Memorandum

To	Ohio Retirement Study Council
From	RVK, Inc.
Subject	Executive Summary: December 31, 2020 Investment Performance
Date	May 13, 2021

Outlined below please find a summary of significant observations, key attributes, and performance metrics of Ohio's six[1] public retirement plans for the period ended December 31, 2020. The purpose of this analysis is to facilitate an objective "apples-to-apples" comparison of the six plans relative to each other, similar benchmarks, and peer group data consisting of similarly sized public pension plans.

While much of the discussion in this summary focuses on results from the trailing two-quarter period, we strongly encourage the Council to place significant weight on long-term results to better assess the management of the State's various pension plan assets. Though the six investment programs share many similarities, it is important to be aware of the crucial differences that may affect performance when reviewing this analysis. Each plan has unique long-term investment objectives and therefore distinct asset allocations in order to meet these objectives. Investment execution approaches also vary as it relates to active/passive and internal/external management.

The full results of our analysis are contained within our Investment Performance Analysis Report and we hope this Executive Summary will help in your review of that data. The information received by RVK, to the best of our knowledge, is complete and appropriate.

Total Fund Returns and Risk

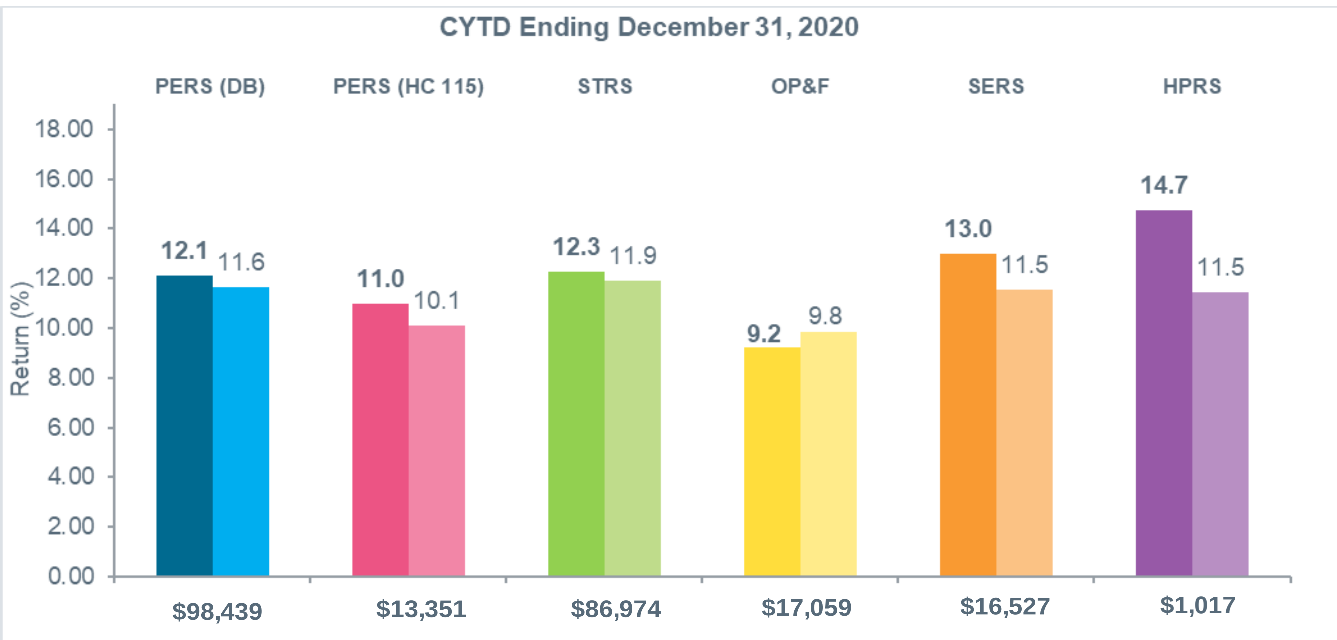
Returns for the Ohio plans ranged from 9.21% to 14.75% for the 2020 calendar year. Risk assets saw significant declines in the first quarter of 2020 as governments around the globe took measures to combat the virus, closing down meaningful portions of their economies—imposing travel restrictions, cancelling social gatherings and events, shuttering non-essential businesses, and even locking down entire cities. In order to mitigate the economic impact of these actions, the United States quickly enacted large-scale monetary and fiscal policy programs. On the monetary front, the United States Federal Reserve (the Fed) announced two emergency rate cuts—first by 50 basis points on March 3 and then by 100 basis points on March 16—returning the Fed funds rate to the zero bound. In addition, the Fed announced an open-ended Quantitative Easing program in conjunction with multiple liquidity enhancing programs. On the fiscal front, the US Federal government passed the Coronavirus Aid, Relief, and Economic Securities (CARES) Act, which provided $2.3 trillion in fiscal stimulus. The size and speed of US fiscal and monetary policy were unprecedented, and these programs played an important role in stabilizing equity and fixed income markets. Despite a nearly 20% decline of the S&P 500 in the first quarter, the Index ended the calendar year with a return of 18.4%. Meanwhile, the Bloomberg US Aggregate Bond Index finished the calendar year with a return of 7.5%.

