0.60	3.37	4.73	2.80	
IM U.S. Long Duration (SA+CF) Median			6.61	-3.65	1.04	1.04	10.88	6.35	6.99	7.91	N/A	
Rank			2	100	100	100	87	100	80	38	N/A	

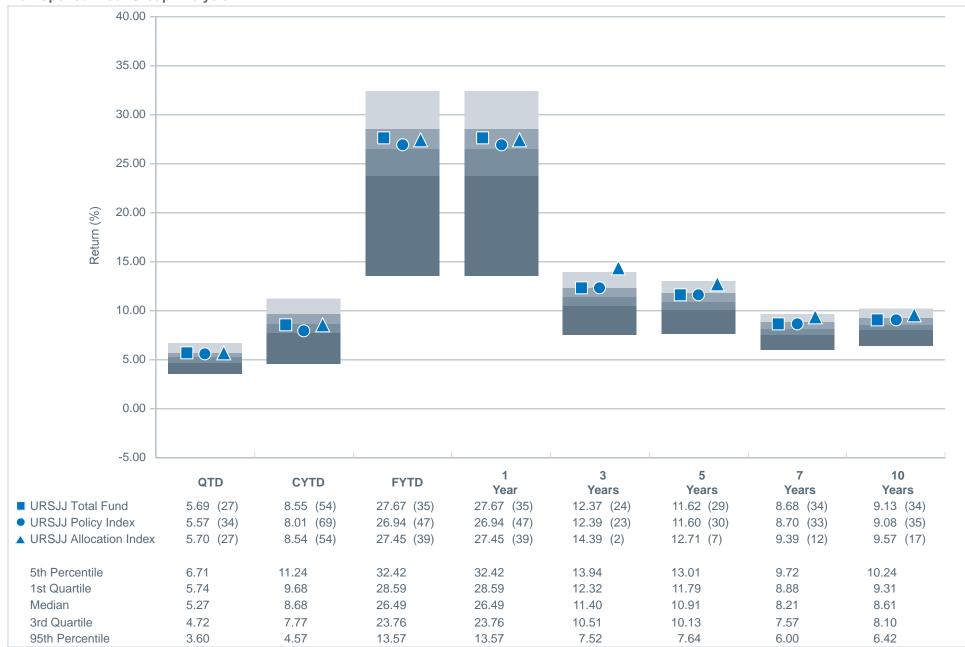


Oklahoma State Pension Commission Uniform Retirement System for Justices & Judges Asset Allocation & Performance - Gross of Fees

	Allocatio	n	Performance (%)									
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
BlackRock TIPS (CF)	14,180,138	3.27	3.26	1.76	6.64	6.64	6.66	4.34	3.48	3.53	4.09	03/01/2010
Bloomberg US Trsy US TIPS Index			3.25	1.73	6.51	6.51	6.53	4.17	3.34	3.40	4.03	
Difference			0.01	0.03	0.13	0.13	0.13	0.17	0.14	0.13	0.06	
IM U.S. TIPS (SA+CF) Median			3.24	1.77	6.60	6.60	6.54	4.22	3.35	3.43	4.07	
Rank			42	51	40	40	33	35	33	37	41	



Oklahoma State Pension Commission Uniform Retirement System for Justices & Judges vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis



Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



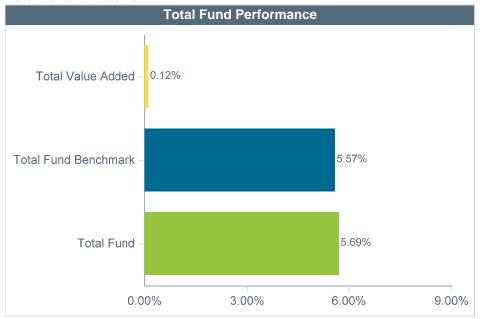
Oklahoma State Pension Commission Uniform Retirement System for Justices & Judges vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis

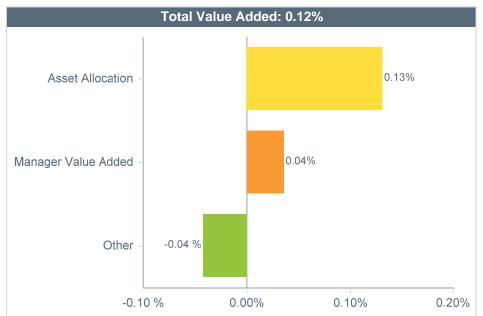


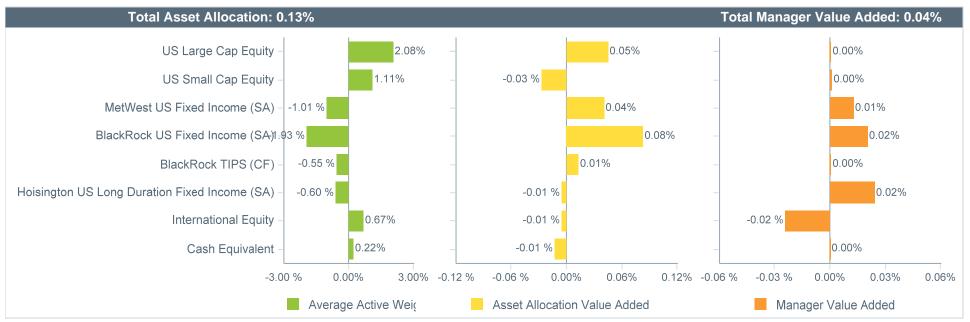
Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments.



