

# Peace Officers' Retirement, Accident and Disability System

Quarterly Performance Report

September 30, 2022

# Executive Summary

**IOWA PEACE OFFICERS' RETIREMENT FUND**  
Executive Summary For Quarter Ending September 30, 2022

The following table gives total time weighted returns and percentile rankings (in parenthesis) for periods ending September 30, 2022. A ranking of 1 is best and 100 is the worst:

	<u>Market Value</u>	<u>1 Quarter</u> rank	<u>1 Year</u> rank	<u>3 Years*</u> rank	<u>5 Years*</u> rank	<u>10 Years*</u> rank	<u>Since Inception</u>
<b><u>TOTAL FUND</u></b>							
PORS - Before Fees	591,498,647.08	-4.86 (60)	-23.74 (95)	4.87 (23)	5.10 (29)	8.25 (13)	8.64 (7/31/88)
PORS - After Fees	591,498,647.08	-4.96	-24.02	4.51	4.74	7.87	8.24 (7/31/88)
Consumer Price Index		0.49	8.22	4.97	3.79	2.53	3.53 (7/31/88)
Consumer Price Index + 4%		1.49	12.22	8.97	7.79	6.53	7.53 (7/31/88)
POR POLICY INDEX		-4.96	-15.37	3.74	4.37	6.87	7.97 (7/31/88)
Allocation Index		-4.89	-15.31	3.81	4.36	7.37	8.35 (7/31/88)
<b><u>LARGE CAPITALIZATION EQUITIES</u></b>							
Jennison - gross of fees	74,734,680.76	-1.09 (15)	-34.51 (94)	8.78 (15)			7.92 (4/01/18)
Jennison - net of fees		-1.21	-34.79	8.32			7.44 (4/01/18)
Russell 1000 Growth Index		-3.60 (44)	-22.59 (77)	10.67 (09)			11.36 (10/01/11)
Vanguard Total Market - gross of fees	80,571,441.27	-4.44 (56)	-17.96 (63)	7.54 (38)	8.53 (39)		11.45 (12/31/12)
Vanguard Total Market - net of fees		-4.44	-17.96	7.54	8.53		11.45 (12/31/12)
Russell 3000 Index		-4.46 (58)	-17.63 (62)	7.70 (34)	8.62 (36)		11.67 (12/31/12)
<b><u>SMALL CAPITALIZATION EQUITIES</u></b>							
Fisher - gross of fees	105,143,680.41	-6.32 (90)	-20.89 (71)	9.87 (11)	7.09 (50)	11.43 (40)	12.25 (11/30/89)
Fisher - net of fees		-6.56	-21.55	9.03	6.26	10.56	11.27 (11/30/89)
Russell 2000 Value		-4.61 (64)	-17.69 (62)	4.72 (73)	2.87 (90)	7.94 (87)	9.66 (11/30/89)
<b><u>FIXED INCOME</u></b>							
Loomis Sayles - gross of fees	76,616,179.38	-3.45 (37)	-12.38 (21)	-0.56 (11)	1.37 (08)	3.02 (07)	5.14 (3/31/07)
Loomis Sayles - net of fees		-3.52	-12.63	-0.85	1.07	3.02	4.81 (3/31/07)
Barclays Universal		-4.45	-14.92	-3.11	-0.18	1.17	3.00 (3/31/07)
Lazard - gross of fees	35,462,687.60	-4.33 (53)	-13.52 (50)				-6.25 (7/01/20)
Lazard - net of fees		-4.37	-13.65				-6.39 (7/01/20)
Barclays Aggregate		-4.75 (67)	-14.60 (61)				-0.23 (7/01/20)

INTERNATIONAL EQUITIES

Baillie Gifford - <i>gross of fees</i>	126,531,987.12	-10.58 (73)	-44.60 (98)	-0.69 (49)	0.10 (44)	6.06 (21)	8.58 (9/30/08)
Baillie Gifford - <i>net of fees</i>		-10.58	-44.60	-0.69	0.10	6.06	8.57 (9/30/08)
MSCI ACWI x-US		-9.80	-24.79	-1.50	-0.43	4.11	3.76 (1/31/03)

LIQUIDITY

Cash	1,363,675.98	0.50	0.80	0.55	1.90	1.17	6.28 (11/30/89)
Merrill Lynch 90 Day Treasury Bill		0.47	0.62	0.60	1.15	0.68	2.73 (11/30/89)

REITS EQUITY

Principal US Property - <i>gross of fees</i>	63,427,132.75	0.42 (53)	22.11 (30)	11.51 (29)	9.82 (36)	10.59 (40)	6.78 (6/30/06)
Principal US Property - <i>net of fees</i>		0.18	20.98	10.47	8.79	10.59	6.29 (6/30/06)
NCREIF NFI-ODCE Index		0.52	22.09	12.75	10.61	11.10	7.50 (6/30/06)
Principal Enhanced - <i>gross of fees</i>	27,647,181.81	1.71 (43)	27.26 (20)	15.80 (14)	12.81 (17)	14.51 (08)	7.81 (11/30/06)
Principal Enhanced - <i>net of fees</i>		1.45	25.97	14.51	11.59	14.51	6.50 (11/30/06)
NCREIF NFI-ODCE Index		0.52	22.09	12.75	10.61	11.10	7.50 (11/30/06)

## **EXECUTIVE SUMMARY (Page 1 of 3)**

### **Total Fund Performance**

The market value of the PORS Fund on September 30, 2022, was \$591,498,647, a decrease of \$32,817,078 from the Fund market value on June 30, 2022. For a year over year comparison, the fund has experienced a decrease of \$196,703,563 since September 30, 2021. The rate of return for the PORS Fund was -4.86% (before fees) for the quarter. The Fund's quarter performance was above the Policy Index return of -4.96% and above the Allocation Index return of -4.89%. When measured against other master trusts reporting to the Trust Universe Comparison Services (TUCS), the performance of the Fund before fees for the quarter ranked in the 60<sup>th</sup> percentile. The Fund's annual return of -23.74% before fees for the one-year period ranked 95<sup>th</sup> in the TUCS universe. For the three-year period, the Fund experienced a return of 4.87%. Over the five-year period ending September 30, 2022, the PORS Fund has earned an annualized rate of return of 5.10% before fees and ranked in the 29<sup>th</sup> percentile in the TUCS universe of all master trusts. Over the ten-year period ending September 30, 2022, the PORS Fund has earned an annualized return of 8.25% before fees. The Fund's Sharpe Ratio (a ratio which measures excess return per unit of risk taken and provides an indicator of the risk-adjusted return) of 0.33 for the five-year period was below the Sharpe Ratio of the Policy Index of 0.35 and below the Allocation Index of 0.35. Over the ten-year period, the Fund's Sharpe Ratio of 0.67 is equal to the Sharpe Ratio for the Policy Index of 0.67 and was below the Allocation Index of 0.69.

### **Manager Performance**

**Jennison** – Jennison had a quarterly return of -1.09% for the quarter, ranking 15<sup>th</sup> in the TUCS universe. Their benchmark, the Russell 1000 Growth Index had a quarterly return of -3.60%. For the year, Jennison returned -34.51% compared to the benchmark of -22.59%. Over 3 years, Jennison has returned 8.78% annually compared to 10.67% for the Russell 1000 Growth Index.

**Vanguard Total Stock Market** – For the quarter, Vanguard returned -4.44%. Over the past year, Vanguard has returned -17.96%. For the three-year period, Vanguard has an annualized return of 7.54%. Over five years, Vanguard has returned an annualized return of 8.53%. Vanguard Total Stock Market is expected to follow the Russell 3000 Index.

**Fisher Investments Small Capitalization Stock Portfolio** – The Fisher portfolio produced a return of -6.32% (before fees) for the quarter, ranking 90<sup>th</sup> in the universe of U.S. equity portfolios reporting to TUCS. Fisher's benchmark, the Russell 2000 Value returned -4.61% for the quarter and ranked 64<sup>th</sup> in the TUCS universe. Fisher's annual return was -20.89% (before fees) and ranked 71<sup>st</sup> in the TUCS universe. The benchmark had an annual return of -17.69% (62<sup>nd</sup> percentile). Fisher's ten-year annualized return of 11.43% before fees is above the 7.94% return of the benchmark.

## **EXECUTIVE SUMMARY (Page 2 of 3)**

### **Manager Performance (continued)**

**Loomis Sayles** – Fixed income manager Loomis Sayles had a quarterly return of -3.45% and ranked 37<sup>th</sup> in the TUCS universe. Its benchmark, the Barclays Universal, had a quarterly return of -4.45%. For the year, Loomis Sayles had an annual return of -12.38% while the Barclays Universal returned -14.92%. Over the three-year period ending September 30, 2022, Loomis Sayles returned an annualized return of -0.56%. For the ten-year period, Loomis Sayles has an annualized return of 3.02% compared to the benchmark return of 1.17%.

**Lazard** – Lazard had a quarterly return of -4.33% compared to the benchmark of -4.75%. Lazard had an annual return of -13.52% and ranked 50<sup>th</sup> in the TUCS Universe compared to the benchmark return of -14.60%, which ranked 61<sup>st</sup>.

**Baillie Gifford International Equities** – Baillie Gifford had a quarterly return of -10.58%, ranking it 73<sup>rd</sup> in the TUCS Universe. Their benchmark, the MSCI ACWI-ex US had a quarterly return of -9.80%. On an annual basis, Baillie Gifford returned -44.60% for a 98<sup>th</sup> ranking in the TUCS universe while the benchmark returned -24.79%. For the ten-year period, Baillie Gifford has earned an annualized return of 6.06%, ranking in the 21<sup>st</sup> percentile, while the benchmark had a return of 4.11%.

**Principal Real Estate** – The Principal Real Estate Mandate is composed of a core fund and an enhanced fund. The quarter return for the Principal Core Real Estate Fund was 0.42% while the NCREIF NFI-ODCE returned 0.52% for the quarter. Principal Core Real Estate Fund returned 22.11% for the year ending September 30, 2022, while the NCREIF NFI-ODCE had a return of 22.09%. For the ten-year period, the Fund had an annualized return of 10.59%. The Principal Enhanced Real Estate Fund had a quarterly return of 1.71%, which ranked in the 43<sup>rd</sup> percentile, while the annual return was 27.26%. The annualized return for the ten-year period was 14.51%.

## EXECUTIVE SUMMARY (Page 3 of 3)

### Asset Allocation

The Fund's asset allocation on September 30, 2022, was as follows: 18.95% in fixed income bonds, 26.26% was invested in US large cap equity, 21.39% was invested in non-US developed equity, 17.78% was invested in US small/mid cap equity, and 15.40% was invested in real estate. Cash was 0.23% of the portfolio. Real estate was above target due to the market sell-off in equities.

### Compliance Issues

**Total Fund** - The Fund has earned an annualized rate of return of 5.10% (before fees) and 4.74% (after fees) for the five-year period ending September 30, 2022. This performance was above the Investment Policy return objective to earn at least a 4.37% return, and was below the CPI Index (a proxy for inflation rate) plus 4%. For the five years ending September 30, 2022, the inflation rate plus 4% was 7.79%. The Investment Policy also sets the objective of earning more than the Allocation Index. The Fund met this objective as the Allocation Index recorded a 4.36% return for the five years. Finally, the Investment Policy establishes the objective of earning a risk-adjusted return in excess of the Allocation Index over a market cycle. The fund did not meet this objective, as the Sharpe Ratio for the Fund was 0.33 for the five-year period ending September 30, 2022, which was less than the Sharpe Ratio for the Allocation Index of 0.35.

# Market Summary





## Wilshire Trust Universe Comparison Service

### The Market Environment

September 30, 2022

The U.S. equity market is in the midst of one of the worst sell-offs in the past 20 years, ahead of only the global financial crisis and COVID shutdown. Stock indexes produced gains during the first half of the quarter on strong earnings reports, particularly in technology and energy. While earnings have been falling short of expectations this year, they continue to trend higher versus 2021. The rally collapsed, however, after Federal Reserve Chair Jerome Powell stated in August that the Fed would continue to combat inflation in a way that could cause "some pain" for the U.S. economy. Rising rates have been the story of 2022 as investors are now able to capture a positive real return from bonds, which has allowed them to redirect dollars away from riskier assets. Real GDP growth contracted during the second quarter, down an annualized -0.6%. This marks the second consecutive negative quarter, which is the common, albeit unofficial, definition of a recession. Declines in residential investment, government spending and business inventories were the root causes. The Atlanta Fed's GDPNow forecast for the third quarter currently stands at 2.4%.

The Treasury curve rose across all maturities during the third quarter with the smallest changes still more than 50 basis points. The 10-year Treasury closed at 3.83%, up 81 basis points since June. The 10-year real yield (i.e., net of inflation) rose 101 basis points to 1.68%. The Federal Open Market Committee increased the fed funds rate by a total of 1.50% this quarter, targeting a range of 3.0% to 3.25%. The committee's current median outlook is for a rate of approximately 4.4% by the end of 2022. Consumer price changes have moderated, yet remain elevated, as the Consumer Price Index jumped 1.4% for the three months ending August. For the one-year period, the CPI is up 8.2%. The 10-year break-even inflation rate decreased to 2.15% in September versus 2.34% in June.