[1]OPERS health care plan is not a pension plan and therefore has significantly different characteristics including a shorter focus asset allocation with more liquidity than the pension plans. For purposes of this study, the OPERS health care plan has been included in the results.

The dispersion in results among the State's retirement plans is driven by differences in asset allocation, asset class structure and investment manager selection, though it is not possible with the data available to RVK for us to weight each factor.

During the 2020 calendar year, five out of six plans outperformed or kept pace with their custom total fund benchmarks. Each plan will have different investment objectives and goals and the "Total Fund Benchmarks" will reflect this. Total Fund over/under performance can come from differences in actual allocations or investment manager results.

Figure 1: Total Fund Performance (dark shade) **vs. Total Fund Benchmarks** (light shade)



- Total Fund Benchmark is a target allocation index based on the targeted asset class percentages and appropriate asset class indexes for each individual plan
- Market values shown are in millions ($000,000)
- Performance shown is gross of fees
- PERS (DB): Public Employees Retirement Syst Defined Benefit Pension Plan
- PERS (HC 115): Since the PERS HC is a health care trust (now under HC 115), it has adopted a more conservative asset allocation policy versus the PERS (DB) Fund, with an emphasis on capital preservation, since 2005.
- STRS: State Teachers Retirement System
- OP&F: Ohio Police & Fire Pension Fund
- SERS: School Employees Retirement System
- HPRS: Highway Patrol Retirement System

Asset Allocation

Overall, the six plans all exhibit characteristics of increasingly diversified, institutional quality portfolios. Exposures to public equities (capital appreciation or "growth" assets) make up the largest component for each plan. Within equities, allocations to US equity investments have generally declined over the past ten years while allocations to alternatives, particularly hedge funds and private equity, have increased. The charts in Figure 2 show a 5-year asset allocation "lookback" for each plan and how they have moved to today's portfolio and target.

HPRS currently has the largest allocation to US equity at 32.5% while OP&F has the smallest domestic equity allocation at 19.1%. Just one of six plans have a higher exposure to US equities (peer median: 28.6%). PERS (HC 115) has the largest fixed income allocation at 35.6%. The average total allocation to hedge funds, private equity, and other alternatives among the six plans is 17.1%. Relative to peer median allocations (All Public Plans > $1B), six of six plans have higher strategic exposures to international equities (peer median: 17.7%) and two of six plans have higher strategic exposures to US equities (peer median: 28.6%). Four of six plans have higher allocations to real estate (peer median: 7.0%).

Figure 2: Asset Allocation Changes (5 Years)

- Cash Equivalents for PERS (DB) consists of cash, additional annuity, and other pension assets. Cash Equivalents for PERS (HC 115) consists of cash. OPERS typically holds 30bps of cash (invested in OPERS STIF) for liquidity needs.

The table below highlights recent target allocation changes since our last report.

Figure 3: Changes to Target Allocations Since 06/30/2020

	Domestic Equity	International Equity	Fixed Income	Real Estate	Hedge Funds	Private Equity	Other Alternatives	Cash Equivalents
PERS (DB)	1.40%	1.50%	2.00%	---	-5.00%	---	0.10%	---
PERS (HC 115)	4.90%	2.00%	-2.00%	1.00%	-5.00%	---	-0.90%	---
STRS	---	---	---	---	---	---	---	---
OP&F	-0.50%	-3.30%	9.00%	-2.00%	---	-1.30%	-1.90%	---
SERS	---	---	---	1.00%	-6.00%	1.00%	3.00%	1.00%
HPRS	---	---	---	---	---	---	---	---