Oklahoma State Pension Commission Uniform Retirement System for Justices & Judges Total Fund Attribution







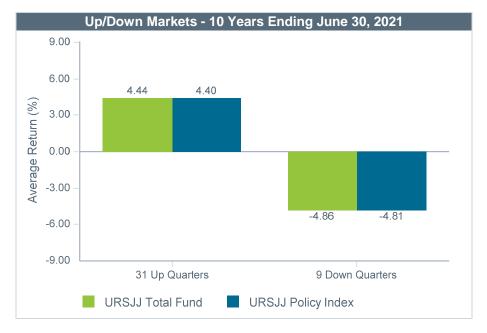


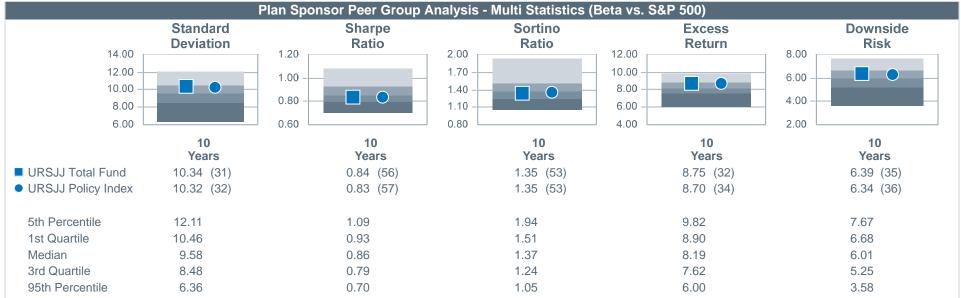


Oklahoma State Pension Commission Uniform Retirement System for Justices & Judges

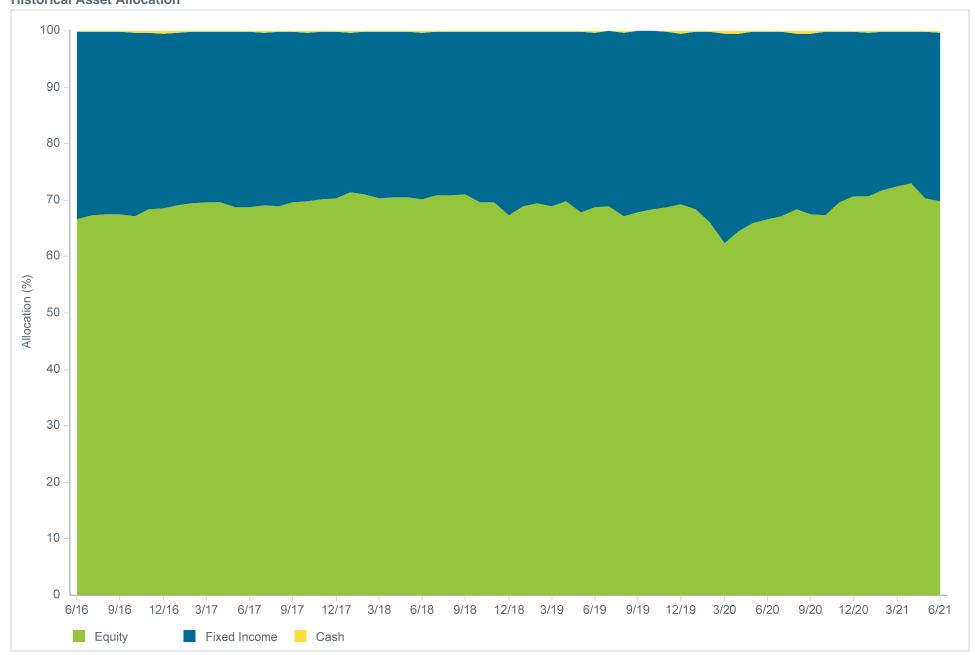
Total Fund Risk & Return, Up/Down Markets, and Multi Statistics













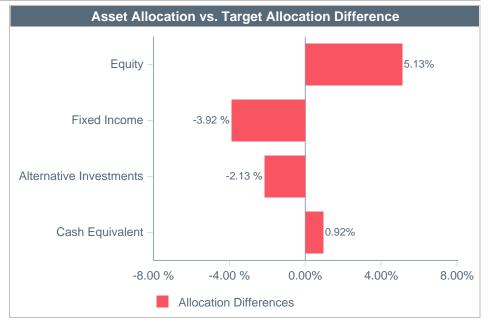
Oklahoma Wildlife Conservation Retirement System (OWCRS)



Oklahoma State Pension Commission Oklahoma Wildlife Conservation Retirement System Total Fund Summary

Performance (%)													
			Trailir	ıg						Calenda	r Year		
	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2020	2019	2018	2017	2016
OWCRS Total Fund (Net)	4.85	7.59	22.82	22.82	11.22	10.49	8.09	8.36	13.00	19.21	-3.85	13.93	6.18
OWCRS Policy Index	3.73	7.07	23.55	23.55	10.15	9.40	7.13	8.02	12.67	17.53	-4.95	12.96	7.34
Difference	1.12	0.52	-0.73	-0.73	1.07	1.09	0.96	0.34	0.33	1.68	1.10	0.97	-1.16
OWCRS Actual Allocation Index	3.84	7.74	25.47	25.47	12.01	10.99	8.64	8.80	13.21	20.53	-3.71	14.38	8.04
Difference	1.01	-0.15	-2.65	-2.65	-0.79	-0.50	-0.55	-0.44	-0.21	-1.32	-0.14	-0.45	-1.86
Actuarial Discount Rate (7.0%)	1.71	3.44	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
Difference	3.14	4.15	15.82	15.82	4.22	3.49	1.09	1.36	6.00	12.21	-10.85	6.93	-0.82
OWCRS Total Fund (Gross)	4.93	7.77	23.23	23.23	11.50	10.74	8.33	8.58	13.34	19.46	-3.68	14.13	6.39
OWCRS Policy Index	3.73	7.07	23.55	23.55	10.15	9.40	7.13	8.02	12.67	17.53	-4.95	12.96	7.34
Difference	1.20	0.70	-0.32	-0.32	1.35	1.34	1.20	0.56	0.67	1.93	1.27	1.17	-0.95
OWCRS Actual Allocation Index	3.84	7.74	25.47	25.47	12.01	10.99	8.64	8.80	13.21	20.53	-3.71	14.38	8.04
Difference	1.09	0.03	-2.24	-2.24	-0.51	-0.25	-0.31	-0.22	0.13	-1.07	0.03	-0.25	-1.65
All Public Plans-Total Fund Median	5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	12.57	18.59	-4.15	15.28	7.65
Rank	68	75	81	81	48	57	47	53	41	38	41	71	85

