

**SUMMARY OF RELEVANT FACTS**  
**Pompano Beach Police & Firefighters' Retirement System**  
**As of December 31, 2019**

**Distribution of Assets:**

<b>Equity</b>		
-Large Cap. Value	\$31,956,910	
-Large Cap. Growth	\$32,193,375	
-Mid Cap. Value	\$12,933,448	
-Small/Mid Cap. Growth	\$12,683,243	
-International Value	\$19,083,047	
-International Growth	\$19,066,315	
Total Equity	\$127,916,338	
Fixed Income	\$55,316,822	
Private Real Estate	\$21,295,635	
Fund of Hedge Funds	\$23,276,627	
Master Limited Partnerships	\$11,179,972	
Private Equity	\$8,285,425	
Cash (Non-Managed Account)	\$7,408,340	
Total Portfolio	\$254,679,159	

**Distribution by Percentages:**

	Policy	Current
<b>Equity Breakdown</b>		
-Large Cap. Value	12.50%	12.55%
-Large Cap. Growth	12.50%	12.64%
-Mid Cap. Value	5.00%	5.08%
-Small/Mid Cap. Growth	5.00%	4.98%
-International Value	7.50%	7.49%
-International Growth	7.50%	7.49%
Total Equity	50.00%	50.23%
Fixed Income	22.50%	21.72%
Private Real Estate	7.50%	8.36%
Fund of Hedge Funds	10.00%	9.14%
Master Limited Partnerships	5.00%	4.39%
Private Equity	5.00%	3.25%
Cash (Non-Managed Account)	0.00%	2.91%
Total Portfolio	100.00%	100.00%

**INVESCO (Private Real Estate)**

Private Real Estate	100.00%	\$18,295,635
Fees		(\$46,154)
Gain or (Loss)		\$405,503

**OFFICE BUILDING**

Total Assets	100.00%	\$3,000,000
Gain or (Loss)		\$31,875

**Center Coast Master Limited Partnerships**

Fund of Hedge Fund	100.00%	\$11,179,972
Gain or (Loss)		(\$235,692)

**Other Important Facts:**

Total Portfolio	\$254,679,159
Total Gain or (Loss) - Gross of Fees	\$10,606,868

**BLACKROCK**

Total Assets	100.00%	\$31,956,910
Equity	96.78%	\$30,926,582
Cash	3.22%	\$1,030,327
Fees		(\$19,164)
Gain or (Loss)		\$2,373,421

**SANDS CAPITAL MANAGEMENT**

Total Assets	100.00%	\$16,087,234
Equity	96.45%	\$15,515,904
Cash	3.55%	\$571,330
Fees		(\$22,182)
Gain or (Loss)		\$1,579,983

**SAWGRASS ASSET MANAGEMENT**

Total Assets	100.00%	\$16,106,141
Equity	98.42%	\$15,850,938
Cash	1.58%	\$255,203
Fees		(\$19,521)
Gain or (Loss)		\$1,279,282

**NUANCE**

Total Assets	100.00%	\$12,933,448
Equity	92.06%	\$11,907,007
Cash	7.94%	\$1,026,441
Fees		(\$11,004)
Gain or (Loss)		\$954,452

**WELLS**

Total Assets	100.00%	\$12,683,243
Equity	98.90%	\$12,543,734
Cash	1.10%	\$139,509
Fees		(\$24,300)
Gain or (Loss)		\$843,046

**Pine Grove Fund of Hedge Fund**

Fund of Hedge Fund	100.00%	\$10,818,977
Gain or (Loss)		\$135,613

**Ironwood Fund of Hedge Fund**

Fund of Hedge Fund	100.00%	\$12,457,650
Gain or (Loss)		\$311,557

**MAIN ACCOUNT (NON-MANAGED)**

Cash	100.00%	\$7,408,340
Gain or (Loss)		\$1,879

**LAZARD (International Value)**

Total Assets	100.00%	\$19,083,047
Equity	97.23%	\$18,555,070
Cash	2.77%	\$527,978
Fees		(\$21,528)
Gain or (Loss)		\$1,332,044

**RENAISSANCE (International Growth)**

Total Assets	100.00%	\$19,066,315
Equity	97.02%	\$18,498,447
Cash	2.98%	\$567,868
Fees		(\$27,138)
Gain or (Loss)		\$1,486,927

**STANDISH MELLON**

Total Assets	100.00%	\$27,642,162
Fixed	91.39%	\$25,263,414
Cash	8.61%	\$2,378,749
Fees		(\$15,246)
Gain or (Loss)		\$49,897

**INCORE/VICTORY (FORMERLY MUNDER)**

Total Assets	100.00%	\$27,674,659
Fixed	99.03%	\$27,407,130
Cash	0.97%	\$267,530
Fees		(\$13,889)
Gain or (Loss)		\$57,082

**NB CROSSROADS (PRIVATE EQUITY) #1**

Total Assets	100.00%	\$3,468,628
Gain or (Loss)		\$0

**NB CROSSROADS (PRIVATE EQUITY) #2**

Fund of Hedge Fund	100.00%	\$2,936,821
Gain or (Loss)		\$0

**BLACKSTONE (PRIVATE EQUITY)**

Total Assets	100.00%	\$1,211,739
Gain or (Loss)		\$0

**GOLDMAN SACHS (PRIVATE EQUITY)**

Total Assets	100.00%	\$668,237
Gain or (Loss)		(\$0)

**BREAKDOWN OF RETURNS**  
**Pompano Beach Police & Firefighters' Retirement System**  
**As of December 31, 2019**

**TRADITIONAL INVESTMENTS**

<b>BLACKROCK</b>		<b>Your Returns</b>				
<i>Large Cap. Value</i>		<b>Gross</b>	<b>Net</b>	<b>Russ 1000 Value</b>	<b>PSN Money Mgrs.</b>	<b>S&amp;P 500</b>
	Quarter	7.88	7.82	7.41	7.16	0.46
	1 year	29.16	28.84	26.54	27.00	17.25
	3 year	11.73	11.35	9.68	11.04	9.99
	5 year	10.06	9.57	8.29	9.39	7.22
	Since 1/31/2013	11.37	10.84	11.34	NA	8.43
<b>SANDS CAPITAL</b>						
<i>Large Cap. Growth</i>				<b>Russ 1000 Growth</b>	<b>PSN Money Mgrs.</b>	
	Quarter	10.73	10.57	10.62	8.54	
	1 year	29.89	29.06	36.39	32.99	
	3 year	23.80	23.07	20.49	17.63	
	5 year	12.97	12.30	14.63	12.34	
	Since 5/31/2003	13.15	12.50	10.86	NA	
<b>SAWGRASS</b>						
<i>Large Cap. Growth</i>				<b>Russ 1000 Growth</b>	<b>PSN Money Mgrs.</b>	
	Quarter	8.39	8.25	10.62	8.54	
	Since 1/31/2019	24.56	24.10	25.14	NA	
<b>NUANCE</b>						
<i>Mid Cap. Value</i>				<b>Russ Mid Value</b>	<b>PSN Money Mgrs.</b>	
	Quarter	7.76	7.67	6.36	7.26	
	1 year	32.86	32.36	27.06	26.07	
	Since 6/30/2018	17.89	17.51	7.57	6.19	
	Nuance/RBC Global - 3 year	10.20	9.84	8.10	8.37	
	Nuance/RBC Global - 5 year	8.25	7.76	7.61	8.19	
	Nuance/RBC Global - Since 1/31/2009	15.58	14.97	15.50	NA	
<b>WELLS</b>						
<i>Small/Mid Cap. Growth</i>				<b>Russ 2500 Growth</b>	<b>PSN Money Mgrs.</b>	
	Quarter	7.00	6.79	10.57	9.67	
	1 year	40.43	39.33	32.65	28.69	
	3 year	19.91	18.91	15.17	15.59	
	5 year	13.30	12.31	10.84	11.01	
	Since 1/31/2009	18.80	17.78	17.08	NA	
<b>LAZARD</b>						
<i>International Value</i>				<b>MSCI AC Wrld x US</b>		
	Quarter	7.40	7.28	8.92		
	1 year	20.04	19.48	21.51		
	3 year	9.68	9.16	9.87		
	5 year	5.81	5.29	5.51		
	Since 1/31/2013	5.30	4.79	4.90		
<b>RENAISSANCE</b>						
<i>International Growth</i>				<b>MSCI AC Wrld x US</b>		
	Quarter	8.37	8.21	8.92		
	1 year	20.26	19.56	21.51		
	3 year	7.61	6.96	9.87		
	5 year	4.22	3.57	5.51		
	Since 1/31/2009	9.03	8.36	8.83		
<b>STANDISH MELLON</b>						
<i>Fixed Income</i>				<b>BC Aggregate</b>	<b>BC Int. Aggregate</b>	<b>BC Int. Gov/Credit</b>
	Quarter	0.18	0.12	0.18	0.47	0.37
	1 year	8.52	8.28	8.72	6.67	6.80
	3 year	4.10	3.85	4.03	3.26	3.24
	5 year	3.01	2.74	3.05	2.59	2.57
	Since 4/30/2003	4.22	3.90	4.11	3.72	3.53
<b>INCORE/VICTORY (Munder)</b>						
<i>Fixed Income</i>				<b>BC Aggregate</b>	<b>BC Int. Aggregate</b>	<b>BC Int. Gov/Credit</b>
	Quarter	0.20	0.15	0.18	0.47	0.37
	1 year	8.38	8.16	8.72	6.67	6.80
	3 year	4.26	4.06	4.03	3.26	3.24
	5 year	3.19	3.01	3.05	2.59	2.57
	Since 9/30/2002	4.49	4.27	4.19	3.79	3.64

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**ALTERNATIVE INVESTMENTS**

ALTERNATIVE INVESTMENTS

INVESCO						
Private Real Estate		Gross	Net	NCREIF	NCREIF ODCE	BC Aggregate
	Quarter	2.26	2.00	1.55	1.51	0.18
	1 year	6.52	5.39	6.42	5.34	8.72
	3 year	8.08	6.90	6.70	7.09	4.03
	5 year	9.62	8.42	8.25	8.97	3.05
	Since 7/31/2006	6.54	5.40	7.29	6.51	4.42
OFFICE BUILDING						
Private Real Estate				90-Day T-Bill	BC Aggregate	
	Quarter	1.07	1.07	0.46	0.18	
	1 year	4.71	4.71	2.25	8.72	
	3 year	4.59	4.59	1.65	4.03	
	5 year	17.82	17.82	1.05	3.05	
	Since 3/31/2007	1.07	1.01	0.86	4.23	
Ironwood						
Fund of Hedge Funds				HFRI FOF Cons	BC Aggregate	
	Quarter	2.56	2.56	1.67	0.18	
	1 year	8.15	8.15	6.34	8.72	
	3 year	5.65	5.65	3.09	4.03	
	5 year	4.29	4.29	2.30	3.05	
	Since 7/31/2008	3.75	3.75	1.54	4.17	
Pine Grove						
Fund of Hedge Funds				HFRI FOF Cons	BC Aggregate	
	Quarter	1.27	1.27	1.67	0.18	
	1 year	4.91	4.91	6.34	8.72	
	3 year	3.65	3.65	3.09	4.03	
	5 year	2.22	2.22	2.30	3.05	
	Since 9/30/2008	3.56	3.56	2.19	4.27	
Center Coast						
Master Limited Partnerships				Alerian MLP		
	Quarter	(2.07)	(2.20)	(4.08)		
	1 year	15.62	15.05	6.56		
	3 year	(1.64)	(2.13)	(4.45)		
	Since 1/31/2015	(4.88)	(5.32)	(6.52)		
Neuberger Berman				MSCI AC Wld		
Private Equity #1		Time-Wtd	Dollar-Wtd	/ 90-Day T-Bill	BC Aggregate	
	Quarter	0.00	0.00	0.46	0.18	
	1 year	5.57	5.63	17.25	8.72	
	3 year	9.02	9.55	9.99	4.03	
	5 year	10.14	10.60	7.22	3.05	
	Since 3/31/2010	4.69	10.16	8.35	3.66	
Neuberger Berman				MSCI AC Wld		
Private Equity #2		Time-Wtd	Dollar-Wtd	/ 90-Day T-Bill	BC Aggregate	
	Quarter	0.00	0.00	0.46	0.18	
	1 year	13.93	13.91	17.25	8.72	
	3 year	12.81	12.82	9.99	4.03	
	5 year	9.83	11.31	7.22	3.05	
	Since 7/31/2014	8.53	10.87	6.55		
Blackstone						
Private Equity		Time-Wtd	Dollar-Wtd	S&P 500	BC Aggregate	
	Quarter	0.00	(0.34)	9.07	0.18	
	1 year	2.04	1.50	31.49	8.72	
	3 year	9.37	9.37	15.27	4.03	
	5 year	8.80	7.79	11.70	3.05	
	Since 11/30/2013	9.57	7.76	12.30		
Goldman Sachs				MSCI AC Wld		
Private Equity		Time-Wtd	Dollar-Wtd	/ 90-Day T-Bill	BC Aggregate	
	Quarter	0.00	0.00	0.46	0.18	
	1 year	1.24	1.97	17.25	8.72	
	3 year	2.97	5.30	9.99	4.03	
	5 year	4.61	6.12	7.22	3.05	
	Since 12/31/2013	4.88	7.11	6.80		

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TOTAL FUND				Policy Index
Time-Weighted Return (TWR)				
	Quarter	4.41	4.30	4.53
	1 year	18.43	17.96	18.15
	3 year	9.86	9.40	8.42
	5 year	6.81	6.33	6.16
	Since 9/30/2002	7.78	7.30	7.42
	Since 6/30/1995	7.29		

TOTAL FUND				Actuarial Rate	CPI +3
Dollar-Weighted Net Return (IRR)					
	Quarter		4.62	1.825	1.35
	1 year		18.52	7.30	5.15
	3 year		9.61	7.30	5.01
	5 year		6.20	7.30	4.82
	Since 9/30/2002		7.52	7.30	5.12

#### **Note**

Per the Board's request, all performance results (including but not limited to rates of return, risk, measures, unit values, and dollar values) prior to September 30, 2002, were provided by GRS Asset Consulting Group, who was the previous consultant. The performance data is believed to be accurate, but there is no assurance. Graystone Consulting has not calculated or independently verified the accuracy of the returns or market values and is not responsible or liable for any mistake or miscalculations. Effective September 30, 2002, all valuations and rates of return are calculated by Graystone Consulting.

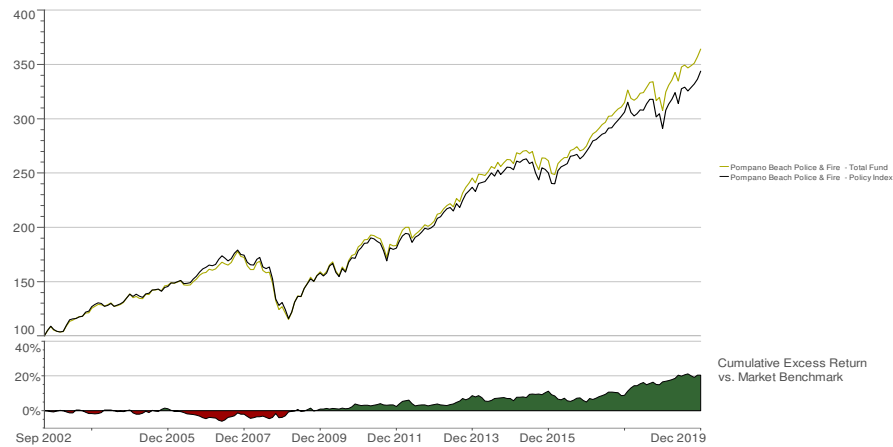
# Return/ Risk Analysis - Since 9/30/2002

## Zephyr StyleADVISOR

Zephyr StyleADVISOR: MSSB - Tampa, FL

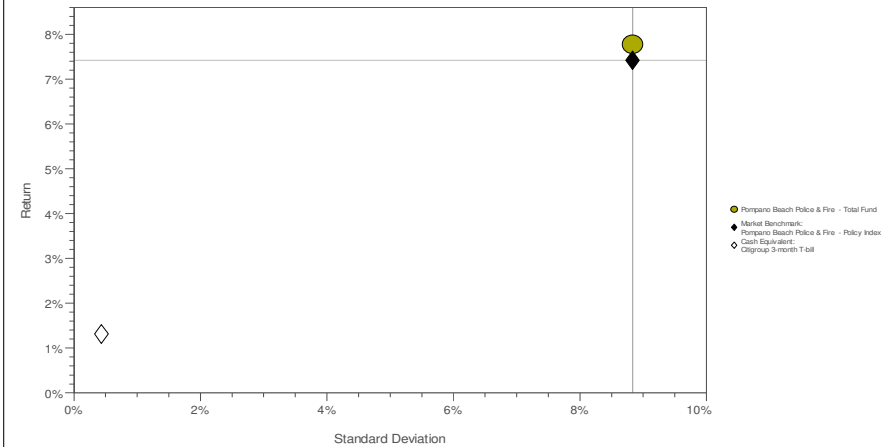
### Manager Performance

October 2002 - December 2019 (Single Computation)



### Risk / Return

October 2002 - December 2019 (Single Computation)



## Return & Risk Analysis

October 2002 - December 2019: Summary Statistics

	Return	Excess Return vs. Market	Standard Deviation	Beta vs. Market	Maximum Drawdown	Up Capture vs. Market	Down Capture vs. Market	Alpha vs. Market	Sharpe Ratio	R-Squared vs. Market
Pompano Beach Police & Fire - Total Fund	7.78%	0.36%	8.83%	0.98	-35.21%	99.99%	96.46%	0.47%	0.73	96.57%
Pompano Beach Police & Fire - Policy Index	7.42%	0.00%	8.83%	1.00	-35.28%	100.00%	100.00%	0.00%	0.69	100.00%

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## COMPLIANCE CHECKLIST

### Pompano Beach Police & Firefighters' Retirement System

As of December 31, 2019

GUIDELINES	In Compliance	GUIDELINES	In Compliance
<b><u>Equity Portfolio</u></b>		<b><u>Standish Mellon</u></b>	
Listed on recognized exchange	Yes	<b><u>Fixed Income Portfolio</u></b>	
Single issue not to exceed 10% at market value for each equity in each separately managed portfolio	Yes	Market Value < 13.75% & > 10.00% of total fund	Yes
Total equity portfolio < 57.5% of total fund at market value	Yes	U.S. Government / Agency or U.S. Corporations	Yes
No scrutinized companies (Sudan/Iran) held per Protecting Florida's Investments Act requirement	Yes	Bonds rated "BBB" or better	Yes
		Single corporate issuer not exceed 10% of bond portfolio	Yes
<b><u>Blackrock (Equity Dividend)</u></b>		<b><u>Incore/Victory (Formerly Munder)</u></b>	
<b><u>Large Capitalization Value Equity Portfolio</u></b>		<b><u>Fixed Income Portfolio</u></b>	
Market Value 15.0% & > 10.0% of total fund	Yes	Market Value < 13.75% & > 10.00% of total fund	Yes
		U.S. Government / Agency or U.S. Corporations	Yes
<b><u>Sands Capital Management</u></b>		Bonds rated "BBB" or better	Yes
<b><u>Large Capitalization Growth Equity Portfolio</u></b>		BBB rated bonds < 15% of fixed income portfolio at market	No
Market Value 7.5% & > 5.0% of total fund	Yes	Single corporate issuer not exceed 10% of bond portfolio (except U.S. Government/Agency)	Yes
		<b><u>Invesco</u></b>	
<b><u>Sawgrass Asset Management</u></b>		<b><u>Private Real Estate Portfolio</u></b>	
<b><u>Large Capitalization Growth Equity Portfolio</u></b>		Market Value < 10% of total fund	Yes
Market Value 7.5% & > 5.0% of total fund	Yes		
		<b><u>Combined Fund of Hedge Funds</u></b>	
<b><u>Nuance</u></b>		Market Value < 10% of total fund	Yes
<b><u>Mid Capitalization Value</u></b>			
Market Value < 7.5% & > 2.5% of total fund	Yes	<b><u>Center Coast</u></b>	
		<b><u>Master Limited Partnerships</u></b>	
<b><u>Wells Capital</u></b>		Market Value < 7.5% of total fund	Yes
<b><u>Small/Mid Capitalization Growth</u></b>			
Market Value < 7.5% & > 2.5% of total fund	Yes	<b><u>Combined Private Equity</u></b>	
		Market Value < 7.5% of total fund	Yes
<b><u>Lazard</u></b>			
<b><u>International Value Equity Portfolio</u></b>			
Market Value < 10.0% & > 5.0% of total fund	Yes		
<b><u>Renaissance</u></b>			
<b><u>International Growth Equity Portfolio</u></b>			
Market Value < 10.0% & > 5.0% of total fund	Yes		

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# PERFORMANCE CHECKLIST

## Pompano Beach Police & Firefighters' Retirement System

As of December 31, 2019

OBJECTIVES		Met
<b><u>Total Portfolio</u></b>	<u>7 year</u>	<u>Since Inception</u>
Exceed Target Index - 3+ years	Yes	Yes
Exceed actuarial assumption (7.4%) - 3+ years	Yes	Yes
Exceed CPI + 3% - 3+ years	Yes	Yes
<b><u>Blackrock (Equity Dividend)</u></b>		
<b><u>Large Capitalization Value Equity Portfolio</u></b>		
Performance (Inception 1/15/13)	<u>3 year</u>	<u>Since Inception</u>
Rank in the Top 50% of manager universe	Yes	No
Performance > Russell 1000 Value	Yes	Yes
<b><u>Sands Capital Management</u></b>		
<b><u>Large Capitalization Growth Equity Portfolio</u></b>		
Performance (Inception 5/12/03)	<u>7 year</u>	<u>Since Inception</u>
Rank in the Top 50% of manager universe	Yes	Yes
Performance > Russell 1000 Growth	No	Yes
<b><u>Sawgrass Asset Management</u></b>		
<b><u>Large Capitalization Growth Equity Portfolio</u></b>		
Performance (Inception 1/31/19)	<u>3 year</u>	<u>Since Inception</u>
Rank in the Top 50% of manager universe	N/A	Yes
Performance > Russell 1000 Growth	N/A	No
<b><u>Nuance</u></b>		
<b><u>Mid Capitalization Value</u></b>		
Performance (Inception 6/30/2018)	<u>3 year</u>	<u>Since Inception</u>
Rank in the Top 50% of manager universe	N/A	Yes
Performance > Russell Midcap Value	N/A	Yes
<b><u>Wells Capital</u></b>		
<b><u>Small/Mid Capitalization Growth</u></b>		
Performance (Inception 1/2009)	<u>5 year</u>	<u>Since Inception</u>
Rank in the Top 50% of manager universe	Yes	Yes
Performance > Russell 2500 Growth	Yes	Yes
<b><u>Lazard</u></b>		
<b><u>International Value Equity Portfolio</u></b>		
Performance (Inception 1/30/13)	<u>3 year</u>	<u>Since Inception</u>
Performance > MSCI ACWI ex US	No	Yes

OBJECTIVES		Met
<b><u>Renaissance</u></b>		
<b><u>International Growth Equity Portfolio</u></b>		
Performance (Inception 1/09)	<u>5 year</u>	<u>Since Inception</u>
Performance > MSCI ACWI ex US	No	Yes
<b><u>Standish Mellon</u></b>		
<b><u>Fixed Income Portfolio</u></b>		
Performance (Inception 4/30/03)	<u>7 year</u>	<u>Since Inception</u>
Performance > Barclays Capital Aggregate	Yes	Yes
<b><u>Incore/Victory (Formerly Munder)</u></b>		
<b><u>Fixed Income Portfolio</u></b>		
Performance (Inception 9/30/02)	<u>7 year</u>	<u>Since Inception</u>
Performance > Barclays Aggregate	Yes	Yes
<b><u>Invesco</u></b>		
<b><u>Private Real Estate Portfolio</u></b>		
Performance (Inception 9/3/06)	<u>7 year</u>	<u>Since Inception</u>
Performance > NCREIF Property	Yes	No
<b><u>Ironwood</u></b>		
<b><u>Fund of Hedge Funds</u></b>		
Performance (Inception 7/31/08)	<u>7 year</u>	<u>Since Inception</u>
Performance > HFRI FOF Conservative Index	Yes	Yes
<b><u>Pine Grove</u></b>		
<b><u>Fund of Hedge Funds</u></b>		
Performance (Inception 9/30/08)	<u>7 year</u>	<u>Since Inception</u>
Performance > HFRI FOF Conservative Index	Yes	Yes
<b><u>Center Coast</u></b>		
<b><u>Master Limited Partnerships</u></b>		
Performance (Inception 1/2/15)	<u>3 year</u>	<u>Since Inception</u>
Performance > Alerian MLP	Yes	Yes

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# QUARTERLY PERFORMANCE EVALUATION

Prepared for:

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**Pompano Beach Police &  
Firefighters' Retirement System**

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**As of December 31, 2019**

**Graystone Consulting Tampa**

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Institutional Consultant



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▪ Office Building Note Reports	
▪ Ironwood (Fund of Hedge Fund) Account Reports	
▪ Pine Grove (Fund of Hedge Fund) Account Reports	
▪ Center Coast (Master Limited Partnerships) Account Reports	
▪ Neuberger Berman (Private Equity #1) Account Reports	
▪ Neuberger Berman (Private Equity #2) Account Reports	
▪ Blackstone (Private Equity) Account Reports	
▪ Goldman Sachs (Private Equity) Account Reports	

# Capital Markets Overview: 4Q 2019

## Introduction

Quarterly Update as of December 31, 2019 and Forecasts as of November 29, 2019

- The S&P 500 capped off an historic year for returns in the fourth quarter with its strongest finish since 2013. Equities were up 9.07% on the quarter and gained 32.6% in 2019. International markets underperformed the US slightly, though still performed nicely. MS & Co.'s CIO and Chief US Equity Strategist, Mike Wilson, has raised his price target to 3,000 for the S&P 500 into 2020 and expects range-bound trading over the next year, as unrealistic expectations for corporate earnings and already stretched valuations may pressure equity returns.
- US equities rose in the fourth quarter, as the S&P 500 gained 9.07% and 10 of 11 sectors finished in the black. Tech led, gaining 14.40%. Other outperformers included Health Care and Financials, which were up 14.37% and 10.44%, respectively. Real Estate was the only money loser, falling 0.54%. Utilities trailed as well, up only 0.80%. Other major US indices were positive on the quarter; the Dow Jones added 6.67% and the NASDAQ gained 12.49%.
- International underperformed slightly in the fourth quarter, as the US continued its market leadership. International markets rose on positive trade news and incremental improvement in European economic data. The MSCI EAFE Index (a benchmark for international developed markets) added 8.21% for US-currency investors.
- The bond market was flat in the fourth quarter as the Fed meeting expectations and improving sentiment surrounding global growth kept bond yields steady to slightly higher across the curve. The Bloomberg Barclays US Aggregate Bond Index, a general measure of the bond market, rose 0.18%.
- Morgan Stanley & Co. economists expect US real GDP will be 1.7% in Q4 2019 amid an environment of 2.9% global GDP growth; they expect that pace to accelerate in the US and globally for 2020 to 1.8% and 3.2%, respectively.
- Commodities were up in the fourth quarter; the Bloomberg Commodity Index gained 4.0%.

Source: FactSet, Bloomberg, Morgan Stanley & Co. Research, Morgan Stanley Wealth Management GIC

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# Capital Markets Overview: 4Q 2019

## The US Economy

Quarterly Update as of December 31, 2019 and Forecasts as of November 29, 2019

The Bureau of Economic Analysis estimated that real Gross Domestic Product increased at an annualized rate of 2.1% in 3Q19, in comparison to a 2.0% increase in 2Q19. Morgan Stanley & Co. economists forecast US Real GDP growth will be 1.7% in Q4 2019 and 1.8% in 2020.

The seasonally adjusted unemployment rate for November 2019 was 3.5%, the cycle low. The number of unemployed was 5.8 million in November, down from 6.0 million in August. The number of long-term unemployed (those jobless for 27 weeks or more) was 1.2 million, unchanged from August 2019's 1.2. These individuals accounted for 21.1% of the unemployed vs. 20.6% at the end of August 2019.

According to the most recent data from the Federal Reserve Bank of St. Louis, corporate profits rose 0.6% quarter over quarter and fell 0.3% year over year as of Q3 2019.

Inflation was accelerated slightly in the US, according to the Bureau of Labor Statistics. The year-over-year Consumer Price Index was 2.1% in November, up from 1.8% in October. Morgan Stanley & Co. economists forecast a 2.0% annual inflation rate for Q4 2019 and 2.4% for 2020.

The Census Bureau reported that the number of new private-sector housing starts in November was at a seasonally adjusted annual rate of 1,365,000—13.6% above housing starts in November of last year.

The Census Bureau also reported that seasonally adjusted retail and food services sales increased at 3.3% year over year in November. Consumer confidence was steady in 4Q19, with Conference Board Consumer Confidence reading 126.5 in December, compared to 126.3 in September, though confidence is still below July's peak of 135.8.

In November, the Institute for Supply Management's (ISM) Purchasing Managers Index (PMI), a manufacturing sector index, remains in contraction at 48.1, though is up from September's reading of 47.8, which had been the lowest since 2016. Generally speaking, a PMI or NMI (ISM Non-Manufacturing Index) over 50 indicates that the sector is expanding, and a PMI below 50 but over 43 indicates that the sector is shrinking but the overall economy is expanding. August's reading was the first PMI below 50 since August 2016. Overall, PMI has been above 43 for 126 consecutive months, indicating overall economic recovery and expansion since May 2009.

The ISM's Non-Manufacturing Index (NMI) for November was 53.9—down from October's 54.7. The index has now been above 50 for 118 consecutive months, indicating non-manufacturing expansion since February 2010.

Source: FactSet, Bloomberg, Morgan Stanley & Co. Research, Federal Reserve Bank of St. Louis, Morgan Stanley Wealth Management GIC

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# Capital Markets Overview: 4Q 2019

## US Equity Markets

As of 4Q 2019

The Dow Jones Industrial Average gained 6.67% in the fourth quarter, while the NASDAQ Composite Index was up 12.49%. The S&P 500 Index added 9.07% over the same period.

10 of 11 sectors rose on a total return basis in 4Q19. Tech led, gaining 14.40%. Other outperformers included Health Care and Financials, which were up 14.37% and 10.44%, respectively. Real Estate was the only money loser, falling 0.54%. Utilities trailed as well, up only 0.80%.

The Russell 1000, a large-cap index, gained 9.04% for the quarter, as large-cap growth (10.62%) outperformed large-cap value (7.39%).

The Russell Midcap gained 7.06% on the quarter, with mid-cap growth (8.17%) outperforming mid-cap value (6.33%).

The Russell 2000, a small-cap index, added 9.94% for the quarter, with small-cap growth (11.38%) outperforming small-cap value (8.47%).

### Key US Stock Market Index Returns (%) for the Period Ending 12/31/2019

INDEX IN USD	Quarter	12 Months	5-Years (Annualized)	7-Years (Annualized)
S&P 500	9.07%	31.49%	11.69%	14.72%
Dow Jones	6.67%	25.34%	12.58%	14.50%
Russell 2000	9.94%	25.52%	8.22%	11.64%
Russell Midcap	7.06%	30.54%	9.33%	13.20%
Russell 1000	9.04%	31.43%	11.48%	14.59%

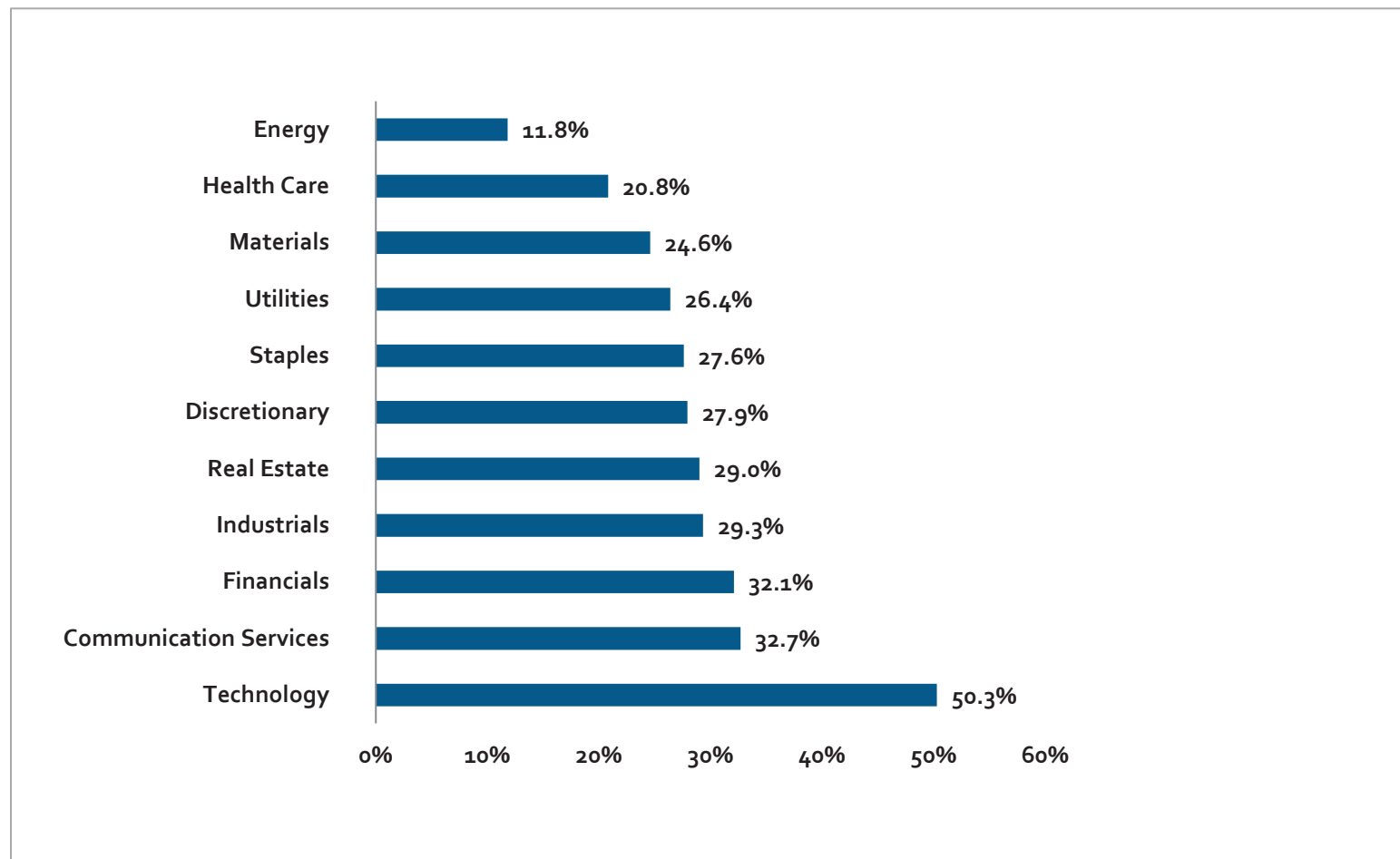
Source: FactSet, Bloomberg, Morgan Stanley Wealth Management GIC

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# S&P 500 Sectors

## YTD 2019 Total Return

As of December 31, 2019



Source: Bloomberg

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# Capital Markets Overview: 4Q 2019

## Global Equity Markets

As of 4Q 2019

International underperformed slightly in the fourth quarter, as the US continued its market leadership. International markets rose on positive trade news and incremental improvement in European economic data. The MSCI EAFE Index (a benchmark for international developed markets) added 8.21% for US-currency investors.

In the fourth quarter, the MSCI Emerging Markets Index rose 11.93% for US-currency investors as a weakening US dollar provided a tailwind to improving sentiment surrounding global growth and trade. The MSCI Europe Index gained 8.89% for US-currency investors, while the MSCI Japan added 7.51%.

The S&P 500 Index gained 9.07% for the quarter.

Emerging economy equity market indices were up in the fourth quarter. The MSCI BRIC (Brazil, Russia, India and China) Index rose 13.18% in US dollar terms, while the MSCI EM Asia Index gained 12.33%.

### Key Global Stock Market Index Returns (%) for the Period Ending 12/31/2019

INDEX IN USD	Quarter	12 Months	5-Years (Annualized)	7-Years (Annualized)
MSCI EAFE	8.21%	22.66%	6.18%	6.84%
MSCI EAFE Growth	8.48%	28.43%	8.13%	8.26%
MSCI EAFE Value	7.87%	16.83%	4.15%	5.34%
MSCI Europe	8.89%	24.59%	5.69%	6.62%
MSCI Japan	7.51%	20.59%	7.95%	8.73%
S&P 500	9.07%	31.49%	11.69%	14.72%
MSCI Emerging Markets	11.93%	18.88%	6.00%	3.64%

Source: FactSet, Bloomberg, Morgan Stanley Wealth Management GIC

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# Capital Markets Overview: 4Q 2019

## The US Bond Market

As of 4Q 2019

The bond market was flat in the fourth quarter as the Fed meeting expectations and improving sentiment surrounding global growth kept bond yields steady to slightly higher across the curve. The Bloomberg Barclays US Aggregate Bond Index, a general measure of the bond market, rose 0.18%.

Interest rates rose during the fourth quarter, as the yield on the 10-year US Treasury note rose to a quarter-end 1.91% from 1.66% at the end of September. The shortest end of the curve fell as the Fed cut their Fed funds target rate, with the yield on 3-month Treasury bills falling to 1.54% from 1.81%, re-steepening the yield curve as measured by the 10-year and the 3-month tenors.