The U.S. stock market, represented by the FT Wilshire 5000 Index<sup>SM</sup>, was down -4.45% for the third quarter and is now down -24.4% for all of 2022. Most sectors were down for the quarter. The worst performing were Communication Services (-12.5%), Real Estate (-10.9%) and Materials (-6.7%). The two sectors producing gains were Consumer Discretionary (+4.0%) and Energy (+3.6%). From a size perspective, small cap outperformed large by 98 basis points. Growth stocks outperformed value for the quarter but trail meaningfully for the year-to-date.

The U.S. Treasury yield curve was up meaningfully across all maturities during the quarter, with increases ranging from 60 to 165 basis points. The 10-year Treasury yield ended the quarter at 3.83%, up 81 basis points from June. Credit spreads widened during the quarter within investment grade bonds but tightened, slightly, for

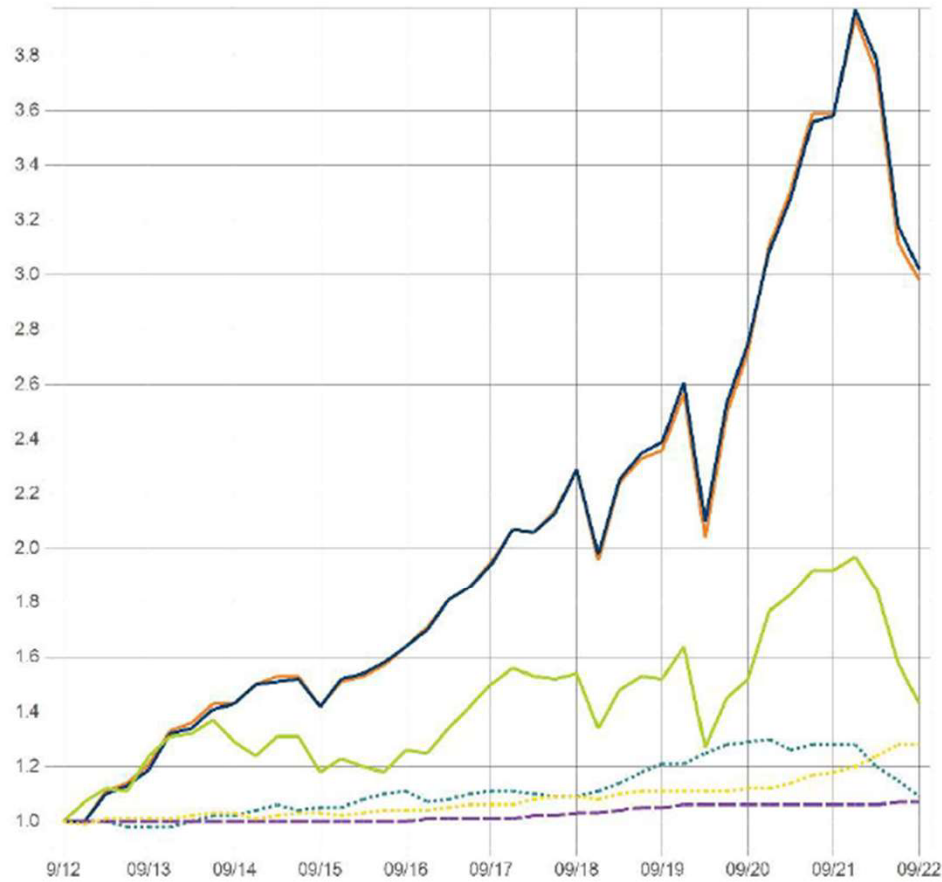
high yield bonds, after an outsized jump of 163 basis points in June. The Federal Open Market Committee met twice during the quarter, as scheduled, and increased the overnight rate by 0.75% in both July and September, targeting a range of 3.00% to 3.25%. The Fed's "dot plot" is messaging that the current intent is for another 125 basis points in increases before the end of 2022. Equity markets reacted negatively to Fed Chair Jerome Powell's "pain" speech in August where he clearly stressed the committee's current goal of taming inflation.

Performance results within international equity markets were negative for the third quarter, with developed outperforming emerging markets. The MSCI EAFE Index was down -9.4% for the quarter, while the MSCI Emerging Markets Index was down -11.6%. In Europe, monetary policy tightening and an energy crisis due, in part, to restricted Russian gas supplies weighed on stocks. In late September, the Bank of England found it necessary to intervene in the bond market after a massive sell-off of UK government bonds, announcing a temporary purchase program of long-dated bonds. China is currently struggling on several fronts – slowing growth, record high youth unemployment and a collapsing housing market. Its zero-COVID policy is arguably making matters worse, as full or partial lockdowns announced in late September will affect approximately 125 million people.

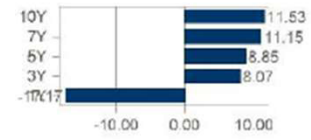


## State of Iowa Peace Officer Retirement System The Market Environment

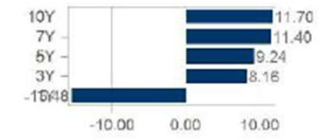
*Historical Perspective*  
Quarter Ending September 30, 2022



— Wilshire 5000    
 — S&P 500    
 — MSCI EAFE (Net)  
- - - Bloomberg Aggregate    
 - - - 91-Day Treasury Bill    
 - - - Consumer Price Index



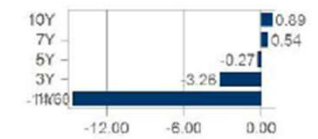
Wilshire 5000



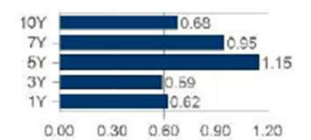
S&P 500



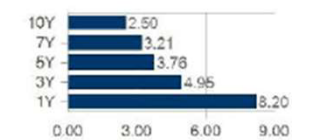
MSCI EAFE (Net)