Asset Allocation vs. Target Allocation									
	Asset Allocation (\$)	Asset Allocation (%)	Target Allocation (%)						
OWCRS (Wildlife)	141,673,934	100.00	100.00						
Equity	78,102,371	55.13	50.00						
Fixed Income	51,122,786	36.08	40.00						
Alternative Investments	11,143,801	7.87	10.00						
Cash Equivalent	1,304,976	0.92	0.00						





	Allocation				Performance (%)							
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
OWCRS Total Fund	141,673,934	100.00	4.85	7.59	22.82	22.82	11.22	10.49	8.09	8.36	6.72	01/01/2006
OWCRS Policy Index			3.73	7.07	23.55	23.55	10.15	9.40	7.13	8.02	6.94	
Difference			1.12	0.52	-0.73	-0.73	1.07	1.09	0.96	0.34	-0.22	
OWCRS Actual Allocation Index			3.84	7.74	25.47	25.47	12.01	10.99	8.64	8.80	7.35	
Difference			1.01	-0.15	-2.65	-2.65	-0.79	-0.50	-0.55	-0.44	-0.63	
Actuarial Discount Rate (7.0%)			1.71	3.44	7.00	7.00	7.00	7.00	7.00	7.00	7.00	
Difference			3.14	4.15	15.82	15.82	4.22	3.49	1.09	1.36	-0.28	
Equity	78,102,371	55.13	7.27	13.53	39.00	39.00	14.57	15.83	11.83	12.75	9.45	01/01/2006
OWCRS Equity Custom Index			5.42	14.85	46.93	46.93	13.54	14.54	10.65	N/A	N/A	
Difference			1.85	-1.32	-7.93	-7.93	1.03	1.29	1.18	N/A	N/A	
iShares:Russ 1000 ETF (IWB)	5,481,967	3.87	7.00	13.43	40.96	40.96	18.47	17.52	13.80	14.60	34.84	03/01/2020
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	36.40	
Difference			-1.54	-1.52	-2.11	-2.11	-0.69	-0.47	-0.36	-0.30	-1.56	
Vanguard SC V I;Ins (VSIIX)	1,500,167	1.06	5.41	23.10	N/A	N/A	N/A	N/A	N/A	N/A	54.55	11/01/2020
Vanguard Spl Sm Cap Val Index			5.40	23.14	65.61	65.61	10.82	12.78	9.64	11.86	54.57	
Difference			0.01	-0.04	N/A	N/A	N/A	N/A	N/A	N/A	-0.02	
Vanguard S-C Id;Inst (VSCIX)	1,443,400	1.02	5.59	16.37	56.50	56.50	14.75	15.97	11.51	12.90	10.51	12/01/2005
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	9.66	
Difference			1.30	-1.17	-5.53	-5.53	1.23	-0.50	0.12	0.56	0.85	
T Rowe Price NH;I (PRJIX)	1,491,046	1.05	11.98	9.92	43.83	43.83	29.39	28.55	21.07	20.55	20.02	01/01/2014
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	12.52	
Difference			8.06	0.94	-7.53	-7.53	13.45	9.79	7.96	7.03	7.50	
Bank of Oklahoma Managed Equity (SA)	49,101,261	34.66	8.20	15.16	37.72	37.72	N/A	N/A	N/A	N/A	49.18	04/01/2020
Russell 3000 Index			8.24	15.11	44.16	44.16	18.73	17.89	13.95	14.70	57.13	
Difference			-0.04	0.05	-6.44	-6.44	N/A	N/A	N/A	N/A	-7.95	
Vanguard Dev Mkt;Adm (VTMGX)	6,354,468	4.49	5.73	9.91	35.81	35.81	9.14	10.90	5.69	6.38	4.89	09/01/1999
MSCI Wrld Ex US Index (USD) (Net)			5.65	9.92	33.60	33.60	8.57	10.36	4.90	5.70	4.77	
Difference			0.08	-0.01	2.21	2.21	0.57	0.54	0.79	0.68	0.12	



	Allocation	on	Performance (%)									
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Dodge & Cox Intl Stock (DODFX)	4,167,984	2.94	4.66	12.15	40.42	40.42	7.49	10.23	3.50	5.53	4.21	03/01/2014
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	5.82	
Difference			-0.82	2.99	4.70	4.70	-1.89	-0.85	-1.83	0.08	-1.61	
MFS Intl New Discv;R6 (MIDLX)	4,222,452	2.98	4.57	5.06	29.18	29.18	8.16	11.10	7.10	8.13	7.45	03/01/2014
MSCI ACW Ex US Grth Index (USD) (Net)			6.60	6.52	33.68	33.68	13.23	13.37	8.06	7.28	8.33	
Difference			-2.03	-1.46	-4.50	-4.50	-5.07	-2.27	-0.96	0.85	-0.88	
Invesco Dev Mkt;R6 (ODVIX)	4,339,627	3.06	5.66	6.57	37.35	37.35	11.67	14.01	6.53	6.14	7.40	06/01/2013
MSCI Emg Mkts Index (USD) (Net)			5.05	7.45	40.90	40.90	11.27	13.03	6.35	4.29	6.37	
Difference			0.61	-0.88	-3.55	-3.55	0.40	0.98	0.18	1.85	1.03	
Fixed Income	51,122,786	36.08	1.69	-0.37	2.62	2.62	5.78	3.17	3.23	3.29	3.59	01/01/2006
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.23	
Difference			-0.14	1.24	2.96	2.96	0.44	0.14	-0.05	-0.10	-0.64	
Bank of Oklahoma Managed Fixed Income (SA)	23,791,483	16.79	1.73	-0.69	1.24	1.24	5.24	2.75	2.87	2.92	3.43	12/01/2005
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.27	
Difference			-0.10	0.92	1.58	1.58	-0.10	-0.28	-0.41	-0.47	-0.84	
MetWest:Total Rtn;I (MWTIX)	7,217,387	5.09	1.80	-1.16	1.28	1.28	6.12	3.63	3.54	4.32	4.50	08/01/2017
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	3.85	
Difference			-0.03	0.45	1.62	1.62	0.78	0.60	0.26	0.93	0.65	
PIMCO:Income;Inst (PIMIX)	8,548,106	6.03	2.01	1.84	9.58	9.58	5.66	5.81	5.23	6.98	4.80	08/01/2017
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	3.85	
Difference			0.18	3.45	9.92	9.92	0.32	2.78	1.95	3.59	0.95	
PIMCO:Intl Bd (DH);Inst (PFORX)	4,322,289	3.05	0.12	-1.21	3.03	3.03	4.27	3.82	4.52	5.37	2.23	03/01/2020
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	1.46	
Difference			-1.71	0.40	3.37	3.37	-1.07	0.79	1.24	1.98	0.77	