Riskier parts of the bond market such as US high yield debt rose in the fourth quarter, buoyed by the market's risk-on sentiment. The Bloomberg Barclays Capital High Yield Index, a measure of lower-rated corporate bonds, gained 2.61%.

Mortgage-backed continued to show modest gains in the fourth quarter. The Bloomberg Barclays Capital Mortgage-Backed Securities Index rose 0.71%. Municipal bonds were also up; the Bloomberg Barclays Capital Muni Index saw gains of 0.74%.

### Key US Bond Market Index Returns (%) for the Period Ending 12/31/2019

INDEX IN USD	Quarter	12 Months	5-Years (Annualized)	7-Years (Annualized)
Bloomberg Barclays Capital US Aggregate	0.18%	8.72%	3.06%	2.72%
Bloomberg Barclays Capital High Yield	2.61%	14.32%	6.13%	5.78%
Bloomberg Barclays Capital Government/Credit	-0.03%	9.70%	3.24%	2.80%
Bloomberg Barclays Capital Government	-0.79%	6.86%	2.37%	1.99%
Bloomberg Barclays Capital Intermediate Govt/Credit	0.37%	6.82%	2.59%	2.16%
Bloomberg Barclays Capital Long Govt/Credit	-1.12%	19.59%	5.43%	5.09%
Bloomberg Barclays Capital Mortgage Backed Securities	0.71%	6.35%	2.60%	2.48%
Bloomberg Barclays Capital Muni	0.74%	7.54%	3.54%	3.40%

Source: FactSet, Bloomberg, Morgan Stanley & Co. Research, Morgan Stanley Wealth Management GIC

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Nontraditional investment options and strategies are often employed by a portfolio manager to further a fund’s investment objective and to help offset market risks. However, these features may be complex, making it more difficult to understand the fund’s essential characteristics and risks, and how it will perform in different market environments and over various periods of time. They may also expose the fund to increased volatility and unanticipated risks particularly when used in complex combinations and/or accompanied by the use of borrowing or “leverage.”

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These limitations include survivorship bias (the returns of the indices may not be representative of all the hedge funds in the universe because of the tendency of lower performing funds to leave the index); heterogeneity (not all hedge funds are alike or comparable to one another, and the index may not accurately reflect the performance of a described style); and limited data (many hedge funds do not report to indices, and the index may omit funds, the inclusion of which might significantly affect the performance shown). The HFRI indices are based on information self-reported by hedge fund managers that decide on their own, at any time, whether or not they want to provide, or continue to provide, information to HFR Asset Management, L.L.C. Results for funds that go out of business are included in the index until the date that they cease operations. Therefore, these indices may not be complete or accurate representations of the hedge fund universe, and may be biased in several ways. 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Investment products in this category may employ various investment strategies and techniques for both hedging and more speculative purposes such as short-selling, leverage, derivatives and options, which can increase volatility and the risk of investment loss. Alternative investments are not suitable for all investors. As a diversified global financial services firm, Morgan Stanley Wealth Management engages in a broad spectrum of activities including financial advisory services, investment management activities, sponsoring and managing private investment funds, engaging in broker-dealer transactions and principal securities, commodities and foreign exchange transactions, research publication, and other activities. In the ordinary course of its business, Morgan Stanley Wealth Management therefore engages in activities where Morgan Stanley Wealth Management's interests may conflict with the interests of its clients, including the private investment funds it manages. 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A majority of Alternative Investment managers reviewed and selected by GIMA pay or cause to be paid an ongoing fee for distribution from their management fees to Morgan Stanley Wealth Management in connection with Morgan Stanley Wealth Management clients that purchase an interest in an Alternative Investment and in some instances pay these fees on the investments held by advisory clients. Morgan Stanley Wealth Management rebates such fees that are received and attributable to an investment held by an advisory client and retains the fees paid in connection with investments held by brokerage clients. Morgan Stanley Wealth Management has a conflict of interest in offering alternative investments because Morgan Stanley Wealth Management or our affiliates, in most instances, earn more money in your account from your investments in alternative investments than from other investment options.

It should be noted that the majority of hedge fund indexes are comprised of hedge fund manager returns. This is in contrast to traditional indexes, which are comprised of individual securities in the various market segments they represent and offer complete transparency as to membership and construction methodology. As such, some believe that hedge fund index returns have certain biases that are not present in traditional indexes. Some of these biases inflate index performance, while others may skew performance negatively. However, many studies indicate that overall hedge fund index performance has been biased to the upside. Some studies suggest performance has been inflated by up to 260 basis points or more annually depending on the types of biases included and the time period studied. Although there are numerous potential biases that could affect hedge fund returns, we identify some of the more common ones throughout this paper.

Self-selection bias results when certain manager returns are not included in the index returns and may result in performance being skewed up or down. Because hedge funds are private placements, hedge fund managers are able to decide which fund returns they want to report and are able to opt out of reporting to the various databases. Certain hedge fund managers may choose only to report

returns for funds with strong returns and opt out of reporting returns for weak performers. Other hedge funds that close may decide to stop reporting in order to retain secrecy, which may cause a downward bias in returns.

Survivorship bias results when certain constituents are removed from an index. This often results from the closure of funds due to poor performance, “blow ups,” or other such events. As such, this bias typically results in performance being skewed higher. As noted, hedge fund index performance biases can result in positive or negative skew. However, it would appear that the skew is more often positive. While it is difficult to quantify the effects precisely, investors should be aware that idiosyncratic factors may be giving hedge fund index returns an artificial “lift” or upwards bias.

**Hedge Funds of Funds** and many funds of funds are private investment vehicles restricted to certain qualified private and institutional investors. They are often speculative and include a high degree of risk. Investors can lose all or a substantial amount of their investment. They may be highly illiquid, can engage in leverage and other speculative practices that may increase volatility and the risk of loss, and may be subject to large investment minimums and initial lockups. They involve complex tax structures, tax-inefficient investing and delays in distributing important tax information. Categorically, hedge funds and funds of funds have higher fees and expenses than traditional investments, and such fees and expenses can lower the returns achieved by investors. Funds of funds have an additional layer of fees over and above hedge fund fees that will offset returns. An investment in an **exchange-traded fund** involves risks similar to those of investing in a broadly based portfolio of equity securities traded on an exchange in the relevant securities market, such as market fluctuations caused by such factors as economic and political developments, changes in interest rates and perceived trends in stock and bond prices. An investment in a **target date portfolio** is subject to the risks attendant to the underlying funds in which it invests, in these portfolios the funds are the Consulting Group Capital Market funds. A target date portfolio is geared to investors who will retire and/or require income at an approximate year. The portfolio is managed to meet the investor’s goals by the pre-established year or “target date.” A target date portfolio will transition its invested assets from a more aggressive portfolio to a more conservative portfolio as the target date draws closer. An investment in the target date portfolio is not guaranteed at any time, including, before or after the target date is reached. **Managed futures** investments are speculative, involve a high degree of risk, use significant leverage, are generally illiquid, have substantial charges, subject investors to conflicts of interest, and are suitable only for the risk capital portion of an investor’s portfolio. Managed futures investments do not replace equities or bonds but rather may act as a complement in a well diversified portfolio. Managed Futures are complex and not appropriate for all investors. **Rebalancing** does not protect against a loss in declining financial markets. There may be a potential tax implication with a rebalancing strategy.

**Asset allocation and diversification** do not assure a profit or protect against loss in declining financial markets. Past performance is no guarantee of future results. Actual results may vary.

**Tax laws are complex and subject to change.** Morgan Stanley Smith Barney LLC (“Morgan Stanley”), its affiliates and Morgan Stanley Financial Advisors and Private Wealth Advisors do not provide tax or legal advice and are not “fiduciaries” (under ERISA, the Internal Revenue Code or otherwise) with respect to the services or activities described herein except as otherwise provided in writing by Morgan Stanley and/or as described at [www.morganstanley.com/disclosures/dol](http://www.morganstanley.com/disclosures/dol). Individuals are encouraged to consult their tax and legal advisors (a) before establishing a retirement plan or account, and (b) regarding any potential tax, ERISA and related consequences of any investments made under such plan or account.

Annuities and insurance products are offered in conjunction with Morgan Stanley Smith Barney LLC’s licensed insurance agency affiliates.

Indices are unmanaged and investors cannot directly invest in them. They are not subject to expenses or fees and are often comprised of securities and other investment instruments the liquidity of which is not restricted. A particular investment product may consist of securities significantly different than those in any index referred to herein. Composite index results are shown for illustrative purposes only, generally do not represent the performance of a specific investment, may not, for a variety of reasons, be a suitable comparison or benchmark for a particular investment and may not necessarily reflect the actual investment strategy or objective of a particular investment. Consequently, comparing an investment to a particular index may be of limited use.

This material is not a financial plan and does not create an investment advisory relationship between you and your Morgan Stanley Financial Advisor. We are not your fiduciary either under the Employee Retirement Income Security Act of 1974 (ERISA) or the Internal Revenue Code of 1986, and any information in this report is not intended to form the primary basis for any investment decision by you, or an investment advice or recommendation for either ERISA or Internal Revenue Code purposes. Morgan Stanley Private Wealth Management will only prepare a financial plan at your specific request using Private Wealth Management approved financial planning signature.

We may act in the capacity of a broker or that of an advisor. As your broker, we are not your fiduciary and our interests may not always be identical to yours. Please consult with your Private Wealth Advisor to discuss our obligations to disclose to you any conflicts we may from time to time have and our duty to act in your best interest. We may be paid both by you and by others who compensate us based on what you buy. Our compensation, including that of your Private Wealth Advisor, may vary by product and over time.

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For index, indicator and survey definitions referenced in this report please visit the following: <https://www.morganstanley.com/wealth-investmentsolutions/wmir-definitions>

**GLOBAL INVESTMENT COMMITTEE (GIC) ASSET ALLOCATION MODELS:** The Asset Allocation Models are created by Morgan Stanley Wealth Management's GIC.

**HYPOTHETICAL MODEL PERFORMANCE (GROSS):** Hypothetical model performance results do not reflect the investment or performance of an actual portfolio following a GIC Strategy, but simply reflect actual historical performance of selected indices on a real-time basis over the specified period of time representing the GIC's strategic and tactical allocations as of the date of this report. The past performance shown here is simulated performance based on benchmark indices, not investment results from an actual portfolio or actual trading. There can be large differences between hypothetical and actual performance results achieved by a particular asset allocation or trading strategy. Hypothetical performance results do not represent actual trading and are generally designed with the benefit of hindsight. Actual performance results of accounts vary due to, for example, market factors (such as liquidity) and client-specific factors (such as investment vehicle selection, timing of contributions and withdrawals, restrictions and rebalancing schedules). Clients would not necessarily have obtained the performance results shown here if they had invested in accordance with any GIC Asset Allocation Model for the periods indicated. Despite the limitations of hypothetical performance, these hypothetical performance results allow clients and Financial Advisors to obtain a sense of the risk/return trade-off of different asset allocation constructs. The hypothetical performance results in this report are calculated using the returns of benchmark indices for the asset classes, and not the returns of securities, fund or other investment products. Models may contain allocations to Hedge Funds, Private Equity and Private Real Estate. The benchmark indices for these asset classes are not issued on a daily basis. When calculating model performance on a day for which no benchmark index data is issued, we have assumed straight line growth between the index levels issued before and after that date.

**FEES REDUCE THE PERFORMANCE OF ACTUAL ACCOUNTS:** None of the fees or other expenses (e.g. commissions, mark-ups, mark-downs, fees) associated with actual trading or accounts are reflected in the GIC Asset Allocation Models. The GIC Asset Allocation Models and any model performance included in this presentation are intended as educational materials. Were a client to use these models in connection with investing, any investment decisions made would be subject to transaction and other costs which, when compounded over a period of years, would decrease returns. Information regarding Morgan Stanley's standard advisory fees is available in the Form ADV Part 2, which is available at [www.morganstanley.com/adv](http://www.morganstanley.com/adv). The following hypothetical illustrates the compound effect fees have on investment returns: For example, if a portfolio's annual rate of return is 15% for 5 years and the account pays 50 basis points in fees per annum, the gross cumulative five-year return would be 101.1% and the five-year return net of fees would be 96.8%. Fees and/or expenses would apply to clients who invest in investments in an account based on these asset allocations, and would reduce clients' returns. The impact of fees and/or expenses can be material.

**Variable annuities** are long-term investments designed for retirement purposes and may be subject to market fluctuations, investment risk, and possible loss of principal. All guarantees, including optional benefits, are based on the financial strength and claims-paying ability of the issuing insurance company and do not apply to the underlying investment options. Optional riders may not be able to be purchased in combination and are available at an additional cost. Some optional riders must be elected at time of purchase. Optional riders may be subject to specific limitations, restrictions, holding periods, costs, and expenses as specified by the insurance company in the annuity contract. If you are investing in a **variable annuity** through a tax-advantaged retirement plan such as an IRA, you will get no additional tax advantage from the variable annuity. Under these circumstances, you should only consider buying a variable annuity because of its other features, such as lifetime income payments and death benefits protection. Taxable distributions (and certain deemed distributions) are subject to ordinary income tax and, if taken prior to age 59½, may be subject to a 10% federal income tax penalty. Early withdrawals will reduce the death benefit and cash surrender value.

**Equity securities** may fluctuate in response to news on companies, industries, market conditions and general economic environment. **Ultrashort-term fixed income** asset class is comprised of fixed income securities with high quality, very short maturities. They are therefore subject to the risks associated with debt securities such as credit and interest rate risk.

**Master Limited Partnerships (MLPs)** are limited partnerships or limited liability companies that are taxed as partnerships and whose interests (limited partnership units or limited liability company units) are traded on securities exchanges like shares of common stock. Currently, most MLPs operate in the energy, natural resources or real estate sectors. Investments in MLP interests are subject to the risks generally applicable to companies in the energy and natural resources sectors, including commodity pricing risk, supply and demand risk, depletion risk and exploration risk. Individual MLPs



are publicly traded partnerships that have unique risks related to their structure. These include, but are not limited to, their reliance on the capital markets to fund growth, adverse ruling on the current tax treatment of distributions (typically mostly tax deferred), and commodity volume risk. The potential tax benefits from investing in MLPs depend on their being treated as partnerships for federal income tax purposes and, if the MLP is deemed to be a corporation, then its income would be subject to federal taxation at the entity level, reducing the amount of cash available for distribution to the fund which could result in a reduction of the fund's value. MLPs carry interest rate risk and may underperform in a rising interest rate environment. MLP funds accrue deferred income taxes for future tax liabilities associated with the portion of MLP distributions considered to be a tax-deferred return of capital and for any net operating gains as well as capital appreciation of its investments; this deferred tax liability is reflected in the daily NAV, and, as a result, the MLP fund's after-tax performance could differ significantly from the underlying assets even if the pre-tax performance is closely tracked.

**Investing in commodities** entails significant risks. Commodity prices may be affected by a variety of factors at any time, including but not limited to, (i) changes in supply and demand relationships, (ii) governmental programs and policies, (iii) national and international political and economic events, war and terrorist events, (iv) changes in interest and exchange rates, (v) trading activities in commodities and related contracts, (vi) pestilence, technological change and weather, and (vii) the price volatility of a commodity. In addition, the commodities markets are subject to temporary distortions or other disruptions due to various factors, including lack of liquidity, participation of speculators and government intervention. **Physical precious metals** are non-regulated products. Precious metals are speculative investments, which may experience short-term and long term price volatility. The value of precious metals investments may fluctuate and may appreciate or decline, depending on market conditions. Unlike bonds and stocks, precious metals do not make interest or dividend payments. Therefore, precious metals may not be suitable for investors who require current income. Precious metals are commodities that should be safely stored, which may impose additional costs on the investor.

**REITs** investing risks are similar to those associated with direct investments in real estate: property value fluctuations, lack of liquidity, limited diversification and sensitivity to economic factors such as interest rate changes and market recessions. Risks of **private real estate** include: illiquidity; a long-term investment horizon with a limited or nonexistent secondary market; lack of transparency; volatility (risk of loss); and leverage. Principal is returned on a monthly basis over the life of a **mortgage-backed security**. Principal prepayment can significantly affect the monthly income stream and the maturity of any type of MBS, including standard MBS, CMOs and Lottery Bonds. **Asset-backed securities** generally decrease in value as a result of interest rate increases, but may benefit less than other fixed-income securities from declining interest rates, principally because of prepayments.

**Yields** are subject to change with economic conditions. Yield is only one factor that should be considered when making an investment decision. **Credit ratings** are subject to change. **Duration**, the most commonly used measure of bond risk, quantifies the effect of changes in interest rates on the price of a bond or bond portfolio. The longer the duration, the more sensitive the bond or portfolio would be to changes in interest rates. The majority of \$25 and \$1000 par **preferred securities** are "callable" meaning that the issuer may retire the securities at specific prices and dates prior to maturity. Interest/dividend payments on certain preferred issues may be deferred by the issuer for periods of up to 5 to 10 years, depending on the particular issue. The investor would still have income tax liability even though payments would not have been received. Price quoted is per \$25 or \$1,000 share, unless otherwise specified. Current yield is calculated by multiplying the coupon by par value divided by the market price. The initial interest rate on a **floating-rate security** may be lower than that of a fixed-rate security of the same maturity because investors expect to receive additional income due to future increases in the floating security's underlying reference rate. The reference rate could be an index or an interest rate. However, there can be no assurance that the reference rate will increase. Some floating-rate securities may be subject to call risk. The market value of **convertible bonds** and the underlying common stock(s) will fluctuate and after purchase may be worth more or less than original cost. If sold prior to maturity, investors may receive more or less than their original purchase price or maturity value, depending on market conditions. Callable bonds may be redeemed by the issuer prior to maturity. Additional call features may exist that could affect yield. Some \$25 or \$1000 par **preferred securities** are QDI (Qualified Dividend Income) eligible. Information on QDI eligibility is obtained from third party sources. The dividend income on QDI eligible preferreds qualifies for a reduced tax rate. Many traditional 'dividend paying' perpetual preferred securities (traditional preferreds with no maturity date) are QDI eligible. In order to qualify for the preferential tax treatment all qualifying preferred securities must be held by investors for a minimum period – 91 days during a 180 day window period, beginning 90 days before the ex-dividend date.

Companies paying **dividends** can reduce or cut payouts at any time.

**Nondiversification:** For a portfolio that holds a concentrated or limited number of securities, a decline in the value of these investments would cause the portfolio's overall value to decline to a greater degree than a less concentrated portfolio. The **indices selected by Morgan Stanley Wealth Management** to measure performance are representative of broad asset classes. Morgan Stanley Wealth Management retains the right to change representative indices at any time. Because of their narrow focus, **sector investments** tend to be more volatile than investments that diversify across many sectors and companies.

**Growth investing** does not guarantee a profit or eliminate risk. The stocks of these companies can have relatively high valuations. Because of these high valuations, an investment in a growth stock can be more risky than an investment in a company with more modest growth expectations. **Value investing** does not guarantee a profit or eliminate risk. Not all companies whose stocks are

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considered to be value stocks are able to turn their business around or successfully employ corrective strategies which would result in stock prices that do not rise as initially expected .

Any type of **continuous or periodic investment plan** does not assure a profit and does not protect against loss in declining markets. Since such a plan involves continuous investment in securities regardless of fluctuating price levels of such securities, the investor should consider his financial ability to continue his purchases through periods of low price levels.

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# Pompano Beach Police & Firefighters' Retirement System

## Asset Allocation & Time Weighted Performance

as of December 31, 2019

	Allocation		Performance(%)								
	Market Value (\$)	%	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Total Fund</b>	<b>254,679,159</b>	<b>100.00</b>	<b>4.41</b>	<b>4.41</b>	<b>18.43</b>	<b>9.86</b>	<b>6.81</b>	<b>8.53</b>	<b>8.65</b>	<b>7.78</b>	<b>10/01/2002</b>
Policy Index			4.53	4.53	18.15	8.42	6.16	7.90	8.09	7.42	
<b>Domestic Equity</b>											
BlackRock - Large Cap Value	31,956,910	12.55	7.88	7.88	29.16	11.73	10.06	N/A	N/A	11.37	02/01/2013
Russell 1000 VL			7.41	7.41	26.54	9.68	8.29	N/A	N/A	11.34	
Sands Capital - Large Cap Growth	16,087,234	6.32	10.73	10.73	29.89	23.80	12.97	16.41	16.83	13.15	06/01/2003
Russell 1000 Gr			10.62	10.62	36.39	20.49	14.63	16.92	15.22	10.85	
Sawgrass Asset Management	16,106,141	6.32	8.39	8.39	N/A	N/A	N/A	N/A	N/A	24.56	02/01/2019
Russell 1000 Gr			10.62	10.62	N/A	N/A	N/A	N/A	N/A	25.14	
Nuance - Mid Cap Value	12,933,448	5.08	7.76	7.76	32.86	N/A	N/A	N/A	N/A	17.89	07/01/2018
Russell Midcap Value			6.36	6.36	27.06	N/A	N/A	N/A	N/A	7.57	
Wells - SMID Growth	12,683,243	4.98	7.00	7.00	40.43	19.91	13.30	15.58	16.11	18.80	02/01/2009
Russell 2500 GR			10.57	10.57	32.65	15.17	10.84	14.11	14.01	17.07	
<b>International Equity</b>											
Lazard - International Value	19,083,047	7.49	7.40	7.40	20.04	9.68	5.81	N/A	N/A	5.30	02/01/2013
MSCI AC World ex US Net			8.92	8.92	21.51	9.87	5.51	N/A	N/A	4.90	
Renaissance - International Growth	19,066,315	7.49	8.37	8.37	20.26	7.61	4.22	6.62	5.61	9.03	02/01/2009
MSCI AC World ex US Net			8.92	8.92	21.51	9.87	5.51	5.44	4.97	8.83	
<b>Fixed Income</b>											
Standish Mellon - Fixed Income	27,642,162	10.85	0.18	0.18	8.52	4.10	3.01	2.74	3.97	4.22	05/01/2003
Barclays Aggregate			0.18	0.18	8.72	4.03	3.05	2.72	3.75	4.10	
Incore/Victory	27,674,659	10.87	0.20	0.20	8.38	4.26	3.19	2.94	4.01	4.49	10/01/2002
Barclays Aggregate			0.18	0.18	8.72	4.03	3.05	2.72	3.75	4.19	

The prices, quotes, or statistics contained herein have been obtained from sources believed to be reliable, however, its accuracy cannot be guaranteed. Past performance is not a guarantee of future results.



# Pompano Beach Police & Firefighters' Retirement System

## Asset Allocation & Time Weighted Performance

as of December 31, 2019

	Allocation		Performance(%)								
	Market Value (\$)	%	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Alternatives</b>											
Invesco - Private Real Estate	18,295,635	7.18	2.26	2.26	6.52	8.08	9.62	10.68	11.66	6.54	08/01/2006
NCREIF Property Idx			1.55	1.55	6.42	6.70	8.25	9.14	10.18	7.29	
Office Building - Private Real Estate	3,000,000	1.18	1.07	1.07	4.71	4.59	17.82	6.73	4.13	1.07	04/01/2007
90-Day T-Bills			0.46	0.46	2.25	1.65	1.05	0.76	0.56	0.86	
Ironwood - FOHF	12,457,650	4.89	2.56	2.56	8.15	5.65	4.29	5.74	6.00	3.75	08/01/2008
HFRI FOF Conservative			1.67	1.67	6.34	3.09	2.30	3.17	2.77	1.54	
Pine Grove - FOHF	10,818,977	4.25	1.27	1.27	4.91	3.65	2.22	3.22	3.31	3.56	10/01/2008
HFRI FOF Conservative			1.67	1.67	6.34	3.09	2.30	3.17	2.77	2.19	
Center Coast Capital - Master Limited Partnerships	11,179,972	4.39	-2.07	-2.07	15.62	-1.64	N/A	N/A	N/A	-4.88	02/01/2015
Alerian MLP Index			-4.08	-4.08	6.56	-4.45	N/A	N/A	N/A	-6.52	
Neuberger Berman - Private Equity #1	3,468,628	1.36	0.00	0.00	5.57	9.02	10.14	11.59	N/A	4.69	04/01/2010
MSCI ACWI / 90-Day T-Bill (Sept)			0.46	0.46	17.25	9.99	7.22	9.03	N/A	8.35	
Neuberger Berman - Private Equity #2	2,936,821	1.15	0.00	0.00	13.93	12.81	9.83	N/A	N/A	8.53	08/01/2014
MSCI ACWI / 90-Day T-Bill (Sept)			0.46	0.46	17.25	9.99	7.22	N/A	N/A	6.55	
Blackstone - Private Equity	1,211,739	0.48	0.00	0.00	2.04	9.37	8.80	N/A	N/A	9.57	12/01/2013
Dynamic S&P 500/90-Day T-Bill (Sept)			0.46	0.46	21.11	12.16	9.88	N/A	N/A	10.81	
Goldman Sachs - Private Equity	668,237	0.26	0.00	0.00	1.24	2.97	4.61	N/A	N/A	4.88	01/01/2014
MSCI ACWI / 90-Day T-Bill (Sept)			0.46	0.46	17.25	9.99	7.22	N/A	N/A	6.80	
<b>Cash &amp; Equivalents</b>											
Non-Managed Account	7,408,340	2.91	0.37	0.37	1.88	1.68	1.53	1.56	1.14	1.39	10/01/2002
90-Day T-Bills			0.46	0.46	2.25	1.65	1.05	0.76	0.56	1.31	

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# Pompano Beach Police & Firefighters' Retirement System

## Asset Allocation & Net Dollar Weighted Performance (IRR)

as of December 31, 2019

	%	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Total Fund</b>	<b>100.00</b>	<b>4.30</b>	<b>4.30</b>	<b>18.16</b>	<b>9.50</b>	<b>6.14</b>	<b>8.11</b>	<b>8.34</b>	<b>7.50</b>	<b>09/30/2002</b>
<b>Domestic Equity</b>										
BlackRock - Large Cap Value	12.55	7.80	7.80	28.95	11.34	9.19	N/A	N/A	11.13	01/31/2013
Sands Capital - Large Cap Growth	6.32	10.57	10.57	35.96	25.44	10.96	15.78	16.47	10.60	05/31/2003
Sawgrass Asset Management	6.32	8.25	8.25	N/A	N/A	N/A	N/A	N/A	24.28	01/31/2019
Nuance - Mid Cap Value	5.08	7.66	7.66	32.76	N/A	N/A	N/A	N/A	17.02	06/30/2018
Wells - SMID Growth	4.98	6.78	6.78	41.90	19.91	11.75	15.24	15.77	20.09	01/31/2009
<b>International Equity</b>										
Lazard - International Value	7.49	7.26	7.26	19.29	9.76	5.14	N/A	N/A	4.81	01/31/2013
Renaissance - International Growth	7.49	8.19	8.19	19.12	7.90	3.54	5.75	5.02	6.95	01/31/2009
<b>Fixed Income</b>										
Standish Mellon - Fixed Income	10.85	0.13	0.13	8.29	3.80	2.72	2.42	3.67	3.91	04/30/2003
Incore/Victory	10.87	0.16	0.16	8.18	4.02	3.00	2.82	3.85	4.27	09/30/2002
<b>Alternatives</b>										
Invesco - Private Real Estate	7.18	2.00	2.00	5.39	6.90	8.42	9.47	10.07	7.20	07/31/2006
Office Building - Private Real Estate	1.18	1.07	1.07	4.72	4.59	27.93	7.90	4.46	1.14	03/31/2007
Ironwood - FOHF	4.89	2.57	2.57	8.15	5.65	4.29	5.33	5.62	3.85	07/31/2008
Pine Grove - FOHF	4.25	1.27	1.27	4.91	3.65	2.22	2.89	3.04	3.28	09/30/2008
Center Coast Capital - Master Limited Partnerships	4.39	-2.19	-2.19	15.02	-2.12	N/A	N/A	N/A	-4.51	01/31/2015
Neuberger Berman - Private Equity #1	1.36	0.00	0.00	5.63	9.55	10.60	12.01	N/A	10.16	03/31/2010
Neuberger Berman - Private Equity #2	1.15	0.00	0.00	13.91	12.82	11.31	N/A	N/A	10.87	07/31/2014
Blackstone - Private Equity	0.48	-0.34	-0.34	1.50	9.37	7.79	N/A	N/A	7.76	11/30/2013
Goldman Sachs - Private Equity	0.26	0.00	0.00	1.97	5.30	6.12	N/A	N/A	7.11	12/31/2013
<b>Cash &amp; Equivalents</b>										
Non-Managed Account	2.91	0.12	0.12	1.45	1.07	-0.15	-0.69	-1.76	-0.72	09/30/2002

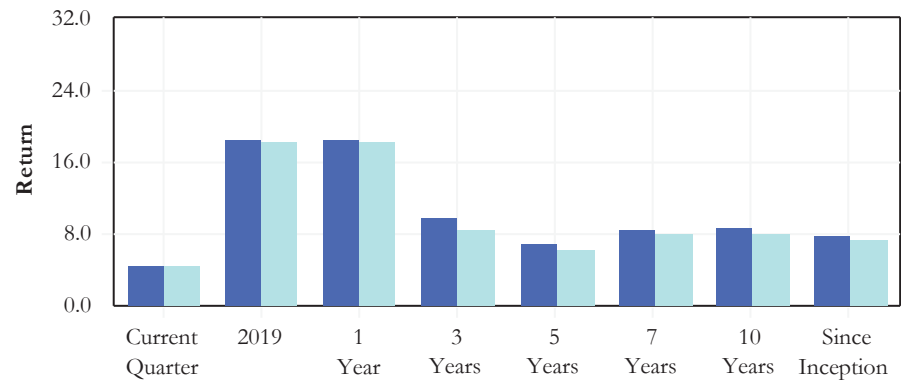
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# Pompano Beach Police & Firefighters' Retirement System

## Total Fund - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 10/01/2002
Total Fund	4.41	4.41	18.43	9.86	6.81	8.53	8.65	7.78
Policy Index	4.53	4.53	18.15	8.42	6.16	7.90	8.09	7.42
Differences	-0.12	-0.12	0.28	1.44	0.65	0.63	0.56	0.36

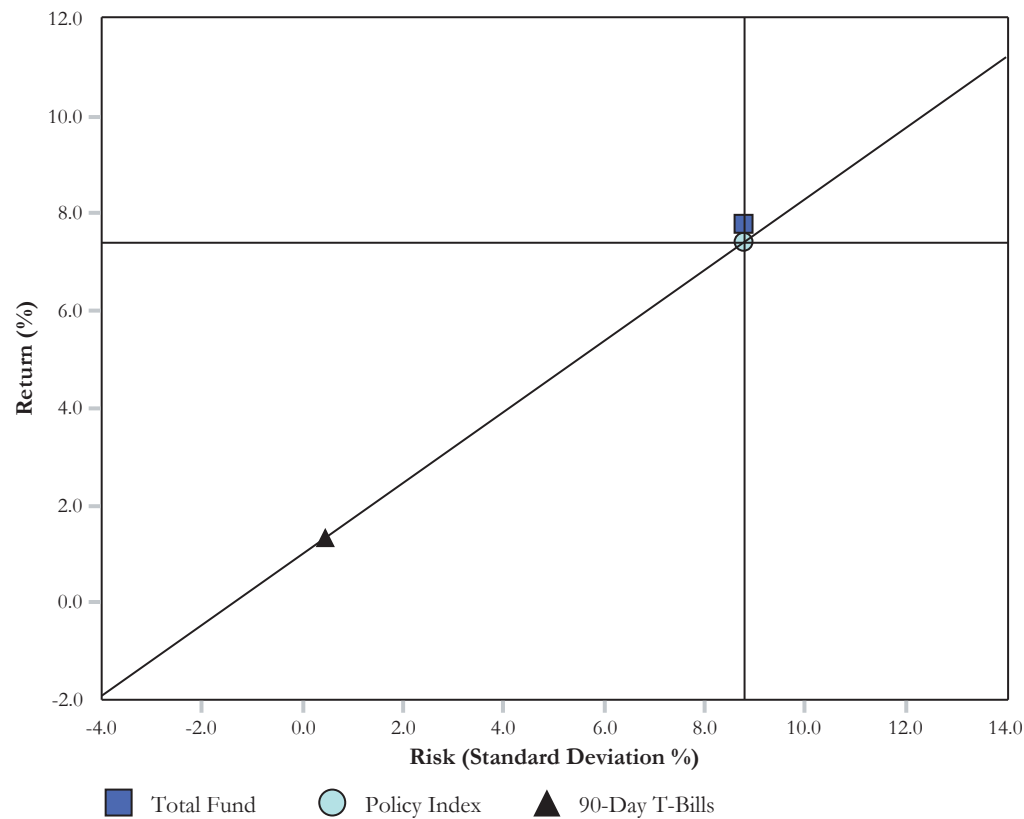
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 10/01/2002
Total Fund								
Beginning Market Value	242,836	242,836	225,748	217,294	229,964	185,094	152,713	17,915
Net Contributions	1,475	1,475	-10,554	-26,052	-46,705	-51,513	-61,846	29,558
Fees/Expenses	-239	-239	-955	-2,971	-5,143	-7,311	-9,947	-13,503
Income	1,317	1,317	5,074	14,228	22,222	29,582	38,738	57,098
Gain/Loss	9,290	9,290	35,367	52,181	54,341	98,828	135,020	163,612
Ending Market Value	254,679	254,679	254,679	254,679	254,679	254,679	254,679	254,679

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Total Fund	7.78	8.81	0.98	-35.21	100.05	95.98	0.47	0.75	0.97	10/01/2002
Policy Index	7.42	8.81	1.00	-35.28	100.00	100.00	0.00	0.71	1.00	10/01/2002

### Manager Risk & Return



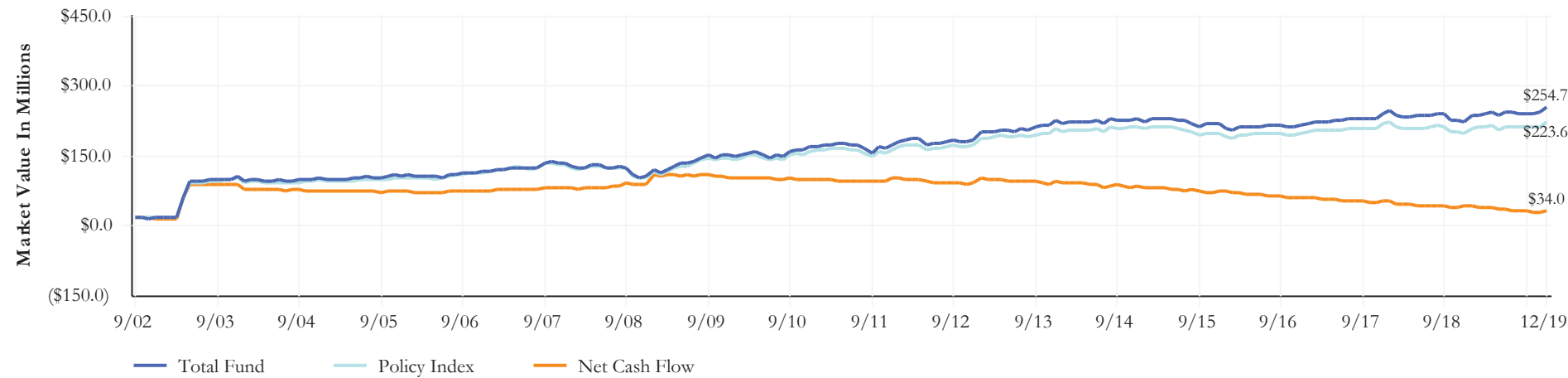
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# Pompano Beach Police & Firefighters' Retirement System

## Total Fund - Change in Assets & Distribution of Returns

as of December 31, 2019

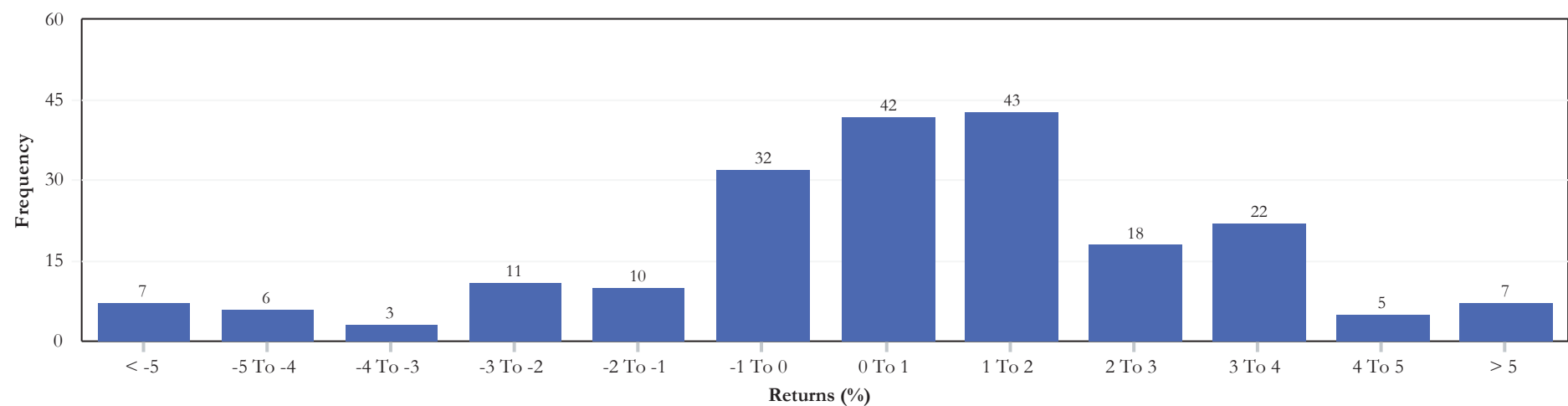
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Income	Return On Investment	Market Value As of 12/31/2019
Total Fund	242,835.91	-	67,774.35	-66,299.24	-238.72	-	1,316.67	10,606.87	254,679.16