Bloomberg Aggregate



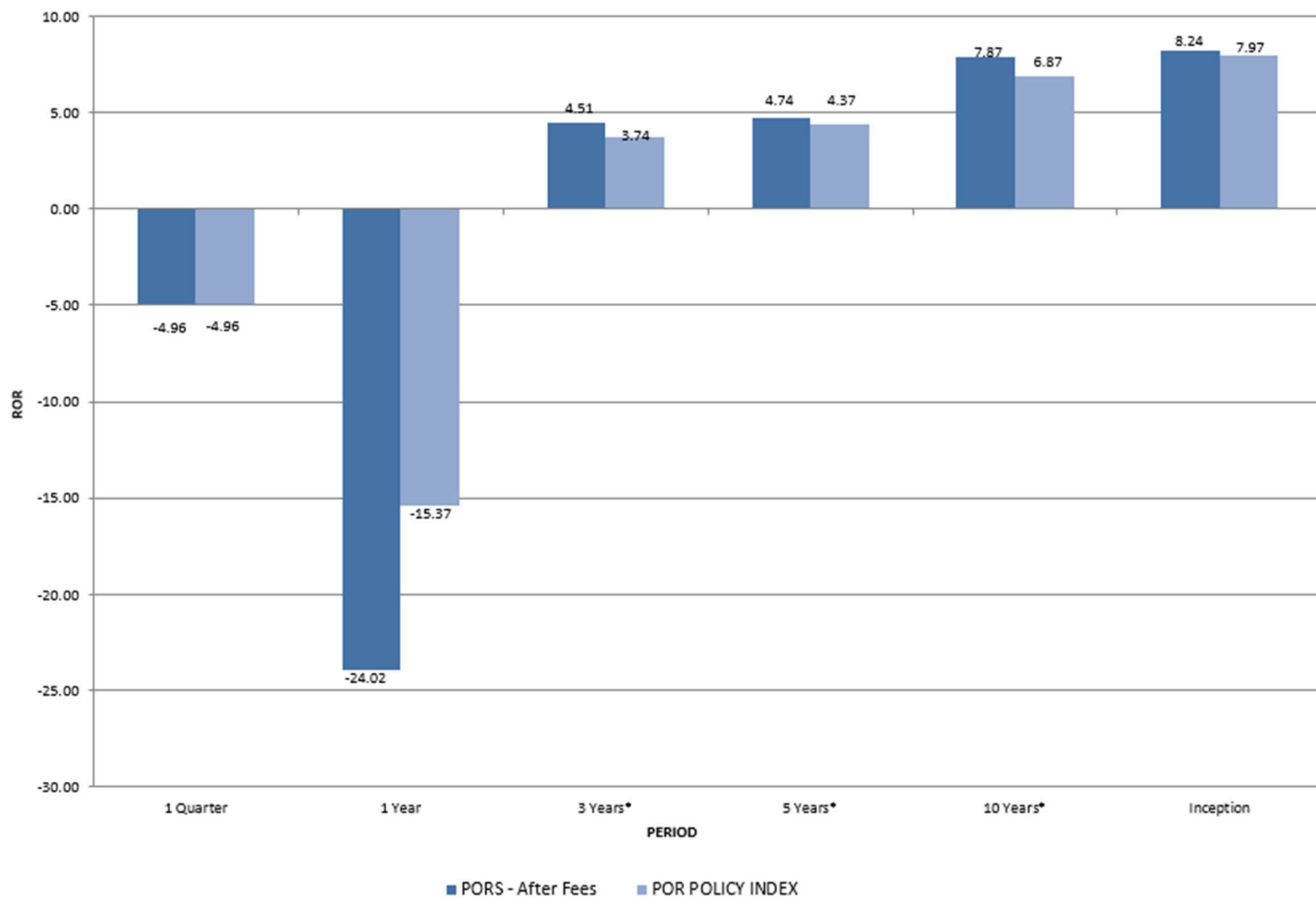
91-Day Treasury Bill



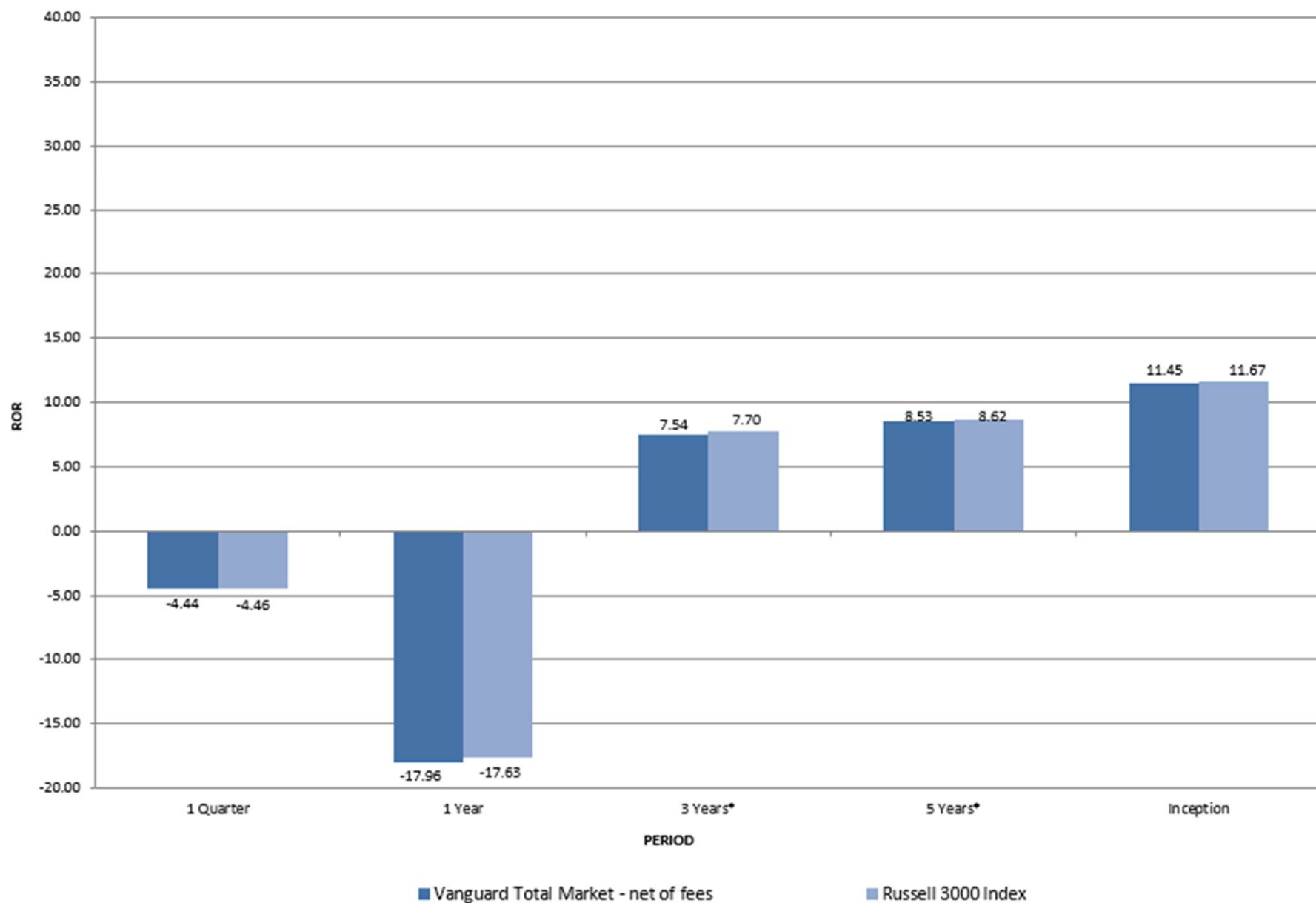
Consumer Price Index

# Investment Returns

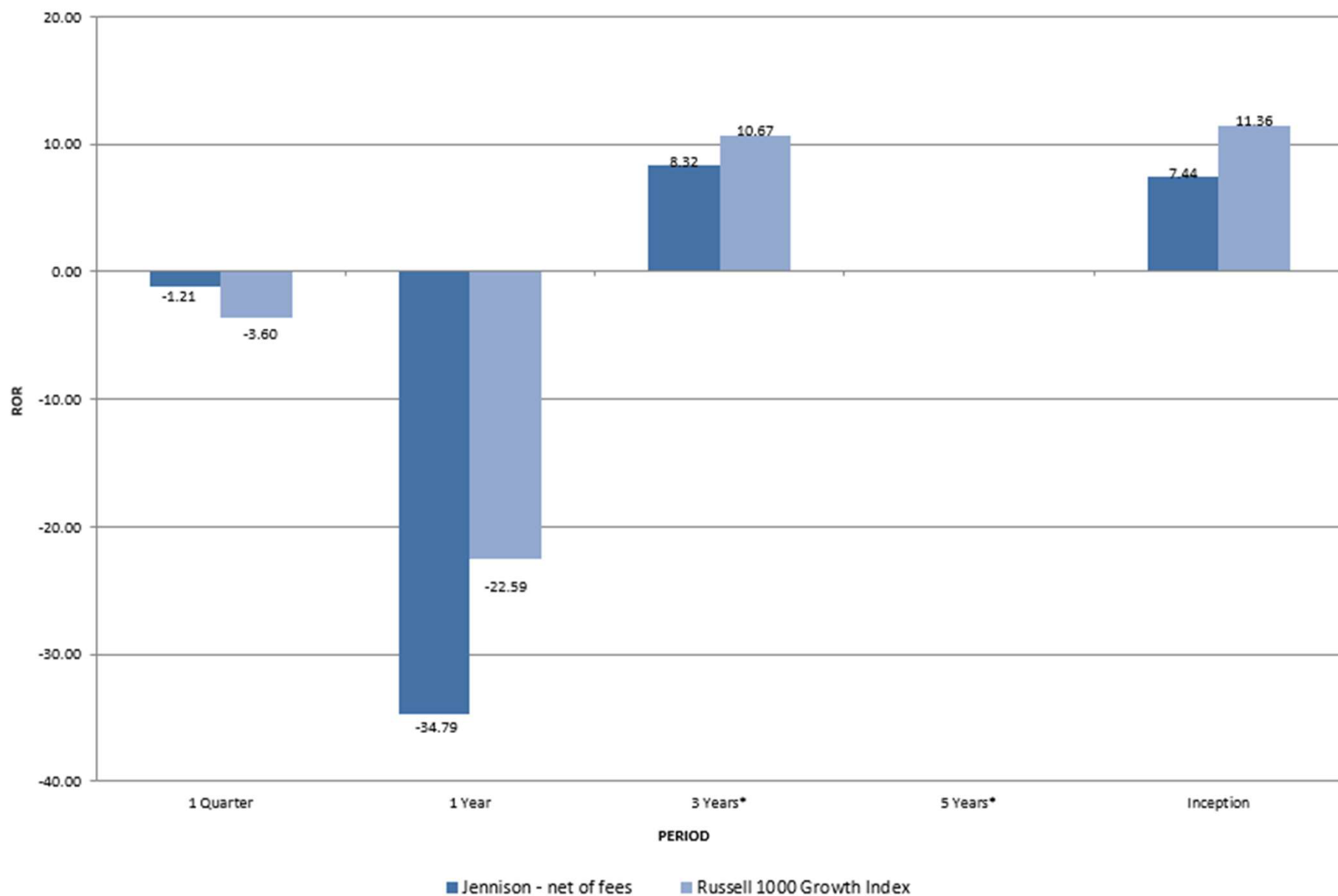
**PEACE OFFICERS' RETIREMENT SYSTEM (net of fees) vs. POLICY INDEX  
FOR THE PERIOD ENDING 9/30/22**



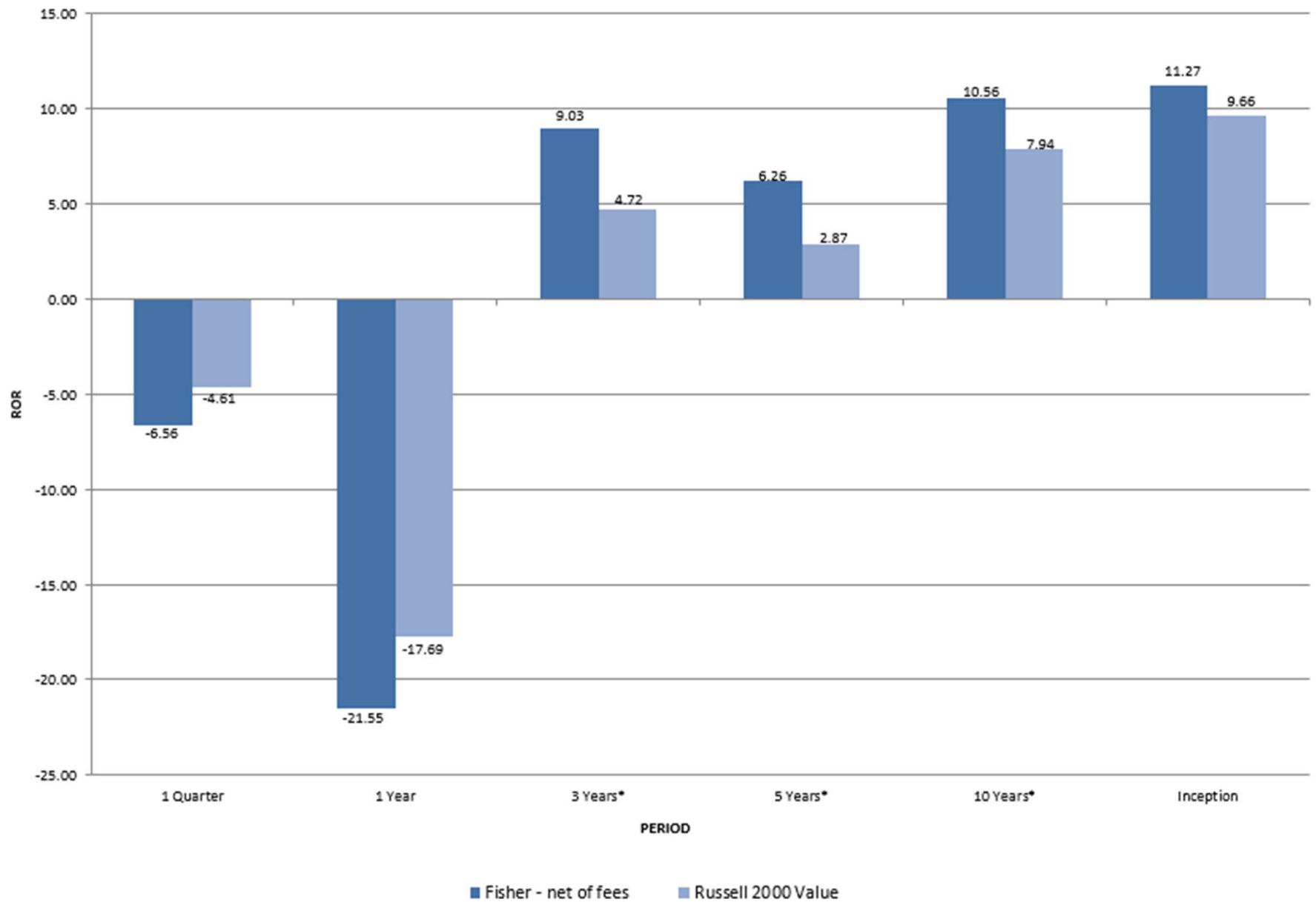
### VANGUARD TOTAL STOCK MARKET (net of fees) vs. MSCI BROAD MARKET INDEX FOR THE PERIOD ENDING 9/30/22



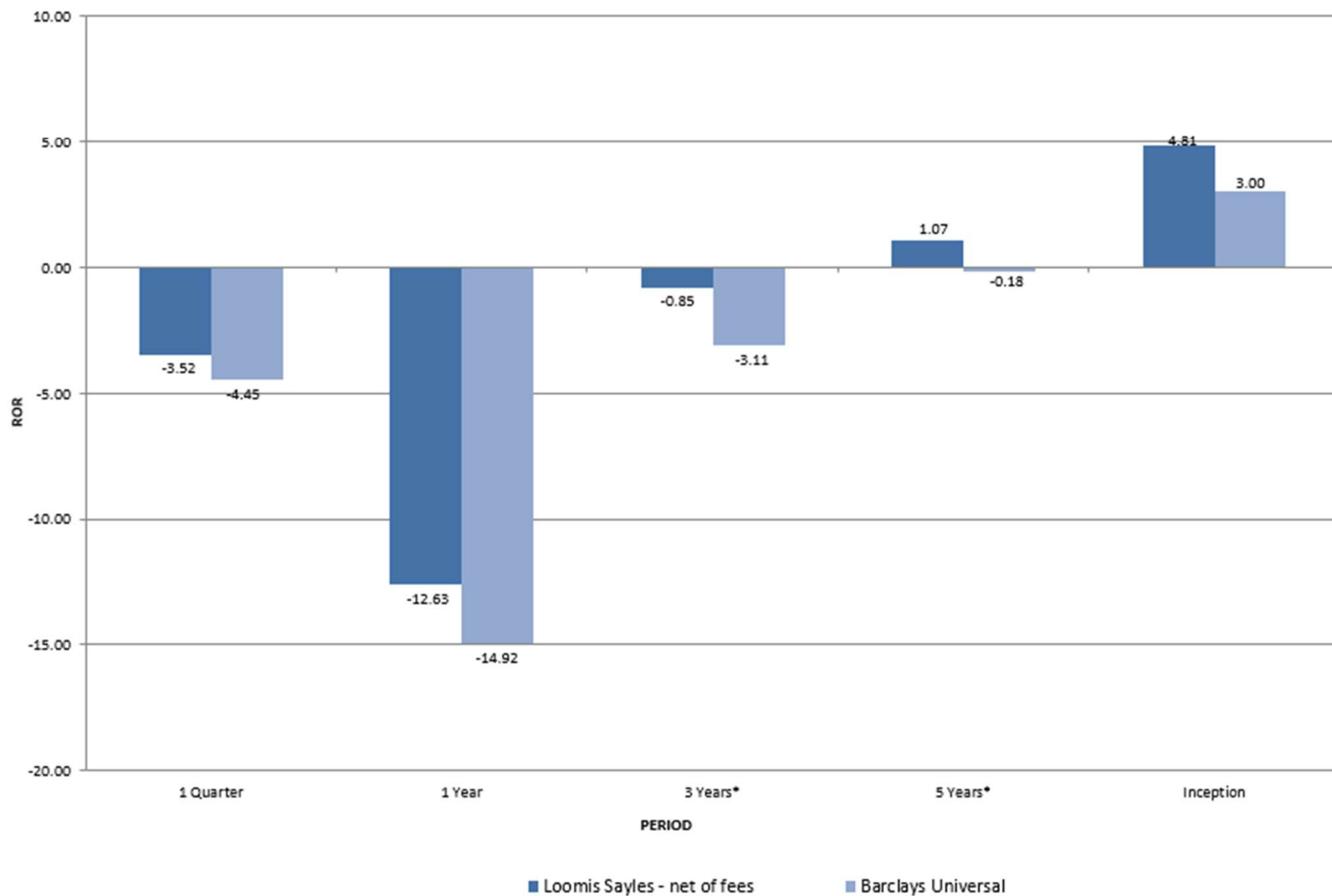
### JENNISON (net of fees) vs. RUSSELL 1000 GROWTH FOR THE PERIOD ENDING 9/30/22