	Allocatio	Allocation				Performance (%)						
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Alternative Investments	11,143,801	7.87	3.68	6.48	18.06	18.06	5.85	6.11	3.59	3.47	3.68	12/01/2010
OWCRS Alternatives Custom Index			2.89	4.97	18.31	18.31	6.32	5.61	3.32	N/A	N/A	
Difference			0.79	1.51	-0.25	-0.25	-0.47	0.50	0.27	N/A	N/A	
First Eagle:Global;I (SGIIX)	5,720,253	4.04	6.02	10.38	29.63	29.63	10.26	9.36	7.05	7.83	8.76	08/01/2017
MSCI Wrld Index (USD) (Net)			7.74	13.05	39.04	39.04	14.99	14.83	10.16	10.65	13.63	
Difference			-1.72	-2.67	-9.41	-9.41	-4.73	-5.47	-3.11	-2.82	-4.87	
Calamos:Mkt Neut Inc;I (CMNIX)	5,423,548	3.83	1.33	2.71	7.08	7.08	4.74	4.86	4.00	4.25	4.60	08/01/2017
Bloomberg US Govt/Credit Bond Index			2.42	-1.96	-0.39	-0.39	5.95	3.31	3.56	3.71	4.25	
Difference			-1.09	4.67	7.47	7.47	-1.21	1.55	0.44	0.54	0.35	



	Allocation	on			Performance (%)							
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
OWCRS Total Fund	141,673,934	100.00	4.93	7.77	23.23	23.23	11.50	10.74	8.33	8.58	6.93	01/01/2006
OWCRS Policy Index			3.73	7.07	23.55	23.55	10.15	9.40	7.13	8.02	6.94	
Difference			1.20	0.70	-0.32	-0.32	1.35	1.34	1.20	0.56	-0.01	
OWCRS Actual Allocation Index			3.84	7.74	25.47	25.47	12.01	10.99	8.64	8.80	7.35	
Difference			1.09	0.03	-2.24	-2.24	-0.51	-0.25	-0.31	-0.22	-0.42	
Actuarial Discount Rate (7.0%)			1.71	3.44	7.00	7.00	7.00	7.00	7.00	7.00	7.00	
Difference			3.22	4.33	16.23	16.23	4.50	3.74	1.33	1.58	-0.07	
All Public Plans-Total Fund Median			5.27	8.68	26.49	26.49	11.40	10.91	8.21	8.61	7.38	
Rank			68	75	81	81	48	57	47	53	75	
Equity	78,102,371	55.13	7.34	13.68	39.38	39.38	14.69	15.90	11.88	12.78	9.48	01/01/2006
OWCRS Equity Custom Index			5.42	14.85	46.93	46.93	13.54	14.54	10.65	N/A	N/A	
Difference			1.92	-1.17	-7.55	-7.55	1.15	1.36	1.23	N/A	N/A	
iShares:Russ 1000 ETF (IWB)	5,481,967	3.87	7.04	13.52	41.18	41.18	18.65	17.70	13.97	14.77	35.05	03/01/2020
Russell 1000 Index			8.54	14.95	43.07	43.07	19.16	17.99	14.16	14.90	36.40	
Difference			-1.50	-1.43	-1.89	-1.89	-0.51	-0.29	-0.19	-0.13	-1.35	
IM U.S. Large Cap Equity (MF) Median			8.22	14.53	40.68	40.68	18.02	17.10	13.19	13.73	34.64	
Rank			66	64	47	47	47	46	42	39	49	
Vanguard SC V I;Ins (VSIIX)	1,500,167	1.06	5.42	23.14	N/A	N/A	N/A	N/A	N/A	N/A	54.62	11/01/2020
Vanguard Spl Sm Cap Val Index			5.40	23.14	65.61	65.61	10.82	12.78	9.64	11.86	54.57	
Difference			0.02	0.00	N/A	N/A	N/A	N/A	N/A	N/A	0.05	
IM U.S. Small Cap Value Equity (MF) Median			4.52	26.26	72.04	72.04	9.21	12.07	7.87	9.95	60.45	
Rank			31	78	N/A	N/A	N/A	N/A	N/A	N/A	75	
Vanguard S-C Id;Inst (VSCIX)	1,443,400	1.02	5.60	16.39	56.56	56.56	14.80	16.01	11.55	12.94	10.55	12/01/2005
Russell 2000 Index			4.29	17.54	62.03	62.03	13.52	16.47	11.39	12.34	9.66	
Difference			1.31	-1.15	-5.47	-5.47	1.28	-0.46	0.16	0.60	0.89	
IM U.S. Small Cap Core Equity (MF) Median			4.00	19.79	60.83	60.83	11.18	13.69	9.68	10.95	8.90	
Rank			18	79	66	66	10	16	12	9	3	
T Rowe Price NH;I (PRJIX)	1,491,046	1.05	12.16	10.29	44.76	44.76	30.22	29.38	21.87	21.38	20.82	01/01/2014
Russell 2000 Grth Index			3.92	8.98	51.36	51.36	15.94	18.76	13.11	13.52	12.52	
Difference			8.24	1.31	-6.60	-6.60	14.28	10.62	8.76	7.86	8.30	
IM U.S. Small Cap Growth Equity (MF) Median			4.77	9.89	52.26	52.26	17.35	20.01	14.09	13.79	13.24	
Rank			1	48	85	85	5	6	3	1	3	