### Distribution of Returns



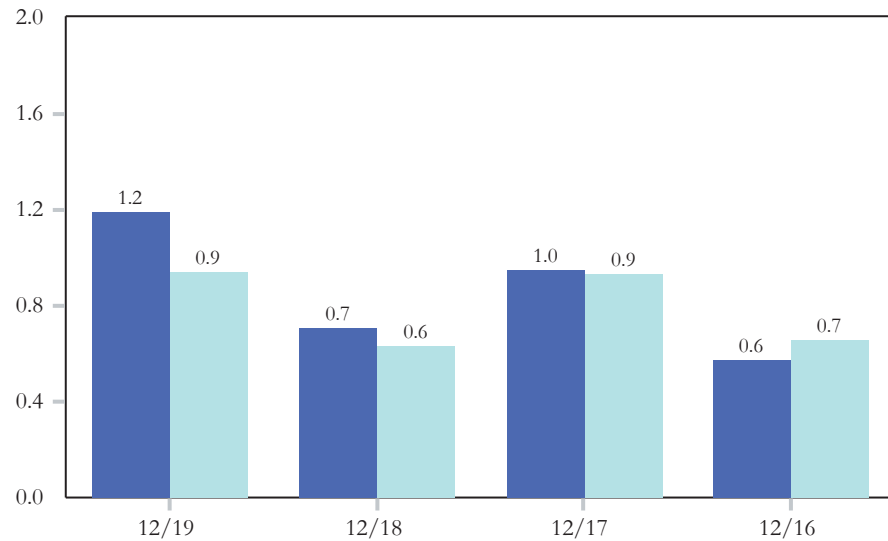
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# Pompano Beach Police & Firefighters' Retirement System

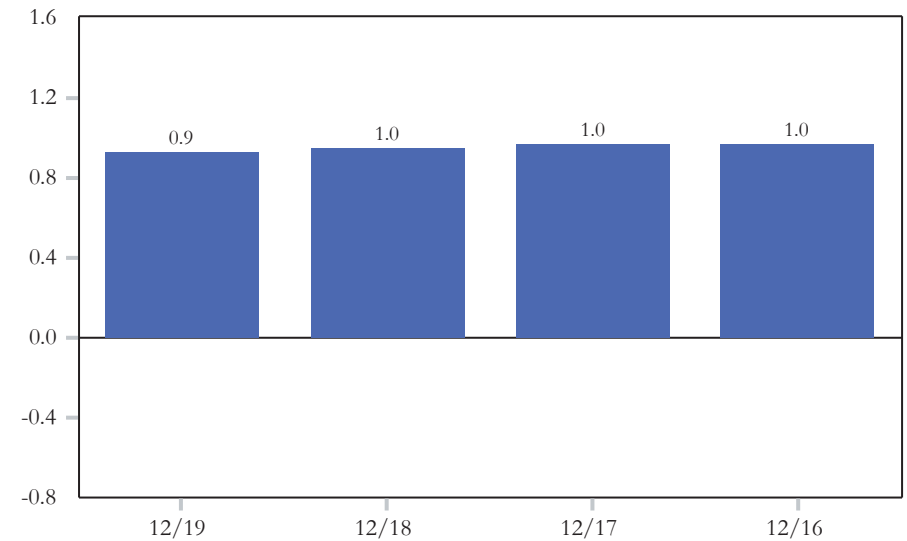
## Total Fund - Rolling Three Year MPT Statistics

as of December 31, 2019

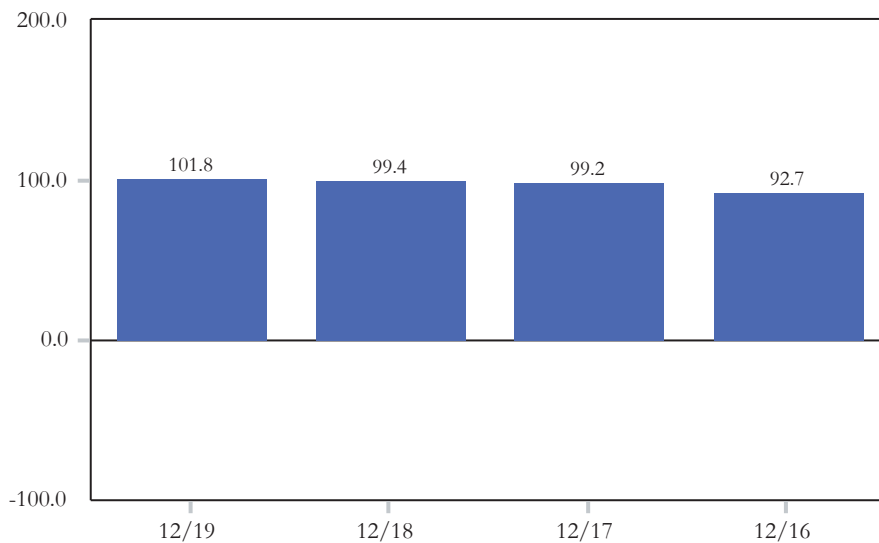
Sharpe Ratio



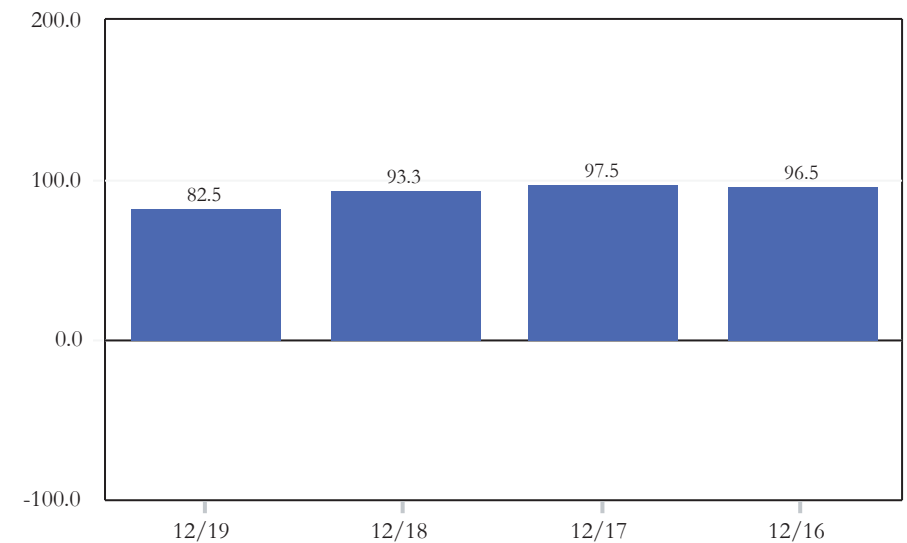
Beta



Up Market Capture



Down Market Capture



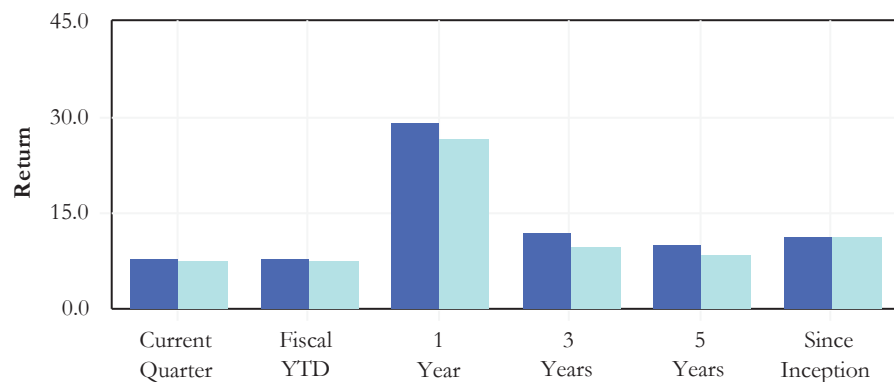
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# Pompano Beach Police & Firefighters' Retirement System

## BlackRock - Large Cap Value - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	Inception 02/01/2013
BlackRock - Large Cap Value	7.88	7.88	29.16	11.73	10.06	11.37
Russell 1000 VL	7.41	7.41	26.54	9.68	8.29	11.34
Differences	0.47	0.47	2.62	2.05	1.77	0.03

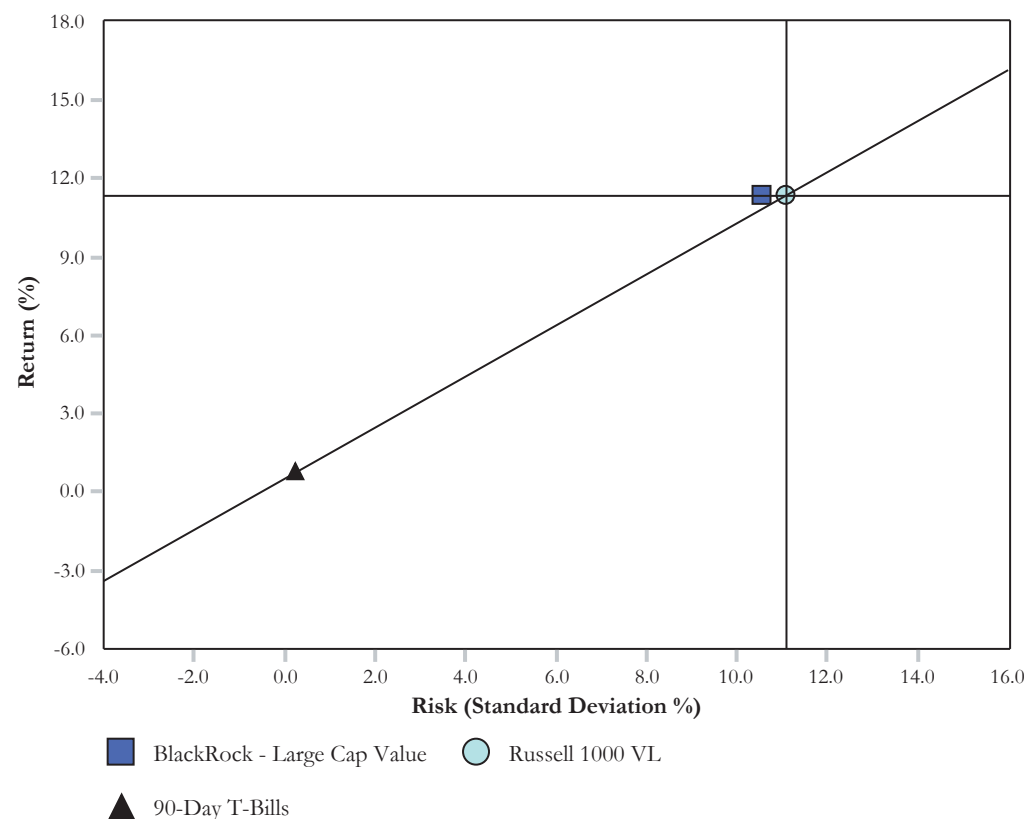
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	Inception 02/01/2013
BlackRock - Large Cap Value						
Beginning Market Value	30,528	30,528	26,607	26,745	31,313	31,167
Net Contributions	-926	-926	-2,240	-4,480	-12,677	-20,939
Fees/Expenses	-19	-19	-74	-297	-614	-974
Income	197	197	848	2,563	4,014	5,739
Gain/Loss	2,176	2,176	6,815	7,426	9,920	16,965
Ending Market Value	31,957	31,957	31,957	31,957	31,957	31,957

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
BlackRock - Large Cap Value	11.37	10.56	0.93	-12.85	94.87	89.40	0.81	1.00	0.95	02/01/2013
Russell 1000 VL	11.34	11.08	1.00	-11.72	100.00	100.00	0.00	0.96	1.00	02/01/2013

### Manager Risk & Return



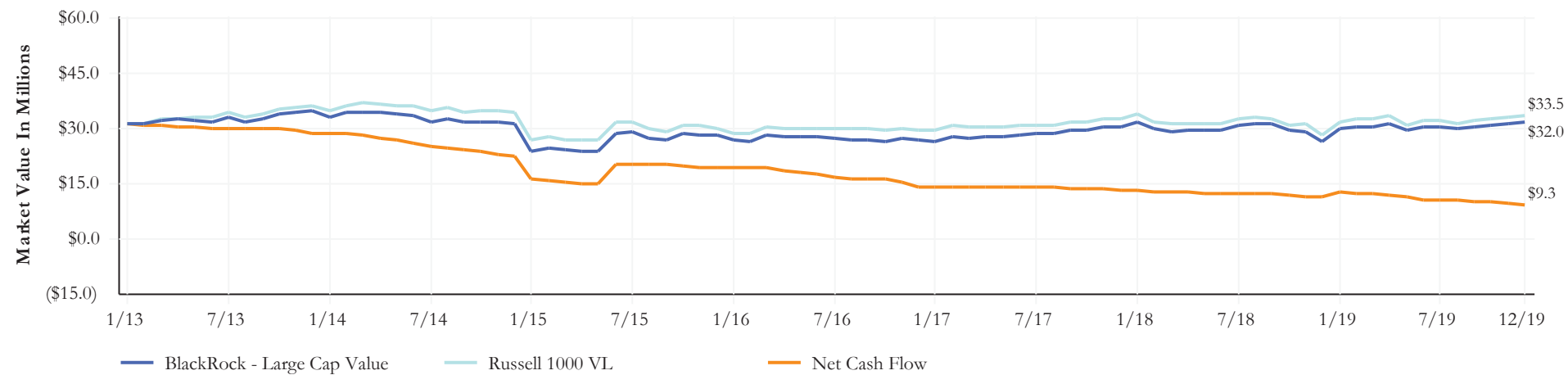
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# Pompano Beach Police & Firefighters' Retirement System

## BlackRock - Large Cap Value - Change in Assets & Distribution of Returns

as of December 31, 2019

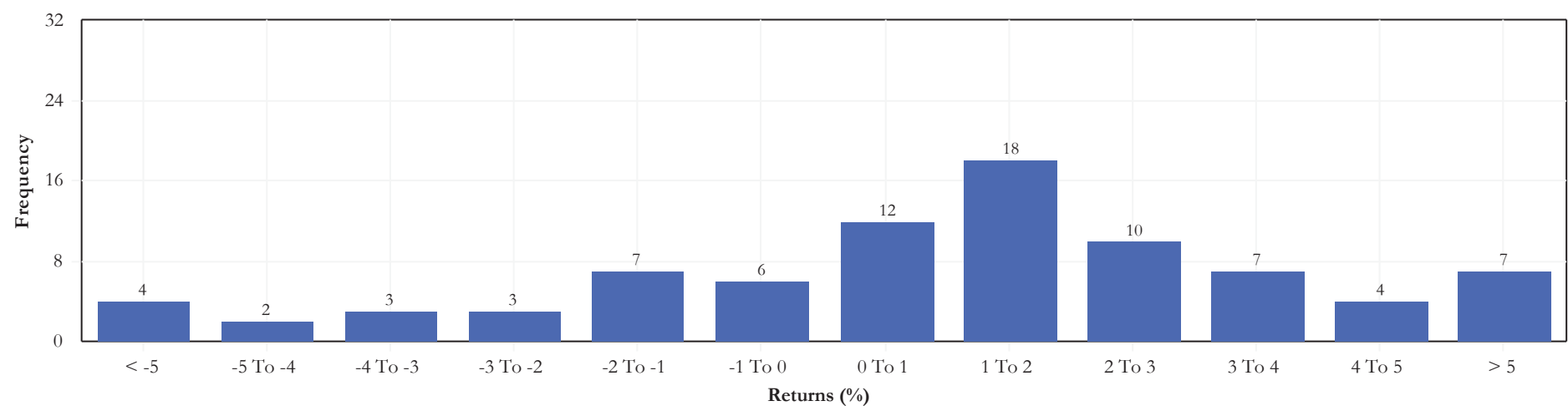
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
BlackRock - Large Cap Value	30,528,488.90	-	3,099,538.91	-4,025,375.09	-19,163.82	-	2,373,420.65	31,956,909.55

### Distribution of Returns

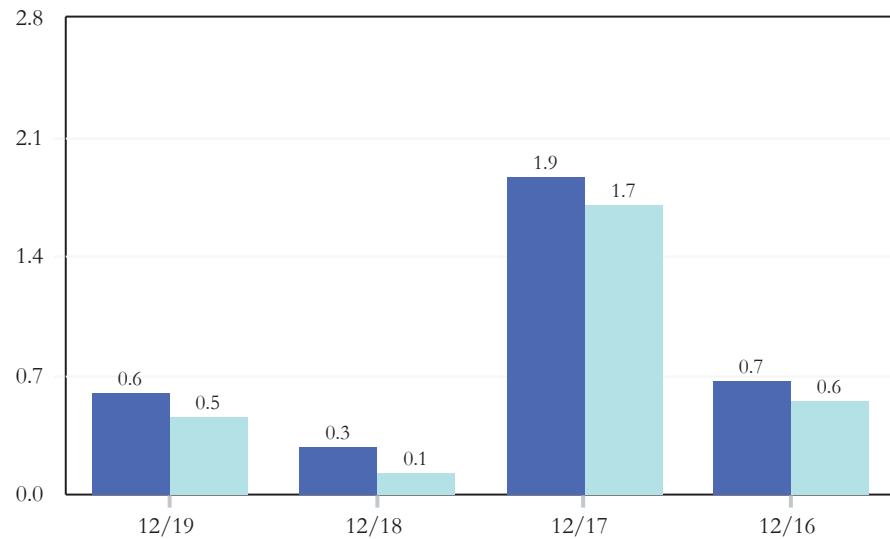


# Pompano Beach Police & Firefighters' Retirement System

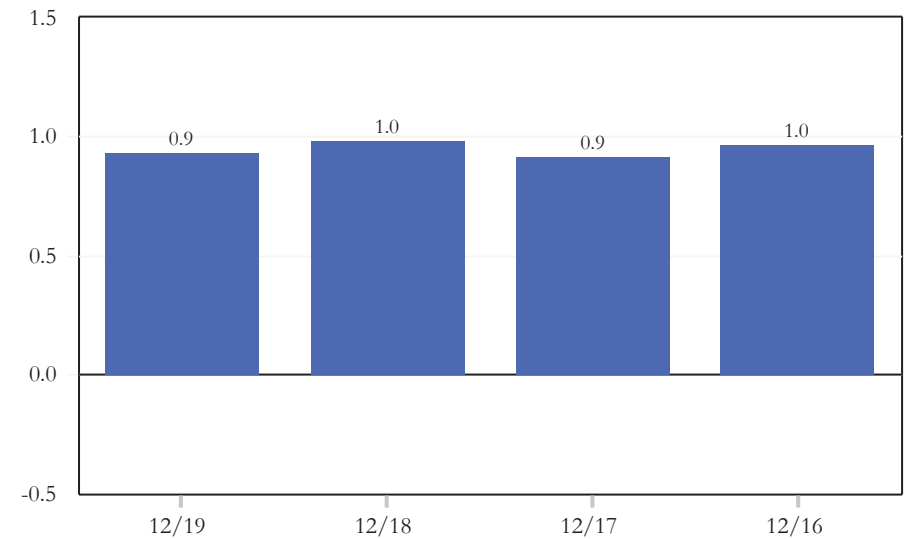
## BlackRock - Large Cap Value - Rolling Two Year MPT Statistics

as of December 31, 2019

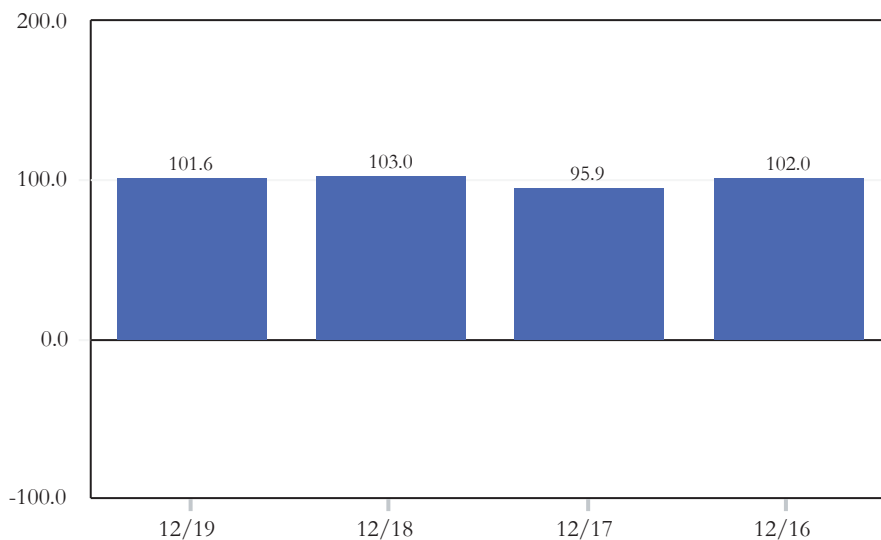
**Sharpe Ratio**



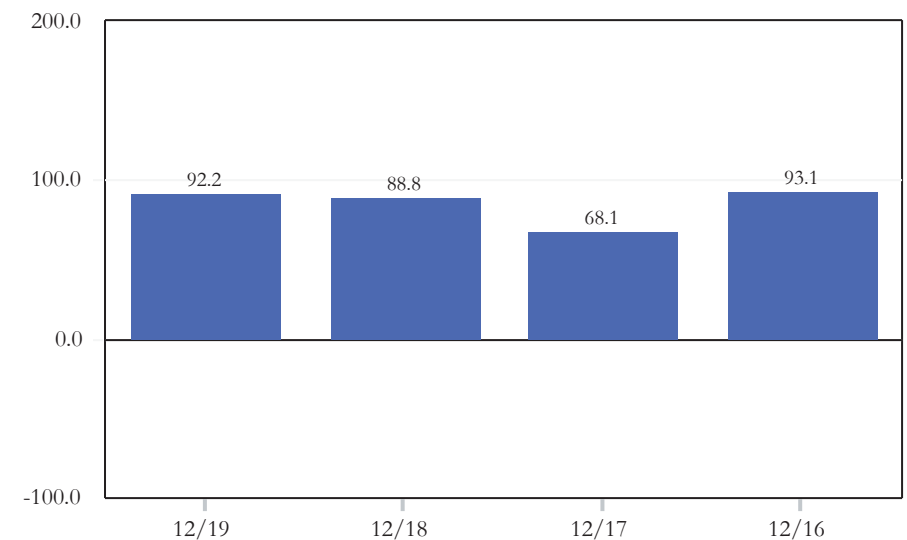
**Beta**



**Up Market Capture**



**Down Market Capture**



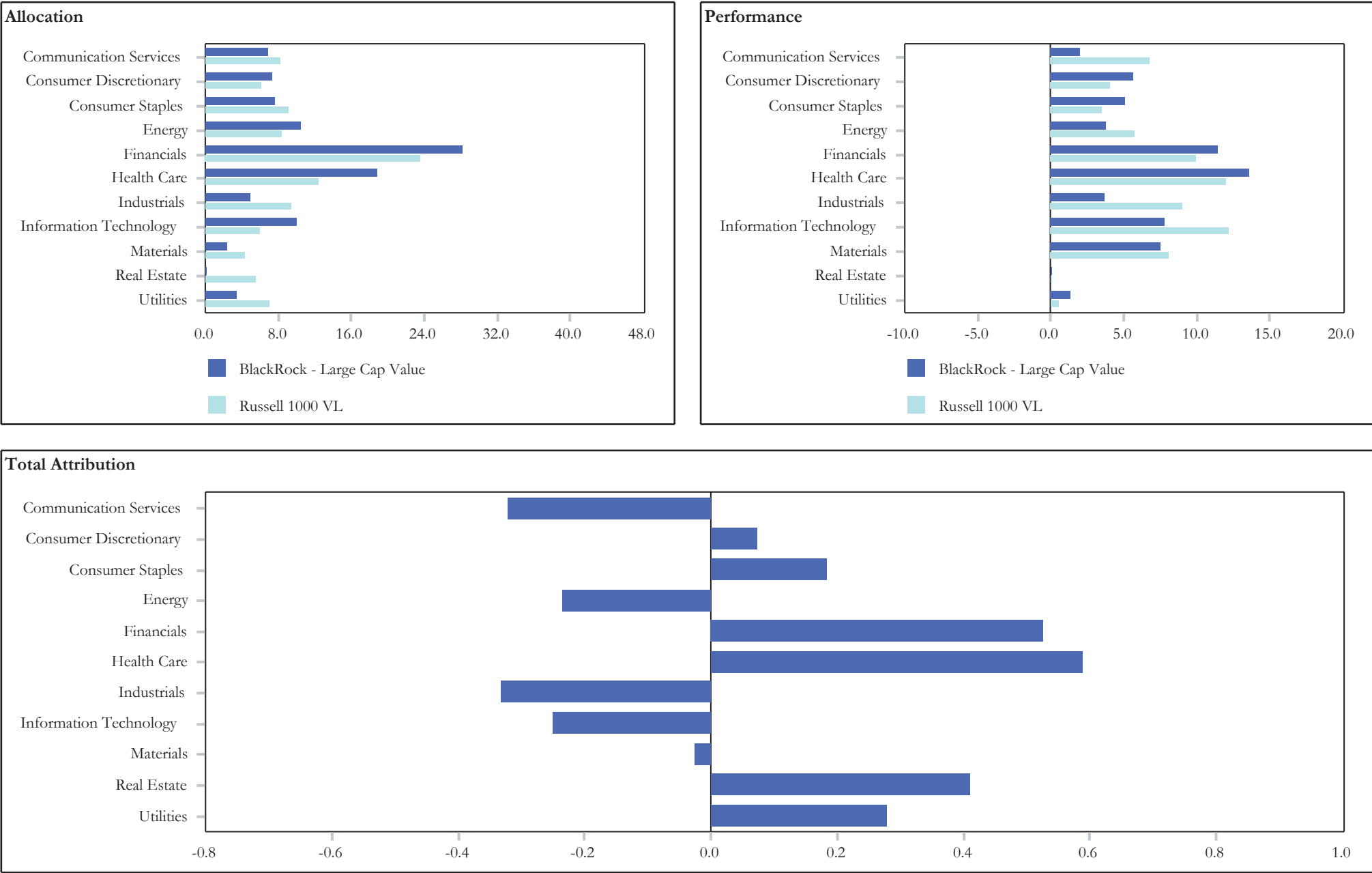
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# Pompano Beach Police & Firefighters' Retirement System

## BlackRock - Large Cap Value - Quarterly Performance Attributes

### as of December 31, 2019



# Pompano Beach Police & Firefighters' Retirement System

## BlackRock - Large Cap Value - Quarterly Performance Attributes

as of December 31, 2019

	Allocation - 10/01/2019		Performance - Quarter Ending December 31, 2019		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Sector	Stock	Interaction	Total
Communication Services	6.91	8.19	1.99	6.75	0.01	-0.39	0.06	-0.32
Consumer Discretionary	7.33	6.09	5.67	4.11	-0.04	0.09	0.02	0.07
Consumer Staples	7.63	9.17	5.11	3.49	0.06	0.15	-0.02	0.18
Energy	10.38	8.37	3.78	5.72	-0.03	-0.16	-0.04	-0.24
Financials	28.15	23.56	11.42	9.97	0.12	0.34	0.07	0.53
Health Care	18.82	12.40	13.57	12.02	0.30	0.19	0.10	0.59
Industrials	4.92	9.41	3.74	9.01	-0.07	-0.50	0.24	-0.33
Information Technology	10.04	6.02	7.77	12.18	0.19	-0.27	-0.18	-0.25
Materials	2.41	4.29	7.55	8.07	-0.01	-0.02	0.01	-0.03
Real Estate	0.00	5.51	0.00	-0.04	0.41	0.00	0.00	0.41
Utilities	3.40	7.01	1.41	0.54	0.25	0.06	-0.03	0.28
Total	100.00	100.00	8.30	7.41	1.17	-0.50	0.22	0.89

All the values for Allocation, Performance and Attribution are expressed in Percentage(%) terms

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# Pompano Beach Police & Firefighters' Retirement System

## BlackRock - Large Cap Value - Portfolio Characteristics

as of December 31, 2019

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$000)	150,599,343.95	131,913,417.27
Median Mkt. Cap (\$000)	62,979,932.82	9,882,157.10
Price/Earnings ratio	17.27	18.40
Price/Book ratio	2.52	2.26
5 Yr. EPS Growth Rate (%)	6.32	6.25
Beta (5 Years, Monthly)	0.95	1.00
Number of Stocks	74	764
Debt to Equity	1.49	0.51

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
JPMorgan Chase & Co	5.50	3.02	2.48	19.40
Verizon Communications Inc	4.60	1.77	2.83	2.78
Citigroup Inc	4.38	1.21	3.17	16.45
Wells Fargo & Co	4.37	1.42	2.95	7.67
Medtronic PLC	2.74	1.06	1.68	4.95
Microsoft Corp	2.61	0.00	2.61	13.82
Morgan Stanley	2.42	0.41	2.01	20.71
Anthem Inc	2.38	0.38	2.00	26.14
Metlife Inc.	2.30	0.28	2.02	9.08
Philips Electronics NV	2.24	0.00	2.24	5.79
% of Portfolio	33.54	9.55	23.99	

Ten Best Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Humana Inc.	1.60	0.19	1.41	43.57
Unitedhealth Group Inc	0.70	0.00	0.70	35.80
NVIDIA Corporation	0.93	0.00	0.93	35.27
State Street Corporation	1.28	0.20	1.08	34.51
Bristol-Myers Squibb Co	1.38	0.43	0.95	27.63
Anthem Inc	2.38	0.38	2.00	26.14
General Electric Co	0.50	0.67	-0.17	24.95
Altria Group Inc	1.61	0.33	1.28	24.07
Pentair plc	0.62	0.05	0.57	21.92
Morgan Stanley	2.42	0.41	2.01	20.71
% of Portfolio	13.42	2.66	10.76	

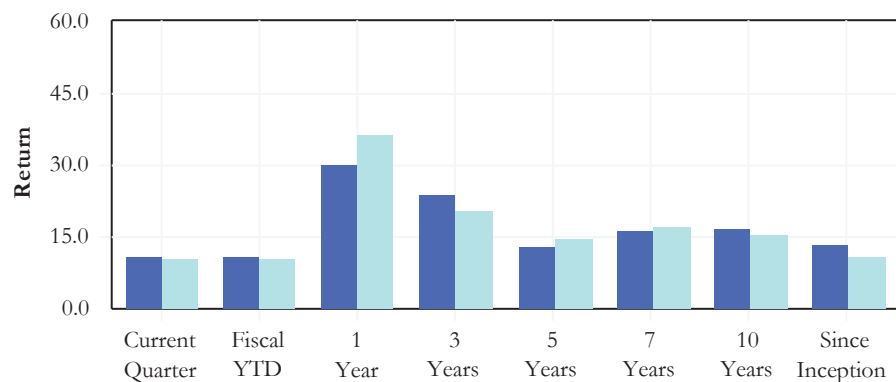
Ten Worst Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
DuPont De Nemours Inc	0.51	0.33	0.18	-9.56
Constellation Brands Inc	0.76	0.21	0.55	-8.10
Northrop Grumman Corp	0.67	0.00	0.67	-7.88
Travelers Companies Inc (The)	0.98	0.21	0.77	-7.34
American Int'l Group Inc	2.11	0.31	1.80	-7.26
Johnson Controls International Plc	0.38	0.22	0.16	-6.65
Motorola Solutions Inc	0.97	0.05	0.92	-5.07
Public Service Ent. Group	0.53	0.21	0.32	-4.11
The Unilever Group	1.64	0.00	1.64	-3.55
Oracle Corp	0.99	0.00	0.99	-3.30
% of Portfolio	9.54	1.54	8.00	

# Pompano Beach Police & Firefighters' Retirement System

## Sands Capital - Large Cap Growth - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 06/01/2013
Sands Capital - LC Growth	10.73	10.73	29.89	23.80	12.97	16.41	16.83	13.15
Russell 1000 Gr	10.62	10.62	36.39	20.49	14.63	16.92	15.22	10.86
Differences	0.11	0.11	-6.50	3.31	-1.66	-0.51	1.61	2.29

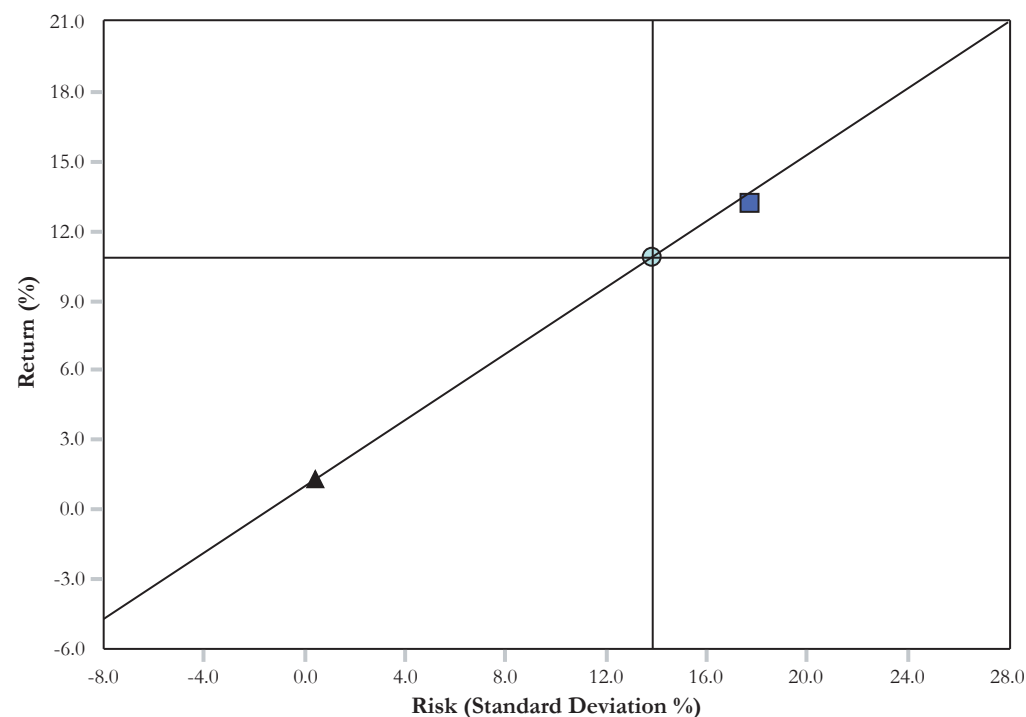
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 06/01/2013
Sands Capital - LC Growth								
Beginning Market Value	14,829	14,829	27,521	25,540	25,578	20,647	28,502	32,988
Net Contributions	-299	-299	-16,088	-25,508	-24,253	-29,810	-48,515	-68,826
Fees/Expenses	-22	-22	-110	-464	-780	-1,065	-1,471	-2,744
Income	11	11	31	126	266	465	894	1,736
Gain/Loss	1,569	1,569	4,734	16,393	15,276	25,849	36,677	52,934
Ending Market Value	16,087	16,087	16,087	16,087	16,087	16,087	16,087	16,087

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Sands Capital - Large Cap Growth	13.15	17.73	1.18	-53.42	116.78	110.89	0.70	0.71	0.84	06/01/2003
Russell 1000 Gr	10.86	13.84	1.00	-47.99	100.00	100.00	0.00	0.72	1.00	06/01/2003

### Manager Risk & Return



- Sands Capital - Large Cap Growth
- Russell 1000 Gr
- ▲ 90-Day T-Bills

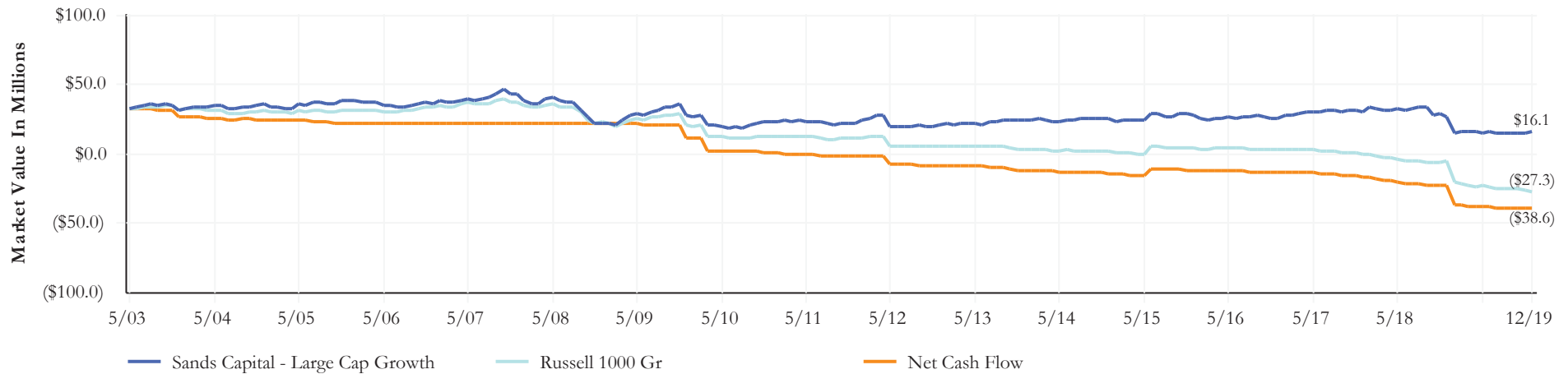
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# Pompano Beach Police & Firefighters' Retirement System