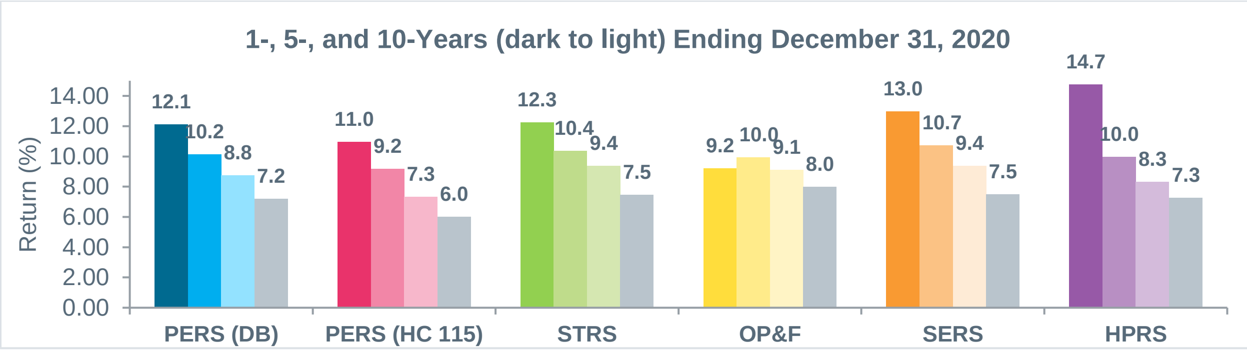
Detailed asset allocation targets as of 12/31/2020 can be found in the full Investment Performance Analysis. PERS (DB & HC 115) are in the process of phasing out their dedicated hedge fund allocations.

Figure 4: Annual Asset Class Performance

The table below highlights calendar year performance for key asset classes.

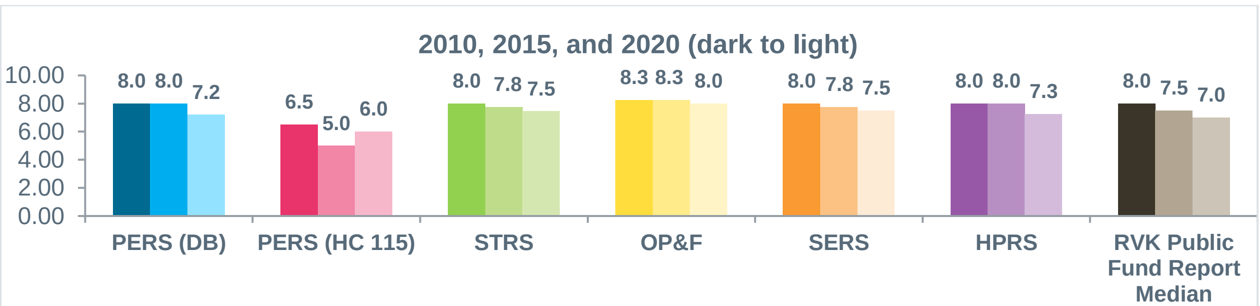
Index (Asset Class)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
S&P 500 (US Large Cap)	26.9	16.0	18.2	38.8	13.7	15.0	21.3	37.3	8.3	31.5	20.0	Highest Return
Russell 2000 (US Small Cap)	18.9	7.8	17.3	32.4	12.5	1.4	12.0	25.0	0.0	25.5	18.4	
MSCI EAFE (Int'l Developed)	16.8	2.1	16.3	22.8	6.0	0.6	11.8	21.8	-4.0	22.0	18.3	
MSCI EM (Int'l Emg Markets)	16.4	-4.2	16.0	13.9	4.9	-0.3	11.2	14.6	-4.4	18.4	10.9	
Barclays US Agg Bond (Fixed Income)	15.1	-5.7	10.9	9.0	3.4	-0.8	8.8	7.8	-11.0	8.7	7.8	
NCREIF ODCE (Real Estate)	7.8	-12.1	4.8	-2.0	-2.2	-4.4	2.7	7.6	-11.2	8.4	7.5	
HFRI FOF (Absolute Return)	6.5	-13.3	4.2	-2.6	-4.9	-14.9	1.0	3.5	-13.8	7.7	1.2	
Bloomberg Cmdty (Commodities)	5.7	-18.4	-1.1	-9.5	-17.0	-24.7	0.5	1.7	-14.6	5.3	-3.1	Lowest Return

Figure 5: Fund Performance (Gross) vs. Actuarial Rate of Return (Gray)



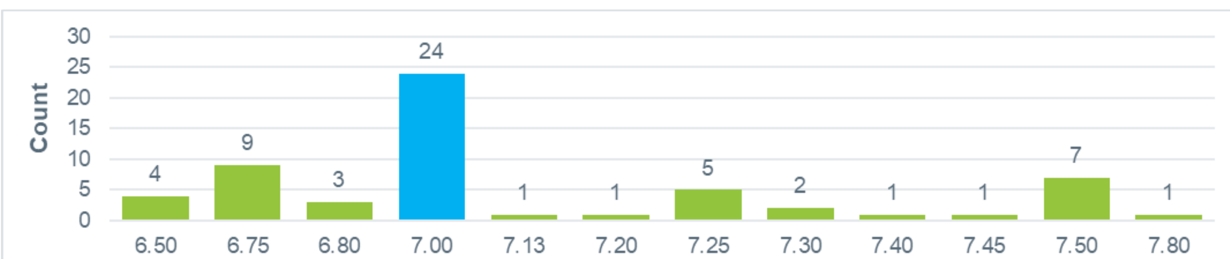
Over the trailing 10-year period, all six plans have outperformed their current actuarial assumed rate of return as shown by Figure 5.