Performance shown is gross of fees. Performance is annualized for periods greater than one year. Manager inception dates shown represent the first full month following initial funding. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



	Allocation	Allocation			Performance (%)							
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Bank of Oklahoma Managed Equity (SA)	49,101,261	34.66	8.25	15.26	37.96	37.96	N/A	N/A	N/A	N/A	49.38	04/01/2020
Russell 3000 Index			8.24	15.11	44.16	44.16	18.73	17.89	13.95	14.70	57.13	
Difference			0.01	0.15	-6.20	-6.20	N/A	N/A	N/A	N/A	-7.75	
Vanguard Dev Mkt;Adm (VTMGX)	6,354,468	4.49	5.75	9.95	35.90	35.90	9.21	10.97	5.76	6.46	4.97	09/01/1999
MSCI Wrld Ex US Index (USD) (Net)			5.65	9.92	33.60	33.60	8.57	10.36	4.90	5.70	4.77	
Difference			0.10	0.03	2.30	2.30	0.64	0.61	0.86	0.76	0.20	
IM All ACWI Ex US (MF) Median			5.39	8.85	36.78	36.78	11.07	11.45	6.23	6.34	5.86	
Rank			39	30	58	58	74	62	57	48	69	
Dodge & Cox Intl Stock (DODFX)	4,167,984	2.94	4.82	12.51	41.30	41.30	8.17	10.92	4.16	6.19	4.87	03/01/2014
MSCI ACW Ex US Index (USD) (Net)			5.48	9.16	35.72	35.72	9.38	11.08	5.33	5.45	5.82	
Difference			-0.66	3.35	5.58	5.58	-1.21	-0.16	-1.17	0.74	-0.95	
IM ACWI Ex US Core (MF) Median			4.99	9.53	36.57	36.57	10.07	11.07	5.57	5.76	5.85	
Rank			62	8	23	23	88	59	84	37	84	
MFS Intl New Discv;R6 (MIDLX)	4,222,452	2.98	4.80	5.55	30.35	30.35	9.16	12.13	8.10	9.15	8.45	03/01/2014
MSCI ACW Ex US Grth Index (USD) (Net)			6.60	6.52	33.68	33.68	13.23	13.37	8.06	7.28	8.33	
Difference			-1.80	-0.97	-3.33	-3.33	-4.07	-1.24	0.04	1.87	0.12	
IM ACWI Ex US Growth (MF) Median			6.74	6.84	36.62	36.62	13.67	14.02	8.12	7.87	8.26	
Rank			90	84	87	87	94	82	51	19	45	
Invesco Dev Mkt;R6 (ODVIX)	4,339,627	3.06	5.87	7.00	38.45	38.45	12.59	14.95	7.41	7.04	8.29	06/01/2013
MSCI Emg Mkts Index (USD) (Net)			5.05	7.45	40.90	40.90	11.27	13.03	6.35	4.29	6.37	
Difference			0.82	-0.45	-2.45	-2.45	1.32	1.92	1.06	2.75	1.92	
IM Emerging Markets Equity (MF) Median			5.10	7.97	41.88	41.88	11.25	12.40	6.13	4.34	6.22	
Rank			37	62	69	69	36	23	31	11	20	