## Sands Capital - Large Cap Growth - Change in Assets & Distribution of Returns

as of December 31, 2019

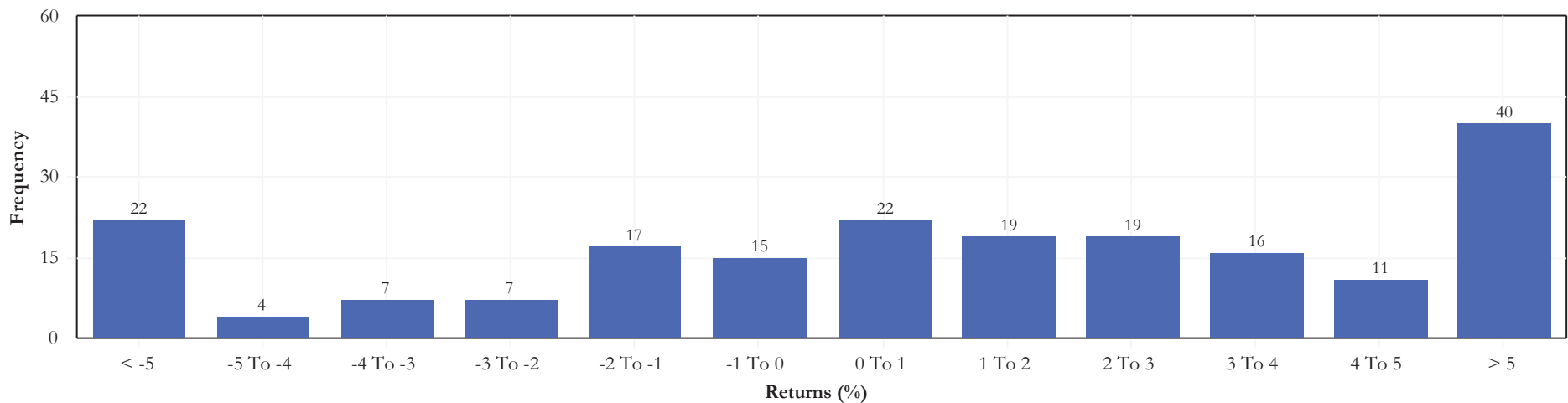
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Sands Capital - Large Cap Growth	14,828,830.89	-	2,503,498.84	-2,802,896.02	-22,182.45	-	1,579,983.03	16,087,234.29

### Distribution of Returns



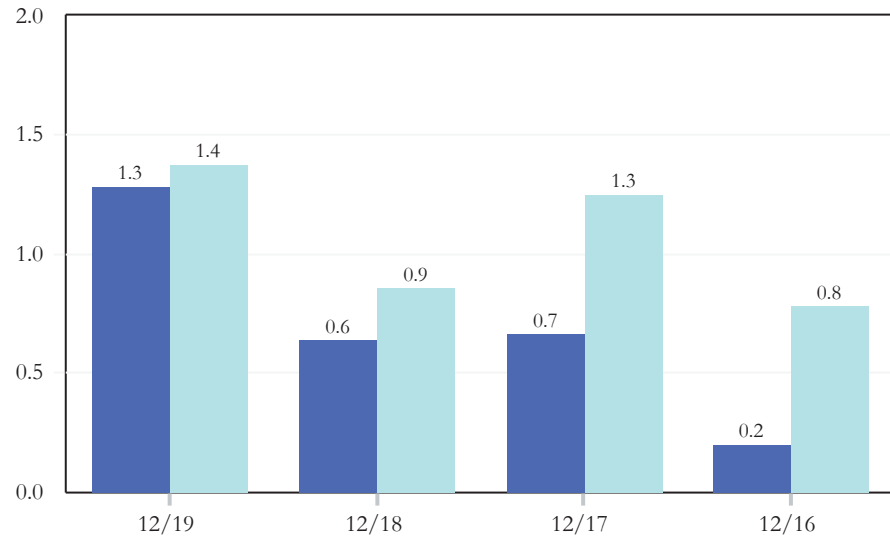
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# Pompano Beach Police & Firefighters' Retirement System

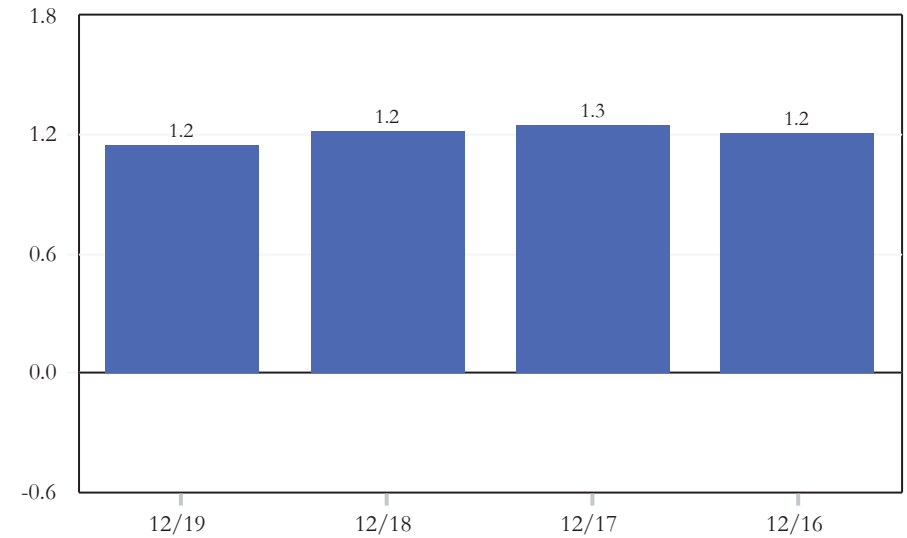
## Sands Capital - Large Cap Growth - Rolling Three Year MPT Statistics

as of December 31, 2019

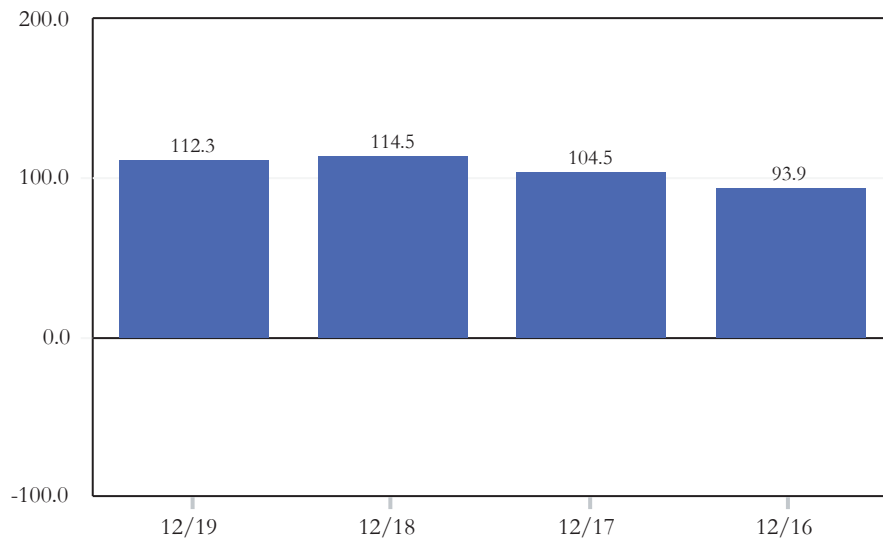
**Sharpe Ratio**



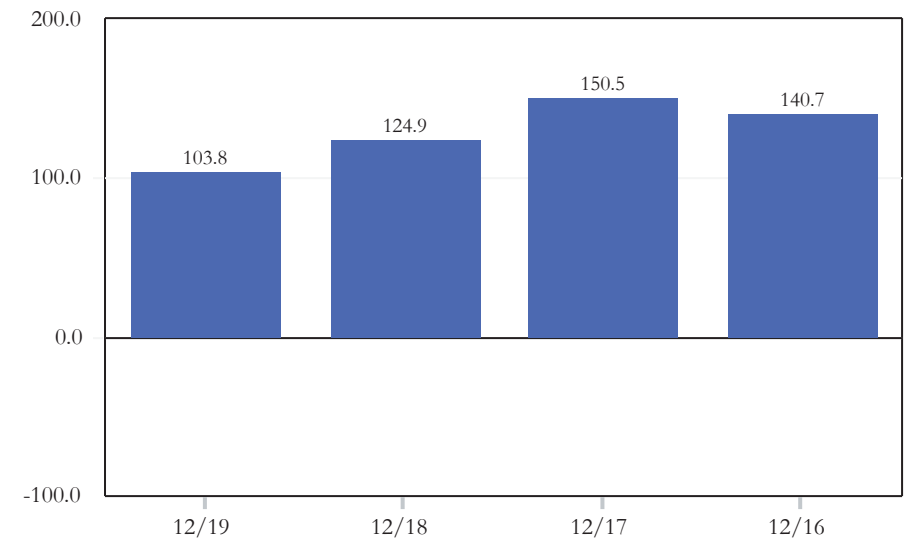
**Beta**



**Up Market Capture**



**Down Market Capture**

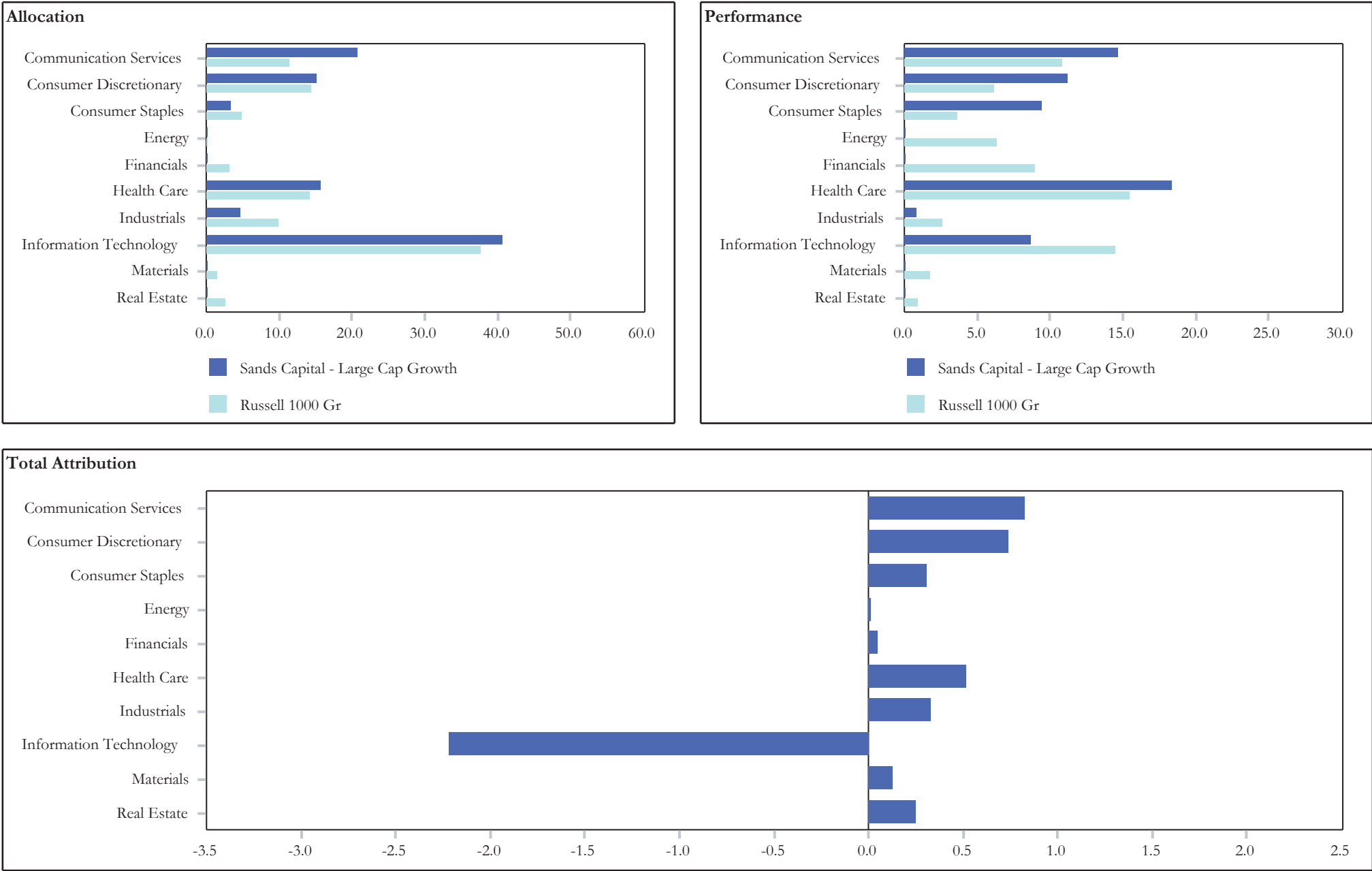


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# Pompano Beach Police & Firefighters' Retirement System

## Sands Capital - Large Cap Growth - Quarterly Performance Attributes

### as of December 31, 2019



**Pompano Beach Police & Firefighters' Retirement System**  
**Sands Capital - Large Cap Growth - Quarterly Performance Attributes**  
**as of December 31, 2019**

	Allocation - 10/01/2019		Performance - Quarter Ending December 31, 2019		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Sector	Stock	Interaction	Total
Communication Services	20.59	11.41	14.67	10.78	0.02	0.44	0.36	0.83
Consumer Discretionary	15.04	14.43	11.22	6.13	-0.03	0.73	0.03	0.74
Consumer Staples	3.26	4.93	9.46	3.61	0.11	0.29	-0.10	0.31
Energy	0.00	0.27	0.00	6.36	0.01	0.00	0.00	0.01
Financials	0.00	3.16	0.00	8.91	0.05	0.00	0.00	0.05
Health Care	15.72	14.23	18.31	15.49	0.07	0.40	0.04	0.52
Industrials	4.74	9.97	0.86	2.65	0.41	-0.18	0.09	0.33
Information Technology	40.66	37.58	8.65	14.40	0.12	-2.16	-0.18	-2.22
Materials	0.00	1.45	0.00	1.76	0.13	0.00	0.00	0.13
Real Estate	0.00	2.58	0.00	0.90	0.25	0.00	0.00	0.25
Total	100.00	100.00	11.45	10.52	1.15	-0.47	0.25	0.93

All the values for Allocation, Performance and Attribution are expressed in Percentage(%) terms

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# Pompano Beach Police & Firefighters' Retirement System

## Sands Capital - Large Cap Growth - Portfolio Characteristics

as of December 31, 2019

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$000)	279,642,693.05	386,597,171.99
Median Mkt. Cap (\$000)	48,711,537.65	13,375,054.25
Price/Earnings ratio	47.03	29.36
Price/Book ratio	10.44	7.87
5 Yr. EPS Growth Rate (%)	33.40	21.83
Beta (5 Years, Monthly)	1.19	1.00
Number of Stocks	29	530
Debt to Equity	0.98	0.75

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Visa Inc	8.99	2.11	6.88	9.42
ServiceNow Inc	7.49	0.34	7.15	11.22
Amazon.com Inc	7.44	5.00	2.44	6.45
Adobe Inc	5.84	1.05	4.79	19.39
Match Group Inc	5.37	0.03	5.34	14.94
Alphabet Inc	5.22	2.62	2.60	9.68
Intuit Inc.	4.68	0.43	4.25	-1.31
Netflix Inc	4.66	0.89	3.77	20.91
salesforce.com Inc	4.37	0.88	3.49	9.57
Alibaba Group Holding Ltd	4.36	0.00	4.36	26.83
% of Portfolio	58.42	13.35	45.07	

Ten Best Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Sarepta Therapeutics Inc	1.56	0.06	1.50	71.32
Mirati Therapeutics Inc	1.27	0.00	1.27	65.40
Align Technology Inc	2.25	0.14	2.11	54.23
Sea Ltd	0.56	0.00	0.56	29.95
Alibaba Group Holding Ltd	4.36	0.00	4.36	26.83
Netflix Inc	4.66	0.89	3.77	20.91
Adobe Inc	5.84	1.05	4.79	19.39
Facebook Inc	3.99	3.21	0.78	15.26
Match Group Inc	5.37	0.03	5.34	14.94
Microsoft Corp	3.93	7.80	-3.87	13.82
% of Portfolio	33.79	13.18	20.61	

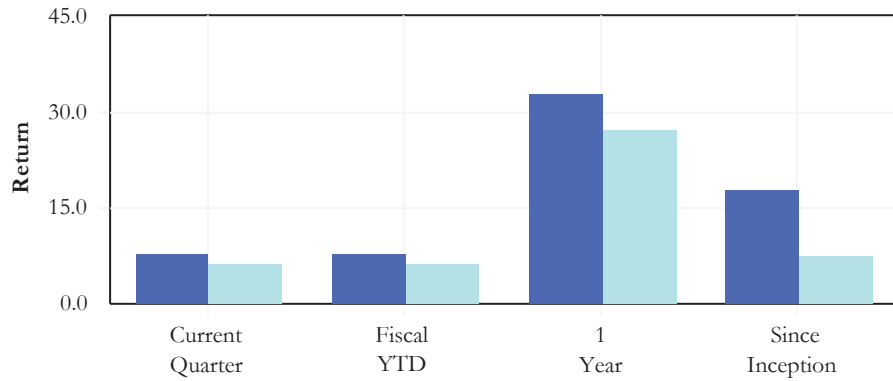
Ten Worst Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Twilio Inc	1.01	0.08	0.93	-10.62
ABIOMED Inc	0.90	0.05	0.85	-4.10
Atlassian Corp Plc	1.18	0.09	1.09	-4.07
Workday Inc	1.56	0.17	1.39	-3.24
Intuit Inc.	4.68	0.43	4.25	-1.31
Floor & Decor Holdings Inc	2.12	0.02	2.10	-0.66
Texas Instruments Inc	2.46	0.79	1.67	0.02
CoStar Group Inc	4.30	0.14	4.16	0.86
Edwards Lifesciences Corp	3.68	0.32	3.36	6.08
Zoetis Inc	3.53	0.41	3.12	6.37
% of Portfolio	25.42	2.50	22.92	

# Pompano Beach Police & Firefighters' Retirement System

## Nuance - Mid Cap Value - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	Inception 07/01/2018
Nuance - Mid Cap Value	7.76	7.76	32.86	17.89
Russell Midcap Value	6.36	6.36	27.06	7.60
Differences	1.40	1.40	5.80	10.29

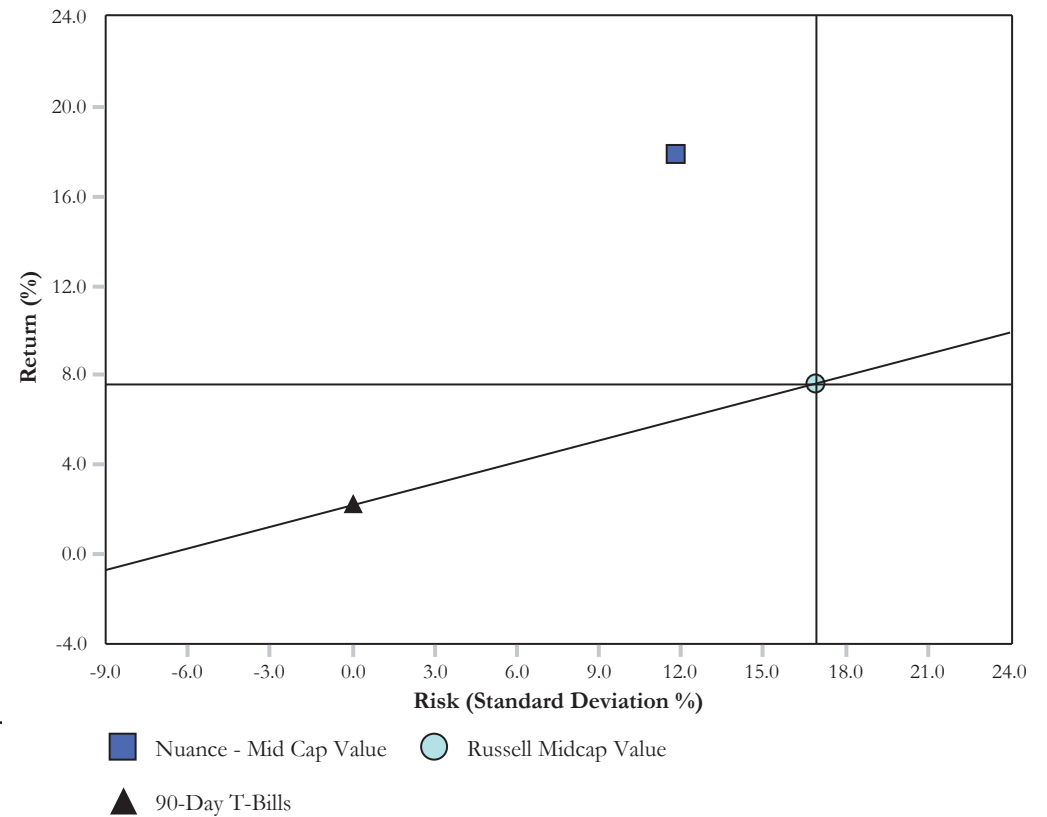
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	Inception 07/01/2018
Nuance - Mid Cap Value				
Beginning Market Value	12,564	12,564	11,251	11,937
Net Contributions	-574	-574	-1,764	-2,012
Fees/Expenses	-11	-11	-46	-58
Income	124	124	326	468
Gain/Loss	831	831	3,167	2,598
Ending Market Value	12,933	12,933	12,933	12,933

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Nuance - Mid Cap Value	17.89	11.84	0.68	-6.56	99.04	53.92	11.91	1.27	0.94	07/01/2018
Russell Midcap Value	7.60	16.90	1.00	-15.63	100.00	100.00	0.00	0.39	1.00	07/01/2018

### Manager Risk & Return



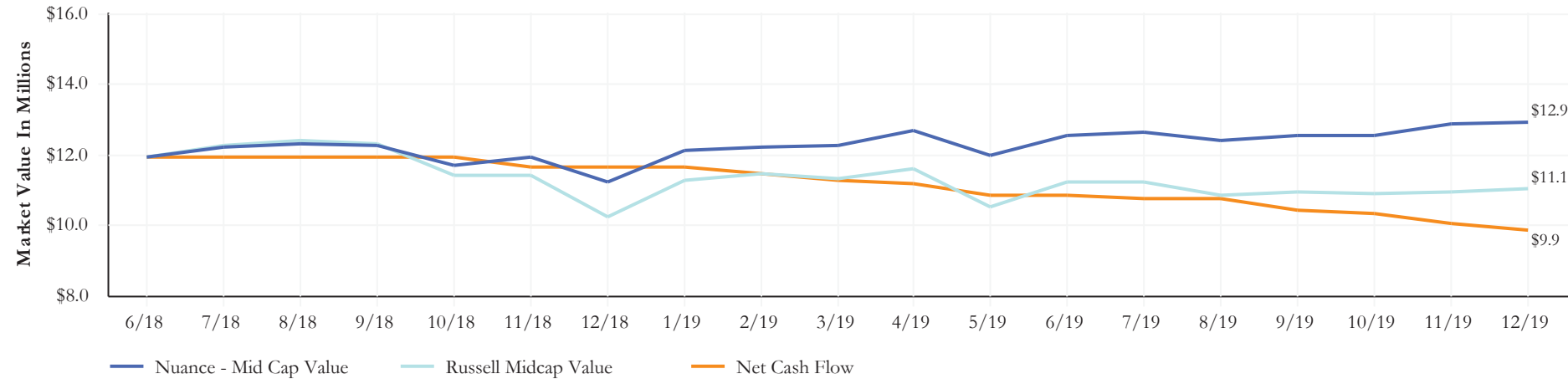
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# Pompano Beach Police & Firefighters' Retirement System

## Nuance - Mid Cap Value - Change in Assets & Distribution of Returns

as of December 31, 2019

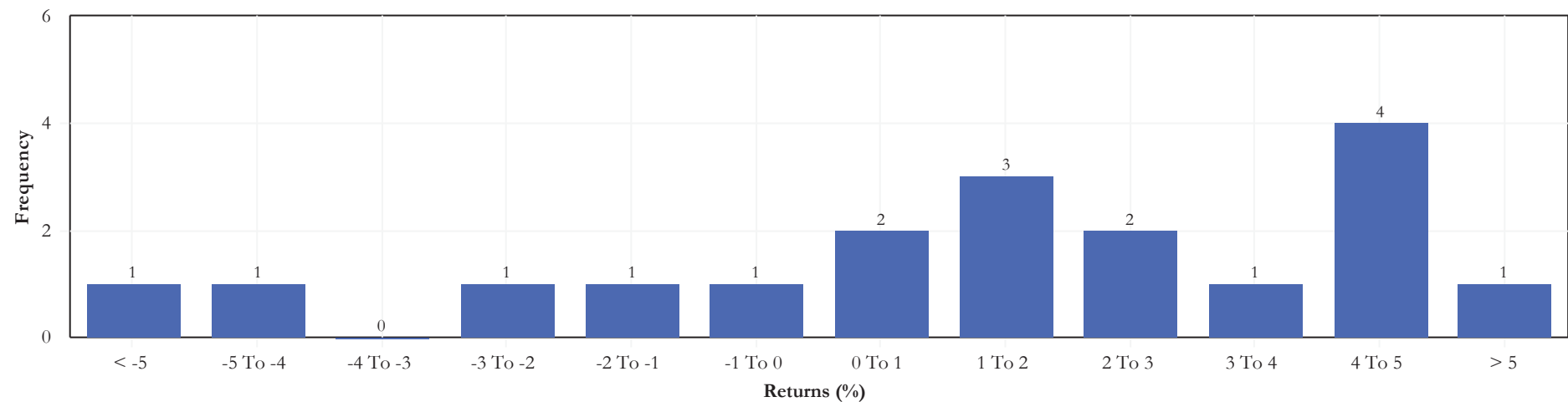
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Nuance - Mid Cap Value	12,563,996.68	-	9,656,603.44	-10,230,599.34	-11,004.10	-	954,451.63	12,933,448.31

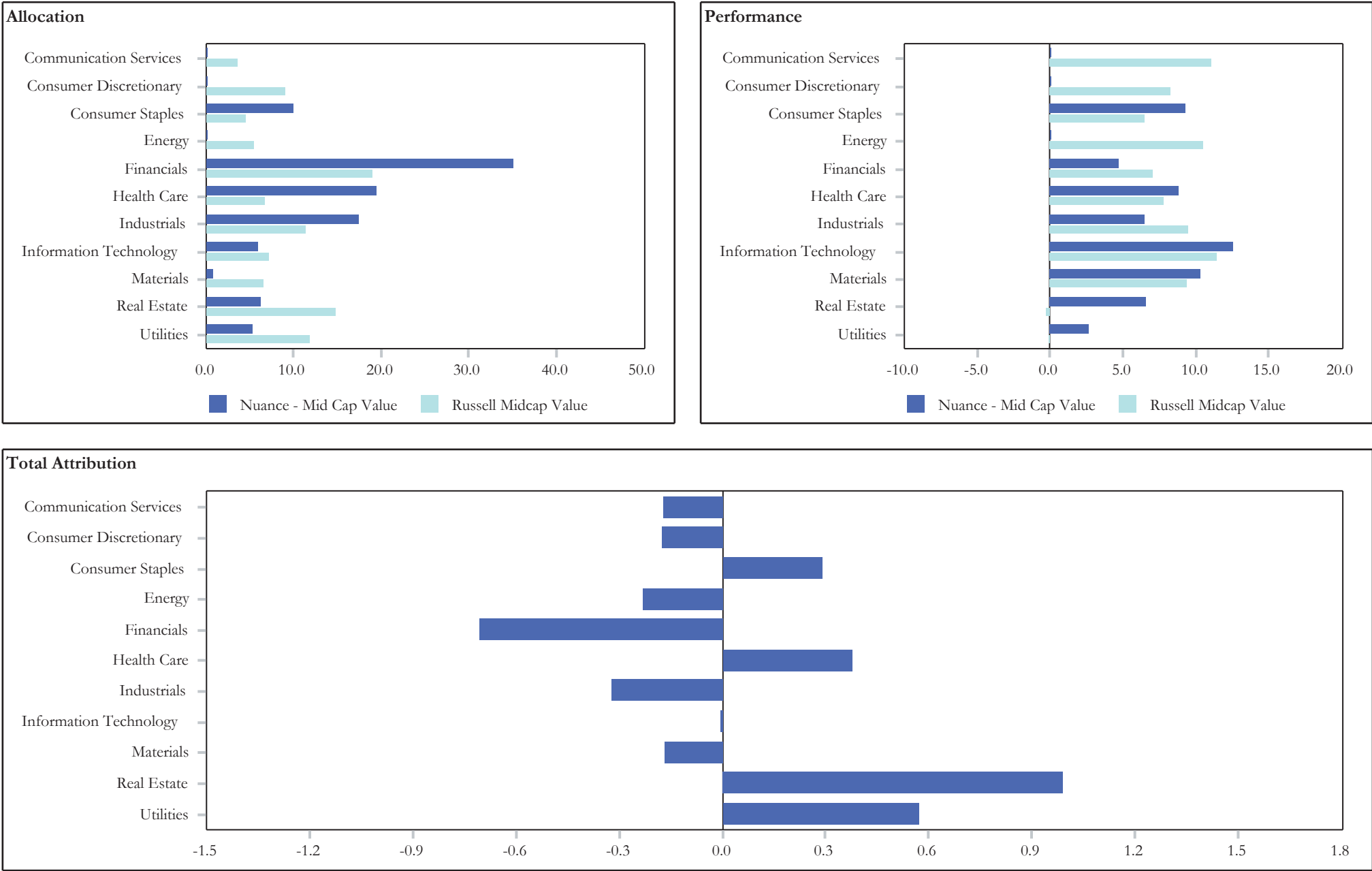
### Distribution of Returns



# Pompano Beach Police & Firefighters' Retirement System

## Nuance - Mid Cap Value - Quarterly Performance Attributes

### as of December 31, 2019



# Pompano Beach Police & Firefighters' Retirement System

## Nuance - Mid Cap Value - Quarterly Performance Attributes

as of December 31, 2019

	Allocation - 10/01/2019		Performance - Quarter Ending December 31, 2019		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Sector	Stock	Interaction	Total
Communication Services	0.00	3.64	0.00	11.04	-0.17	0.00	0.00	-0.17
Consumer Discretionary	0.00	8.94	0.00	8.29	-0.17	0.00	0.00	-0.17
Consumer Staples	9.97	4.57	9.33	6.49	0.01	0.13	0.15	0.29
Energy	0.00	5.50	0.00	10.54	-0.23	0.00	0.00	-0.23
Financials	35.08	18.93	4.71	7.05	0.11	-0.44	-0.38	-0.71
Health Care	19.41	6.70	8.79	7.81	0.19	0.07	0.13	0.38
Industrials	17.42	11.40	6.53	9.44	0.19	-0.33	-0.18	-0.32
Information Technology	5.83	7.22	12.56	11.43	-0.07	0.08	-0.02	0.00
Materials	0.82	6.53	10.30	9.39	-0.17	0.06	-0.05	-0.17
Real Estate	6.21	14.73	6.60	-0.28	0.56	1.01	-0.59	0.99
Utilities	5.25	11.83	2.68	-0.11	0.42	0.33	-0.18	0.57
Total	100.00	100.00	6.79	6.34	0.66	0.90	-1.11	0.46

All the values for Allocation, Performance and Attribution are expressed in Percentage(%) terms

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# Pompano Beach Police & Firefighters' Retirement System

## Nuance - Mid Cap Value - Portfolio Characteristics

as of December 31, 2019

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$000)	17,270,545.84	15,840,101.73
Median Mkt. Cap (\$000)	10,209,349.66	8,018,622.00
Price/Earnings ratio	18.95	18.92
Price/Book ratio	2.34	2.28
5 Yr. EPS Growth Rate (%)	3.11	7.72
Beta (5 Years, Monthly)	0.91	1.00
Number of Stocks	60	631
Debt to Equity	0.55	1.17

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
WABCO Holdings Inc	7.60	0.02	7.58	1.31
Travelers Companies Inc (The)	7.34	0.00	7.34	-7.34
Equity Commonwealth	6.48	0.08	6.40	6.60
Smith & Nephew PLC	4.97	0.00	4.97	0.50
Reinsurance Group of Amer.	4.69	0.21	4.48	2.41
ICU Medical Inc	4.38	0.05	4.33	17.24
Wright Medical Group NV	4.08	0.00	4.08	47.75
Cal Maine Foods Inc	3.79	0.00	3.79	6.99
DENTSPLY SIRONA Inc	3.50	0.26	3.24	6.34
TD AMERITRADE Holding Corp	3.49	0.00	3.49	7.25
% of Portfolio	50.32	0.62	49.70	

Ten Best Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Wright Medical Group NV	4.08	0.00	4.08	47.75
ON Semiconductor Corp	1.79	0.21	1.58	26.91
ABB Ltd	0.58	0.00	0.58	22.47
ICU Medical Inc	4.38	0.05	4.33	17.24
Sanderson Farms Inc	2.46	0.00	2.46	16.45
Globus Medical Inc	0.29	0.00	0.29	15.18
Northern Trust Corp	1.14	0.43	0.71	14.57
Schwab (Charles) Corp	1.38	0.00	1.38	14.14
Graco Inc.	0.32	0.00	0.32	13.34
Amphenol Corp	3.00	0.00	3.00	12.42
% of Portfolio	19.42	0.69	18.73	

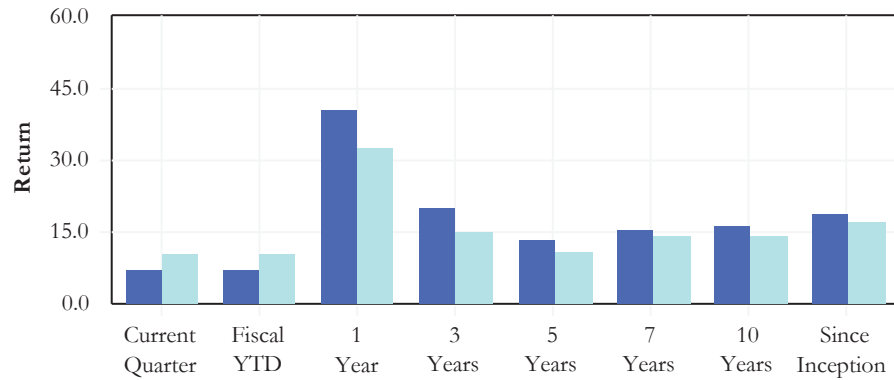
Ten Worst Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Travelers Companies Inc (The)	7.34	0.00	7.34	-7.34
Calavo Growers Inc	0.59	0.00	0.59	-3.58
Universal Health Services Inc.	1.81	0.23	1.58	-3.42
Berkley (W.R.) Corp	0.59	0.21	0.38	-3.12
Chubb Ltd	2.39	0.00	2.39	-3.11
Ecolab Inc.	0.30	0.00	0.30	-2.30
California Water Service Group	0.86	0.00	0.86	-2.22
AptarGroup Inc.	0.87	0.09	0.78	-2.09
Middlesex Water Co	0.31	0.00	0.31	-1.72
Unum Group	1.75	0.12	1.63	-0.90
% of Portfolio	16.81	0.65	16.16	

# Pompano Beach Police & Firefighters' Retirement System

## Wells - SMID Cap Growth - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 02/01/2009
Wells - SMID Growth	7.00	7.00	40.43	19.91	13.30	15.58	16.11	18.80
Russell 2500 GR	10.57	10.57	32.65	15.17	10.84	14.11	14.01	17.08
Differences	-3.57	-3.57	7.78	4.74	2.46	1.47	2.10	1.72

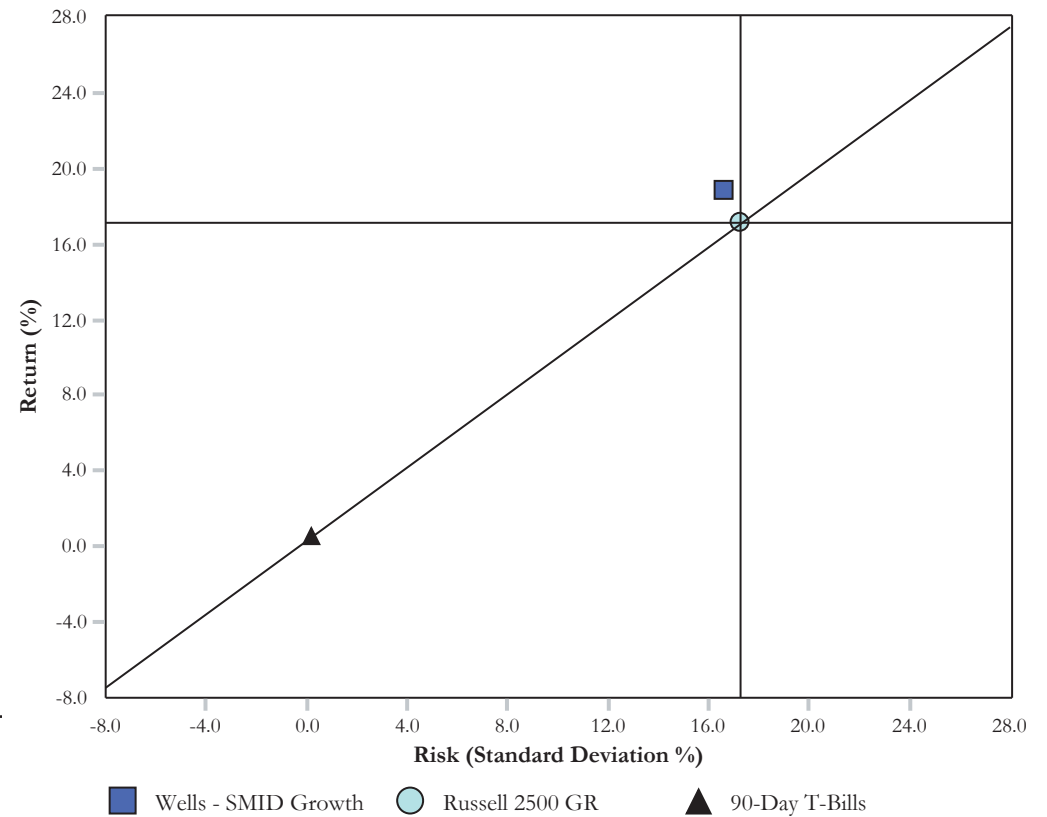
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 02/01/2009
Wells - SMID Growth								
Beginning Market Value	12,250	12,250	10,469	10,487	12,888	10,862	8,593	6,165
Net Contributions	-386	-386	-1,884	-4,266	-7,411	-9,941	-11,958	-12,378
Fees/Expenses	-24	-24	-101	-312	-526	-750	-1,013	-1,058
Income	13	13	48	164	267	376	497	524
Gain/Loss	830	830	4,151	6,611	7,465	12,136	16,564	19,430
Ending Market Value	12,683	12,683	12,683	12,683	12,683	12,683	12,683	12,683