Figure 6: Historical Actuarial Rates of Return



Over the past ten years, the median actuarial rate of return for public funds within the RVK universe has declined (see Figure 6). Actuarial rates for five of the six Ohio plans are above the RVK universe median. Figure 7 shows the dispersion of actuarial rates of return around the median of 7.00%.

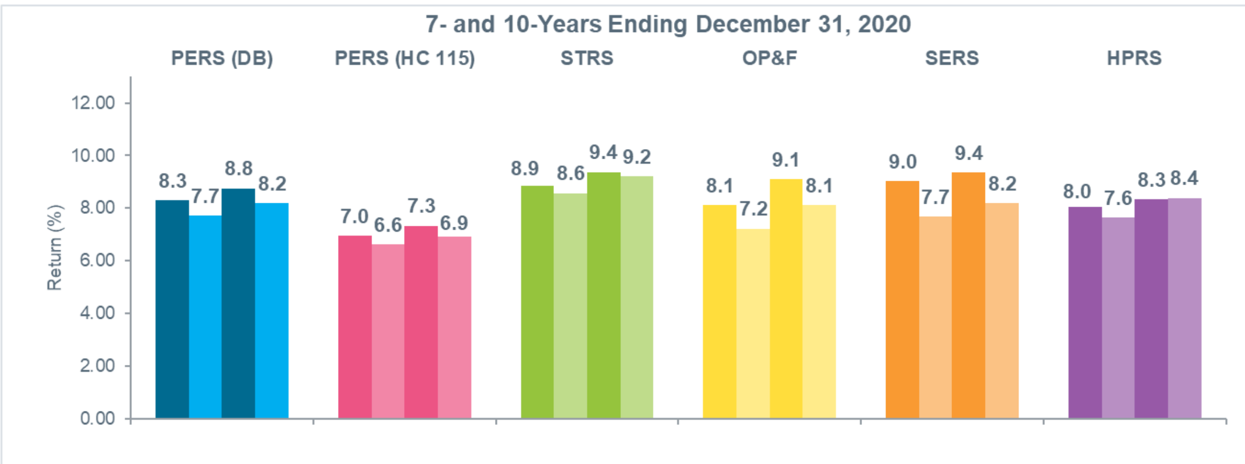
Figure 7: RVK Public Fund Report Survey Actuarial Rates of Return – As of 12/31/2020



RVK prepares a proprietary Public Fund Report with over 70 participating public funds across the U.S. Participating public funds are surveyed semi-annually.

Longer-term performance remains strong as all six plans have outperformed or kept pace with their custom benchmark over the trailing 7-year period (see Figure 8).

Figure 8: Long-Term Fund Performance (dark shade) vs. Total Fund Benchmarks (light shade)



Plan sponsor peer group benchmarking is another way to compare performance results of Ohio's retirement plans, however there can be a wide range in investment objectives and different benefit plan structures. For example, the PERS Health Care Fund's objective of capital preservation leads to a larger allocation to fixed income. Relative to peers, five of the six plans equaled or outperformed the All Public Plans > $1B median over the trailing 3-year period and five plans also equaled or outperformed the median peer over the trailing 10-year period (see Figure 9).

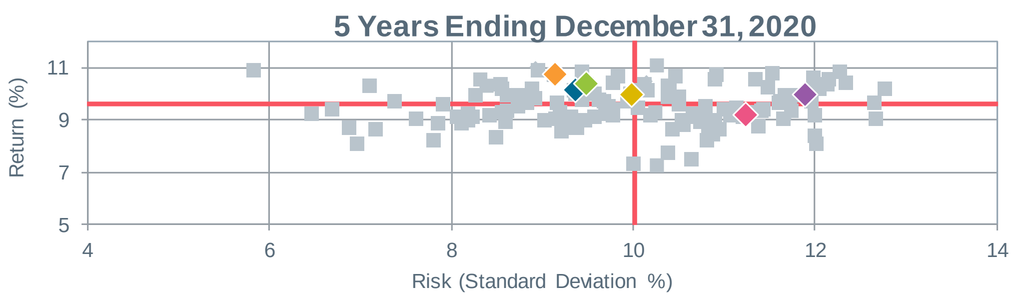
When reviewing a peer group of plan sponsors with assets greater than $10B, ranks generally worsen over the 10-year period for all plans (may not be an appropriate asset level cutoff for all plans, for example HPRS has $1.017B in plan assets).