### FISHER (net of fees) vs. RUSSELL 2000 SMALL VALUE FOR THE PERIOD ENDING 9/30/22

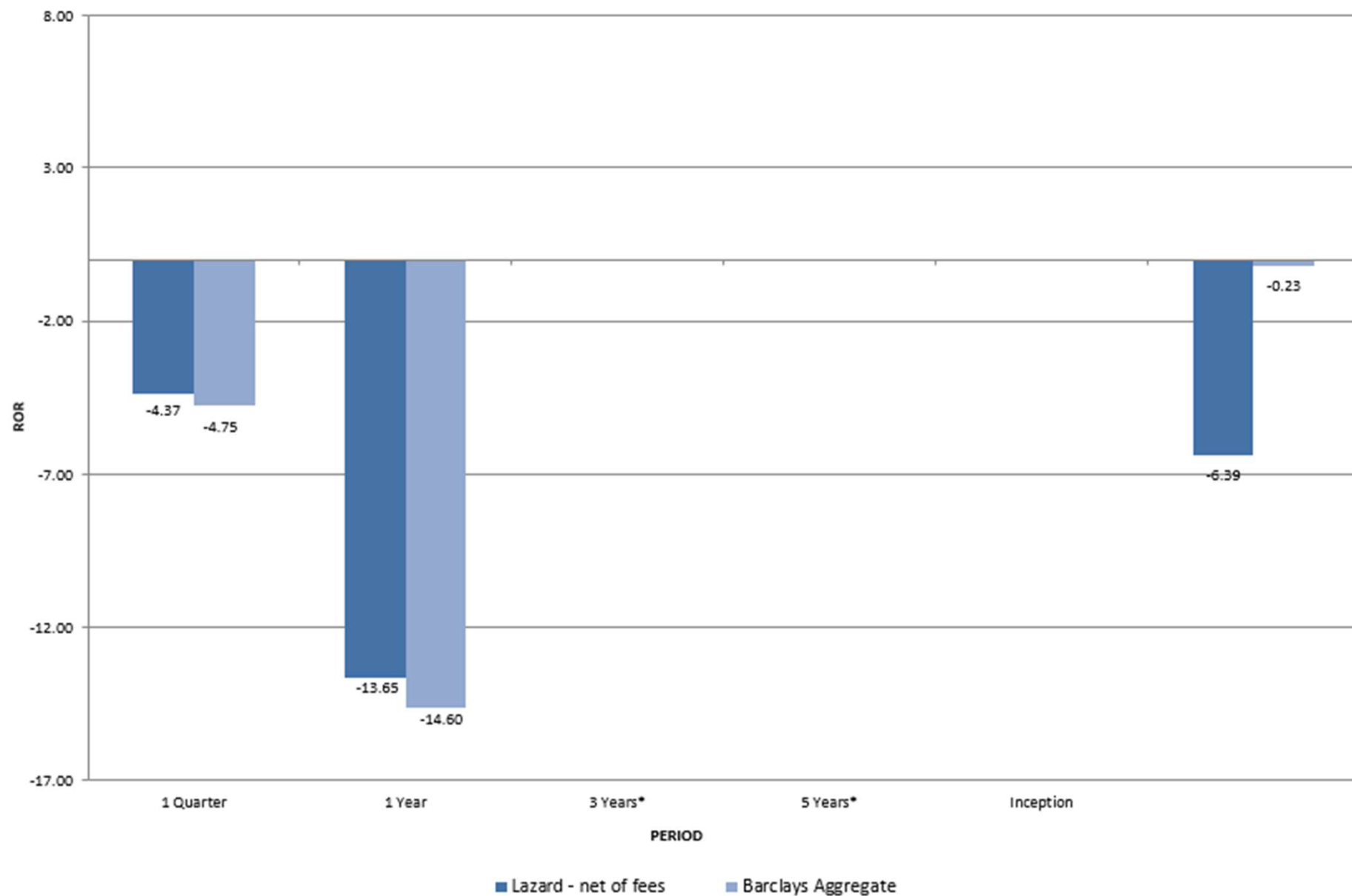


**LOOMIS SAYLES (net of fees) vs. BARCLAYS UNIVERSAL  
FOR THE PERIOD ENDING 9/30/22**

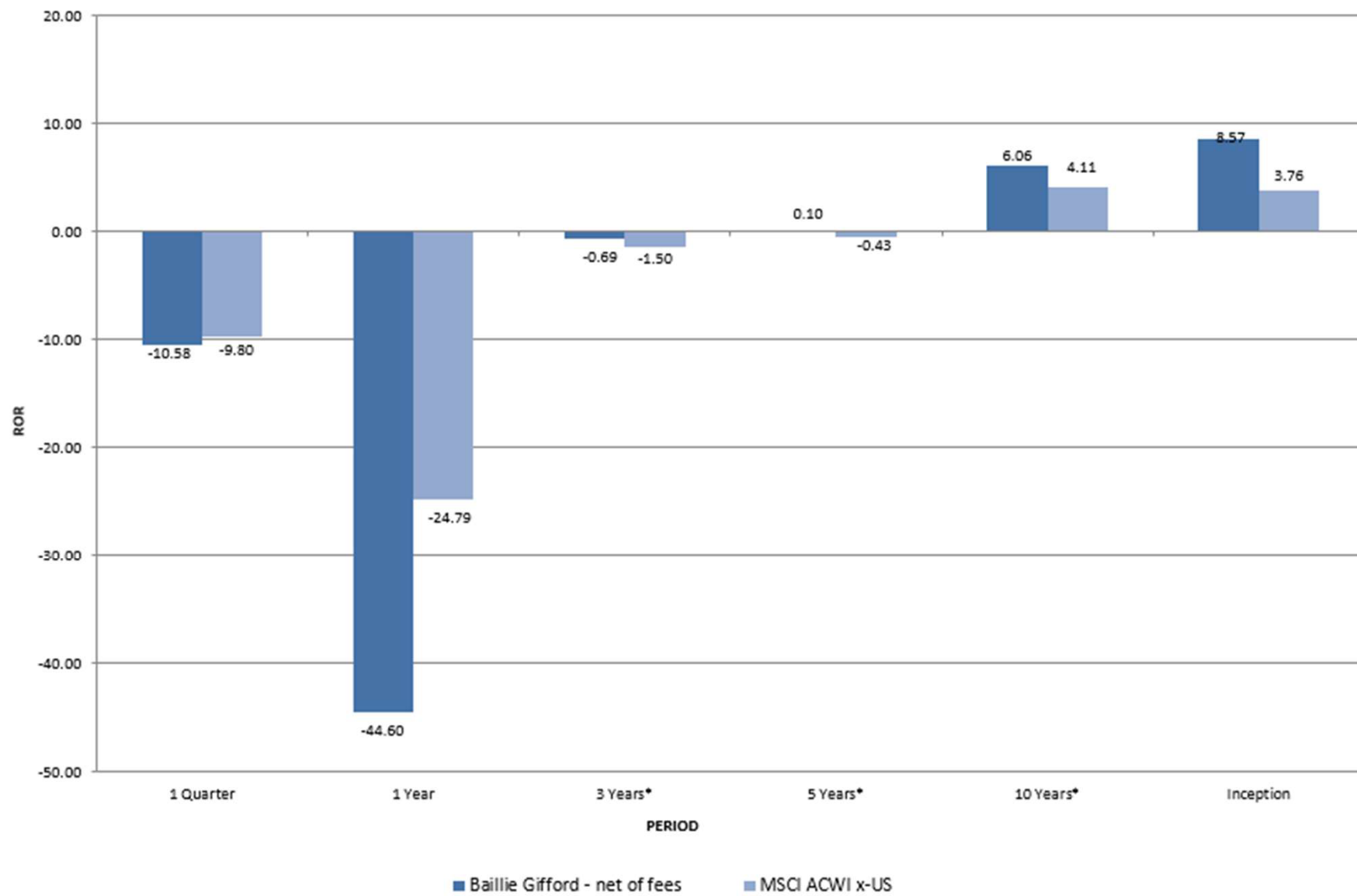




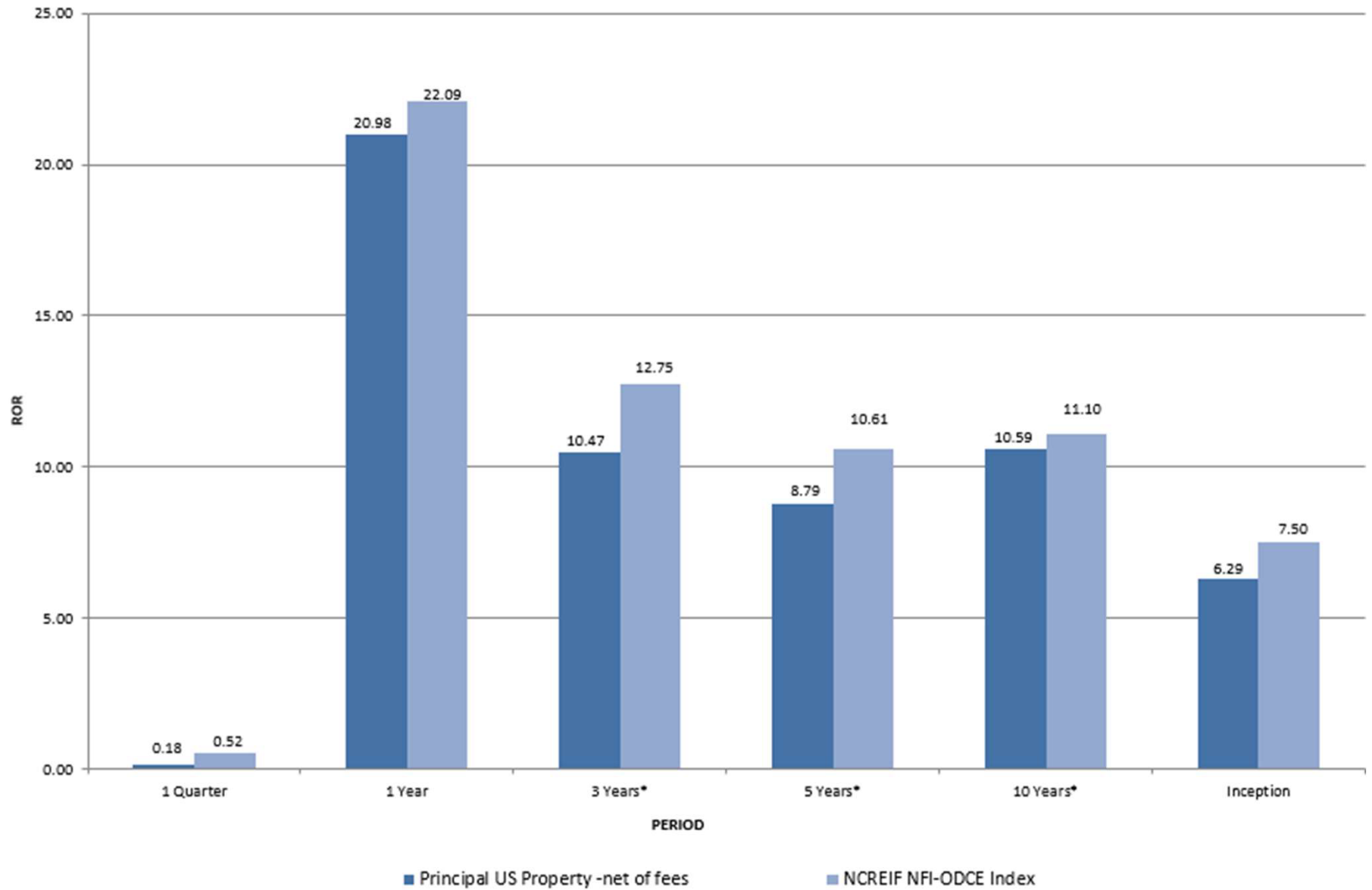
### LAZARD (net of fees) vs. BARCLAYS AGGREGATE FOR THE PERIOD ENDING 9/30/22



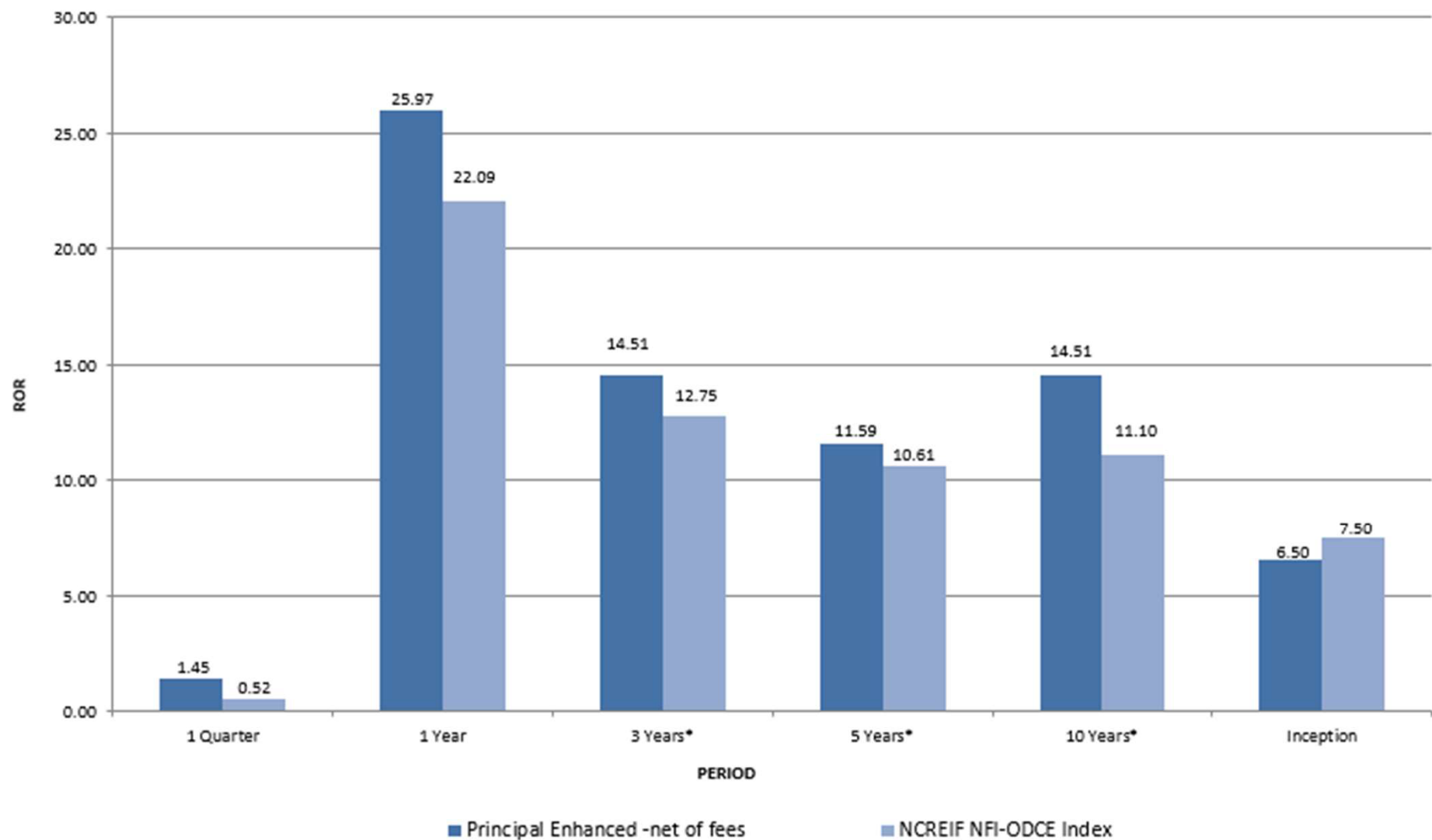
**BAILLIE GIFFORD (net of fees) vs. MSCI EAFE NET  
FOR THE PERIOD ENDING 9/30/22**