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Wells - SMID Growth	18.80	16.67	0.93	-23.19	98.55	88.29	2.61	1.09	0.93	02/01/2009
Russell 2500 GR	17.08	17.27	1.00	-23.72	100.00	100.00	0.00	0.97	1.00	02/01/2009

### Manager Risk & Return



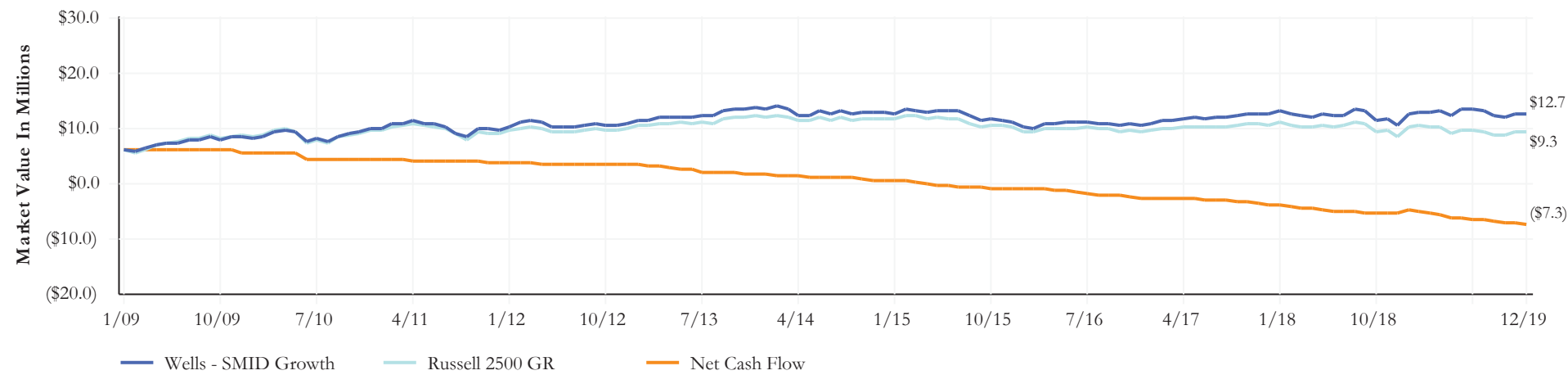
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# Pompano Beach Police & Firefighters' Retirement System

## Wells - SMID Cap Growth - Change in Assets & Distribution of Returns

as of December 31, 2019

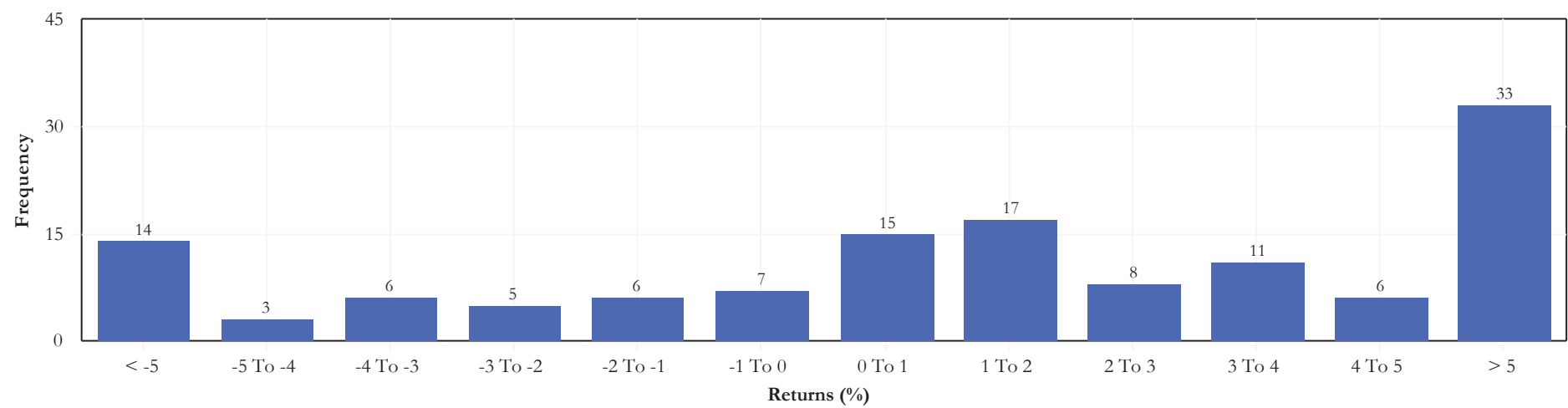
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Wells - SMID Growth	12,250,196.65	-	2,716,749.00	-3,102,448.61	-24,300.39	-	843,046.13	12,683,242.78

### Distribution of Returns

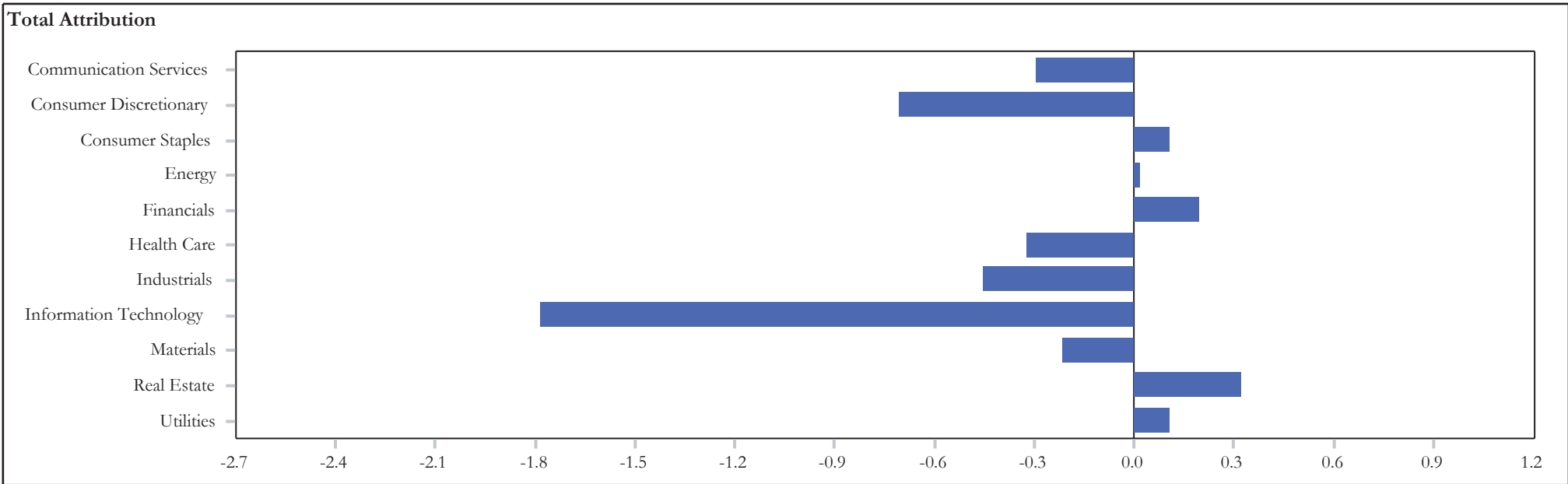
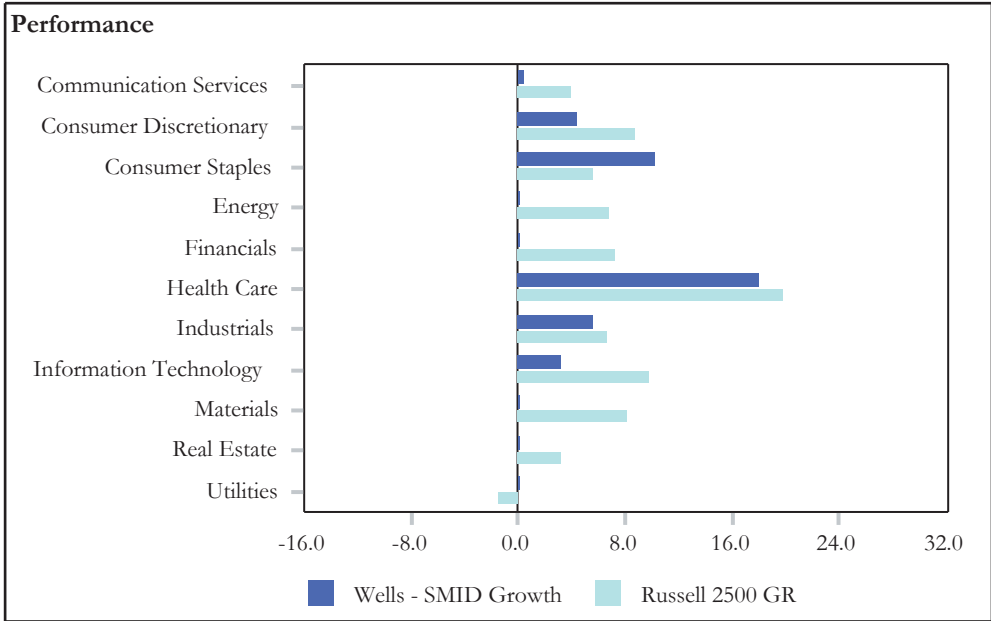
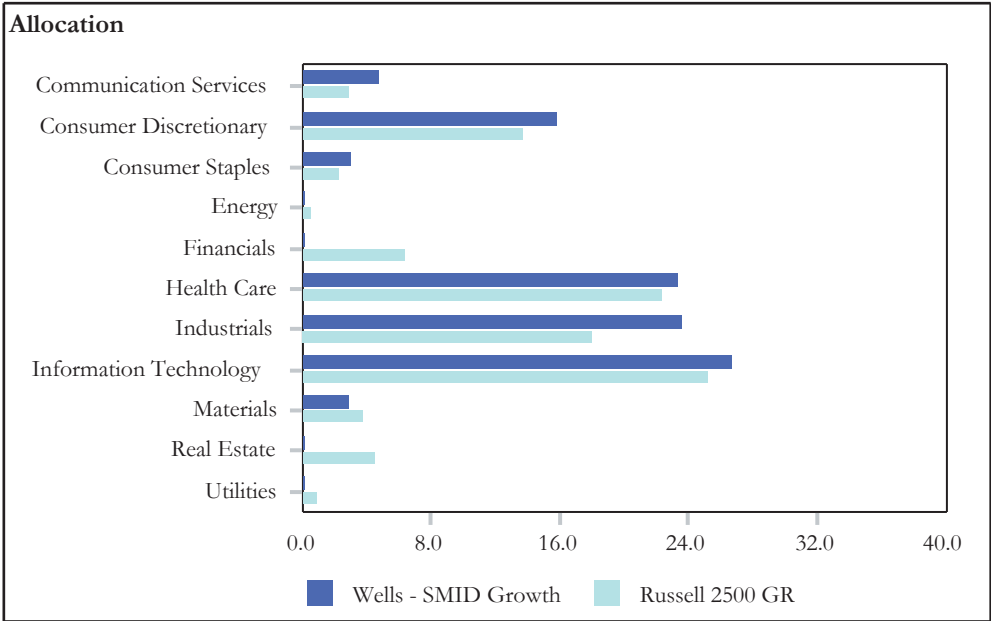




# Pompano Beach Police & Firefighters' Retirement System

## Wells - SMID Growth - Quarterly Performance Attributes

as of December 31, 2019



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# Pompano Beach Police & Firefighters' Retirement System

## Wells - SMID Growth - Quarterly Performance Attributes

as of December 31, 2019

	Allocation - 10/01/2019		Performance - Quarter Ending December 31, 2019		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Sector	Stock	Interaction	Total
Communication Services	4.74	2.81	0.36	3.91	-0.13	-0.10	-0.07	-0.29
Consumer Discretionary	15.78	13.67	4.44	8.67	-0.04	-0.58	-0.09	-0.70
Consumer Staples	2.93	2.23	10.31	5.58	-0.03	0.11	0.03	0.10
Energy	0.00	0.48	0.00	6.84	0.02	0.00	0.00	0.02
Financials	0.00	6.30	0.00	7.30	0.20	0.00	0.00	0.20
Health Care	23.41	22.31	17.99	19.82	0.10	-0.41	-0.02	-0.32
Industrials	23.56	17.99	5.59	6.62	-0.21	-0.19	-0.06	-0.46
Information Technology	26.69	25.21	3.16	9.81	-0.01	-1.68	-0.10	-1.78
Materials	2.89	3.69	0.17	8.20	0.02	-0.30	0.06	-0.21
Real Estate	0.00	4.43	0.00	3.17	0.32	0.00	0.00	0.32
Utilities	0.00	0.88	0.00	-1.49	0.11	0.00	0.00	0.11
Total	100.00	100.00	7.40	10.43	0.34	-3.14	-0.24	-3.03

All the values for Allocation, Performance and Attribution are expressed in Percentage(%) terms

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# Pompano Beach Police & Firefighters' Retirement System

## Wells - SMID Growth - Portfolio Characteristics

as of December 31, 2019

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$000)	8,908,078.61	5,922,809.37
Median Mkt. Cap (\$000)	5,803,939.94	1,330,361.76
Price/Earnings ratio	39.67	27.86
Price/Book ratio	6.58	5.12
5 Yr. EPS Growth Rate (%)	20.40	17.43
Beta (5 Years, Monthly)	0.94	1.00
Number of Stocks	76	1,409
Debt to Equity	1.87	1.32

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
DexCom Inc	2.60	0.92	1.68	46.57
WEX Inc	2.34	0.42	1.92	3.66
Waste Connections Inc.	2.24	0.00	2.24	-1.11
EXACT Sciences Corp	2.08	0.60	1.48	2.34
EPAM Systems Inc	2.07	0.51	1.56	16.37
Booz Allen Hamilton Holding Corp	2.02	0.45	1.57	0.53
Euronet Worldwide Inc	1.99	0.37	1.62	7.70
HealthEquity Inc	1.92	0.24	1.68	29.62
WNS (Holdings) Ltd	1.86	0.00	1.86	12.60
Burlington Stores Inc	1.83	0.70	1.13	14.12
% of Portfolio	20.95	4.21	16.74	

Ten Best Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Deciphera Pharmaceuticals Inc	0.68	0.06	0.62	83.38
Zymeworks Inc	0.30	0.00	0.30	83.31
Sarepta Therapeutics Inc	0.93	0.42	0.51	71.32
Turning Point Therapeutics Inc	0.81	0.08	0.73	65.66
Immunomedics Inc	0.86	0.16	0.70	59.58
CRISPR Therapeutics AG	0.47	0.00	0.47	48.58
DexCom Inc	2.60	0.92	1.68	46.57
Carvana Co	0.77	0.19	0.58	39.47
HealthEquity Inc	1.92	0.24	1.68	29.62
Zai Lab Ltd	0.66	0.00	0.66	28.56
% of Portfolio	10.00	2.07	7.93	

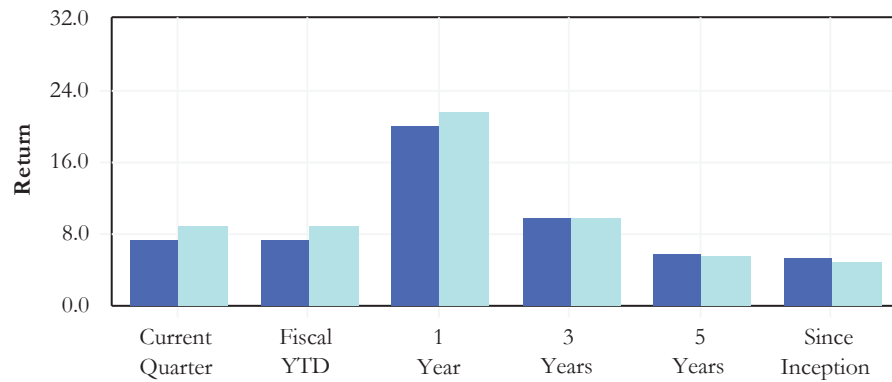
Ten Worst Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Elastic NV	1.05	0.14	0.91	-21.91
Etsy Inc	1.11	0.24	0.87	-21.59
Mercury Systems Inc	1.49	0.17	1.32	-14.86
Twist Bioscience Corp	0.45	0.02	0.43	-12.06
Twilio Inc	1.43	0.00	1.43	-10.62
Haemonetics Corp	1.45	0.27	1.18	-8.91
Rogers Corp.	1.08	0.11	0.97	-8.76
World Wrestling Entertainment Inc.	1.29	0.13	1.16	-8.65
iRhythm Technologies Inc	1.19	0.08	1.11	-8.12
Veeva Systems Inc	1.38	0.00	1.38	-7.88
% of Portfolio	11.92	1.16	10.76	

# Pompano Beach Police & Firefighters' Retirement System

## Lazard - International Value - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	Inception 02/01/2013
Lazard - International Value	7.40	7.40	20.04	9.68	5.81	5.30
MSCI AC World ex US Net	8.92	8.92	21.51	9.87	5.51	4.90
Differences	-1.52	-1.52	-1.47	-0.19	0.30	0.40

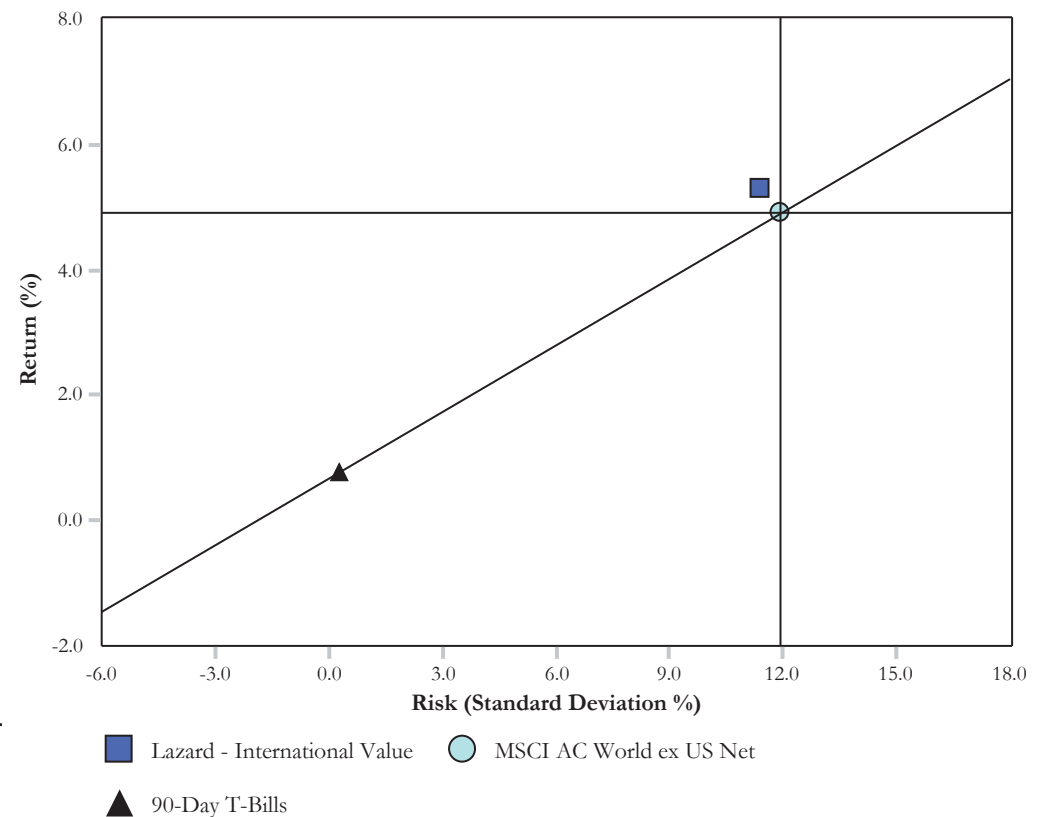
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	Inception 02/01/2013
Lazard - International Value	18,266	18,266	15,448	15,587	10,968	10,443
Beginning Market Value	-493	-493	468	-1,244	3,804	3,586
Net Contributions	-22	-22	-83	-254	-408	-506
Fees/Expenses	196	196	538	1,358	2,054	2,669
Income	1,136	1,136	2,712	3,636	2,665	2,890
Gain/Loss	19,083	19,083	19,083	19,083	19,083	19,083
Ending Market Value						

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Lazard - International Value	5.30	11.38	0.93	-17.86	95.01	90.77	0.72	0.44	0.95	02/01/2013
MSCI AC World ex US Net	4.90	11.95	1.00	-20.85	100.00	100.00	0.00	0.40	1.00	02/01/2013

### Manager Risk & Return



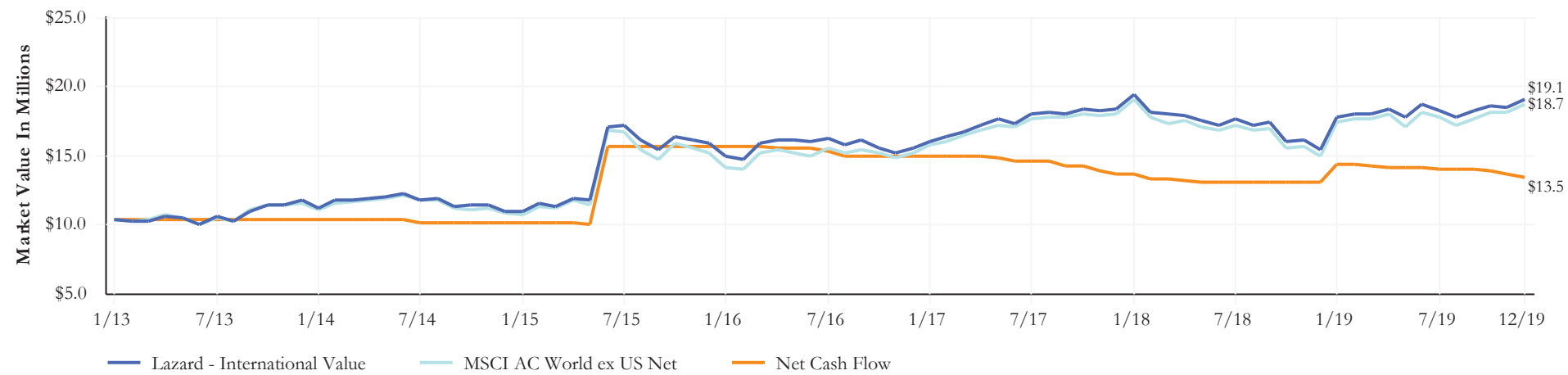
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# Pompano Beach Police & Firefighters' Retirement System

## Lazard - International Value - Change in Assets & Distribution of Returns

as of December 31, 2019

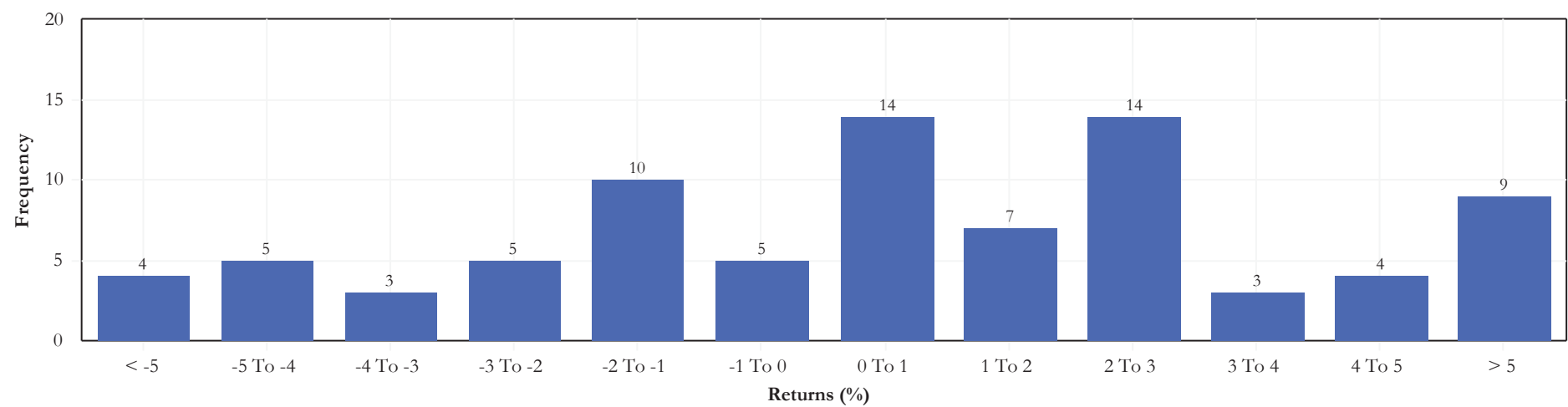
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Lazard - International Value	18,266,003.78	-	3,787,102.58	-4,280,574.38	-21,528.20	-	1,332,043.53	19,083,047.31

### Distribution of Returns

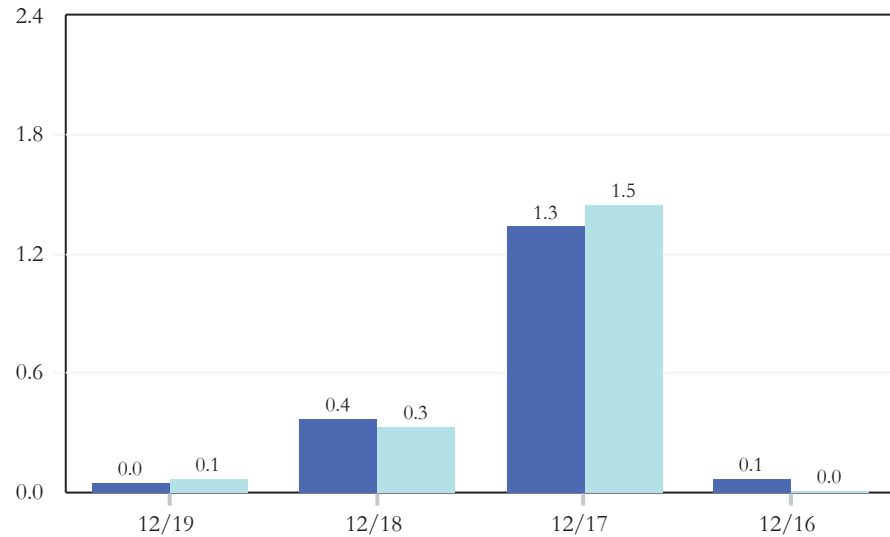


# Pompano Beach Police & Firefighters' Retirement System

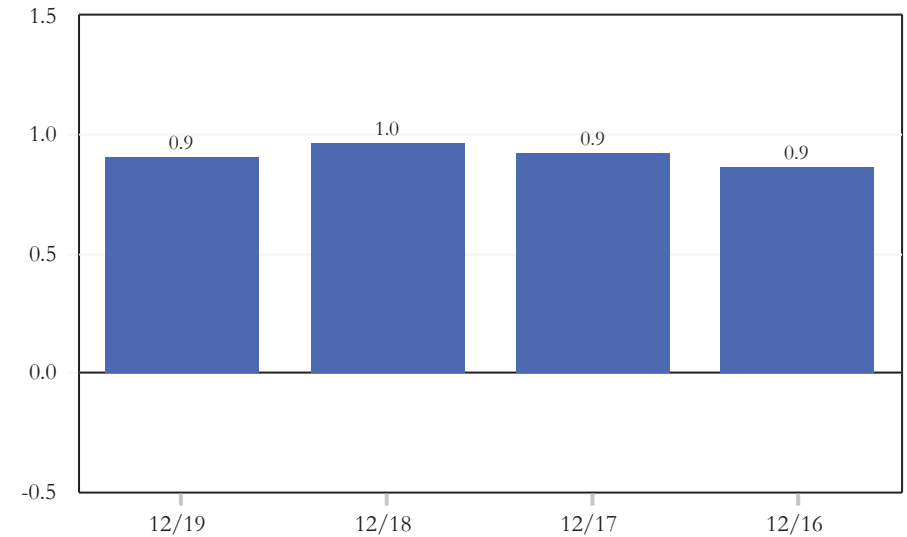
## Lazard - International Value - Rolling Two Year MPT Statistics

as of December 31, 2019

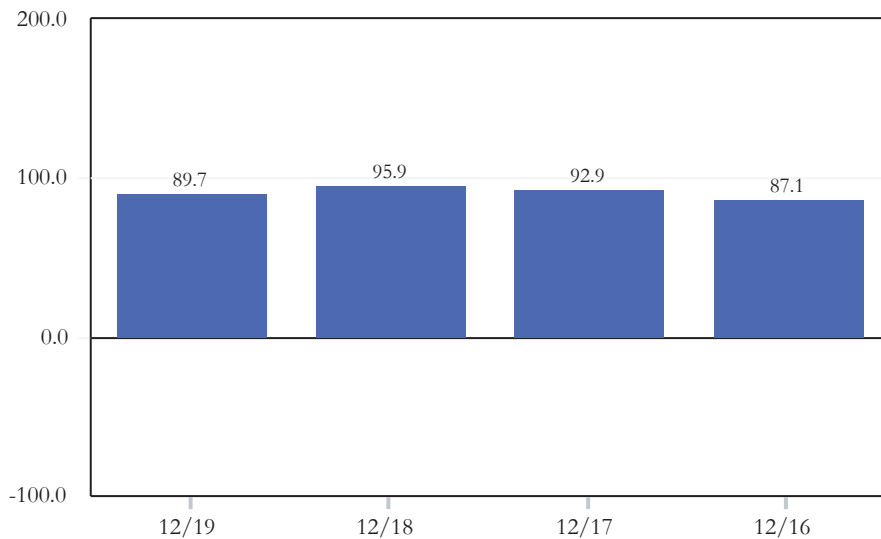
**Sharpe Ratio**



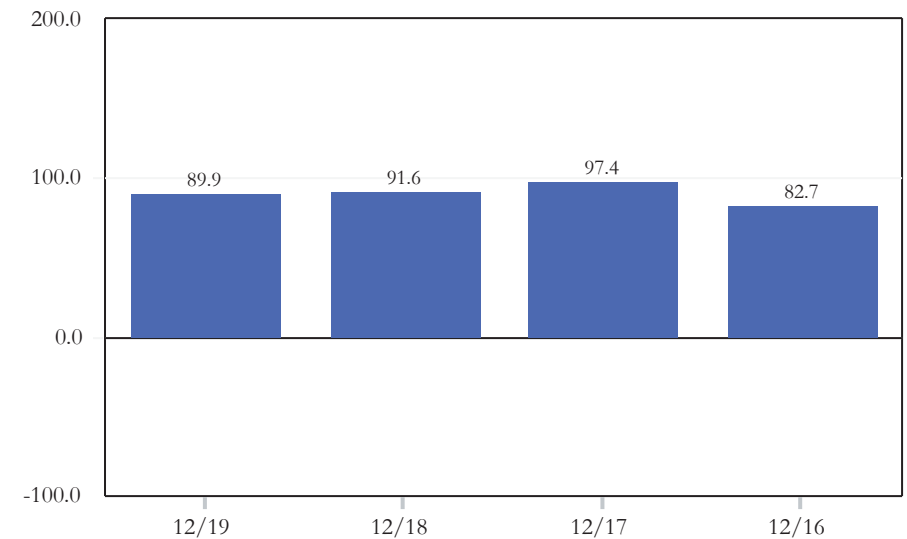
**Beta**



**Up Market Capture**



**Down Market Capture**

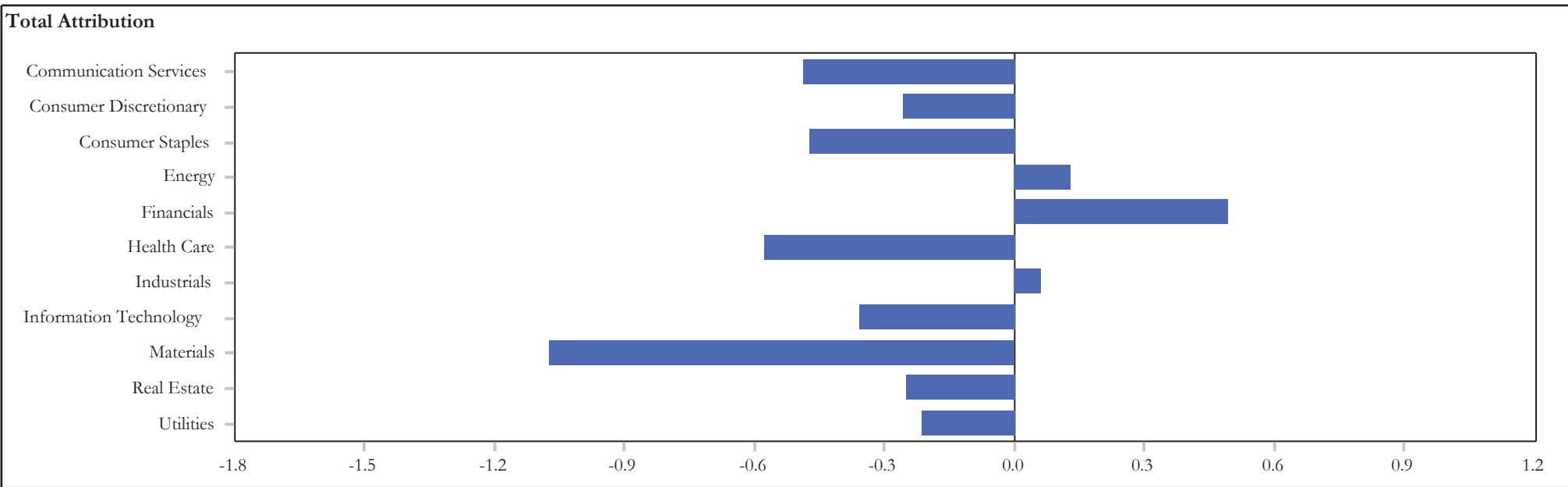
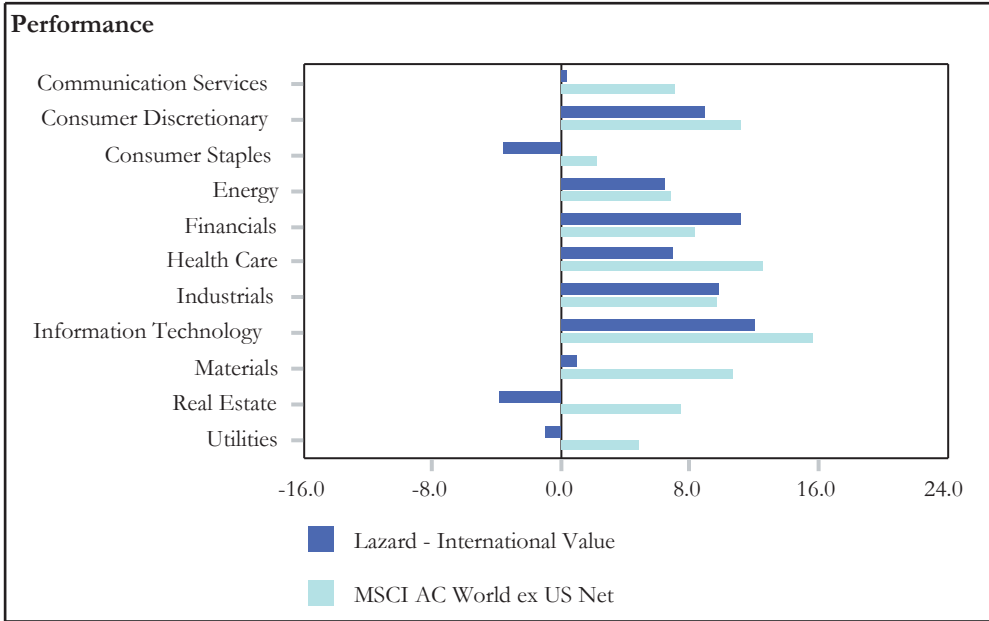
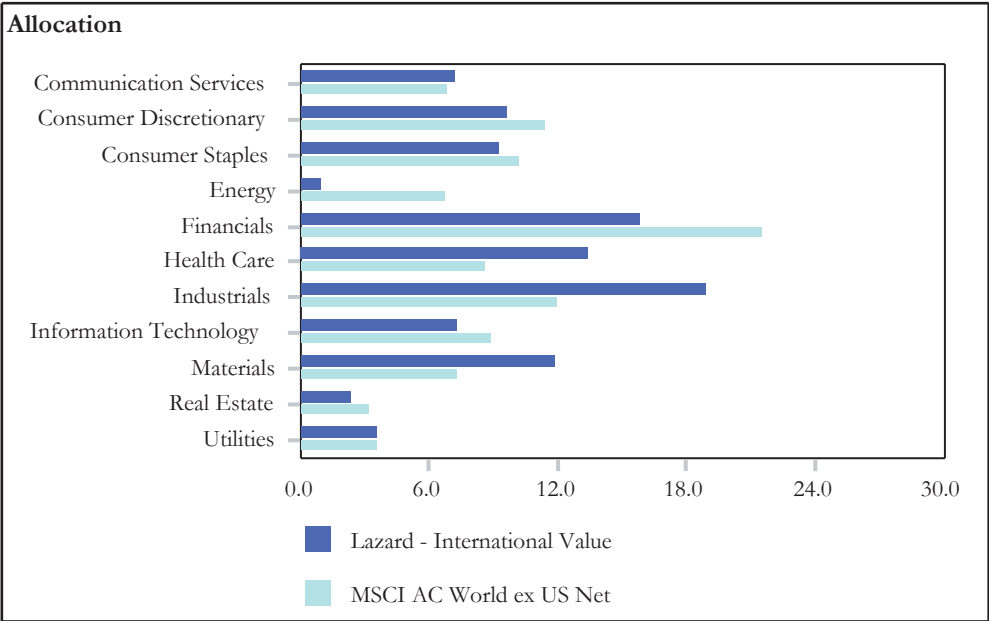


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# Pompano Beach Police & Firefighters' Retirement System

## Lazard - International Value - Quarterly Performance Attributes

as of December 31, 2019



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# Pompano Beach Police & Firefighters' Retirement System

## Lazard - International Value - Quarterly Performance Attributes

as of December 31, 2019

	Allocation - 10/01/2019		Performance - Quarter Ending December 31, 2019		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Sector	Stock	Interaction	Total
Communication Services	7.16	6.83	0.42	7.15	-0.01	-0.46	-0.02	-0.49
Consumer Discretionary	9.56	11.40	8.97	11.26	-0.04	-0.26	0.04	-0.26
Consumer Staples	9.20	10.16	-3.63	2.23	0.07	-0.60	0.06	-0.47
Energy	0.91	6.75	6.49	6.81	0.13	-0.02	0.02	0.13
Financials	15.82	21.55	11.15	8.31	0.04	0.61	-0.16	0.49
Health Care	13.41	8.53	6.94	12.52	0.17	-0.48	-0.27	-0.58
Industrials	18.92	11.92	9.79	9.69	0.04	0.01	0.01	0.06
Information Technology	7.30	8.85	12.13	15.65	-0.10	-0.31	0.05	-0.36
Materials	11.80	7.30	0.99	10.76	0.08	-0.71	-0.44	-1.08
Real Estate	2.35	3.21	-3.84	7.47	0.01	-0.36	0.10	-0.25
Utilities	3.58	3.50	-1.00	4.89	0.00	-0.21	0.00	-0.21
Total	100.00	100.00	6.03	9.05	0.39	-2.78	-0.63	-3.02

All the values for Allocation, Performance and Attribution are expressed in Percentage(%) terms

The prices, quotes, or statistics contained herein have been obtained from sources believed to be reliable, however, its accuracy cannot be guaranteed. Past performance is not a guarantee of future results.