Figure 9: Fund Performance vs. Public Plans

	Market Value ($000,000)	2 Quarters Return %	2 Quarters Rank > $1B	2 Quarters Rank > $10B	1 Year Return %	1 Year Rank > $1B	1 Year Rank > $10B	3 Years Return %	3 Years Rank > $1B	3 Years Rank > $10B	5 Years Return %	5 Years Rank > $1B	5 Years Rank > $10B	7 Years Return %	7 Years Rank > $1B	7 Years Rank > $10B	10 Years Return %	10 Years Rank > $1B	10 Years Rank > $10B
PERS (DB)	98,439	16.5	(37)	(48)	12.1	(49)	(53)	8.5	(43)	(54)	10.2	(33)	(45)	8.3	(25)	(41)	8.8	(32)	(47)
PERS (HC 115)	13,351	15.8	(55)	(63)	11.0	(62)	(64)	7.7	(65)	(72)	9.2	(67)	(73)	7.0	(84)	(90)	7.3	(86)	(91)
STRS	86,974	16.0	(52)	(57)	12.3	(46)	(50)	9.3	(24)	(36)	10.4	(24)	(40)	8.9	(11)	(16)	9.4	(11)	(13)
OP&F	17,059	15.6	(59)	(64)	9.2	(81)	(90)	8.2	(50)	(61)	10.0	(40)	(53)	8.1	(33)	(54)	9.1	(20)	(30)
SERS	16,527	16.1	(45)	(52)	13.0	(35)	(38)	9.5	(20)	(29)	10.7	(12)	(15)	9.0	(8)	(11)	9.4	(13)	(18)
HPRS	1,017	18.6	(10)	(11)	14.8	(14)	(18)	9.2	(27)	(39)	10.0	(39)	(51)	8.0	(38)	(57)	8.3	(50)	(66)
> $1B Peer Median		16.0			12.0			8.2			9.7			7.7			8.3		
> $10B Peer Median		16.4			12.3			8.7			10.0			8.1			8.8		

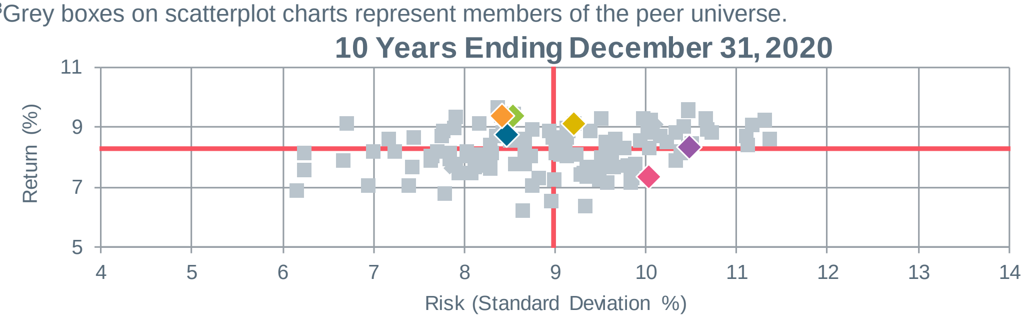
While additional analysis is needed to fully understand the risk posture of each plan, the risk and return charts shown below suggest four of six plans have generated more return for each unit of risk exposure (as measured by standard deviation) than the median peer over the trailing 5-year period. Three plans to varying degrees have exhibited more asset risk relative to peers over the trailing 10-year period (see Figure 10). Peers may have different risk/return results for a variety of reasons, including but not limited to: objectives and goals, target allocations, time of allocation changes, investment restrictions, asset class exposures, or investment management execution.

Figure 10: All Public Plans > $1B Risk and Return



	Return	Standard Dev.	Sharpe Ratio
PERS (DB)	10.1	9.4	0.9
PERS (HC 115)	9.2	11.2	0.7
STRS	10.4	9.5	1.0
OP&F	9.9	10.0	0.9
SERS	10.7	9.1	1.0
HPRS	10.0	11.9	0.8
Median	9.6	10.0	0.9

[3]Grey boxes on scatterplot charts represent members of the peer universe.



	Return	Standard Dev.	Sharpe Ratio
PERS (DB)	8.8	8.5	1.0
PERS (HC 115)	7.3	10.0	0.7
STRS	9.4	8.5	1.0
OP&F	9.1	9.2	0.9
SERS	9.4	8.4	1.0
HPRS	8.3	10.5	0.8
Median	8.3	9.0	0.9

[3]Grey boxes on scatterplot charts represent members of the peer universe.