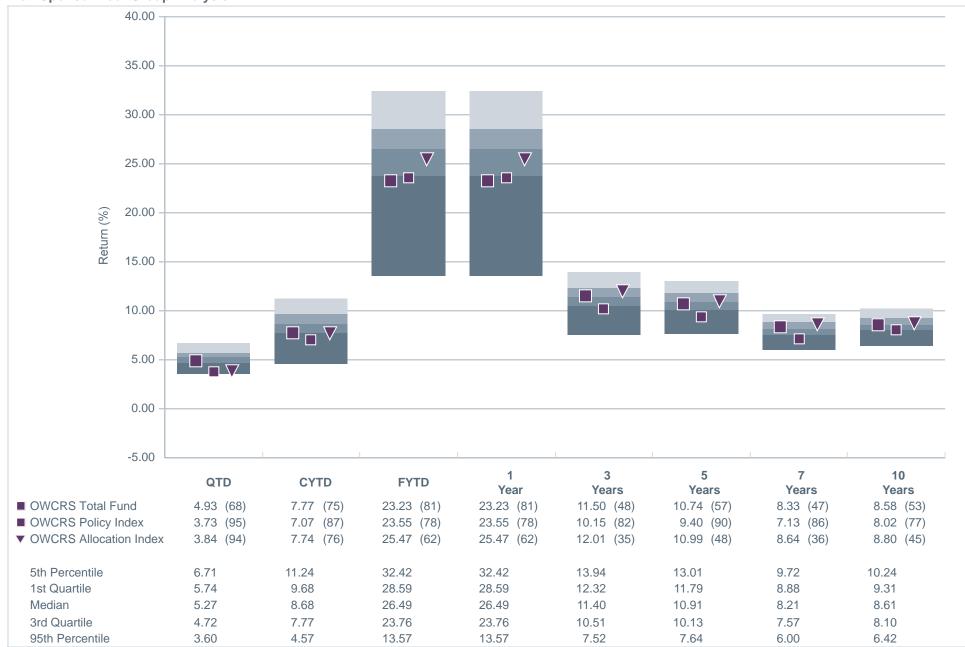
	Allocation			Performance (%)								
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Fixed Income	51,122,786	36.08	1.77	-0.22	2.95	2.95	5.92	3.25	3.29	3.34	3.62	01/01/2006
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.23	
Difference			-0.06	1.39	3.29	3.29	0.58	0.22	0.01	-0.05	-0.61	
Bank of Oklahoma Managed Fixed Income (SA)	23,791,483	16.79	1.77	-0.60	1.43	1.43	5.43	2.99	3.09	3.13	3.63	12/01/2005
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	4.27	
Difference			-0.06	1.01	1.77	1.77	0.09	-0.04	-0.19	-0.26	-0.64	
IM U.S. Broad Market Fixed Income (SA+CF) Median			2.16	-0.86	2.04	2.04	6.25	3.97	3.96	4.21	5.04	
Rank			91	39	61	61	87	98	98	99	100	
MetWest:Total Rtn;I (MWTIX)	7,217,387	5.09	1.91	-0.95	1.72	1.72	6.58	4.09	4.00	4.78	4.96	08/01/2017
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	3.85	
Difference			0.08	0.66	2.06	2.06	1.24	1.06	0.72	1.39	1.11	
IM U.S. Broad Market Core+ Fixed Income (MF) Median			2.15	-0.90	2.68	2.68	6.01	3.96	3.51	3.93	4.32	
Rank			79	52	72	72	27	41	19	8	20	
PIMCO:Income;Inst (PIMIX)	8,548,106	6.03	2.13	2.09	10.17	10.17	6.60	6.81	6.26	8.05	5.77	08/01/2017
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	3.85	
Difference			0.30	3.70	10.51	10.51	1.26	3.78	2.98	4.66	1.92	
IM Multi-Sector General Bond (MF) Median			2.13	1.47	9.12	9.12	5.76	4.88	3.74	4.46	4.39	
Rank			50	35	38	38	23	7	2	1	10	
PIMCO:Intl Bd (DH);Inst (PFORX)	4,322,289	3.05	0.26	-0.92	3.63	3.63	4.86	4.40	5.10	5.95	2.83	03/01/2020
Bloomberg US Agg Bond Index			1.83	-1.61	-0.34	-0.34	5.34	3.03	3.28	3.39	1.46	
Difference			-1.57	0.69	3.97	3.97	-0.48	1.37	1.82	2.56	1.37	
IM International Fixed Income (MF) Median			0.78	-2.80	3.95	3.95	3.41	2.03	0.61	1.26	2.59	
Rank			82	8	51	51	10	3	2	1	48	



	Allocatio	Allocation			Performance (%)							
	Market Value (\$)	%	QTD	CYTD	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Incep.	Inception Date
Alternative Investments	11,143,801	7.87	3.91	6.95	19.04	19.04	6.21	6.33	3.74	3.57	3.78	12/01/2010
OWCRS Alternatives Custom Index			2.89	4.97	18.31	18.31	6.32	5.61	3.32	N/A	N/A	
Difference			1.02	1.98	0.73	0.73	-0.11	0.72	0.42	N/A	N/A	
First Eagle:Global;I (SGIIX)	5,720,253	4.04	6.25	10.85	30.71	30.71	11.20	10.28	7.96	8.75	9.68	08/01/2017
MSCI Wrld Index (USD) (Net)			7.74	13.05	39.04	39.04	14.99	14.83	10.16	10.65	13.63	
Difference			-1.49	-2.20	-8.33	-8.33	-3.79	-4.55	-2.20	-1.90	-3.95	
Calamos:Mkt Neut Inc;I (CMNIX)	5,423,548	3.83	1.57	3.19	8.11	8.11	5.78	5.91	5.04	5.30	5.65	08/01/2017
Bloomberg US Govt/Credit Bond Index			2.42	-1.96	-0.39	-0.39	5.95	3.31	3.56	3.71	4.25	
Difference			-0.85	5.15	8.50	8.50	-0.17	2.60	1.48	1.59	1.40	



Oklahoma State Pension Commission Oklahoma Wildlife Conservation Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis



Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments. Oklahoma State Pension Commission fiscal year begins on 07/01.



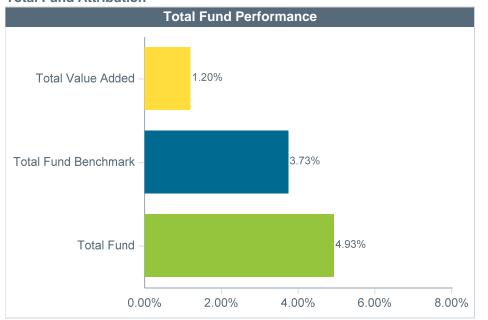
Oklahoma State Pension Commission Oklahoma Wildlife Conservation Retirement System vs. All Public Plans-Total Fund Plan Sponsor Peer Group Analysis

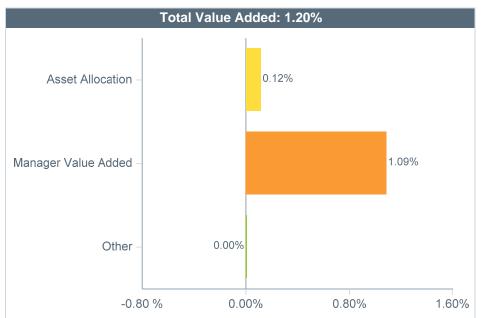


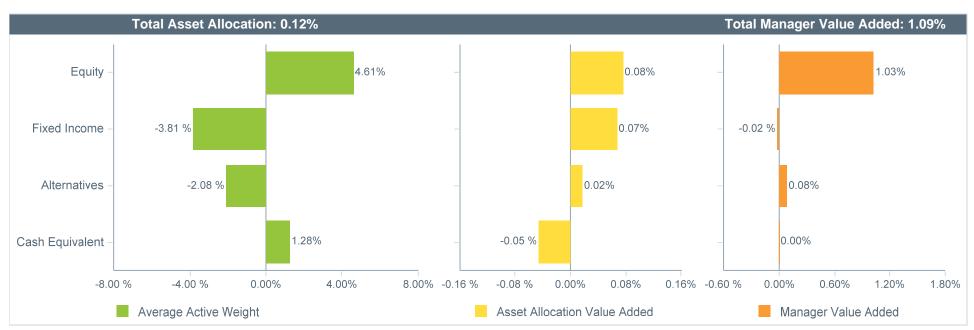
Performance shown is gross of fees. Parentheses contain percentile ranks. Please see the Addendum for custom index definitions and additional comments.