# Pompano Beach Police & Firefighters' Retirement System

## Lazard - International Value - Portfolio Characteristics

as of December 31, 2019

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$000)	69,967,926.91	75,601,211.88
Median Mkt. Cap (\$000)	40,468,356.47	8,444,352.02
Price/Earnings ratio	19.61	16.14
Price/Book ratio	3.16	2.34
5 Yr. EPS Growth Rate (%)	0.21	8.14
Beta (5 Years, Monthly)	0.90	1.00
Number of Stocks	55	2,412
Debt to Equity	1.10	1.04

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
BHP GROUP LTD	9.68	0.00	9.68	N/A
SAP AG	4.15	0.59	3.56	13.68
Novartis AG	3.87	0.90	2.97	8.96
Medtronic PLC	3.83	0.00	3.83	4.95
Sanofi	3.31	0.50	2.81	8.35
Accenture PLC	3.04	0.00	3.04	9.94
Volkswagen AG	3.01	0.03	2.98	16.27
Aon plc	2.93	0.00	2.93	7.85
Prudential PLC	2.90	0.22	2.68	20.15
RELX PLC	2.87	0.22	2.65	6.53
% of Portfolio	39.59	2.46	37.13	

Ten Best Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Ryanair Holdings PLC	1.68	0.00	1.68	31.98
Vestas Wind Systems A/S	0.81	0.08	0.73	30.23
olseley PLC	1.40	0.09	1.31	26.04
Ryohin Keikaku Co Ltd	1.72	0.02	1.70	25.96
ABB Ltd	2.41	0.20	2.21	22.47
BNP Paribas	1.43	0.30	1.13	21.77
Prudential PLC	2.90	0.22	2.68	20.15
Volkswagen AG	3.01	0.03	2.98	16.27
Tesco PLC	1.95	0.15	1.80	15.16
Hitachi Ltd	1.79	0.18	1.61	14.35
% of Portfolio	19.10	1.27	17.83	

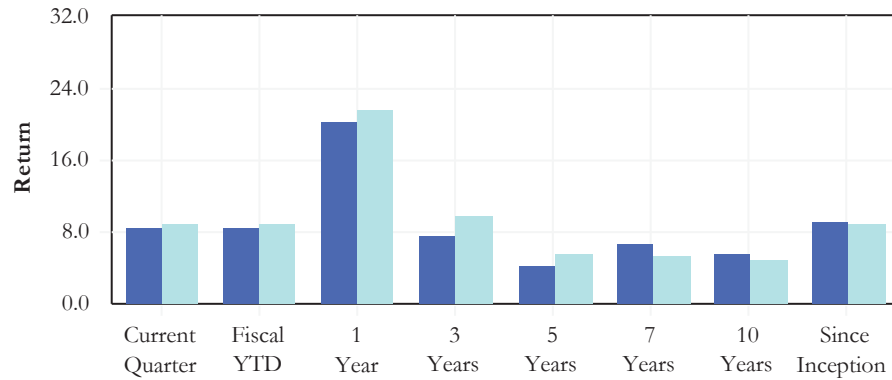
Ten Worst Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Telenor ASA	1.72	0.06	1.66	-8.85
The Unilever Group	1.83	0.37	1.46	-4.16
Daiwa House Industry Co Ltd	2.07	0.08	1.99	-3.84
Alcon Inc	0.48	0.10	0.38	-2.95
Compass Group PLC	1.36	0.18	1.18	-2.92
Engie SA	2.27	0.13	2.14	-1.02
Suzuki Motor Corp	1.14	0.07	1.07	-0.99
Red Electrica Corp SA	0.99	0.04	0.95	-0.96
Wolters Kluwer NV	2.14	0.09	2.05	-0.05
Carlsberg A/S	1.72	0.07	1.65	0.98
% of Portfolio	15.72	1.19	14.53	

# Pompano Beach Police & Firefighters' Retirement System

## Renaissance - International Growth - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 02/01/2009
Renaissance - International Growth	8.37	8.37	20.26	7.61	4.22	6.62	5.61	9.03
MSCI AC World ex US Net	8.92	8.92	21.51	9.87	5.51	5.44	4.97	8.83
Differences	-0.55	-0.55	-1.25	-2.26	-1.29	1.18	0.64	0.20

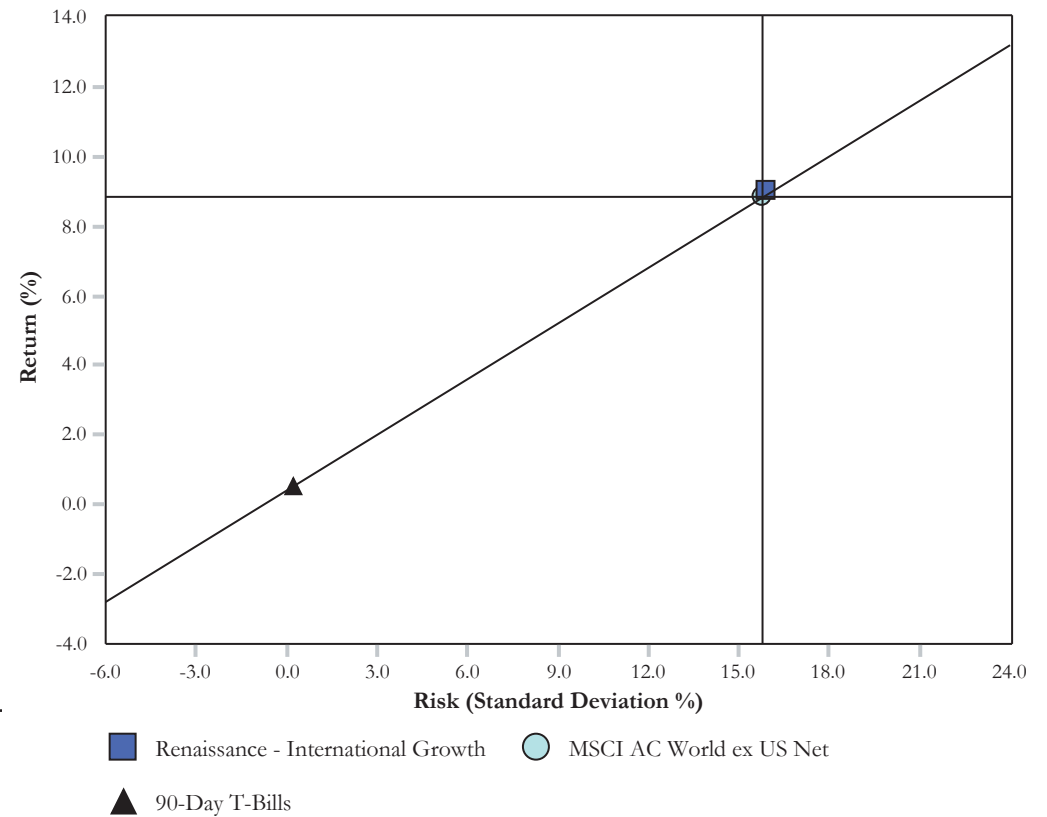
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 02/01/2009
Renaissance - International Growth								
Beginning Market Value	17,929	17,929	14,370	15,496	11,804	10,592	8,500	4,016
Net Contributions	-323	-323	1,593	-226	4,307	2,775	4,024	6,564
Fees/Expenses	-27	-27	-103	-318	-513	-672	-849	-870
Income	85	85	452	1,276	1,914	2,538	3,194	3,315
Gain/Loss	1,402	1,402	2,754	2,838	1,554	3,834	4,197	6,041
Ending Market Value	19,066	19,066	19,066	19,066	19,066	19,066	19,066	19,066

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Renaissance - International Growth	9.03	15.93	0.96	-23.74	96.99	93.93	0.65	0.59	0.90	02/01/2009
MSCI AC World ex US Net	8.83	15.82	1.00	-23.29	100.00	100.00	0.00	0.58	1.00	02/01/2009

### Manager Risk & Return



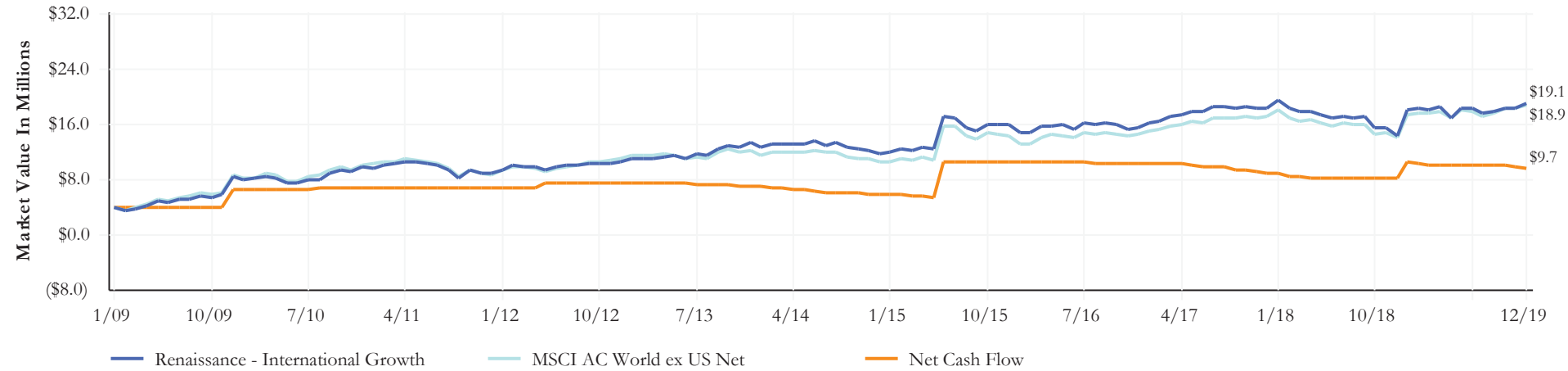
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# Pompano Beach Police & Firefighters' Retirement System

## Renaissance - International Growth - Change in Assets & Distribution of Returns

as of December 31, 2019

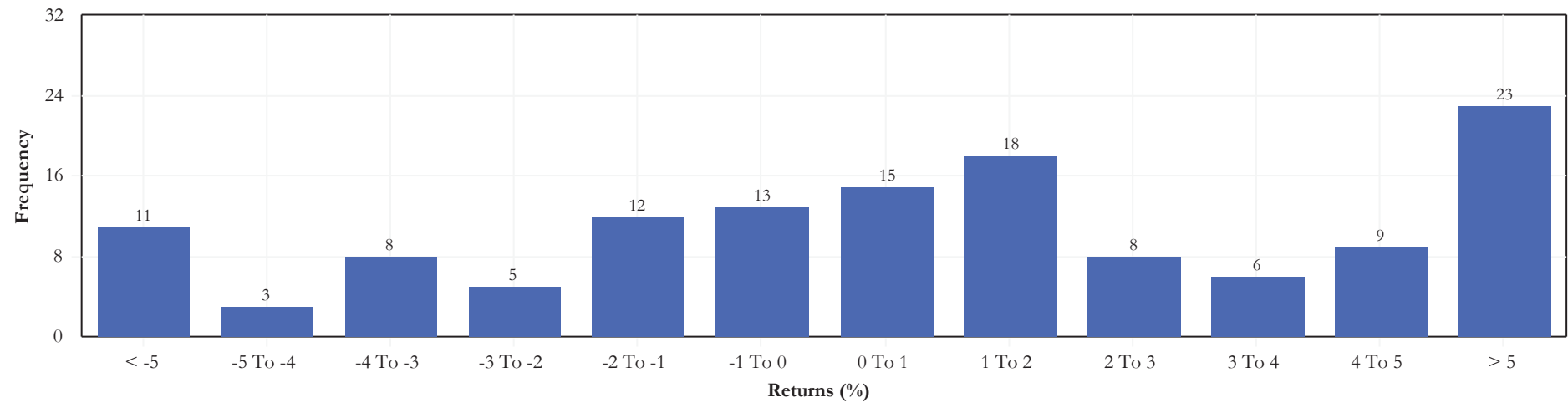
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Renaissance - International Growth	17,929,388.51	-	2,316,933.12	-2,639,795.42	-27,137.70	-	1,486,926.88	19,066,315.39

### Distribution of Returns

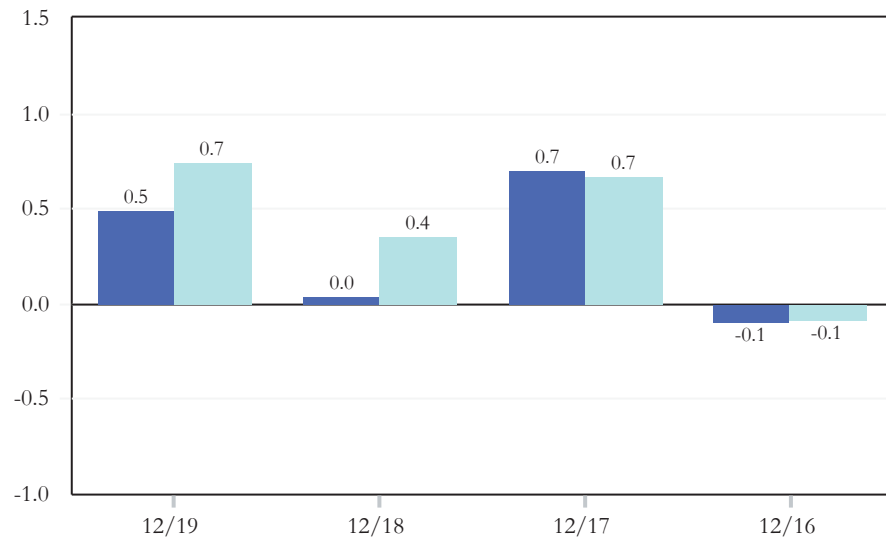


# Pompano Beach Police & Firefighters' Retirement System

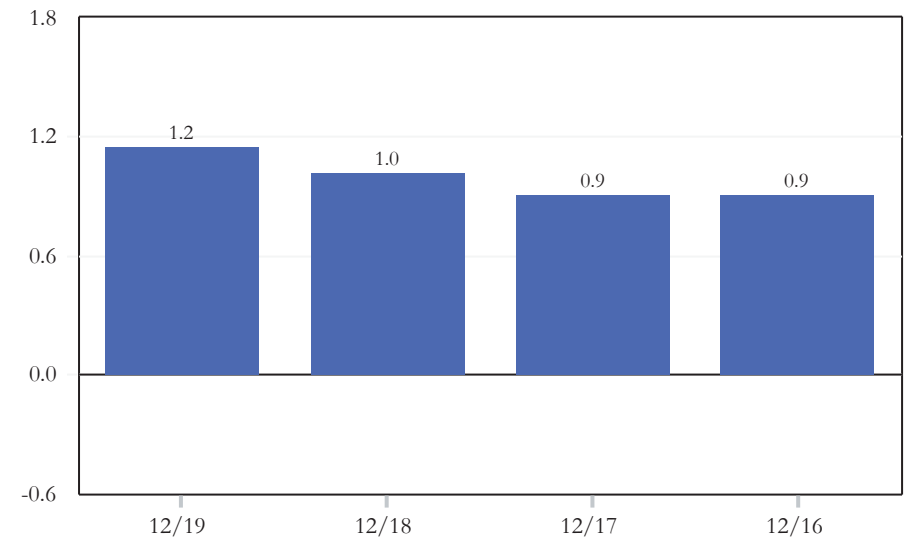
## Renaissance - International Growth - Rolling Three Year MPT Statistics

as of December 31, 2019

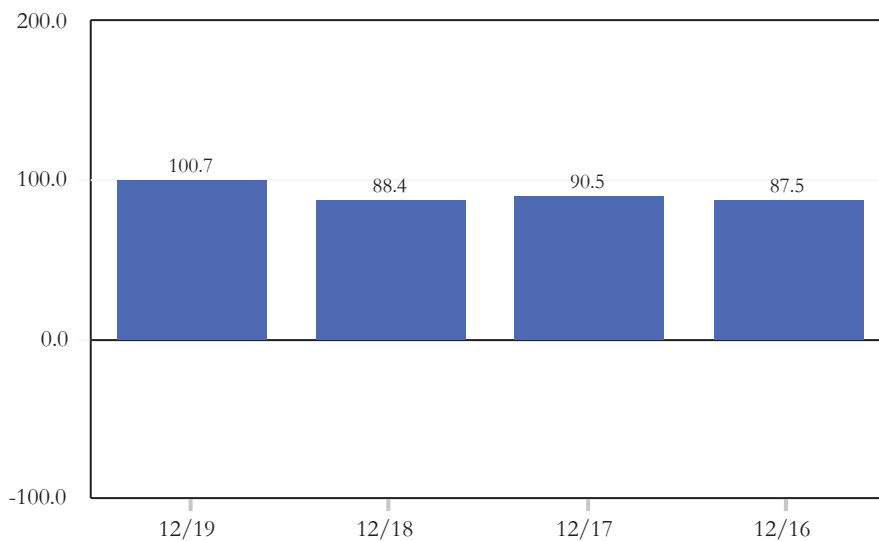
**Sharpe Ratio**



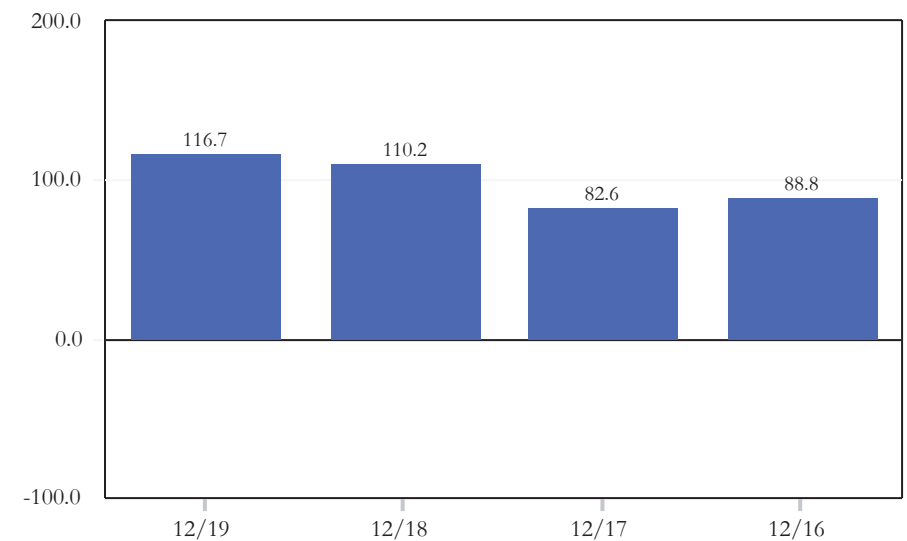
**Beta**



**Up Market Capture**



**Down Market Capture**

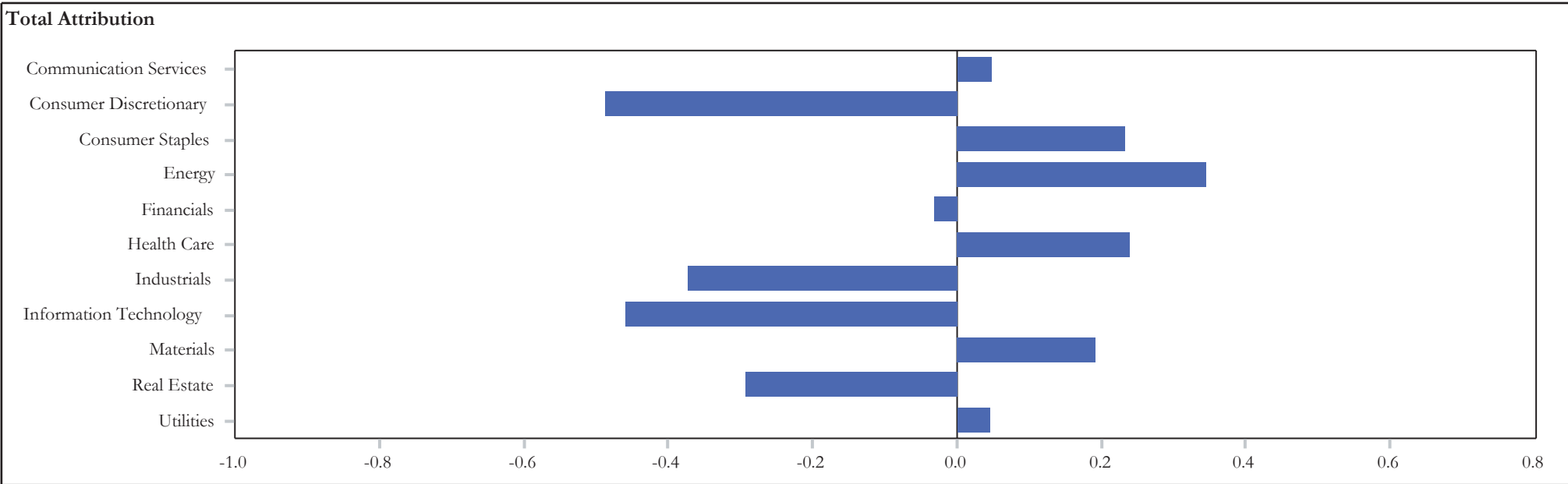
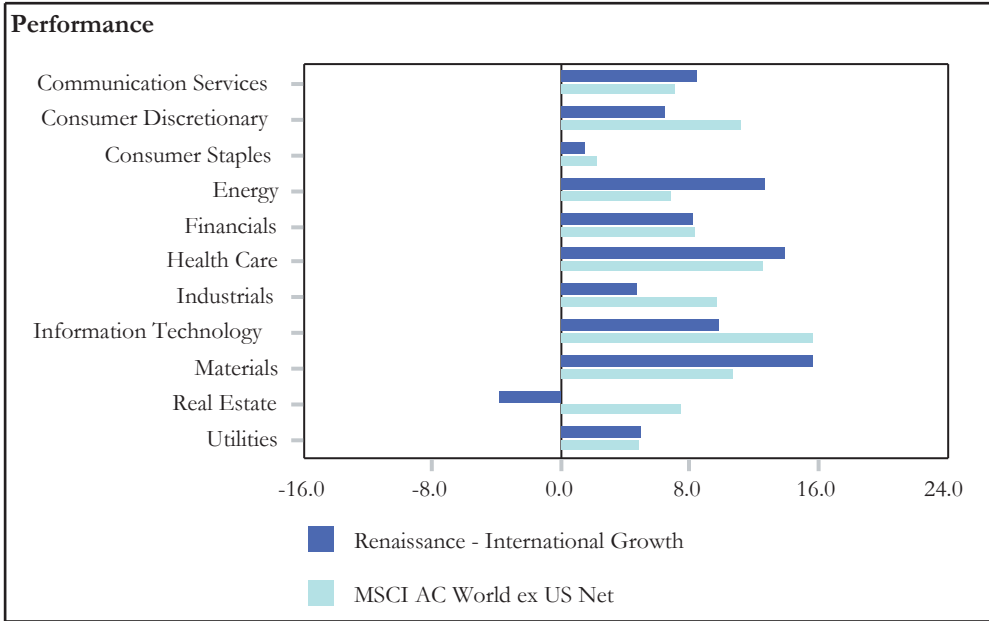
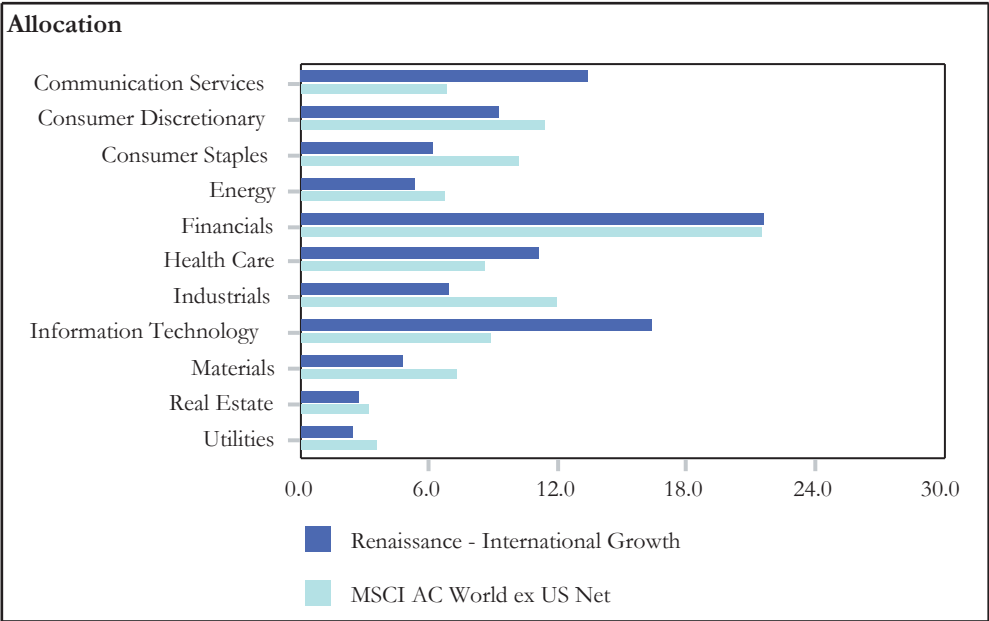


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# Pompano Beach Police & Firefighters' Retirement System

## Renaissance - International Growth - Quarterly Performance Attributes

### as of December 31, 2019



**Pompano Beach Police & Firefighters' Retirement System**  
**Renaissance - International Growth - Quarterly Performance Attributes**  
**as of December 31, 2019**

	Allocation - 10/01/2019		Performance - Quarter Ending December 31, 2019		Attribution			
	Portfolio	Benchmark	Portfolio	Benchmark	Sector	Stock	Interaction	Total
Communication Services	13.44	6.83	8.45	7.15	-0.13	0.09	0.09	0.05
Consumer Discretionary	9.18	11.40	6.48	11.26	-0.05	-0.54	0.11	-0.49
Consumer Staples	6.11	10.16	1.50	2.23	0.28	-0.07	0.03	0.23
Energy	5.35	6.75	12.68	6.81	0.03	0.40	-0.08	0.35
Financials	21.64	21.55	8.16	8.31	0.00	-0.03	0.00	-0.03
Health Care	11.06	8.53	13.90	12.52	0.09	0.12	0.03	0.24
Industrials	6.90	11.92	4.75	9.69	-0.03	-0.59	0.25	-0.37
Information Technology	16.43	8.85	9.82	15.65	0.50	-0.52	-0.44	-0.46
Materials	4.79	7.30	15.66	10.76	-0.04	0.36	-0.12	0.19
Real Estate	2.67	3.21	-3.84	7.47	0.01	-0.36	0.06	-0.29
Utilities	2.43	3.50	4.95	4.89	0.04	0.00	0.00	0.05
Total	100.00	100.00	8.51	9.05	0.70	-1.16	-0.08	-0.54

All the values for Allocation, Performance and Attribution are expressed in Percentage(%) terms

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# Pompano Beach Police & Firefighters' Retirement System

## Renaissance - International Growth - Portfolio Characteristics

as of December 31, 2019

Portfolio Characteristics		
	Portfolio	Benchmark
Wtd. Avg. Mkt. Cap (\$000)	60,686,746.62	75,601,211.88
Median Mkt. Cap (\$000)	28,513,093.83	8,444,352.02
Price/Earnings ratio	14.56	16.14
Price/Book ratio	2.15	2.34
5 Yr. EPS Growth Rate (%)	11.60	8.14
Beta (5 Years, Monthly)	1.02	1.00
Number of Stocks	53	2,412
Debt to Equity	0.65	1.04

Top Ten Equity Holdings				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Oil Co LUKOIL PJSC	2.75	0.17	2.58	23.32
Manulife Financial Corp	2.65	0.18	2.47	11.58
Tim Participacoes SA	2.59	0.01	2.58	34.89
Alibaba Group Holding Ltd	2.58	1.59	0.99	26.83
Arkema	2.53	0.03	2.50	14.01
Astellas Pharma Inc	2.52	0.14	2.38	20.87
Carnival Corporation & Plc	2.51	0.03	2.48	15.89
PT Bank Rakyat Indonesia TBK	2.51	0.08	2.43	9.20
CRH PLC	2.49	0.14	2.35	17.37
AerCap Holdings NV	2.48	0.03	2.45	12.27
% of Portfolio	25.61	2.40	23.21	

Ten Best Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
Tim Participacoes SA	2.59	0.01	2.58	34.89
Alibaba Group Holding Ltd	2.58	1.59	0.99	26.83
Infineon Technologies	2.23	0.13	2.10	26.65
Taiwan Semiconductor	2.18	1.21	0.97	25.88
Oil Co LUKOIL PJSC	2.75	0.17	2.58	23.32
Astellas Pharma Inc	2.52	0.14	2.38	20.87
CRH PLC	2.49	0.14	2.35	17.37
NXP Semiconductors NV	2.23	0.16	2.07	16.98
Icon PLC	2.26	0.00	2.26	16.89
Sberbank of Russia OJSC	2.46	0.20	2.26	16.87
% of Portfolio	24.29	3.75	20.54	

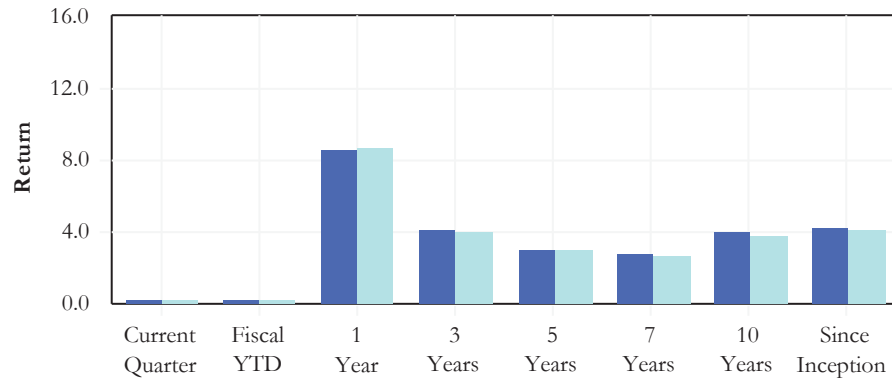
Ten Worst Performers				
	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)	Quarterly Return (%)
China Unicom (Hong Kong) Ltd	1.91	0.03	1.88	-10.77
JOYY Inc	1.32	0.01	1.31	-6.12
Danone SA	2.08	0.23	1.85	-5.85
Daiwa House Industry Co Ltd	2.32	0.08	2.24	-3.84
Seven & I Holdings Co Ltd	1.50	0.12	1.38	-3.66
Acs, Actividades De Construcción Y Servicios SA	2.01	0.05	1.96	0.12
Canadian National Railway	2.03	0.29	1.74	1.11
Check Point Software	1.96	0.06	1.90	1.33
Eni SpA	2.40	0.17	2.23	1.54
Lenovo Group Ltd	2.04	0.02	2.02	1.75
% of Portfolio	19.57	1.06	18.51	

# Pompano Beach Police & Firefighters' Retirement System

## Standish Mellon - Fixed Income - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 05/01/2003
Standish Mellon - Fixed Income	0.18	0.18	8.52	4.10	3.01	2.74	3.97	4.22
Barclays Aggregate	0.18	0.18	8.72	4.03	3.05	2.72	3.75	4.11
Differences	0.00	0.00	-0.20	0.07	-0.04	0.02	0.22	0.11

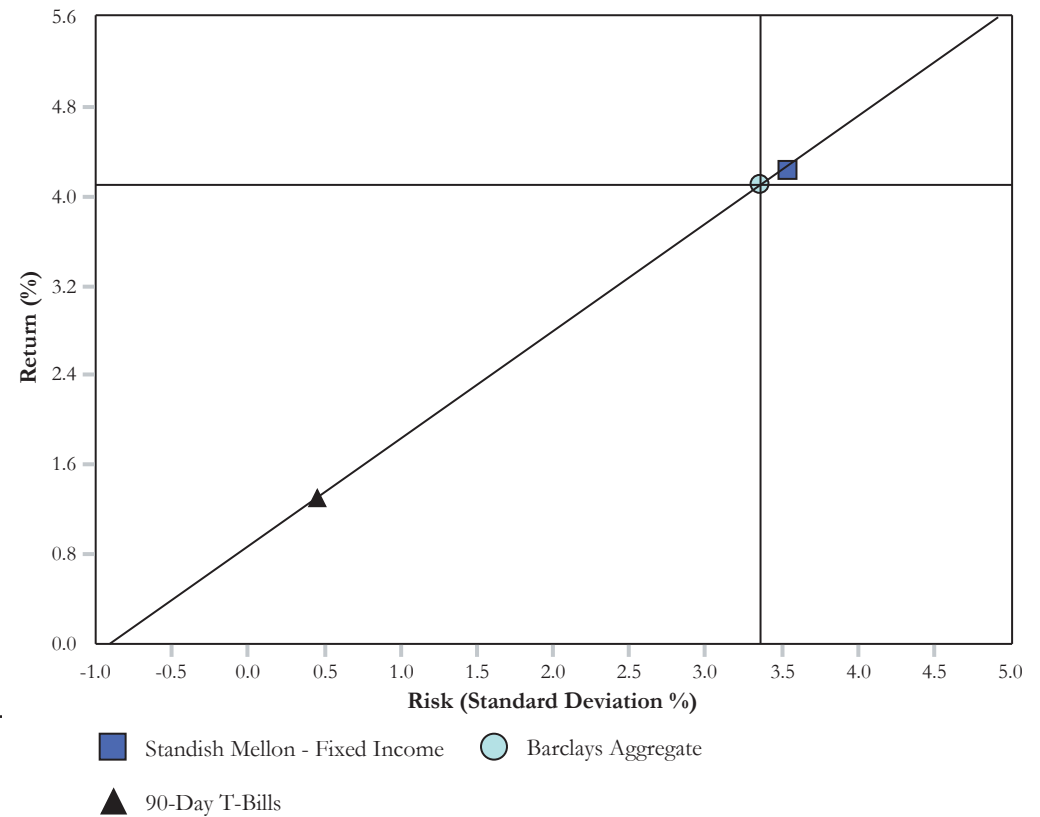
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 05/01/2003
Standish Mellon - Fixed Income								
Beginning Market Value	27,852	27,852	25,710	23,622	25,413	24,445	20,001	16,742
Net Contributions	-245	-245	-200	1,093	-1,279	-1,146	-950	-2,289
Fees/Expenses	-15	-15	-60	-196	-348	-531	-728	-1,080
Income	217	217	831	2,339	3,581	4,779	7,279	12,052
Gain/Loss	-167	-167	1,361	784	275	96	2,040	2,217
Ending Market Value	27,642	27,642	27,642	27,642	27,642	27,642	27,642	27,642