Asset Class Returns and Risk

The following section includes information on all "major" asset classes. Broad market benchmarks are included for illustrative purposes. Additional details, including system-specific benchmark performance, are available within our Investment Performance Analysis.

Traditional Asset Classes:

Traditional asset classes typically make up a portfolio's core allocation and include investments in stocks and bonds, with characteristics of capital appreciation (growth) from stocks and capital preservation (safety) from bonds. Depending on the type of investment, real estate may fall within traditional or alternative categories and exposures can have income, inflation protection, and/or capital appreciation characteristics.

US Equity

The US equity portfolios for four plans outperformed or kept pace with their respective benchmarks during the 2020 calendar year. Six of six plans outperformed the peer median over the same period (see Figure 11). Absolute performance over the past 10 years has been strong, with all six plans outperforming the peer median over all trailing periods one year and longer.

Figure 11: US Equity Performance

	2 Quarters		1 Year		3 Years		5 Years		7 Years		10 Years	
	% Return	Rank	% Return	Rank	% Return	Rank	% Return	Rank	% Return	Rank	% Return	Rank
PERS (DB)	24.9	(59)	19.7	(43)	14.1	(33)	15.1	(31)	12.4	(29)	13.6	(28)
PERS (HC 115)	24.9	(59)	19.7	(43)	14.1	(33)	15.1	(31)	12.4	(29)	13.6	(29)
STRS	26.0	(40)	23.0	(16)	15.5	(10)	15.9	(13)	13.0	(15)	13.8	(24)
OP&F	29.8	(4)	22.8	(17)	16.1	(2)	17.2	(2)	13.9	(1)	14.5	(1)
SERS	24.4	(63)	21.9	(22)	14.3	(29)	15.2	(26)	12.5	(26)	13.8	(25)
HPRS	27.5	(22)	23.3	(11)	13.9	(38)	15.4	(23)	12.6	(24)	13.6	(29)
R 3000 Index	25.2		20.9		14.5		15.4		12.8		13.8	
Peer Median	25.2		18.9		13.0		14.4		11.7		13.0	

[4]OP&F is benchmarked to the Wilshire 5000

International Equity

The international equity portfolios for five of six plans outperformed their respective benchmarks during the 2020 calendar year. HPRS earned the highest absolute performance during the period with a return of 19.0% (see Figure 12). Six out of six funds outperformed their respective benchmarks over the 10-year period.

Figure 12: International Equity Performance

	2 Quarters		1 Year		3 Years		5 Years		7 Years		10 Years	
	% Return	Rank	% Return	Rank	% Return	Rank	% Return	Rank	% Return	Rank	% Return	Rank
PERS (DB)	26.7	(43)	14.8	(39)	6.7	(50)	11.1	(24)	6.9	(28)	6.6	(42)
PERS (HC 115)	26.7	(43)	14.8	(39)	6.7	(50)	11.1	(24)	6.9	(28)	6.6	(42)
STRS	20.6	(100)	6.8	(97)	4.6	(89)	8.8	(84)	6.4	(45)	6.5	(46)
OP&F	28.7	(17)	12.4	(54)	4.7	(89)	8.8	(84)	5.2	(90)	6.1	(56)
SERS	28.0	(23)	15.3	(34)	7.2	(35)	11.0	(30)	6.7	(35)	6.7	(33)
HPRS	29.6	(7)	19.0	(12)	8.3	(20)	10.7	(38)	6.4	(45)	6.4	(54)
MSCI ACW Ex US IMI	25.2		11.1		4.8		9.0		5.0		5.1	
Peer Median	26.0		12.8		6.7		10.1		6.2		6.4	

[5]MSCI ACW Ex US IMI may not be the direct benchmark for all the applicable systems international equity exposure, but it is included as a broad benchmark for illustrative purposes.

Fixed Income

Domestic fixed income markets ended the 2020 calendar year up 7.5%, as measured by the Bloomberg US Aggregate Bond Index. During the period, five out of six plans outperformed or kept pace with their respective benchmarks. Three out of six plans also outperformed the peer median. All six plans outperformed the broad market index over the 10-year trailing period, as shown by Figure 13. SERS fixed income composite returned 5.0% versus 3.8% for the Bloomberg US Aggregate Bond Index, the highest absolute and relative return earned among the six plans over the 10-year time period