**PRINCIPAL US PROPERTY (net of fees) vs. NCREIF NFI  
FOR THE PERIOD ENDING 9/30/22**

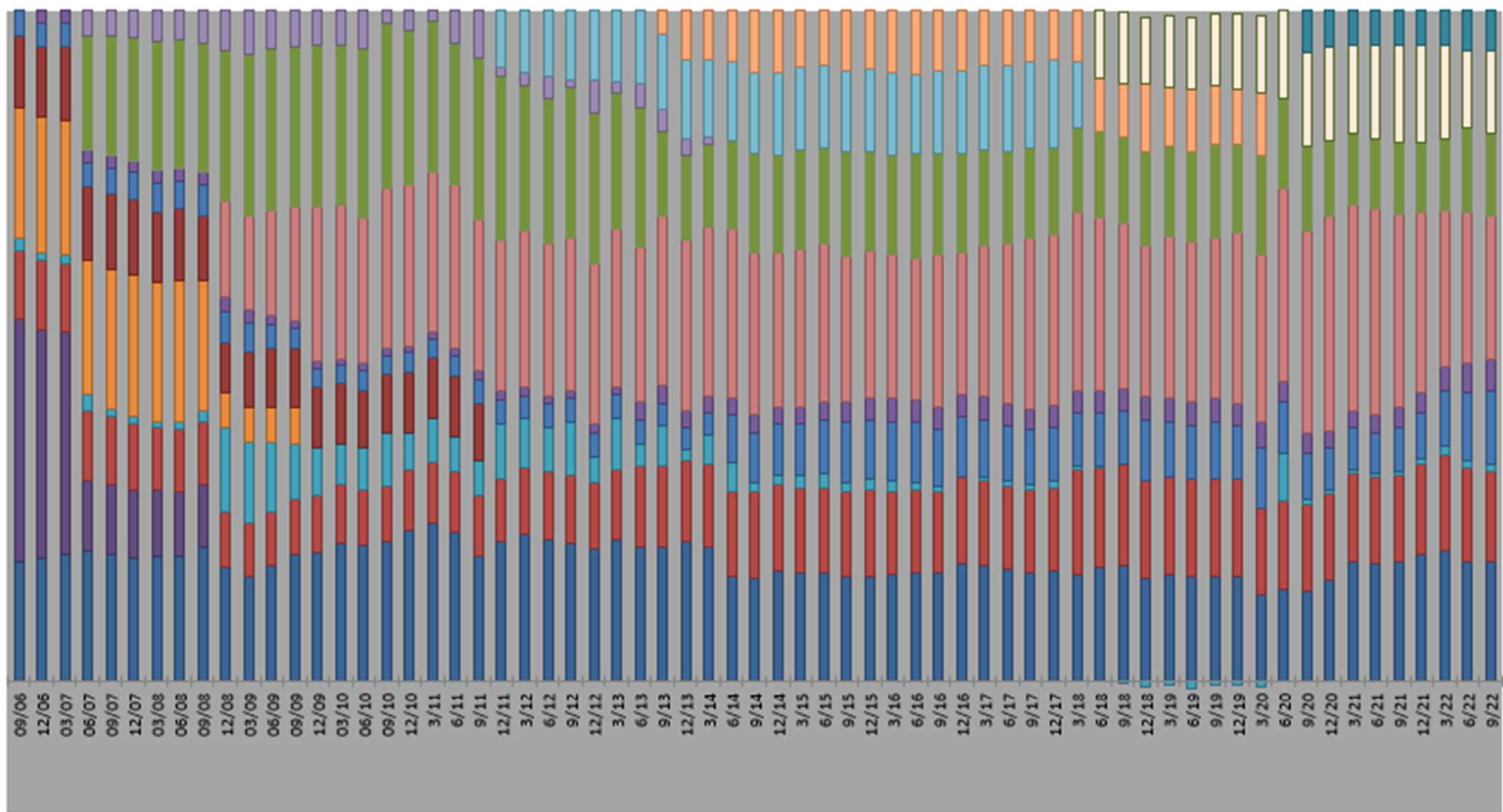


**PRINCIPAL ENHANCED (net of fees) VS. NCREIF NFI  
FOR THE PERIOD ENDING 9/30/22**

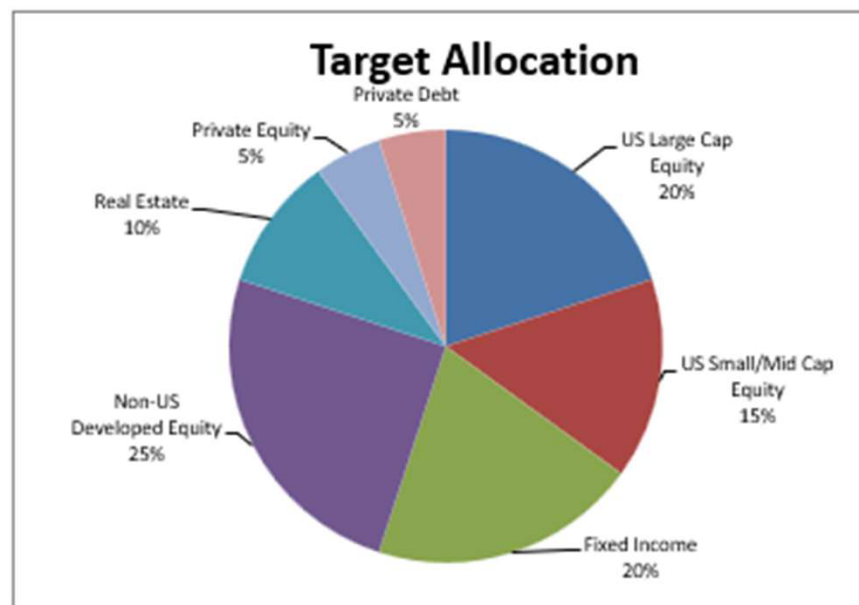
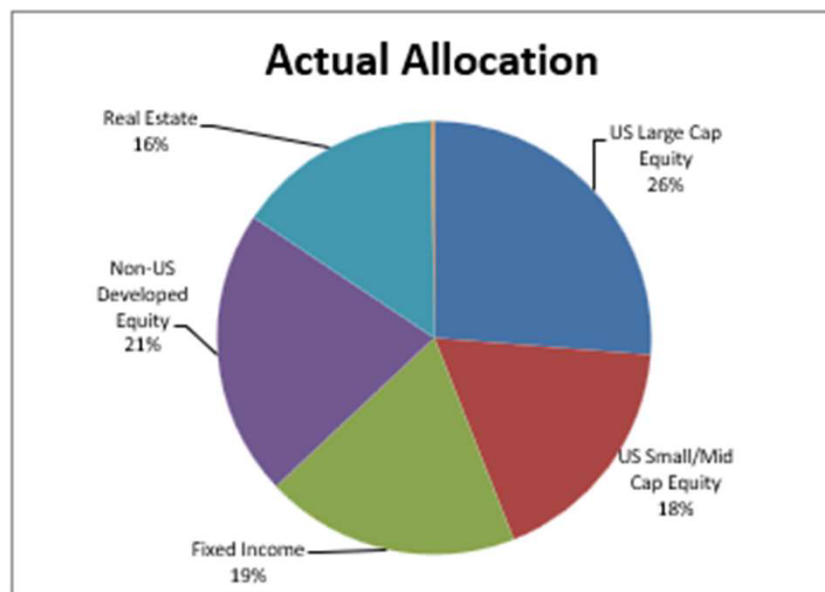


# Asset Allocation

## ASSET ALLOCATION HISTORY

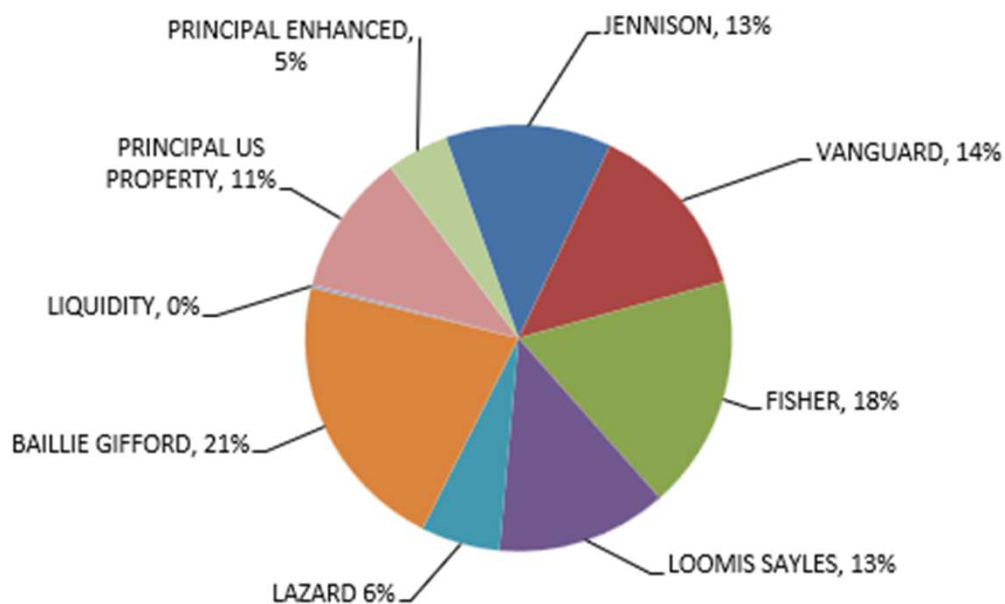


## ACTUAL ASSET ALLOCATION VERSUS TARGET ASSET ALLOCATION AS OF SEPTEMBER 30, 2022



Asset Class	\$ Value Actual	Percent Actual	Percent Target	Percent Range
US Large Cap Equity	155,306,122	26.26%	20.00%	15-30%
US Small/Mid Cap Equity	105,143,680	17.78%	15.00%	10-20%
Fixed Income	112,078,867	18.95%	20.00%	12.75-27%
Non-US Developed Equity	126,531,987	21.39%	25.00%	13.75-35%
Real Estate	91,074,315	15.40%	10.00%	0-13%
Cash	1,363,676	0.23%	0.00%	0.00%
Private Equity	0	0.00%	5.00%	0-8%
Private Debt	0	0.00%	5.00%	0-8%
<b>Total Fund</b>	<b>591,498,647</b>	<b>100%</b>	<b>100%</b>	

## PEACE OFFICERS' RETIREMENT SYSTEM

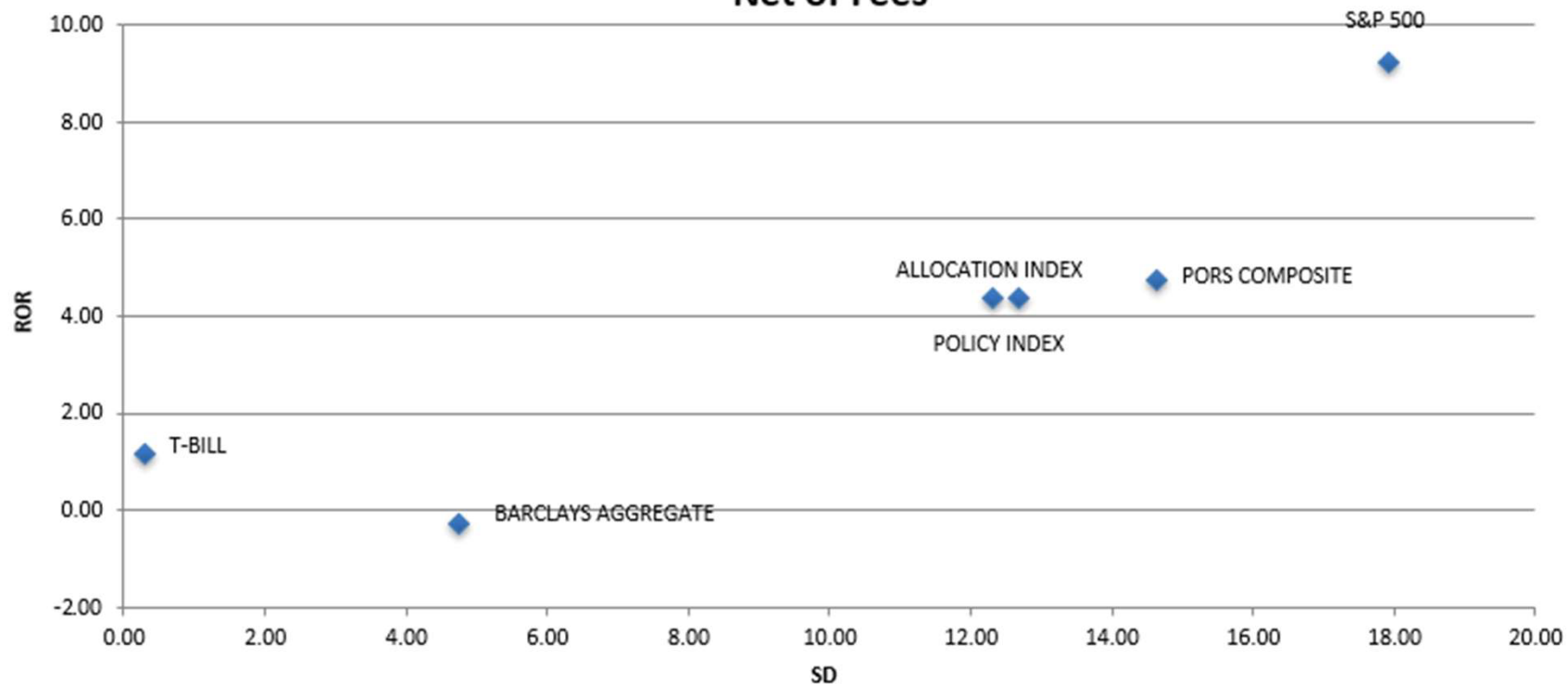


<u>MGR NAME</u>	<u>MARKET VALUE</u>	<u>% OF TOTAL</u>
JENNISON	74,734,680.76	12.63%
VANGUARD	80,571,441.27	13.62%
FISHER	105,143,680.41	17.78%
LOOMIS SAYLES	76,616,179.38	12.95%
LAZARD	35,462,687.60	6.00%
BAILLIE GIFFORD	126,531,987.12	21.39%
LIQUIDITY	1,363,675.98	0.23%
PRINCIPAL US PROPERTY	63,427,132.75	10.72%
PRINCIPAL ENHANCED	27,647,181.81	4.67%
	<u>591,498,647.08</u>	<u>100.00%</u>