Oklahoma State Pension Commission Oklahoma Wildlife Conservation Retirement System Total Fund Attribution







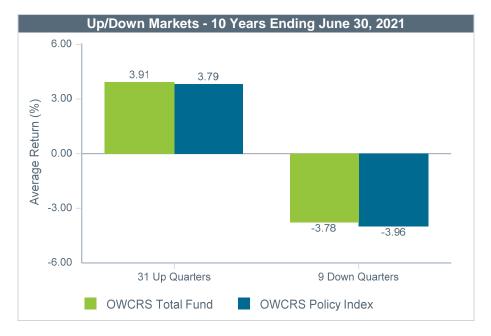
Performance shown is gross of fees. Calculation is based on monthly periodicity. See Glossary for additional information regarding the Total Fund Attribution calculation.

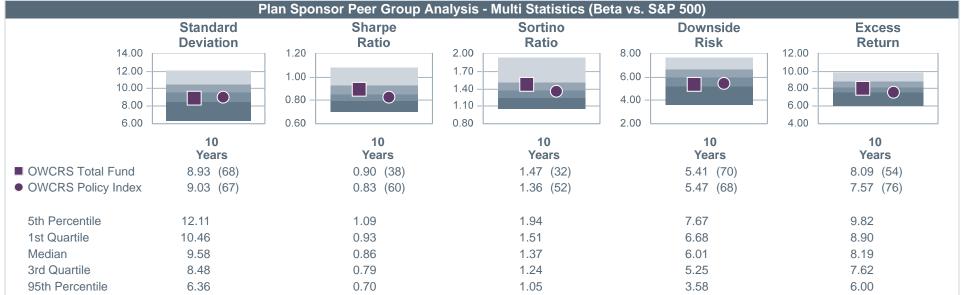


Oklahoma State Pension Commission Oklahoma Wildlife Conservation Retirement System

Total Fund Risk & Return, Up/Down Markets, and Multi Statistics

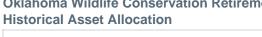


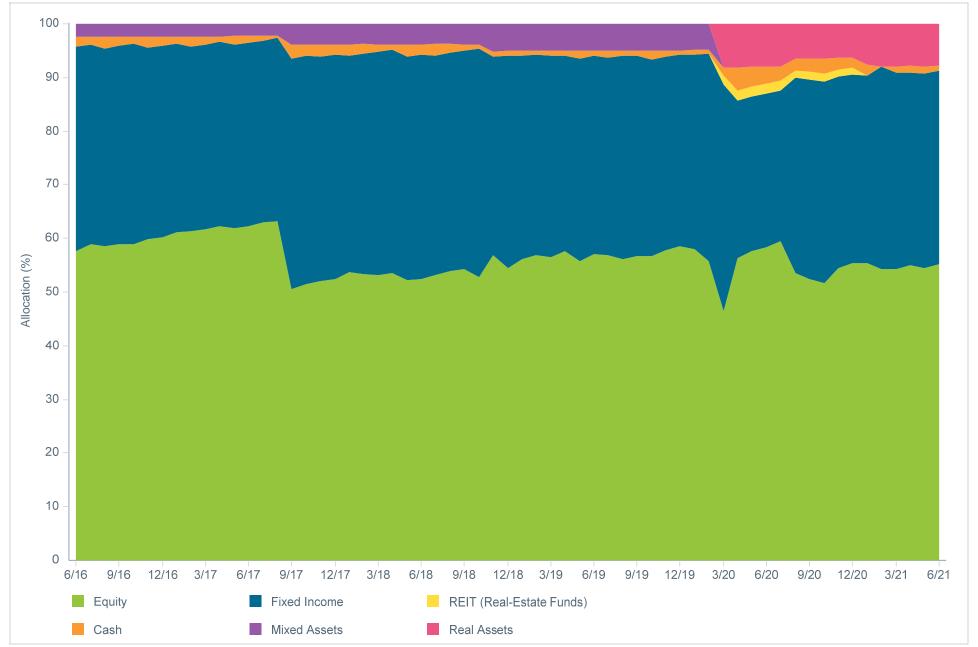














Addendum & Glossary



Oklahoma State Pension Commission
As of June 30, 2021
Addendum

Performance Comments:

- Fiscal year begins on 07/01.
- RVK began monitoring the assets of Oklahoma State Pension Commission as of 07/01/2020. Prior historical data on market values and performance was provided by the prior investment consultant and/or custodian bank.
- Manager inception dates shown reflect the first full month of performance following initial funding.
- Mutual fund performance prior to 07/01/2020 or client inception is product specific.
- Manager inception dates shown represent the first full month following initial funding.
- Indices show N/A for since inception returns when the fund contains more history than the corresponding benchmark.
- Net of fees performance show N/A for since inception returns when the fund contains more gross of fees performance history.