Figure 13: Fixed Income Performance

	2 Quarters		1 Year		3 Years		5 Years		7 Years		10 Years	
	% Return	Rank	% Return	Rank	% Return	Rank	% Return	Rank	% Return	Rank	% Return	Rank
PERS (DB) Core FI	1.9	(82)	9.1	(41)	5.8	(49)	4.8	(82)	4.5	(74)	4.3	(81)
PERS (HC 115) Core FI	1.9	(82)	9.1	(41)	5.8	(49)	4.8	(82)	4.5	(74)	4.3	(81)
STRS	2.2	(79)	8.0	(67)	5.5	(68)	5.0	(76)	4.4	(75)	4.3	(78)
OP&F Core FI	2.2	(79)	7.4	(80)	5.5	(64)	5.0	(78)	4.4	(75)	4.2	(82)
SERS	4.5	(30)	10.6	(18)	6.6	(16)	5.9	(34)	5.0	(41)	5.0	(38)
HPRS	5.8	(7)	7.8	(75)	6.5	(19)	6.2	(20)	5.1	(39)	4.9	(47)
B US Agg Bond Index	1.3		7.5		5.3		4.4		4.1		3.8	
Peer Median	3.5		8.6		5.8		5.5		4.7		4.7	

[6]Bloomberg US Agg Bond Index may not be the direct benchmark for all the applicable systems fixed income exposure, but it is included as a broad benchmark for illustrative purposes.

Real Estate

Of the five plans with exposure to core and value-added real estate, returns ranged from -1.3% to 3.3% during the 2020 calendar year. PERS (HC 115)'s REITs (real estate investment trusts) composite decreased by -11.4% during 2020. Over the trailing 10-year period, returns ranged from 9.0% to 12.6% per annum for plans with core and value-added real estate (see Figure 14).

Figure 14: Real Estate Performance

Core and Value-Added Real Estate							
	2 Quarters	1 Year	3 Years	5 Years	7 Years	10 Years	10 Years
	% Return	% Return	% Return	% Return	% Return	% Return	Standard Deviation
PERS (DB)	0.5	2.6	4.9	7.2	10.2	11.3	3.3
STRS	1.0	-1.3	5.2	6.3	8.6	10.4	3.8
OP&F	0.2	0.1	7.4	9.1	11.5	12.6	3.0
SERS	2.9	3.3	8.1	9.0	10.4	10.9	2.3
HPRS	3.8	2.8	9.5	9.3	10.6	9.0	4.5
NCREIF ODCE Index (Net) (AWA)	1.4	0.3	4.0	5.3	7.3	8.9	2.4
REITs							
PERS (HC 115)	13.8	-11.4	1.6	3.0	6.9	7.6	16.5
DJ US Sel RE Securities	13.9	-11.2	1.5	3.0	6.9	7.5	N/A

[7]NCREIF ODCE Index (Net) (AWA) may not be the direct benchmark for all the applicable systems real estate exposure, but it is included as a broad benchmark for illustrative purposes.

Alternative Asset Classes:
Alternative investments are typically added to a portfolio to provide further diversification of assets, enabling investors to reduce expected portfolio volatility without sacrificing return potential. Exposures may include hedge funds, private equity, private real estate, commodities, and opportunistic exposures to equity or fixed income segments/securities. As compared to traditional asset classes, alternative investments can be less transparent (although this is improving), less liquid (potential fund lock-up periods or staged withdrawals), and more expensive (although costs are generally decreasing). Investment managers rely on manager skill, extensive research, and sourcing of opportunities to add value, all which lead to unique characteristics and higher costs.

As with any investment, alternative investments are also subject to a variety of risks, including, but not limited to: operational, complexity, leverage, liquidity, concentration, volatility, headline, fraud, and regulatory. A thorough and ongoing due diligence process is needed to mitigate these risks. Figure 15 shows the correlation between broad market benchmarks for alternatives (private real estate, REITs, hedge funds, private equity) and traditional asset classes (public equities and fixed income).

Figure 15: Alternative Asset Class Index Correlation

	NCREIF ODCE Index	DJ US Select RE Secr Index	HFRI FOF Comp Index	Cambridge US PE Index (Qtr Lag)
S&P 500 Index (Cap Wtd)	0.14	0.75	0.84	0.09
Russell 2000 Index	0.11	0.75	0.82	0.09
MSCI EAFE Index	0.08	0.69	0.88	0.13
MSCI Emg Mkts Index	-0.03	0.58	0.87	0.04
Bloomberg US Agg Bond Index	-0.19	0.01	-0.23	-0.15
NCREIF ODCE Index	1.00	0.18	0.12	0.60
DJ US Select RE Secr Index	0.18	1.00	0.53	0.26
HFRI FOF Comp Index	0.12	0.53	1.00	0.12
Cambridge US PE Index (Qtr Lag)	0.60	0.26	0.12	1.00

[8]Correlations are based on 15 years of performance ending December 31, 2020.