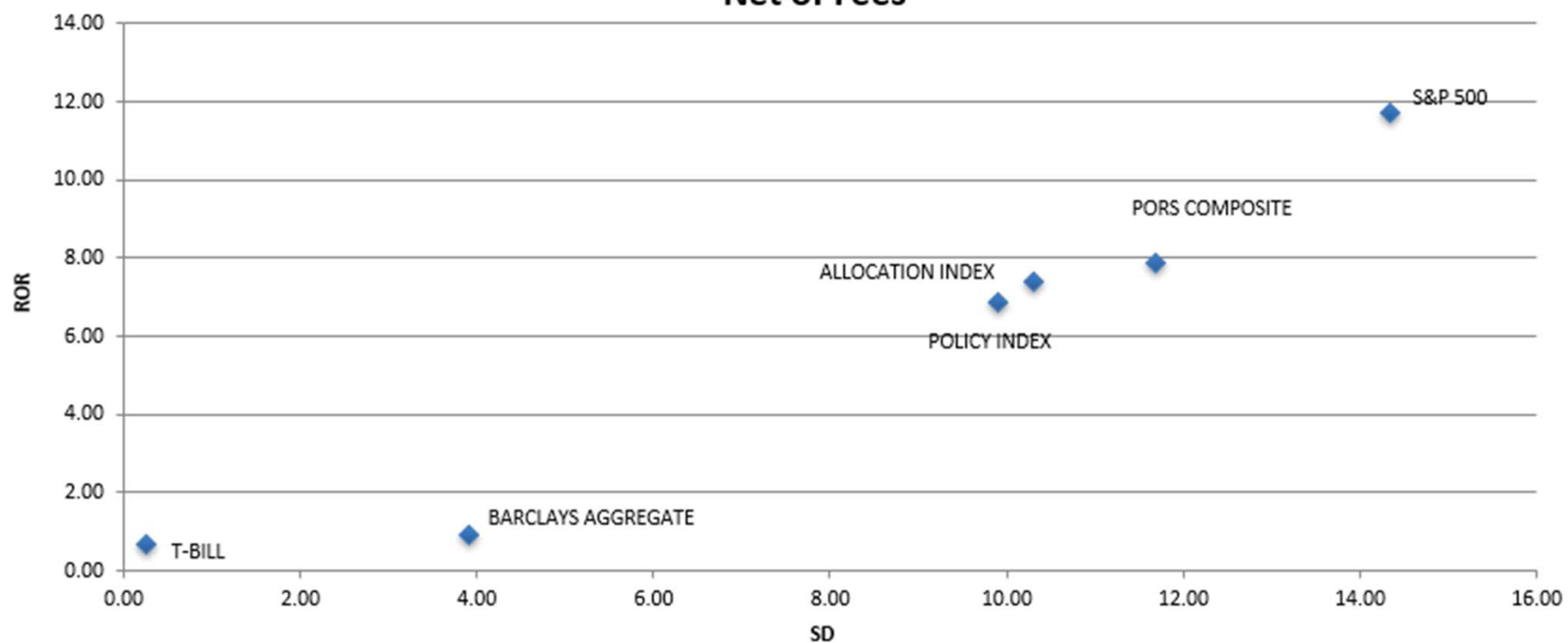
# Risk Measures

## Peace Officers' Retirement System 5 Year Risk vs. Return Net of Fees



<u>Account/Index</u>	<u>5 Years ROR (net of fees)</u>	<u>5 Years Standard Deviation</u>	<u>5 Years Sharpe Ratio</u>
PEACE OFFICERS COMPOSITE	4.74	14.65	0.33
IOWA PORS POLICY INDEX	4.37	12.30	0.35
PORS ALLOCATION INDEX	4.36	12.69	0.35
S&P 500	9.24	17.92	0.54
BARCLAYS AGGREGATE	-0.27	4.73	-0.30
90 DAY T-BILL	1.15	0.30	0.00

## Peace Officers' Retirement System 10 Year Risk vs. Return Net of Fees



**Account/Index**

**10 Years ROR (net of fees)**

**10 Years Standard Deviation**

**10 Years Sharpe Ratio**

PEACE OFFICERS COMPOSITE

7.87

11.70

0.67

IOWA PORS POLICY INDEX

6.87

9.90

0.67

PORS ALLOCATION INDEX

7.37

10.31

0.69

S&P 500

11.70

14.34

0.81

BARCLAYS AGGREGATE

0.89

3.91

0.07

90 DAY T-BILL

0.68

0.25

0.00

# Compliance Report

Peace Officers' Retirement System  
Investment Policies and Guidelines Compliance Check  
Quarter Ending September 30, 2022

**Total Fund**

Yes = In compliance

<u>Asset Allocation</u>	<u>Target</u>	<u>Range</u>	<u>CurrentPortfolio</u>	<u>Compliance</u>
US Large Cap Equity:	20%	15-30%	26.26%	Yes
US Small/Mid Cap Equity:	15%	10-20%	17.78%	Yes
Fixed Income:	20%	12.75-27%	18.95%	Yes
Non-US Developed Equity	25%	13.75-35%	21.39%	Yes
Real Estate:	10%	0-13%	15.40%	No
Private Equity:	5%	0-8%	0.00%	Yes
Private Debt:	5%	0-8%	0.00%	Yes
Cash Equivalents:	0%	0%	0.23%	Yes

Return Objectives (over a five-year market cycle)

Achieve 7% - Absolute Nominal Return:	No
CPI + 4% - Real Return:	No
Exceed Weighted Total Fund Policy Index:	Yes

Risk Adjusted Total Rate of Return

The Total Fund Sharpe Ratio is expected to exceed the same measure for the Weighted Total Fund Policy Index over the period of investment:	No
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**Semi-Monthly Compliance Violations  
Investment Policies and Guideline Compliance Check  
Quarter Ending September 30, 2022**

**Fisher:** No violations as of the end of the quarter.

**Jennison** No violations as of the end of the quarter.

**Loomis Sayles:** No violations as of the end of the quarter.

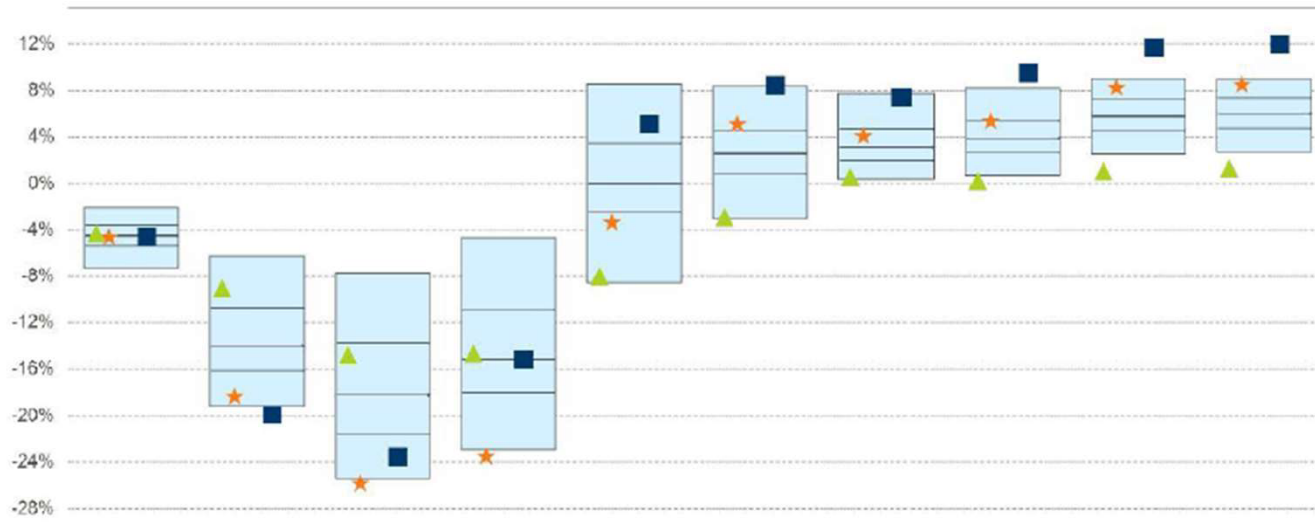
**Lazard:** No violations as of the end of the quarter.

# Appendix

## State of Iowa Peace Officer Retirement System

### Performance Comparison

Total Returns of Master Trusts - All Plans  
Cumulative Periods Ending : September 30, 2022

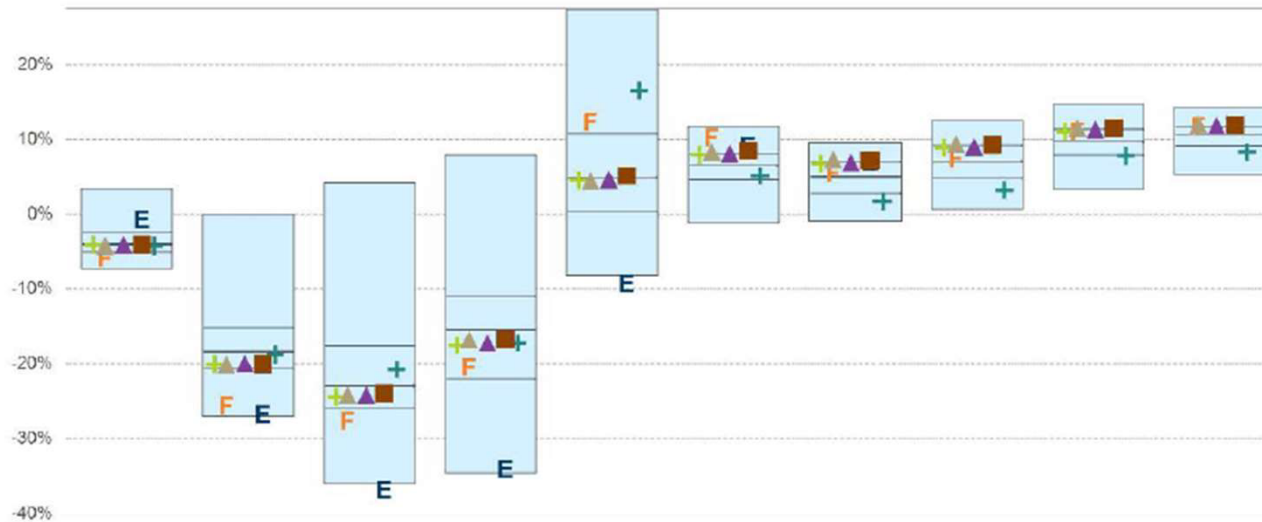


Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	-2.04	-6.22	-7.78	-4.69	8.56	8.37	7.71	8.22	9.03	8.98
25th	-3.56	-10.77	-13.79	-10.85	3.48	4.57	4.66	5.43	7.32	7.36
50th	-4.47	-13.98	-18.24	-15.16	-0.01	2.60	3.14	3.92	5.78	6.05
75th	-5.36	-16.16	-21.54	-18.02	-2.46	0.84	1.98	2.67	4.49	4.72
95th	-7.26	-19.19	-25.38	-22.92	-8.58	-3.02	0.37	0.69	2.53	2.76
No. Of Obs	412	392	385	382	374	363	309	305	293	282
★ Total Fund Composite	-4.86 (80)	-18.64 (92)	-26.10 (96)	-23.73 (95)	-3.58 (85)	4.87 (23)	3.87 (34)	5.10 (29)	8.02 (15)	8.26 (13)
■ S&P 500	-4.88 (80)	-20.20 (96)	-23.87 (91)	-15.48 (51)	4.83 (18)	8.16 (5)	7.17 (6)	9.24 (1)	11.40 (1)	11.70 (1)
▲ Bloomberg Govt/Credit	-4.56 (53)	-9.36 (18)	-15.10 (30)	-14.95 (48)	-8.30 (94)	-3.15 (95)	0.28 (95)	-0.05 (97)	0.78 (98)	1.02 (96)