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Standish Mellon - Fixed Income	4.22	3.55	0.99	-5.61	98.70	92.44	0.16	0.81	0.88	05/01/2003
Barclays Aggregate	4.11	3.36	1.00	-3.83	100.00	100.00	0.00	0.83	1.00	05/01/2003

### Manager Risk & Return



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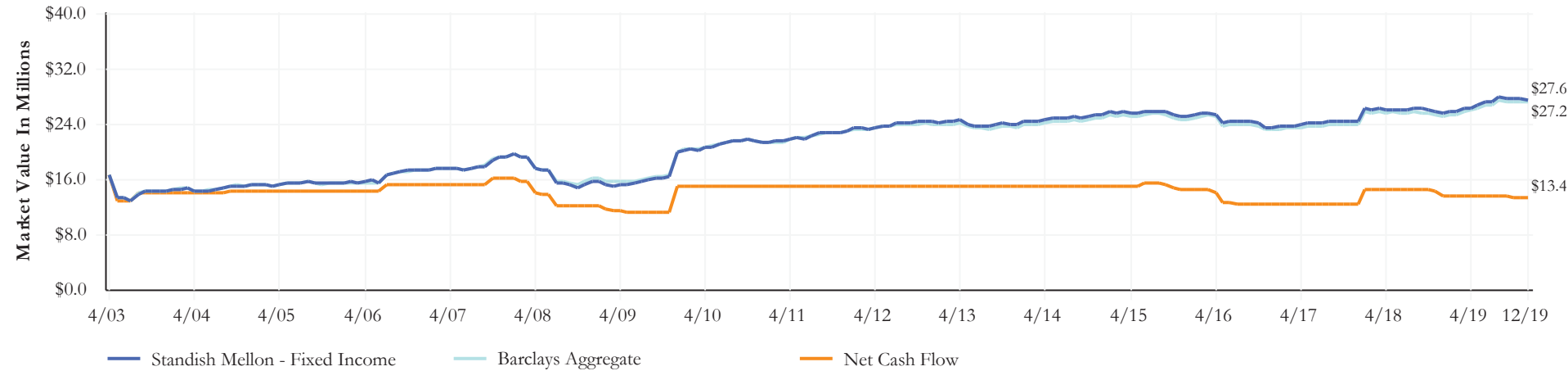


# Pompano Beach Police & Firefighters' Retirement System

## Standish Mellon - Fixed Income - Change in Assets & Distribution of Returns

as of December 31, 2019

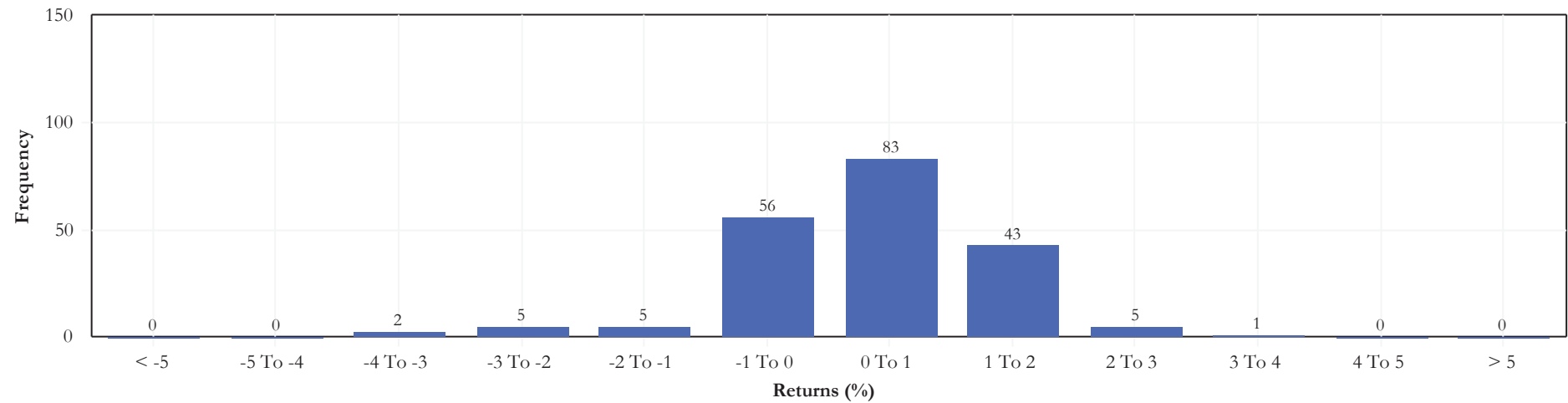
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Standish Mellon - Fixed Income	27,852,265.56	-	16,595,298.30	-16,840,052.65	-15,245.65	-	49,896.61	27,642,162.17

### Distribution of Returns

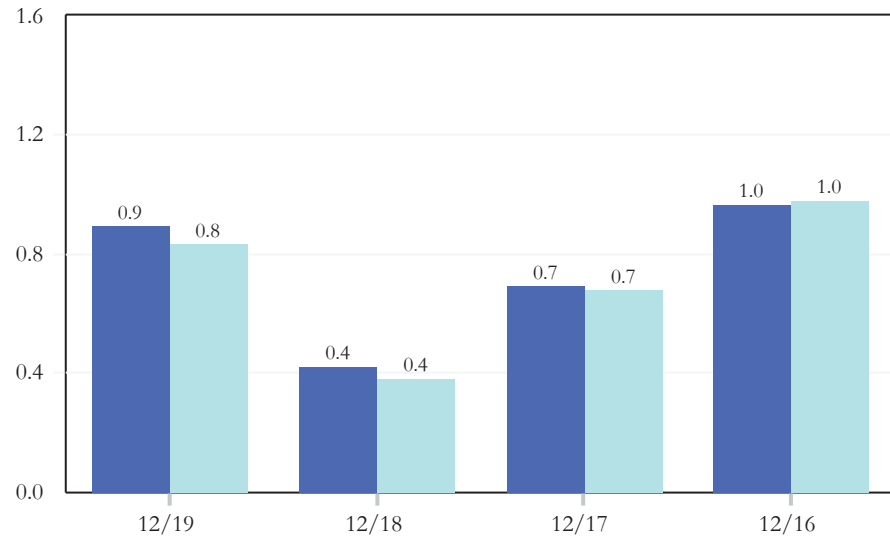


# Pompano Beach Police & Firefighters' Retirement System

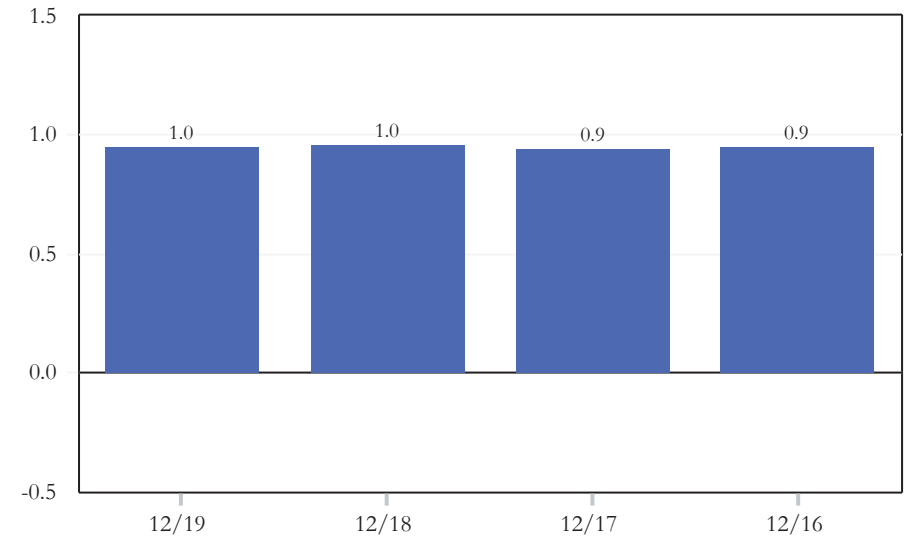
## Standish Mellon - Fixed Income - Rolling Three Year MPT Statistics

as of December 31, 2019

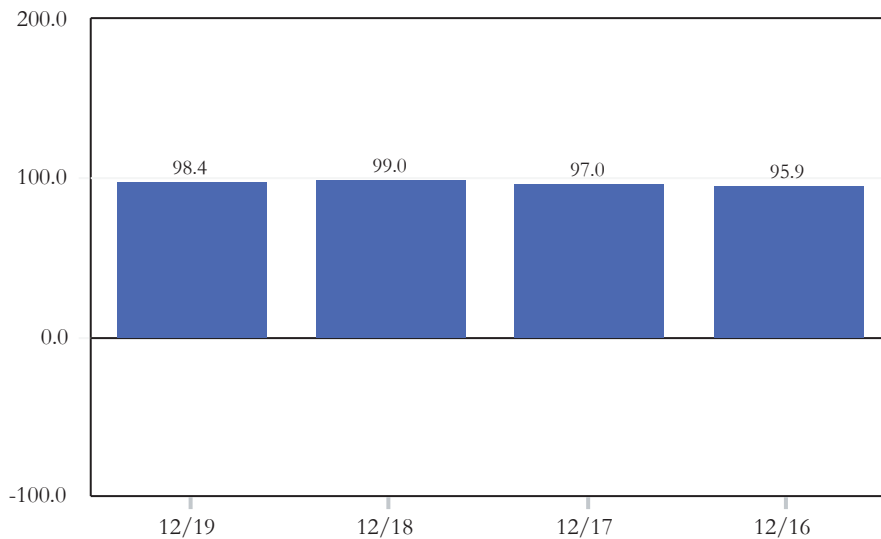
**Sharpe Ratio**



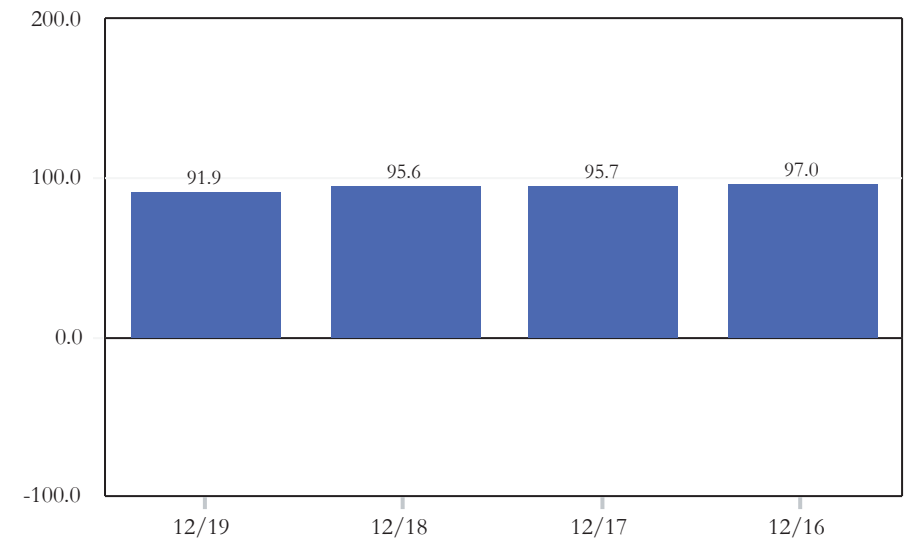
**Beta**



**Up Market Capture**



**Down Market Capture**



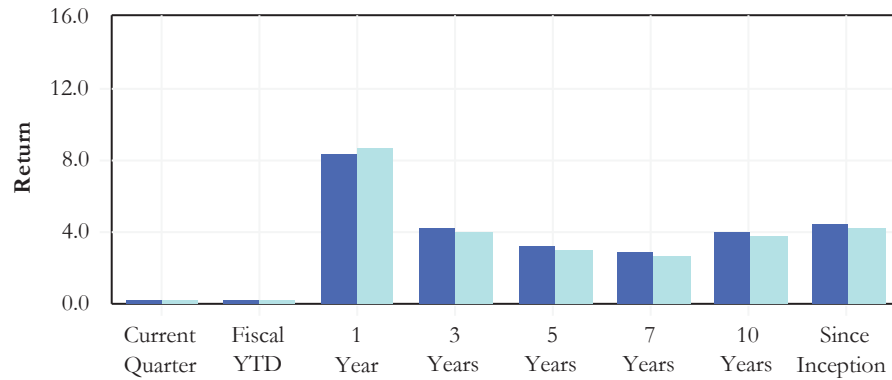
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# Pompano Beach Police & Firefighters' Retirement System

## Incore/Victory (Munder) - Fixed Income - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 10/01/2012
Incore/Victory	0.20	0.20	8.38	4.26	3.19	2.94	4.01	4.49
Barclays Aggregate	0.18	0.18	8.72	4.03	3.05	2.72	3.75	4.19
Differences	0.02	0.02	-0.34	0.23	0.14	0.22	0.26	0.30

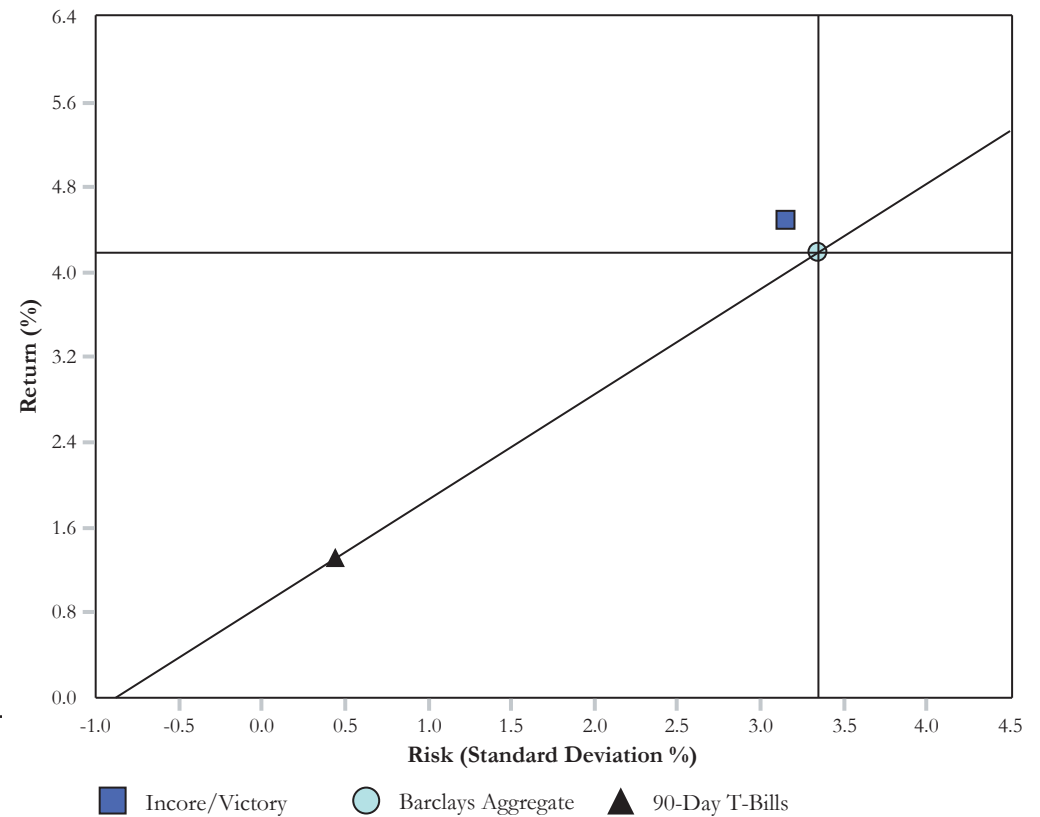
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 10/01/2012
Incore/Victory								
Beginning Market Value	27,898	27,898	25,794	23,754	27,506	23,589	20,017	17,331
Net Contributions	-266	-266	-227	817	-3,694	-997	-1,418	-4,748
Fees/Expenses	-14	-14	-53	-154	-218	-260	-435	-748
Income	181	181	844	2,551	4,245	5,899	8,388	14,859
Gain/Loss	-123	-123	1,317	707	-165	-556	1,122	979
Ending Market Value	27,675	27,675	27,675	27,675	27,675	27,675	27,675	27,675

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Incore/Victory	4.49	3.15	0.92	-3.46	98.36	85.18	0.63	0.99	0.95	10/01/2002
Barclays Aggregate	4.19	3.35	1.00	-3.83	100.00	100.00	0.00	0.85	1.00	10/01/2002

### Manager Risk & Return



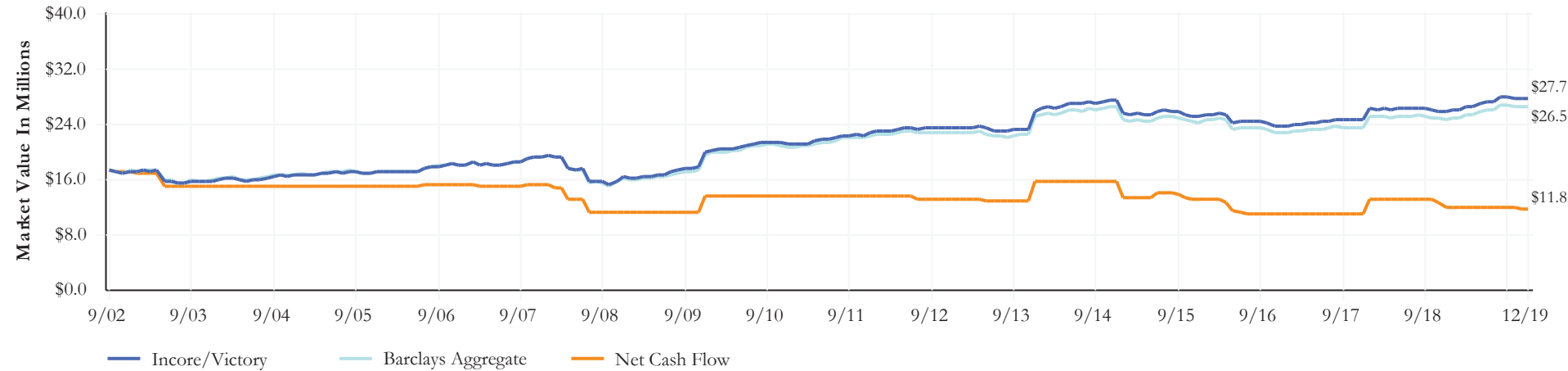
The prices, quotes, or statistics contained herein have been obtained from sources believed to be reliable, however, its accuracy cannot be guaranteed. Past performance is not a guarantee of future results.

# Pompano Beach Police & Firefighters' Retirement System

## Incore/Victory (Munder) - Fixed Income - Change in Assets & Distribution of Returns

as of December 31, 2019

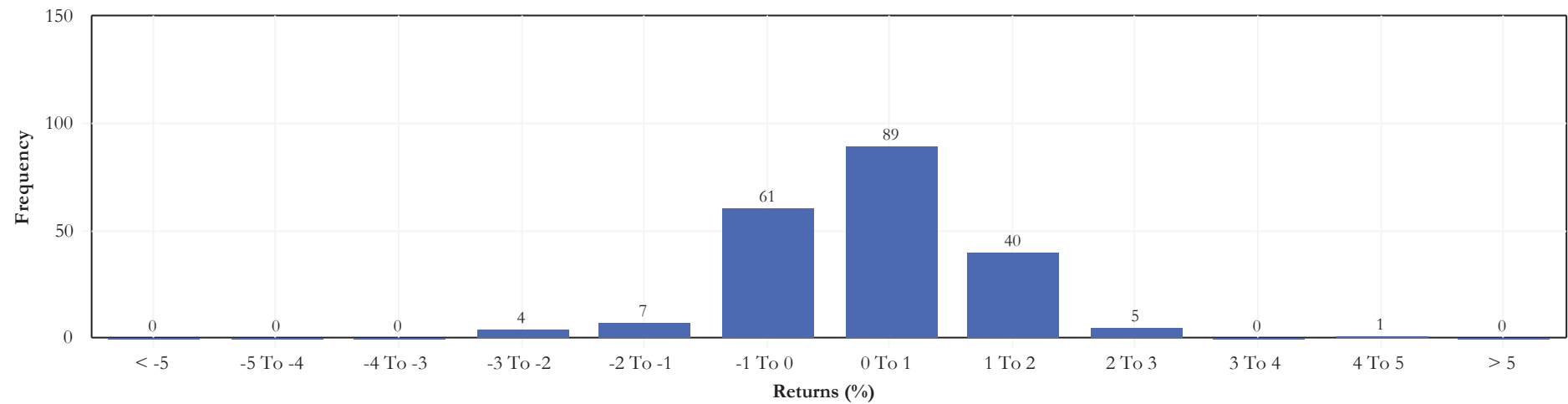
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Incore/Victory	27,897,577.30	-	9,934,932.06	-10,201,043.06	-13,889.00	-	57,082.18	27,674,659.48

### Distribution of Returns

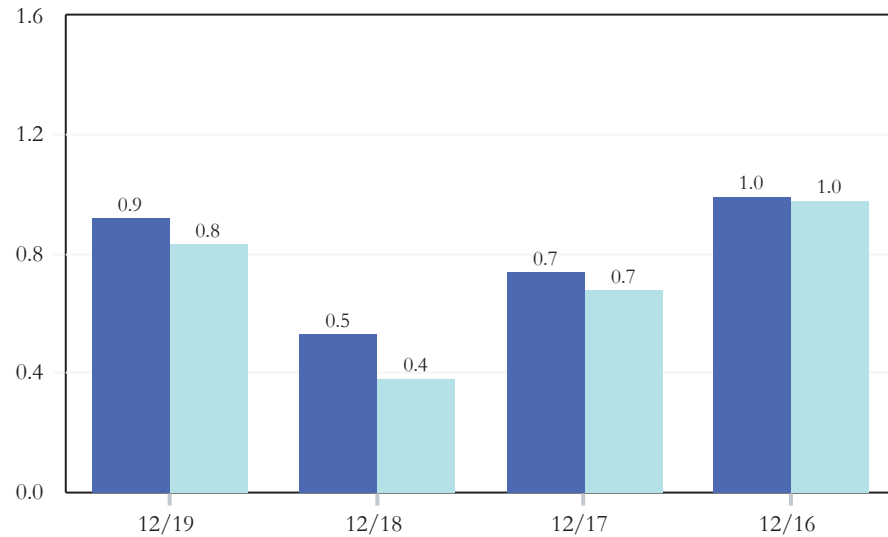


# Pompano Beach Police & Firefighters' Retirement System

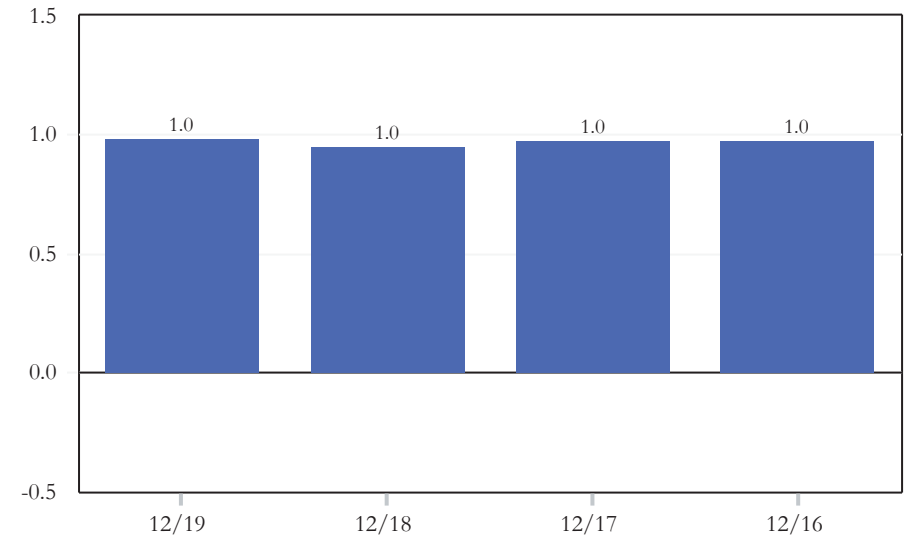
## Incore/Victory - Rolling Three Year MPT Statistics

as of December 31, 2019

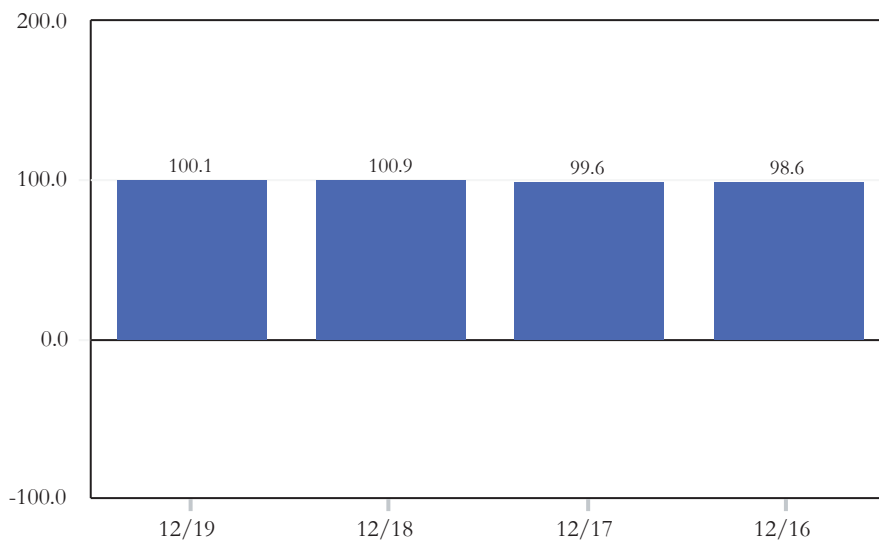
Sharpe Ratio



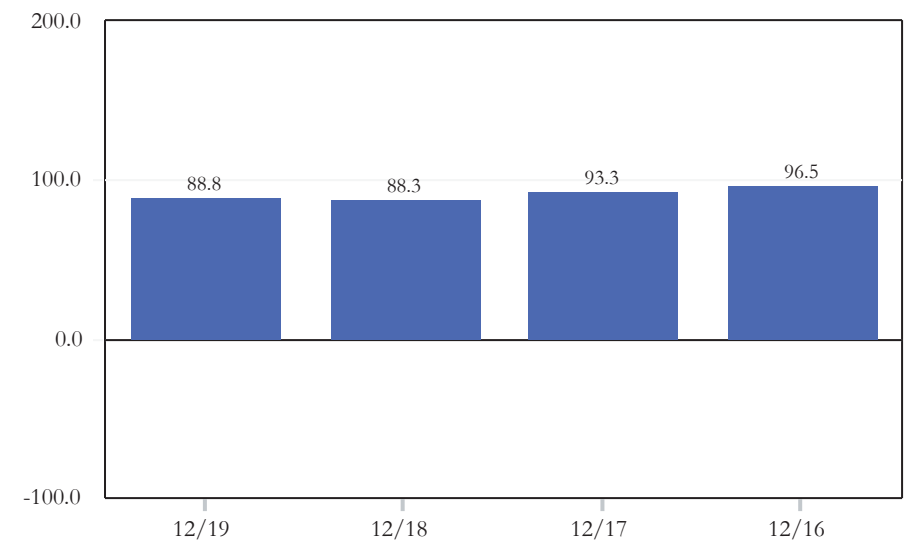
Beta



Up Market Capture



Down Market Capture



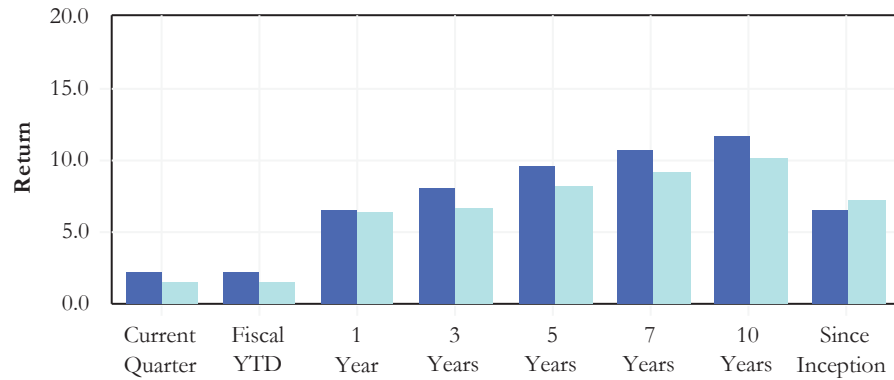
The prices, quotes, or statistics contained herein have been obtained from sources believed to be reliable, however, its accuracy cannot be guaranteed. Past performance is not a guarantee of future results.

# Pompano Beach Police & Firefighters' Retirement System

## Invesco - Private Real Estate - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 08/01/2006
Invesco - Private Real Estate	2.26	2.26	6.52	8.08	9.62	10.68	11.66	6.54
NCREIF Property Idx	1.55	1.55	6.42	6.70	8.25	9.14	10.18	7.29
Differences	0.71	0.71	0.10	1.38	1.37	1.54	1.48	-0.75

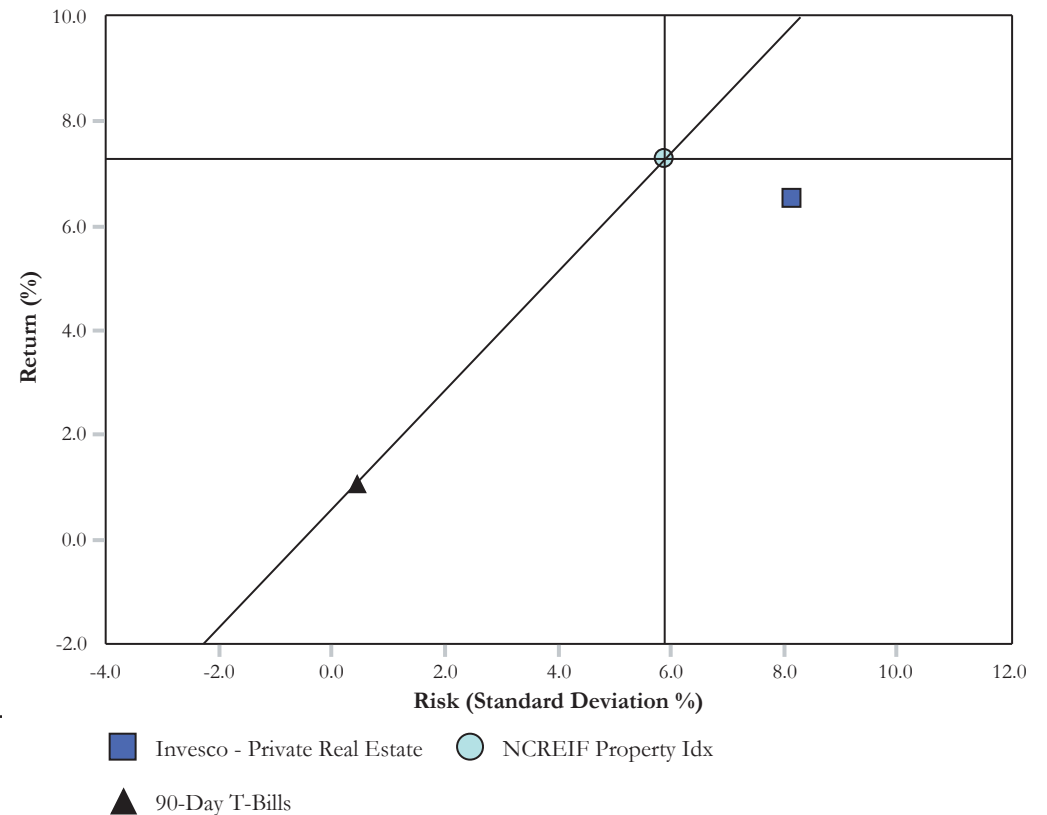
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 08/01/2006
Invesco - Private Real Estate								
Beginning Market Value	17,936	17,936	17,360	14,978	12,210	9,710	2,795	4,000
Net Contributions	-	-	-	-	-	-	4,953	4,655
Fees/Expenses	-46	-46	-189	-548	-851	-1,089	-1,276	-1,424
Income	-	-	-	124	124	124	124	124
Gain/Loss	406	406	1,124	3,743	6,814	9,551	11,700	10,941
Ending Market Value	18,296	18,296	18,296	18,296	18,296	18,296	18,296	18,296

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Invesco - Private Real Estate	6.54	8.15	1.25	-37.83	108.60	167.23	-2.33	0.69	0.82	08/01/2006
NCREIF Property Idx	7.29	5.90	1.00	-23.87	100.00	100.00	0.00	1.05	1.00	08/01/2006

### Manager Risk & Return



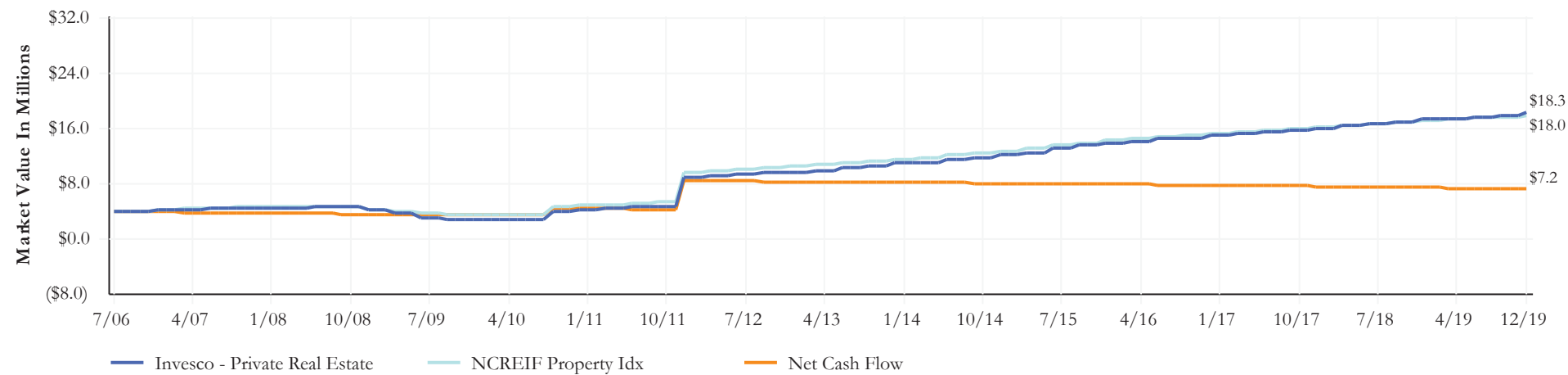
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# Pompano Beach Police & Firefighters' Retirement System

## Invesco - Private Real Estate - Change in Assets & Distribution of Returns

as of December 31, 2019

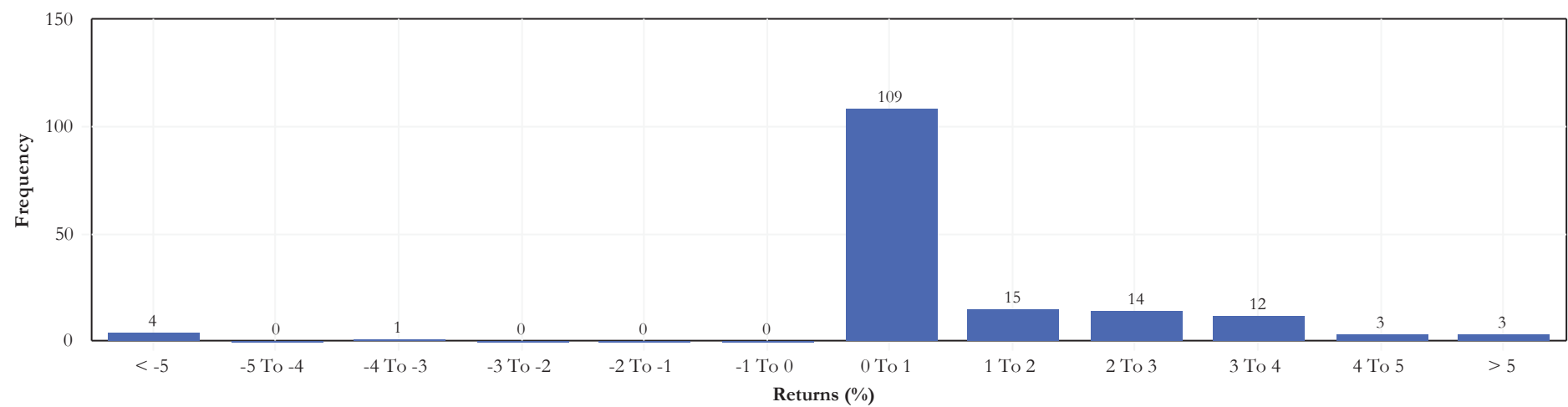
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Invesco - Private Real Estate	17,936,286.00	-	-	-	-46,153.60	-	405,502.60	18,295,635.00