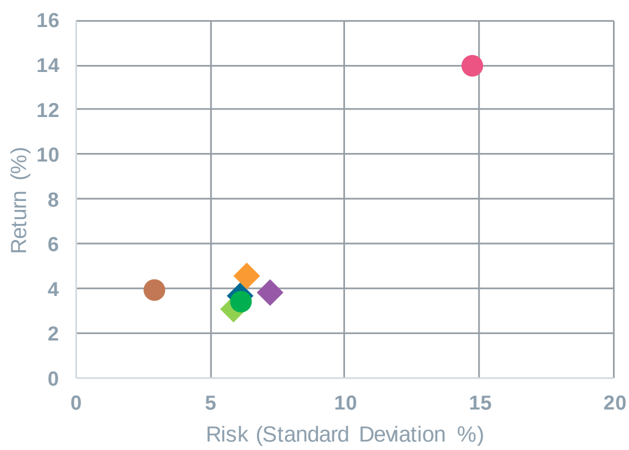
Hedge Funds

Hedge Fund exposures are typically intended to provide attractive risk-adjusted returns and diversification benefits to a portfolio over the long-term. These attributes are often obtained via investments that rely on manager skill rather than specific asset class exposures, and allow for flexibility of allocations and tools.

Composite returns during the 10-year trailing period range from 3.1% to 4.5% among the five plans with dedicated hedge fund composites. Over the trailing 10-year period four out of five hedge fund allocations equaled or outperformed their respective benchmarks.

Figure 16: Hedge Funds Performance

10 Years Ending December 31, 2020



	Return	Standard Dev.
PERS (DB)	3.6	6.2
STRS	3.1	5.9
SERS	4.5	6.4
HPRS	3.8	7.2
HFRI FOF Comp	3.3	6.2
S&P 500	13.9	14.8
B US Agg	3.8	3.0

Private Equity

Private Equity investments typically attempt to achieve returns above public market returns while providing some diversification benefits. Private equity investments provide a way to access companies, industries, and strategies not easily available to public markets and allows skilled managers to effect meaningful change to businesses, thus improving value.

Five of the six plans have dedicated exposure to private equity. Over the trailing 10-year period, the time-weighted returns for these allocations have ranged from 6.6% to 16.2% per annum. Although we prefer to measure private equity performance using since inception money-weighted returns (IRR), we have included time-weighted performance in our full Investment Performance Analysis for illustrative purposes.

Figure 17: Private Equity Performance

	10 Years Ending December 31, 2020				
Plan	**PERS (DB)**	**STRS**	**OP&F**	**SERS**	**HPRS**
% Return	14.2	16.1	15.0	16.2	6.6
Benchmark % Return	13.9	15.3	15.0	13.8	13.6

[9]HPRS's private equity portfolio did not begin in earnest until after 2008. Therefore, longer period trailing returns may not be relevant.

Additional Investments

We have included additional asset class composites which are not shared across the majority of the six plans within our Investment Performance Analysis.

Considerations

After careful analysis, we put forth the following considerations for the Ohio Retirement Study Council:

1. Be mindful of target asset allocation for each fund and the goals they are attempting to achieve. Currently all the funds are diversified across multiple asset classes and exhibit characteristics of prudent investor diversification.

   ➔ The determination of a fund's asset allocation is the single most important investment decision and is a major determinant of long-term return and the volatility risk of asset values. Creating a diversified portfolio of asset classes enables the investor to achieve a potential higher rate of return while minimizing volatility of the portfolio. A fund following a smoother, less volatile path compounds value at a faster rate.

   ➔ Don't assume that all of the plans should have the same asset allocation. Differences in their liabilities, funding status, the risk tolerance of their fiduciaries and other factors will likely produce legitimate differences in their respective asset allocations.

2. Monitor the change in asset allocation over time.

   ➔ Target allocations should be formally reviewed (by the Board) every few years with potentially more frequent informal reviews (by Staff). From each review there can be multiple reasons for adopting new targets (with generally gradual shifts) – from a rare occurrence of the overarching goal of the investment program changing to potential consideration of significant, longer-term economic or market changes to the possibility of opportunities to improve the risk/return tradeoff.

3. While this and subsequent reports we deliver to the council will focus on recent information in return and risk taken at each of the funds, we strongly encourage you to once again focus on the 3 and 5-year risk and return results to better gauge the stewardship of the State's pension assets.

All performance shown is gross of fees, with the exception of externally managed real estate, hedge fund, and private equity investments. Total Fund performance shown is gross of fees but is net of embedded fees, including carried interest, incentives or promotion fees, on externally managed real estate and alternative investments. Peer group ranks are measured in percentiles.