## State of Iowa Peace Officer Retirement System Performance Comparison

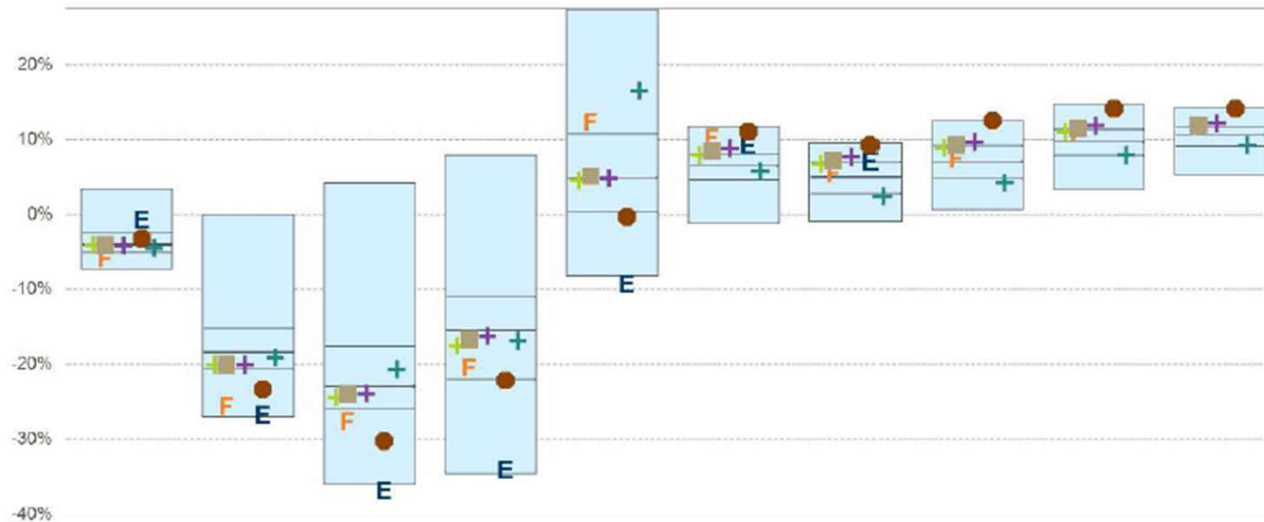
*Total Returns of US Equity Portfolios  
Cumulative Periods Ending : September 30, 2022*



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	3.51	0.00	4.25	7.93	27.36	11.80	9.62	12.53	14.73	14.39
25th	-2.34	-15.21	-17.56	-10.98	10.84	8.14	7.03	9.24	11.43	11.74
50th	-3.94	-18.41	-22.94	-15.48	4.99	6.57	5.00	7.10	9.76	10.73
75th	-4.97	-20.52	-25.87	-21.99	0.49	4.67	2.85	4.80	7.92	9.17
95th	-7.29	-27.03	-38.03	-34.60	-8.14	-1.10	-0.88	0.68	3.40	5.29
No. Of Obs	742	718	717	705	654	623	495	488	450	371
<b>F</b> Fisher Investments	-6.32 (90)	-25.99 (93)	-28.04 (79)	-20.89 (71)	11.97 (22)	9.87 (11)	5.09 (49)	7.09 (50)	10.66 (40)	11.43 (40)
<b>E</b> Jennison	-1.09 (15)	-27.18 (95)	-37.25 (95)	-34.51 (94)	-8.67 (95)	8.78 (15)	6.68 (32)			
<b>+</b> Vanguard Total Market	-4.44 (58)	-20.51 (74)	-24.81 (67)	-17.98 (63)	4.14 (60)	7.54 (38)	6.36 (38)	8.53 (39)	10.70 (40)	
<b>+</b> Russell 2000 Value	-4.61 (64)	-19.18 (57)	-21.12 (38)	-17.70 (62)	16.15 (11)	4.72 (73)	1.32 (85)	2.87 (90)	7.42 (80)	
<b>▲</b> Russell 3000	-4.46 (58)	-20.42 (72)	-24.62 (67)	-17.64 (62)	4.22 (59)	7.69 (34)	6.48 (34)	8.61 (38)	10.90 (38)	7.94 (87)
<b>▲</b> Russell 1000	-4.61 (64)	-20.51 (74)	-24.59 (68)	-17.22 (60)	4.12 (61)	7.94 (30)	6.91 (27)	9.00 (32)	11.15 (31)	11.60 (33)
<b>■</b> Wilshire 5000	-4.45 (57)	-20.47 (72)	-24.41 (62)	-17.17 (58)	4.71 (56)	8.07 (27)	6.77 (31)	8.85 (34)	11.15 (31)	11.53 (35)

## State of Iowa Peace Officer Retirement System Performance Comparison

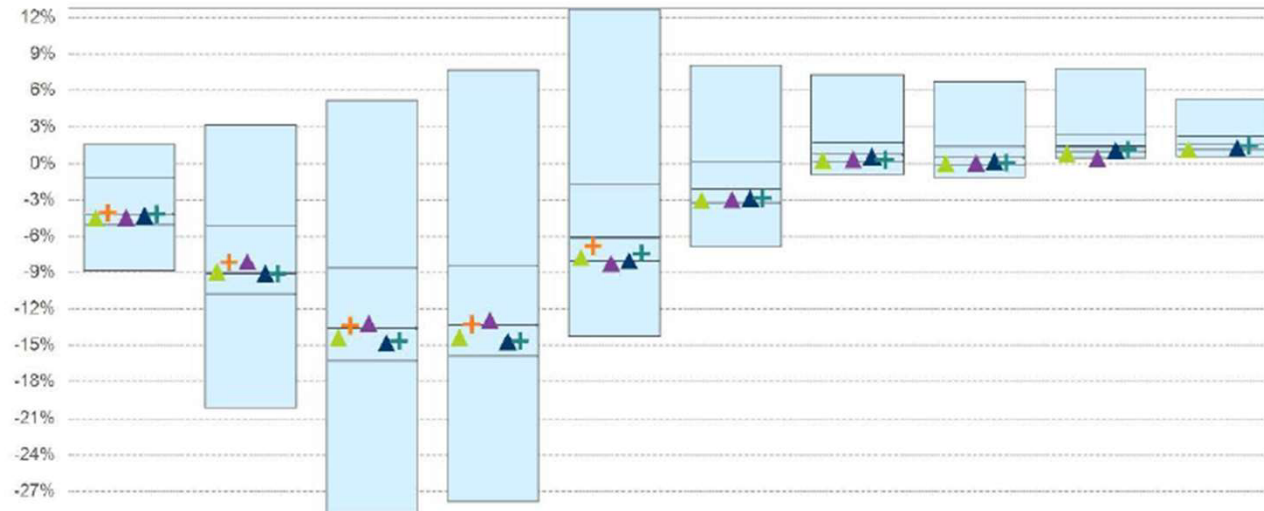
*Total Returns of US Equity Portfolios  
Cumulative Periods Ending : September 30, 2022*



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	3.51	0.00	4.25	7.93	27.36	11.80	9.62	12.53	14.73	14.39
25th	-2.34	-15.21	-17.56	-10.98	10.84	8.14	7.03	9.24	11.43	11.74
50th	-3.04	-18.41	-22.04	-15.48	4.99	6.57	5.00	7.10	9.76	10.73
75th	-4.97	-20.52	-25.87	-21.99	0.49	4.67	2.85	4.80	7.92	9.17
95th	-7.29	-27.03	-36.03	-34.80	-8.14	-1.10	-0.86	0.68	3.40	5.29
No. Of Obs	742	718	717	705	654	623	495	488	450	371
<b>F</b> Fisher Investments	-6.32 (90)	-25.99 (93)	-28.04 (79)	-20.89 (71)	11.97 (22)	9.87 (11)	5.09 (49)	7.09 (50)	10.66 (40)	11.43 (40)
<b>E</b> Jennison	-1.09 (15)	-27.18 (95)	-37.25 (95)	-34.51 (94)	-9.87 (95)	8.78 (15)	6.66 (32)			
<b>+</b> Vanguard Total Market	-4.44 (56)	-20.51 (74)	-24.81 (67)	-17.96 (83)	4.14 (80)	7.54 (38)	6.36 (36)	8.53 (39)	10.70 (40)	
<b>+</b> Wil US Small-Value	-4.86 (68)	-19.58 (60)	-21.07 (38)	-17.27 (61)	16.13 (11)	5.37 (65)	2.02 (82)	3.84 (83)	7.55 (79)	8.88 (78)
<b>+</b> Wilshire US Large-Cap	-4.52 (59)	-20.52 (75)	-24.36 (62)	-16.82 (57)	4.46 (57)	8.41 (17)	7.30 (19)	9.34 (23)	11.51 (23)	11.78 (23)
<b>+</b> Wilshire 5000	-4.45 (57)	-20.47 (72)	-24.41 (62)	-17.17 (58)	4.71 (56)	8.07 (27)	6.77 (31)	8.85 (34)	11.15 (31)	11.53 (35)
<b>●</b> Russell 1000 Growth	-3.60 (44)	-23.77 (89)	-30.66 (88)	-22.59 (77)	-0.73 (82)	10.87 (9)	8.88 (9)	12.16 (7)	13.74 (6)	13.70 (9)

## State of Iowa Peace Officer Retirement System Performance Comparison

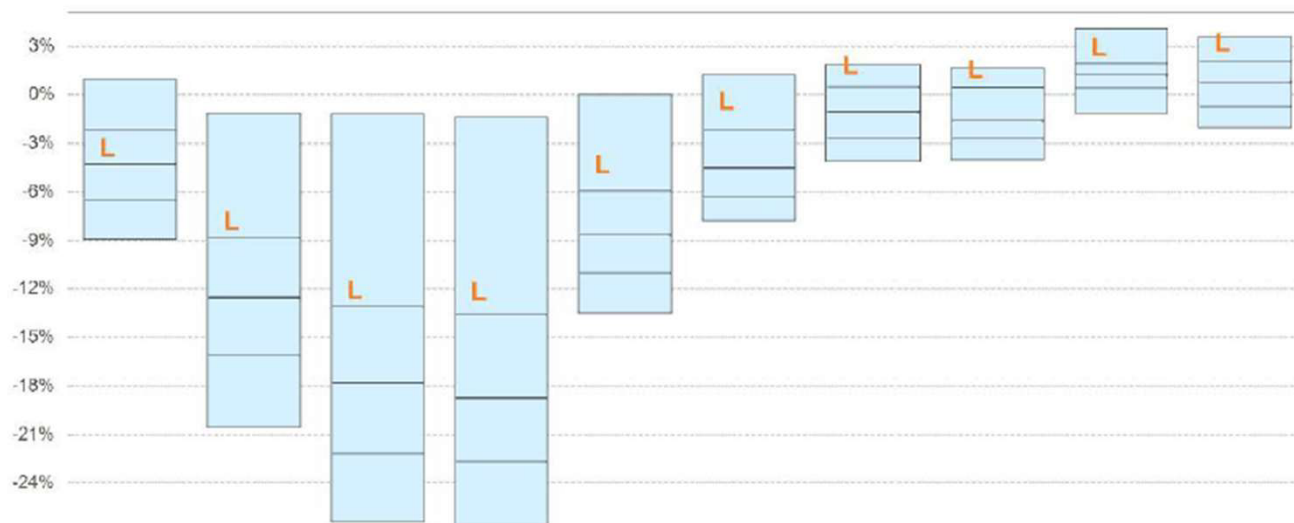
*Total Returns of US Fixed Income Portfolios  
Cumulative Periods Ending : September 30, 2022*



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	1.57	3.17	5.18	7.66	12.67	8.09	7.33	6.74	7.75	5.31
25th	-1.16	-5.05	-8.63	-8.44	-1.69	0.16	1.72	1.40	2.33	2.26
50th	-4.18	-9.09	-13.59	-13.35	-8.10	-2.07	0.76	0.49	1.40	1.53
75th	-5.04	-10.81	-16.22	-15.89	-8.03	-3.23	0.19	-0.05	0.95	1.12
95th	-8.85	-20.12	-28.84	-27.84	-14.24	-6.82	-0.90	-1.13	0.44	0.58
No. Of Obs	653	630	623	614	577	539	375	349	314	250
+ Lazard ▲ Bloomberg Govt/Credit ▲ Bloomberg Aggregate + Barclays US Univ Indx ▲ Merrill Lynch Treasury	-4.33 (53)	-8.40 (42)	-13.64 (50)	-13.52 (50)	-7.04 (56)	-3.15 (72)	0.28 (71)	-0.05 (75)	0.78 (84)	1.02 (81)
	-4.56 (58)	-9.38 (58)	-15.10 (67)	-14.95 (67)	-8.30 (79)	-3.26 (78)	-0.03 (84)	-0.27 (85)	0.54 (93)	0.89 (89)
	-4.75 (67)	-9.22 (55)	-14.61 (62)	-14.60 (61)	-8.00 (73)	-3.11 (71)	0.03 (80)	-0.18 (80)	0.86 (80)	1.17 (71)
	-4.45 (54)	-9.36 (58)	-14.90 (66)	-14.92 (66)	-7.67 (64)	-3.24 (75)	0.09 (78)	-0.26 (84)	0.17 (96)	
	-4.72 (64)	-8.38 (42)	-13.48 (47)	-13.18 (48)	-8.51 (80)					