Custom Index Comments:

- The active Actual Allocation Index of each plan is calculated monthly based on beginning of period investment weights applied to the corresponding primary benchmark return.
- OTRS Policy Index: OTRS's passive, policy index is calculated monthly and currently consists of 43.5% Russell 3000 Index, 19% MSCI ACW ex US IMI (USD) (Net), 22% Bloomberg US Universal Bond Index, 9% NCREIF Property Index (Monthly), and 6.5% Russell 2000 Index+4%. Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- OPERS Policy Index: OPERS's passive, policy index is calculated monthly and currently consists of 40% OPERS US Equity Custom Index, 28% MSCI ACW ex US Index (USD) (Net), and 32% OPERS Fixed Income Custom Index. Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- OPERS US Equity Custom Index is calculated monthly and current consists of 85% Russell 1000 Index and 15% Russell 2000 Index. Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- OPERS Fixed Income Custom Index is calculated monthly and current consists of 78% Bloomberg US Agg Bond Index, 11% FTSE Treasury Index 20+ Yr Index, and 11% Bloomberg US Treasury US TIPS Index. Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- OFPRS Policy Index: OFPRS's passive, policy index is calculated monthly and currently consists of 47% Russell 3000 Index, 15% MSCI ACW ex US Index (USD) (Net), 13% Bloomberg US Agg Bond Index, 7% Bloomberg Global Agg ex US Index (USD) (Unhedged), 10% NCREIF ODCE Index (AWA) (Net) (Monthly), and 8% Cambridge US Private Equity Index (Monthly). Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- OPPRS Policy Index: OPPRS's passive, policy index is calculated monthly and currently consists of 65% MSCI ACW Index (USD) (Net), 20% Bloomberg US Universal Bond Index, and 15% NCREIF ODCE Index (AWA) (Net) (Monthly). From 07/01/2020 through 01/31/2021, it consisted of 60% MSCI ACW Index (USD) (Net), 25% Bloomberg US Universal Bond Index, and 15% NCREIF ODCE Index (AWA) (Net) (Monthly). Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- OPPRS Real Assets Blended Index: is calculated monthly and current consists of 100% NCREIF ODCE Index (AWA) (Net) (Monthly). From 01/01/2016 through 08/31/2019, it consisted of 67% NCREIF ODCE Index (AWA) (Net) (Monthly) and 33% Bloomberg Commodity Index (TR). From 08/01/2014 through 12/31/2015, it consisted of 50% NCREIF ODCE Index (AWA) (Net) (Monthly) and 50% Bloomberg Commodity Index (TR). Prior to 08/01/2014, the index consisted of 100% NCREIF ODCE Index (AWA) (Net) (Monthly).
- Oaktree Global Credit Custom Index is calculated monthly and current consists of 50% ICE BofAML Global High Yield Index and 50% Credit Suisse Leveraged Loan Index.
- OLERS Policy Index: OLERS's passive, policy index is calculated monthly and currently consists of 35% S&P 500 Index (Cap Weighted), 10% Russell 2000 Index, 20% MSCI ACW ex US Index (USD) (Net), 20% Bloomberg US Agg Bond Index, and 15% NCREIF ODCE Index (AWA) (Net) (Monthly). From 07/01/2020 through 01/31/2021, it consisted of 35% S&P 500 Index (Cap Weighted), 10% Russell 2000 Index, 15% MSCI ACW ex US Index (USD) (Net), 30% Bloomberg US Agg Bond Index, and 10% NCREIF ODCE Index (AWA) (Net) (Monthly). Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- URSJJ Policy Index: URSJJ's passive, policy index is calculated monthly and currently consists of 40% URSJJ US Equity Custom Index, 28% MSCI ACW ex US Index (USD) (Net), and 32% URSJJ Fixed Income Index. Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- URSJJ US Equity Custom Index is calculated monthly and current consists of 85% Russell 1000 Index and 15% Russell 2000 Index. Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- URSJJ Fixed Income Custom Index is calculated monthly and current consists of 78% Bloomberg US Agg Bond Index, 11% FTSE Treasury Index 20+ Yr Index, and 11% Bloomberg US Treasury US TIPS Index. Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- OWCRS Policy Index: OWCRS's passive, policy index is calculated monthly and currently consists of 50% OWCRS Equity Custom Index, 40% Bloomberg US Agg Bond Index, and 10% HFRI FoF Composite Index. Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- OWCRS Equity Custom Index is calculated monthly and current consists of 25% MSCI EAFE Index (USD) (Net), 25% S&P 500 Index (Cap Weighted), 25% Russell 2000 Index, and 25% S&P Mid Cap 400 Index (Gross) (Cap Weighted). Performance prior to 07/01/2020 was calculated by the prior investment consultant.
- OWCRS Alternatives Custom Index is calculated monthly and currently consists of 100% HFRI FoF Composite Index. Performance prior to 07/01/2020 was calculated by the



Oklahoma State Pension Commission As of June 30, 2021

Addendum

prior investment consultant.

• Vanguard Spi Sm Cap Val Index consists of S&P Sm Cap 600 Val Index through 05/16/03; MSCI US Sm Cap Val Index through 04/16/13; and CRSP US Sm Cap Val Index thereafter.



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. *Standard & 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 Cr	edit Quality – I	nvestment Grade	Lower Cr	edit Quality – E	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	В	B2	
Α	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
			С	Ca	
			D	С	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, 3nd quartile, and 4th quartile). The median observation is where the 2nd quartile and 3nd 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.

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.

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 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.



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 guarters 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.



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	Asset Class	RVK Liquidity Rating
<u>Liquid Investments</u>		Less Liquid Investments	
T-Bills and Treasurys	100	Fixed Income Plus Sector	50
Cash Equivalents	98	Stable Value (Plan Sponsor Directed)	50
TIPS	95	Hedge Funds of Funds	35
US Large Cap Equity	95		
Diversified Real Return	93		
Stable Value (Participant Directed)	91		
Global Equity	90	Not Liquid Investments	
Non-US Large Cap Equity	90	Core Real Estate	25
Global Tactical Asset Allocation	88	Core Plus Real Estate	15
MLPs	85	Non-Core Real Estate	5
US Mid Cap Equity	85	Private Equity Funds of Funds	5
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		

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:

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

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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