## State of Iowa Peace Officer Retirement System Performance Comparison

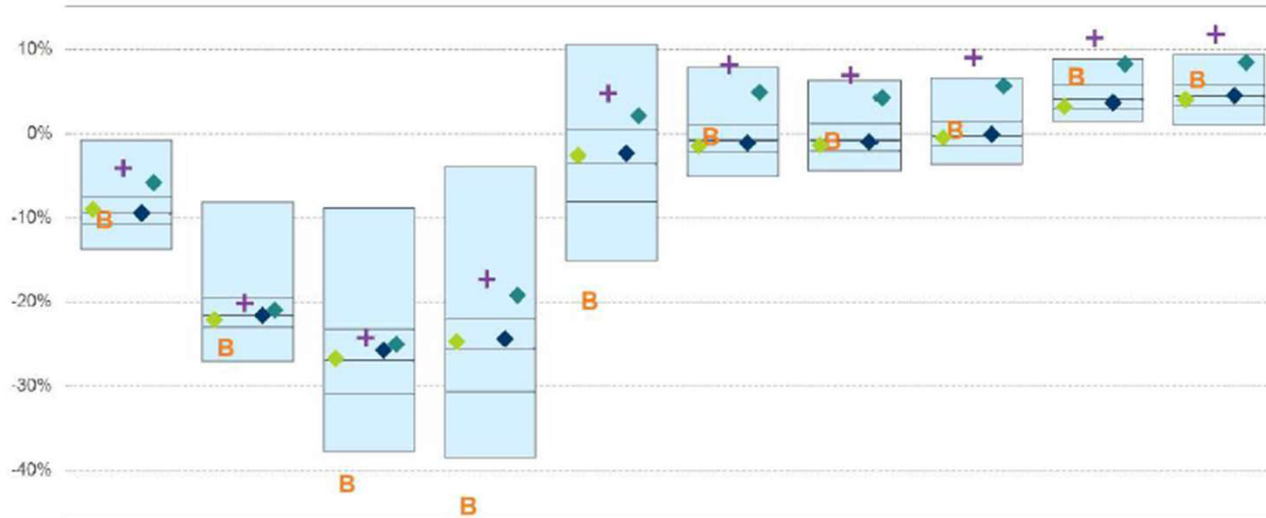
*Total Returns of Non-US Fixed Income Portfolios  
Cumulative Periods Ending : September 30, 2022*



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	0.95	-1.12	-1.18	-1.39	0.00	1.21	1.84	1.65	4.09	3.57
25th	-2.13	-8.77	-13.11	-13.59	-5.93	-2.19	0.50	0.44	1.91	2.04
50th	-4.30	-12.54	-17.82	-18.77	-8.65	-4.52	-1.06	-1.61	1.22	0.79
75th	-6.44	-16.12	-22.18	-22.65	-11.05	-6.33	-2.66	-2.68	0.43	-0.76
95th	-8.93	-20.58	-26.40	-26.76	-13.48	-7.79	-4.13	-4.02	-1.13	-2.04
No. Of Obs	177	168	166	160	153	147	141	130	128	121
Loomis Sayles	-3.45 (37)	-7.95 (19)	-12.26 (18)	-12.38 (21)	-4.50 (16)	-0.56 (11)	1.63 (6)	1.37 (8)	2.76 (11)	3.02 (7)

## State of Iowa Peace Officer Retirement System Performance Comparison

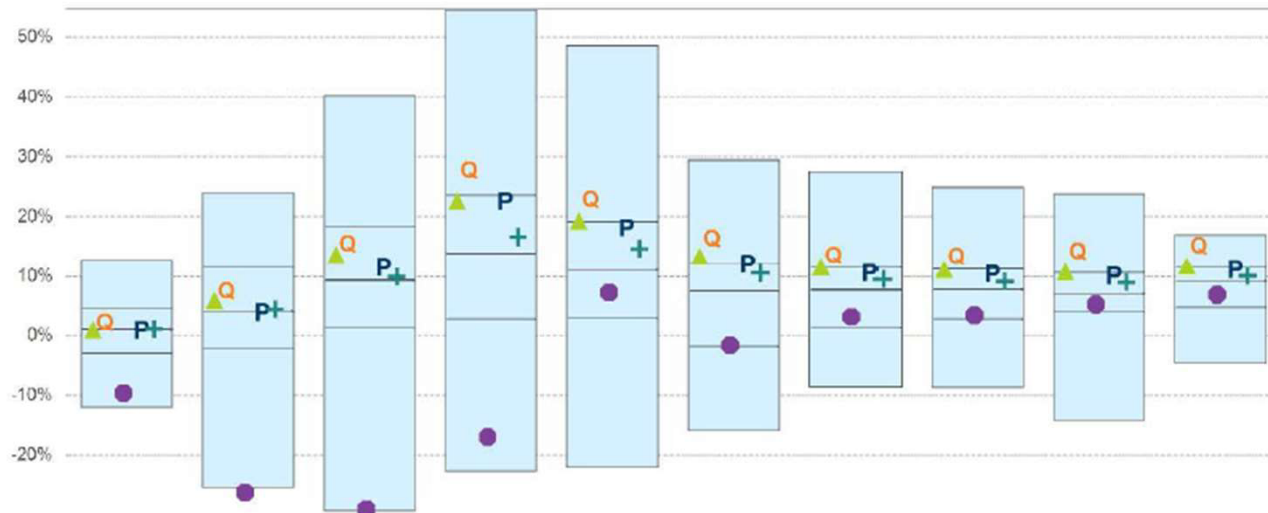
*Total Returns of Non-US Equity Portfolios - All  
Cumulative Periods Ending : September 30, 2022*



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	-0.73	-8.15	-8.85	-3.94	10.58	7.84	6.34	6.64	8.84	9.44
25th	-7.49	-19.48	-23.29	-22.05	0.60	1.11	1.19	1.47	5.79	5.78
50th	-9.47	-21.65	-26.89	-25.57	-3.51	-0.73	-0.75	-0.28	4.10	4.48
75th	-10.69	-23.01	-30.95	-30.63	-8.05	-2.23	-2.06	-1.47	3.06	3.31
95th	-13.66	-27.02	-37.75	-38.46	-15.09	-5.07	-4.37	-3.57	1.51	1.01
No. Of Obs	918	877	871	843	793	760	655	622	593	526
<b>B</b> Baillie Gifford	-10.58 (73)	-25.84 (92)	-41.96 (98)	-44.60 (98)	-20.24 (99)	-0.69 (49)	-1.18 (57)	0.09 (44)	6.42 (18)	6.06 (21)
<b>◆</b> MSCI ACWI x-US	-8.80 (58)	-22.01 (57)	-26.17 (42)	-24.78 (41)	-2.69 (42)	-1.50 (64)	-1.33 (60)	-0.43 (53)	3.28 (69)	4.12 (59)
<b>◆</b> MSCI EAFE (Net)	-9.36 (47)	-22.51 (68)	-27.09 (52)	-25.13 (47)	-2.98 (44)	-1.83 (69)	-1.71 (68)	-0.84 (63)	2.84 (80)	3.67 (68)
<b>◆</b> MSCI World (Net)	-6.19 (16)	-21.37 (45)	-25.42 (37)	-19.64 (19)	1.75 (20)	4.56 (10)	3.87 (9)	5.30 (6)	7.91 (7)	8.11 (9)
<b>+</b> MSCI Broad Market Inde	-4.46 (11)	-20.49 (33)	-24.67 (33)	-17.68 (15)	4.42 (12)	7.83 (5)	6.58 (4)	8.70 (2)	10.97 (1)	11.45 (1)

## State of Iowa Peace Officer Retirement System Performance Comparison

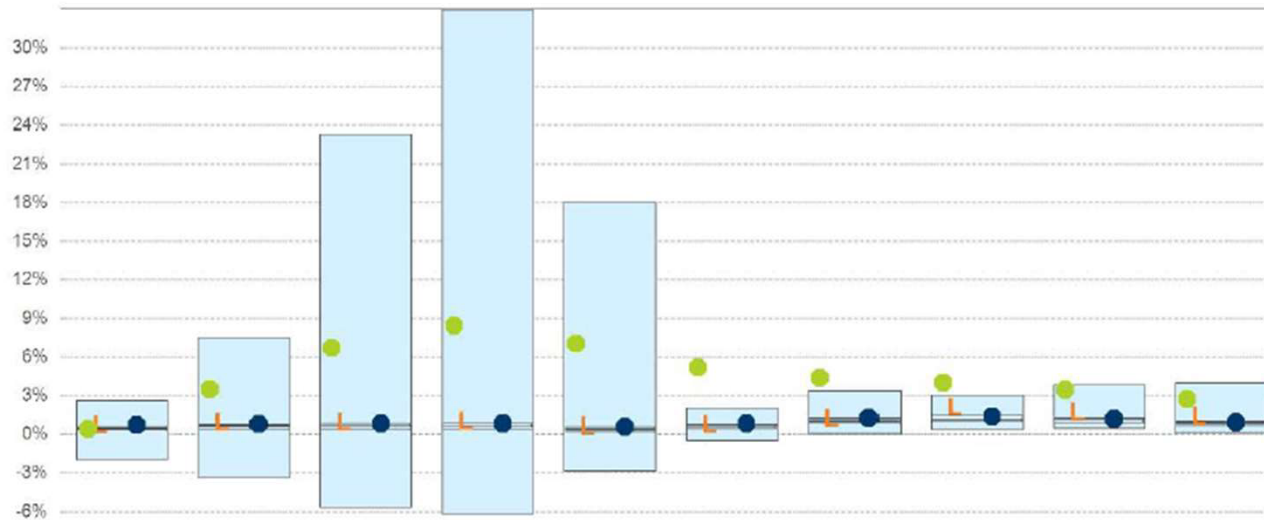
*Total Returns of US Real Estate Portfolios  
Cumulative Periods Ending : September 30, 2022*



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	12.63	24.00	40.19	54.57	48.62	29.43	27.53	24.93	23.84	16.86
25th	4.47	11.45	18.35	23.62	19.12	12.26	11.55	11.25	10.61	11.43
50th	1.06	4.11	9.33	13.76	11.02	7.47	7.68	7.75	7.04	9.22
75th	-2.98	-2.05	1.19	2.79	2.94	-1.77	1.34	2.78	4.15	4.73
95th	-11.93	-25.39	-29.29	-22.73	-22.08	-15.92	-8.65	-8.73	-14.03	-4.64
No. Of Obs	185	194	195	187	181	146	120	115	102	66
<b>Q</b> Principal Enhanced	1.71 (43)	6.92 (37)	14.89 (30)	27.26 (20)	22.33 (16)	15.80 (14)	12.95 (20)	12.80 (17)	13.60 (14)	14.51 (8)
<b>P</b> Principal US Property	0.42 (53)	3.44 (52)	10.98 (44)	22.10 (30)	17.62 (30)	11.51 (29)	10.10 (35)	9.83 (36)	9.80 (38)	10.59 (40)
<b>▲</b> NCREIF NFI-ODCE	0.52 (52)	5.31 (45)	13.08 (36)	22.09 (30)	18.70 (25)	12.75 (22)	11.07 (30)	10.62 (29)	10.21 (30)	11.11 (35)
<b>+</b> NCREIF Property Indx	0.57 (52)	3.82 (51)	9.35 (49)	16.08 (44)	14.10 (42)	9.92 (38)	8.98 (42)	8.62 (46)	8.46 (43)	9.48 (46)
<b>●</b> Wilshire RESI	-10.20 (85)	-26.81 (97)	-29.63 (95)	-17.56 (89)	6.70 (63)	-2.17 (78)	2.58 (68)	2.89 (73)	4.67 (67)	6.32 (62)

## State of Iowa Peace Officer Retirement System Performance Comparison

*Total Returns of US Cash/Short Term Portfolios  
Cumulative Periods Ending : September 30, 2022*



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	2.61	7.51	23.28	32.94	18.03	2.05	3.38	3.05	3.80	3.95
25th	0.57	0.77	0.83	0.87	0.57	0.76	1.28	1.43	1.29	1.02
50th	0.49	0.65	0.67	0.68	0.37	0.60	1.07	1.19	1.09	0.89
75th	0.35	0.39	0.41	0.44	0.24	0.48	0.94	1.06	0.94	0.72
95th	-1.97	-3.37	-5.62	-6.18	-2.87	-0.49	0.06	0.39	0.48	0.09
No. Of Obs	221	218	214	212	198	170	122	114	102	94
L Liquidity	0.50 (47)	0.73 (30)	0.74 (37)	0.81 (30)	0.42 (40)	0.55 (64)	1.01 (62)	1.90 (9)	1.53 (16)	1.17 (16)
● 91-Day Treasury Bill	0.46 (64)	0.57 (64)	0.81 (64)	0.82 (65)	0.34 (65)	0.59 (58)	1.04 (57)	1.15 (61)	0.95 (74)	0.88 (80)
● Consumer Price Index	0.17 (64)	3.24 (7)	6.46 (7)	8.20 (6)	6.79 (5)	4.95 (2)	4.13 (2)	3.76 (4)	3.21 (5)	2.50 (6)