### Distribution of Returns

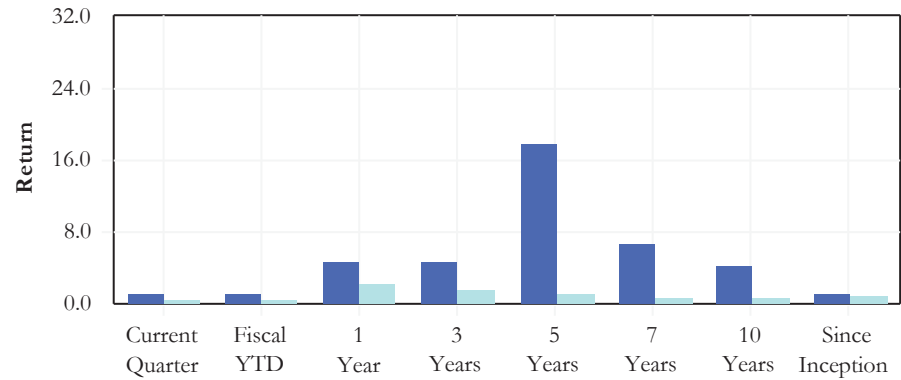


Pompano Beach Police & Firefighters' Retirement System

Office Building - Private Real Estate - Executive Summary

as of December 31, 2019

Manager Performance Chart



Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 04/01/2007
Office Building - Private Real Estate	1.07	1.07	4.71	4.59	17.82	6.73	4.13	1.07
90-Day T-Bills	0.46	0.46	2.25	1.65	1.05	0.76	0.56	0.86
Differences	0.61	0.61	2.46	2.94	16.77	5.97	3.57	0.21

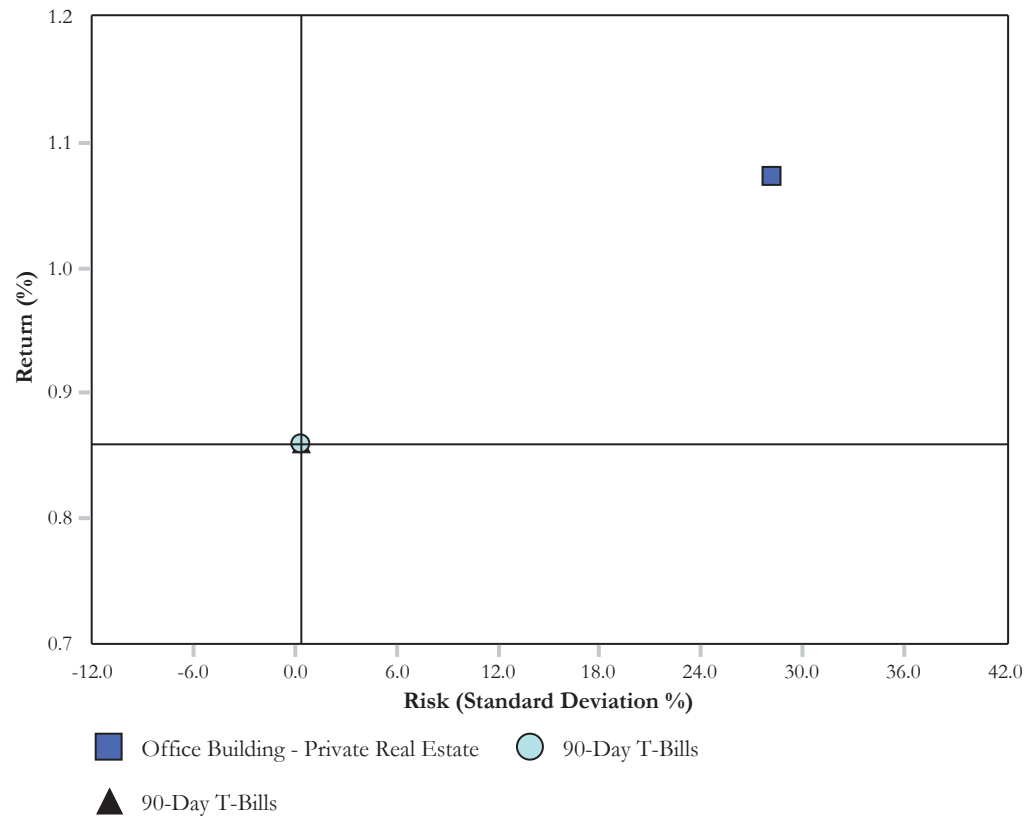
Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 04/01/2007
Office Building - Private Real Estate								
Beginning Market Value	3,000	3,000	3,000	3,000	2,230	3,000	3,000	4,417
Net Contributions	-32	-32	-138	-404	-1,763	-1,606	-1,450	-1,983
Fees/Expenses	-	-	-	-	-	-	-	-33
Income	32	32	138	404	659	501	346	895
Gain/Loss	-	-	-	-	1,874	1,104	1,104	-296
Ending Market Value	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000

Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Office Building - Private Real Estate	1.07	28.20	0.03	-63.09	511.51	N/A	4.45	0.13	0.00	04/01/2007
90-Day T-Bills	0.86	0.36	1.00	0.00	100.00	N/A	0.00	N/A	1.00	04/01/2007

Manager Risk & Return



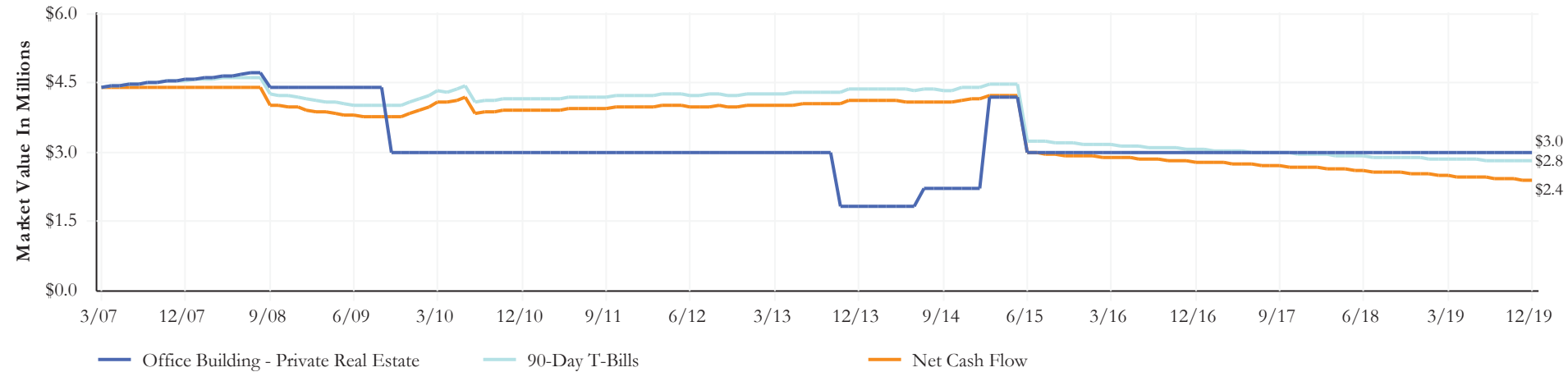


# Pompano Beach Police & Firefighters' Retirement System

## Office Building - Private Real Estate - Change in Assets & Distribution of Returns

as of December 31, 2019

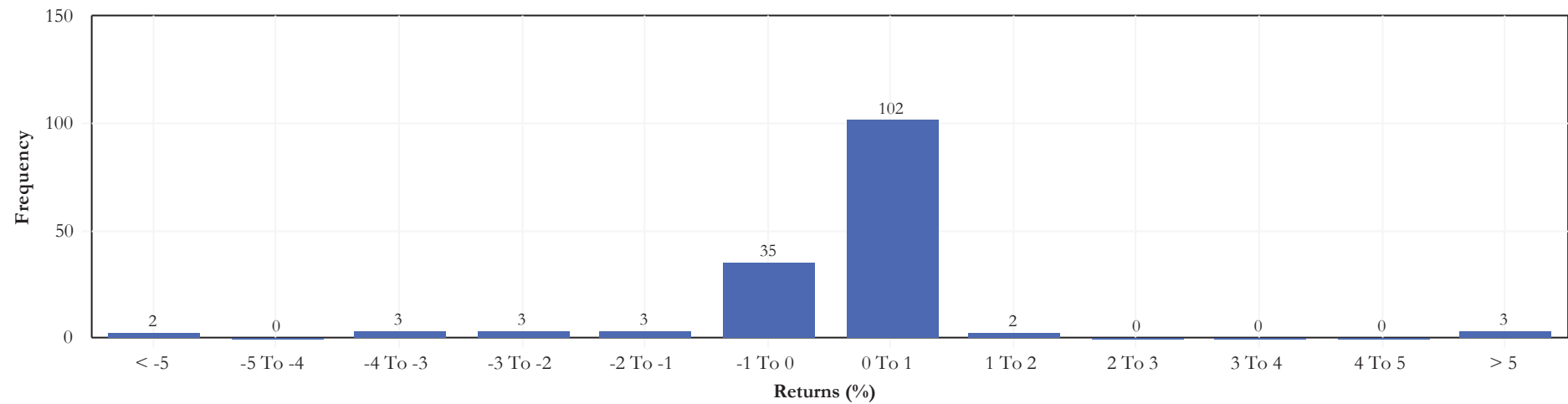
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Office Building - Private Real Estate	3,000,000.00	-	31,875.00	-63,750.00	-	-	31,875.00	3,000,000.00

### Distribution of Returns

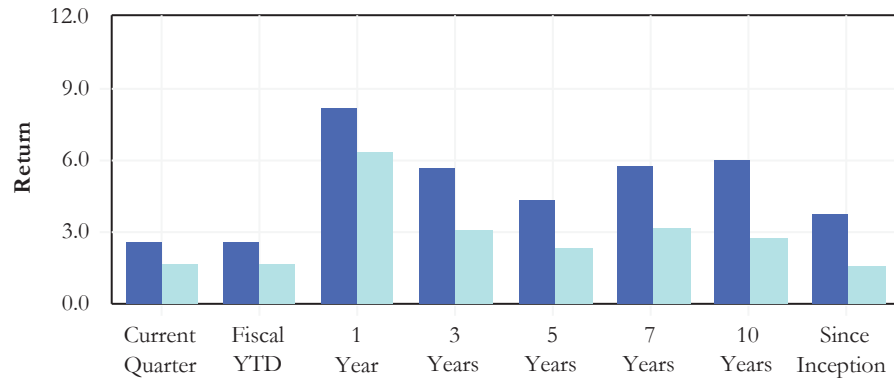


# Pompano Beach Police & Firefighters' Retirement System

## Ironwood - Fund of Hedge Funds - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 08/01/2008
Ironwood - FOHF	2.56	2.56	8.15	5.65	4.29	5.74	6.00	3.75
HFRI FOF Conservative	1.67	1.67	6.34	3.09	2.30	3.17	2.77	1.54
Differences	0.89	0.89	1.81	2.56	1.99	2.57	3.23	2.21

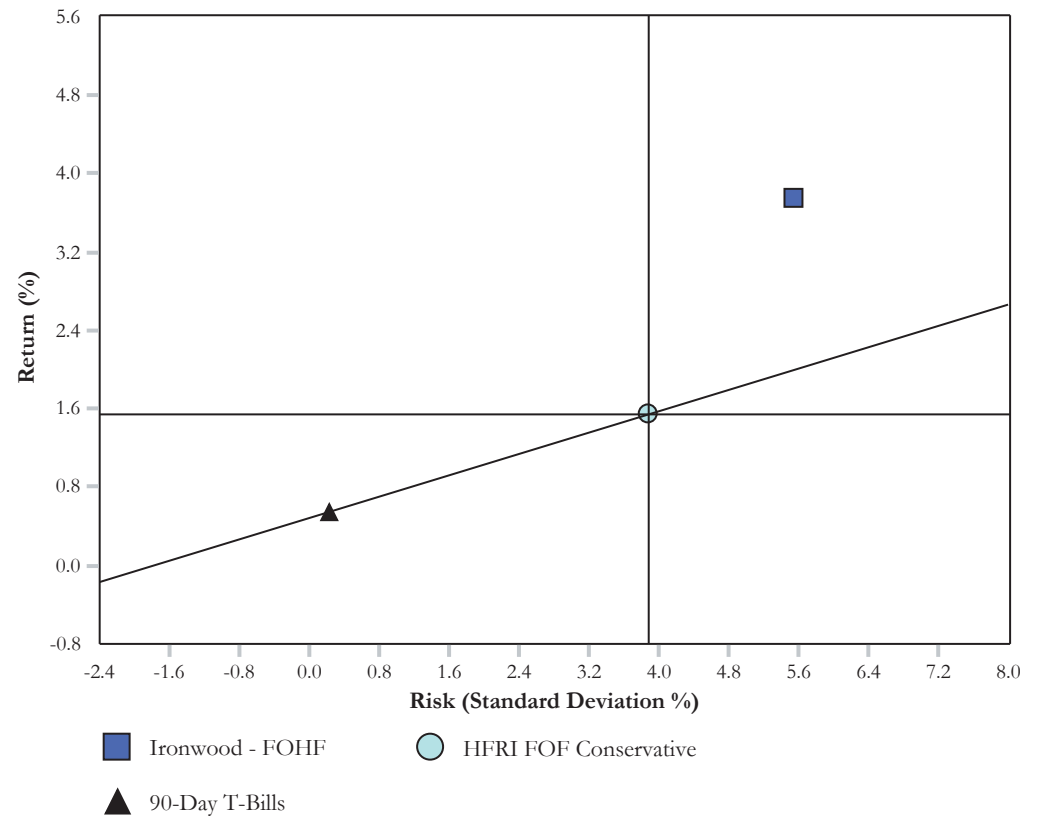
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 08/01/2008
Ironwood - FOHF								
Beginning Market Value	12,146	12,146	11,519	10,565	10,097	5,668	4,679	5,500
Net Contributions	-	-	-	-	-	3,248	3,248	3,248
Fees/Expenses	-	-	-	-	-	-	-	-
Income	-	-	-	-	-	-	-	-
Gain/Loss	312	312	939	1,893	2,361	3,541	4,531	3,710
Ending Market Value	12,458	12,458	12,458	12,458	12,458	12,458	12,458	12,458

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Ironwood - FOHF	3.75	5.55	1.34	-27.28	142.74	102.02	1.70	0.59	0.88	08/01/2008
HFRI FOF Conservative	1.54	3.88	1.00	-17.35	100.00	100.00	0.00	0.27	1.00	08/01/2008

### Manager Risk & Return



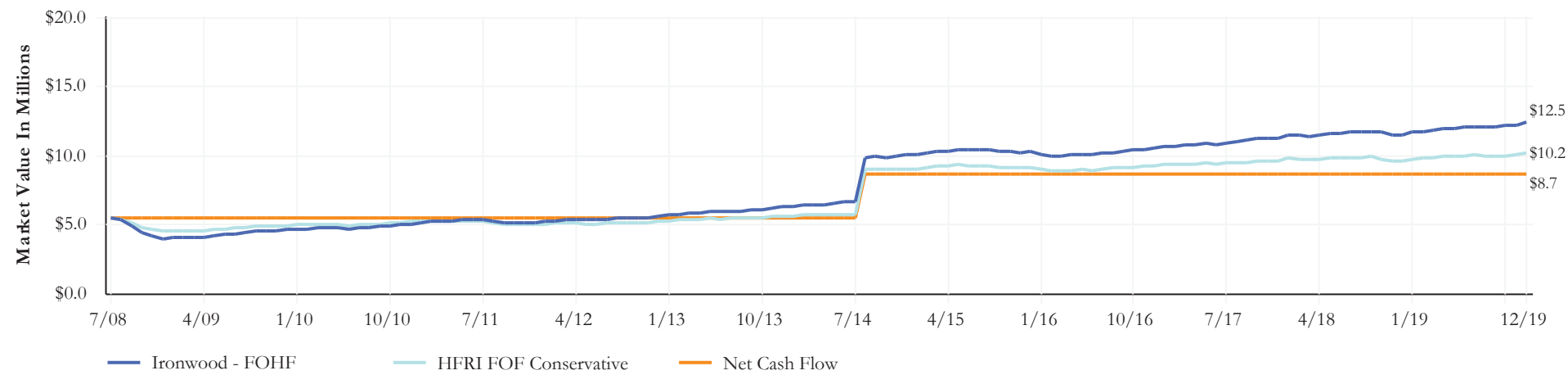
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Pompano Beach Police & Firefighters' Retirement System

Ironwood - Fund of Hedge Funds - Change in Assets & Distribution of Returns

as of December 31, 2019

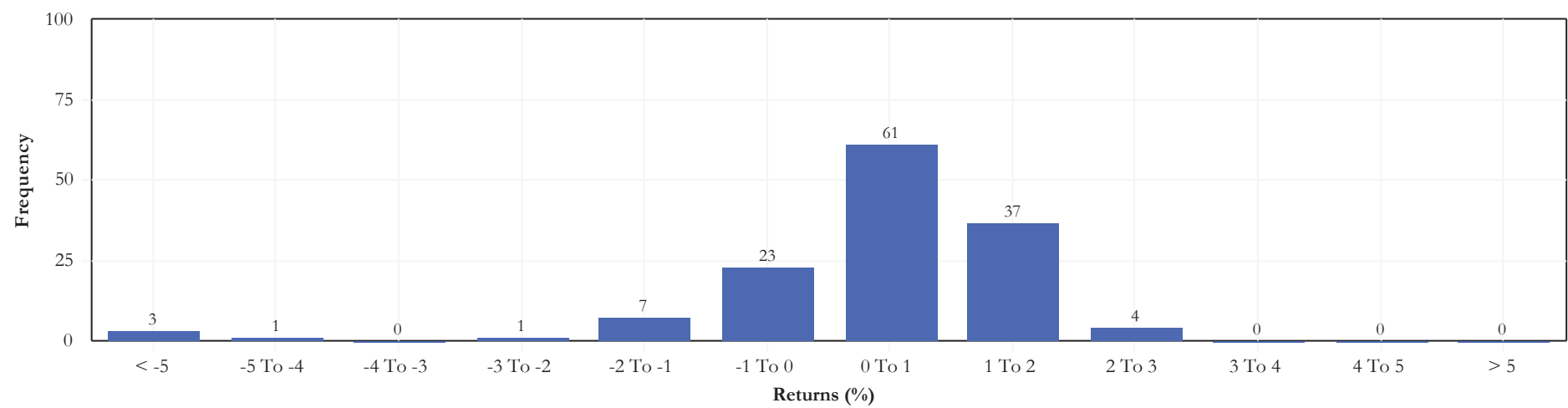
Historic Change in Assets



Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Ironwood - FOHF	12,146,092.86	-	-	-	-	-	311,557.21	12,457,650.07

Distribution of Returns

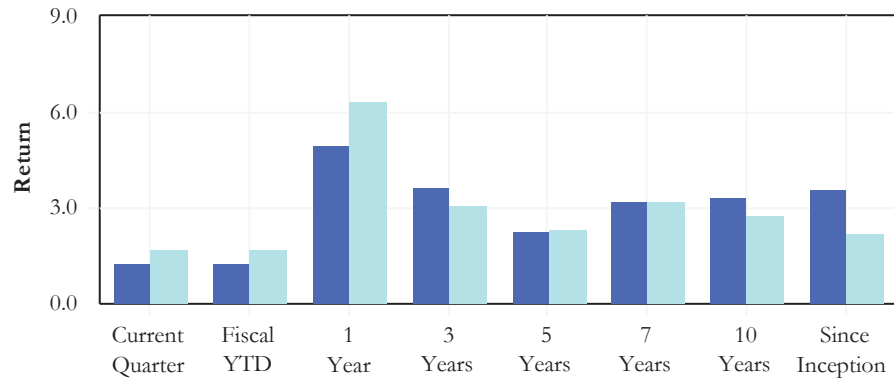


# Pompano Beach Police & Firefighters' Retirement System

## Pine Grove - Fund of Hedge Funds - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 10/01/2008
Pine Grove - FOHF	1.27	1.27	4.91	3.65	2.22	3.22	3.31	3.56
HFRI FOF Conservative	1.67	1.67	6.34	3.09	2.30	3.17	2.77	2.19
Differences	-0.40	-0.40	-1.43	0.56	-0.08	0.05	0.54	1.37

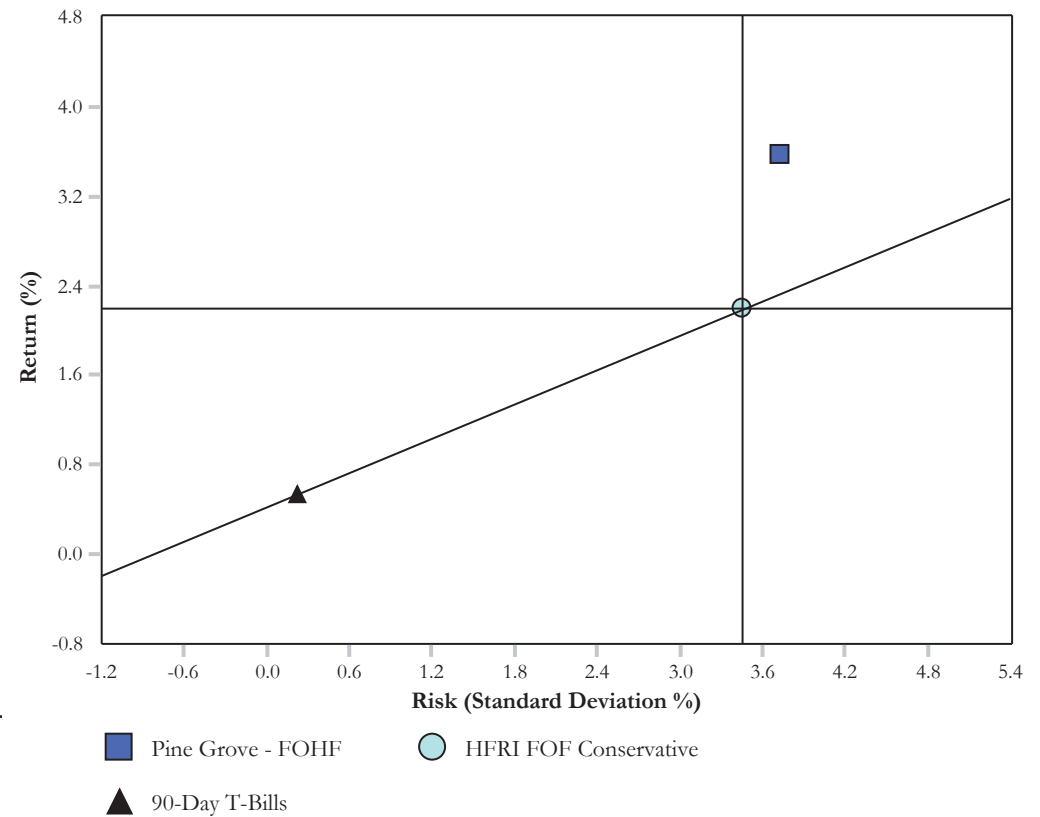
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years	Inception 10/01/2008
Pine Grove - FOHF								
Beginning Market Value	10,683	10,683	10,313	9,715	9,694	6,533	5,889	5,500
Net Contributions	-	-	-	-	-	2,439	2,439	2,439
Fees/Expenses	-	-	-	-	-	-	-	-
Income	-	-	-	-	-	-	-	-
Gain/Loss	136	136	506	1,104	1,125	1,848	2,491	2,880
Ending Market Value	10,819	10,819	10,819	10,819	10,819	10,819	10,819	10,819

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Pine Grove - FOHF	3.56	3.74	0.97	-10.80	110.51	76.50	1.43	0.81	0.80	10/01/2008
HFRI FOF Conservative	2.19	3.45	1.00	-11.47	100.00	100.00	0.00	0.49	1.00	10/01/2008

### Manager Risk & Return



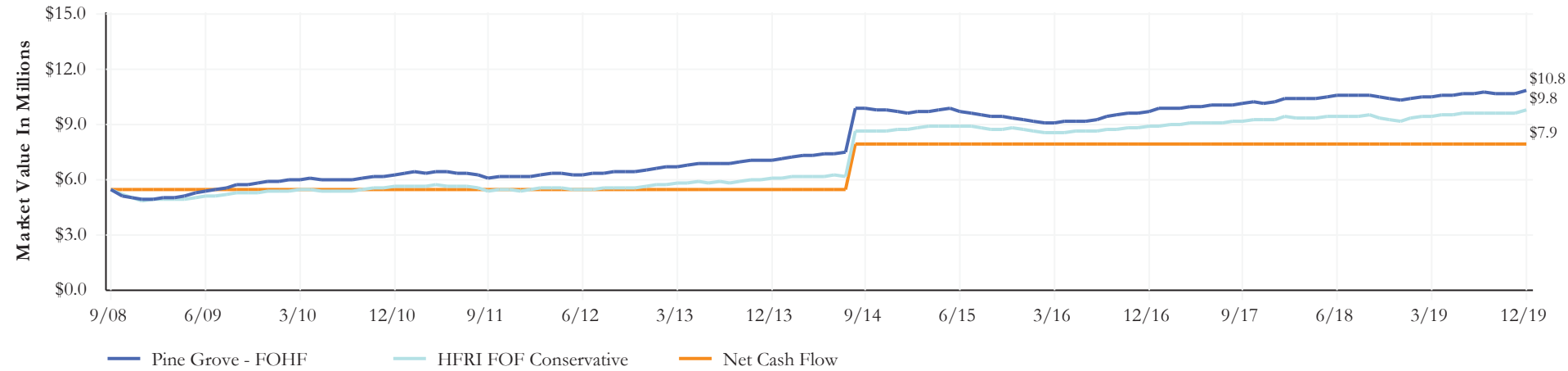
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Pompano Beach Police & Firefighters' Retirement System

Pine Grove - Fund of Hedge Funds - Change in Assets & Distribution of Returns

as of December 31, 2019

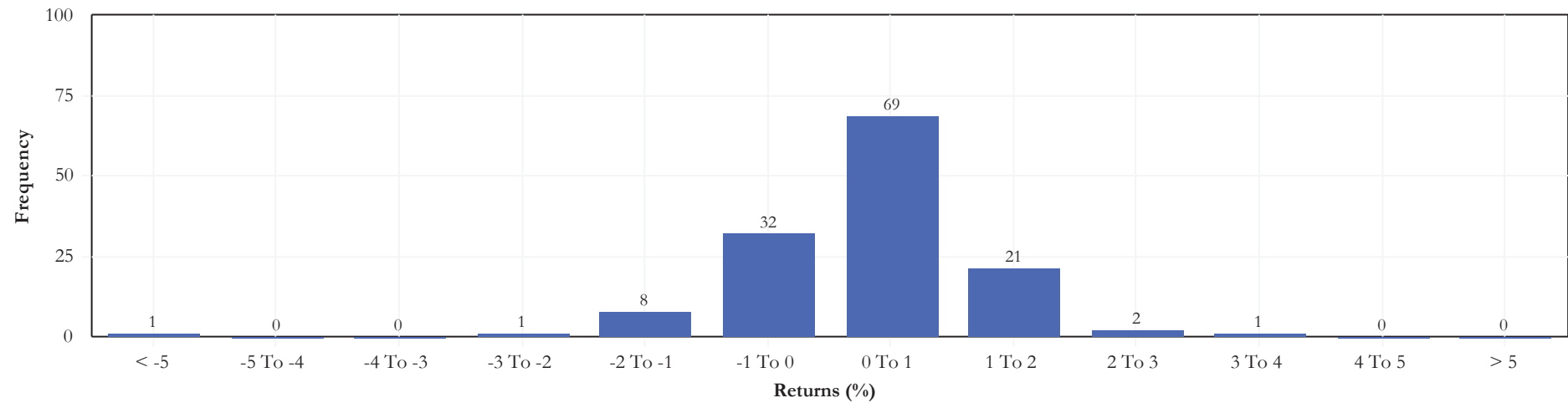
Historic Change in Assets



Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Pine Grove - FOHF	10,683,363.89	-	-	-	-	-	135,613.32	10,818,977.21

Distribution of Returns

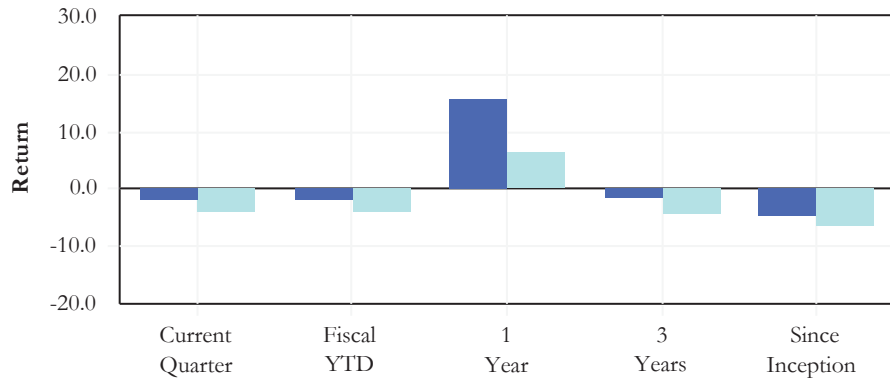


# Pompano Beach Police & Firefighters' Retirement System

## Center Coast - Master Limited Partnerships - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	Inception 02/01/2015
Center Coast Capital - MLPs	-2.07	-2.07	15.62	-1.64	-4.88
Alerian MLP Index	-4.08	-4.08	6.56	-4.45	-6.53
Differences	2.01	2.01	9.06	2.81	1.65

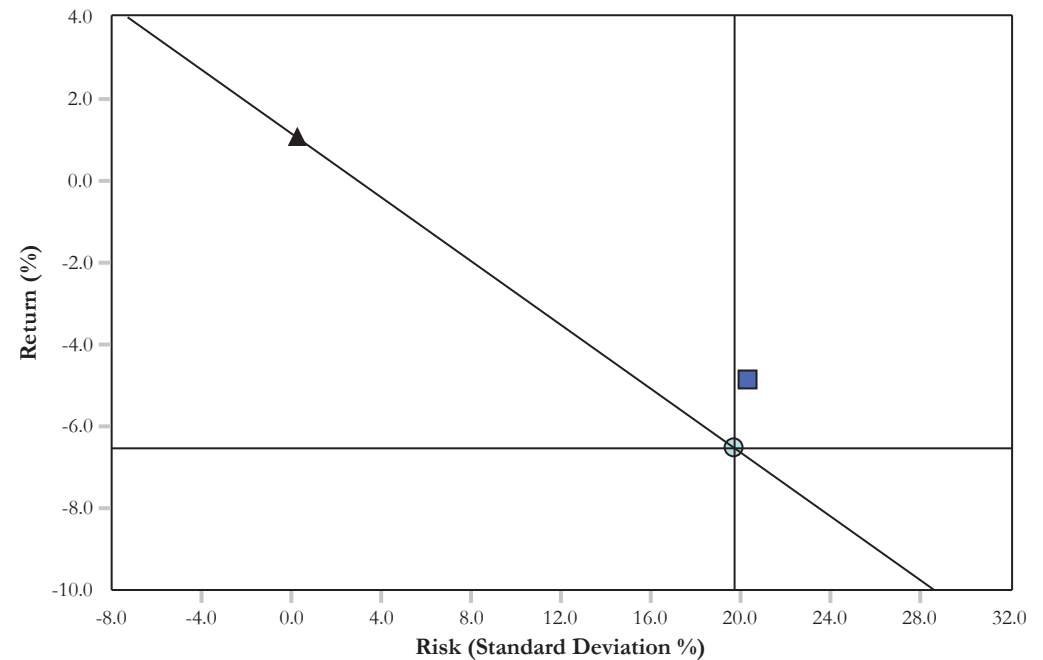
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	Inception 02/01/2015
Center Coast Capital - MLPs					
Beginning Market Value	11,406	11,406	9,661	11,724	11,073
Net Contributions	24	24	65	191	2,789
Fees/Expenses	-14	-14	-55	-168	-241
Income	192	192	769	2,348	3,532
Gain/Loss	-428	-428	741	-2,915	-5,973
Ending Market Value	11,180	11,180	11,180	11,180	11,180

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Center Coast Capital - Master Limited Partnerships	-4.88	20.37	1.01	-41.29	103.80	96.83	1.93	-0.19	0.95	02/01/2015
Alerian MLP Index	-6.53	19.73	1.00	-40.74	100.00	100.00	0.00	-0.30	1.00	02/01/2015

### Manager Risk & Return



- Center Coast Capital - Master Limited Partnerships
- Alerian MLP Index
- 90-Day T-Bills

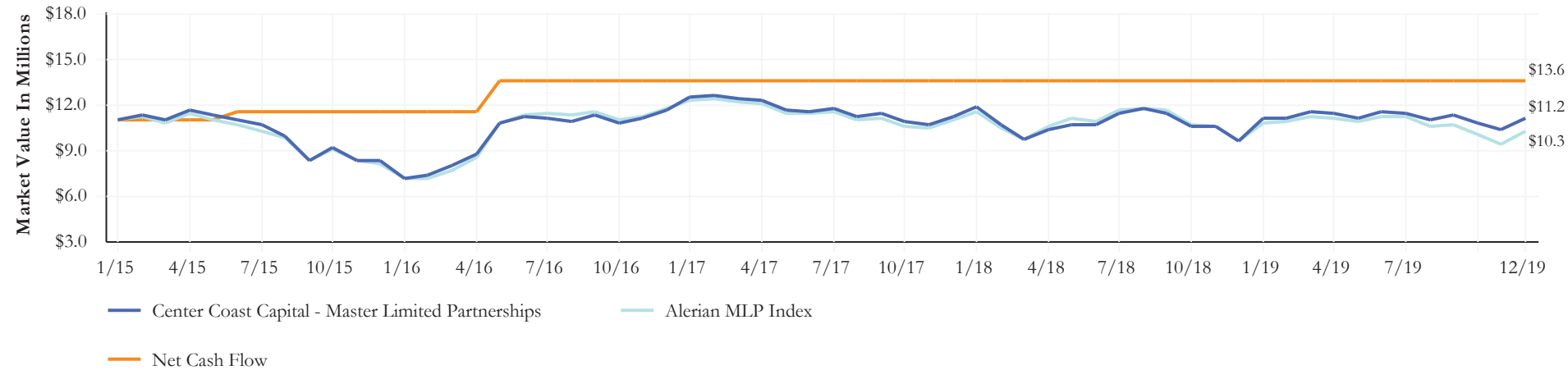
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# Pompano Beach Police & Firefighters' Retirement System

## Center Coast - Master Limited Partnerships - Change in Assets & Distribution of Returns

as of December 31, 2019

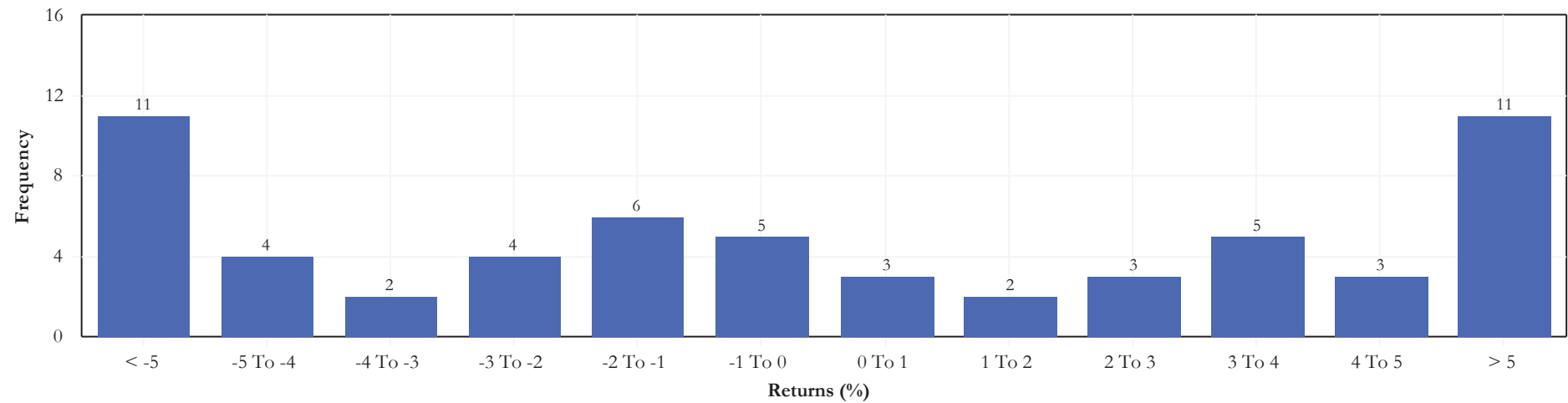
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Center Coast Capital - Master Limited Partnerships	11,406,137.61	-	2,193,587.29	-2,169,685.80	-14,374.86	-	-235,692.19	11,179,972.05

### Distribution of Returns

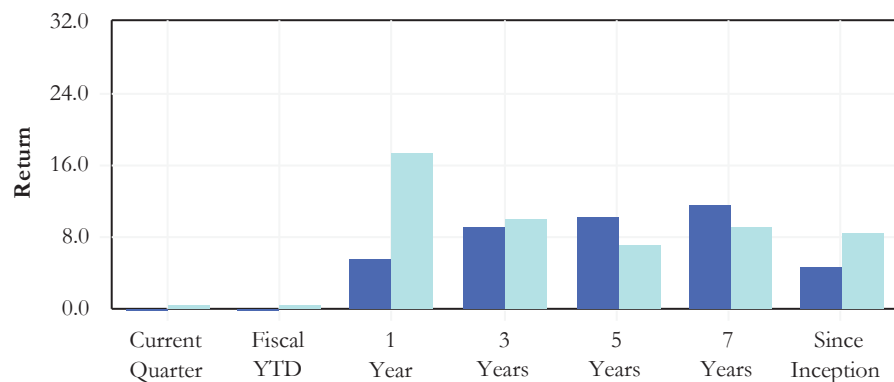


# Pompano Beach Police & Firefighters' Retirement System

## Neuberger Berman - Private Equity #1 - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	Inception 04/01/2010
Neuberger Berman - Private Equity #1	0.00	0.00	5.57	9.02	10.14	11.59	4.69
MSCI ACWI / 90-Day T-Bill (Sept)	0.46	0.46	17.25	9.99	7.22	9.03	8.35
Differences	-0.46	-0.46	-11.68	-0.97	2.92	2.56	-3.66

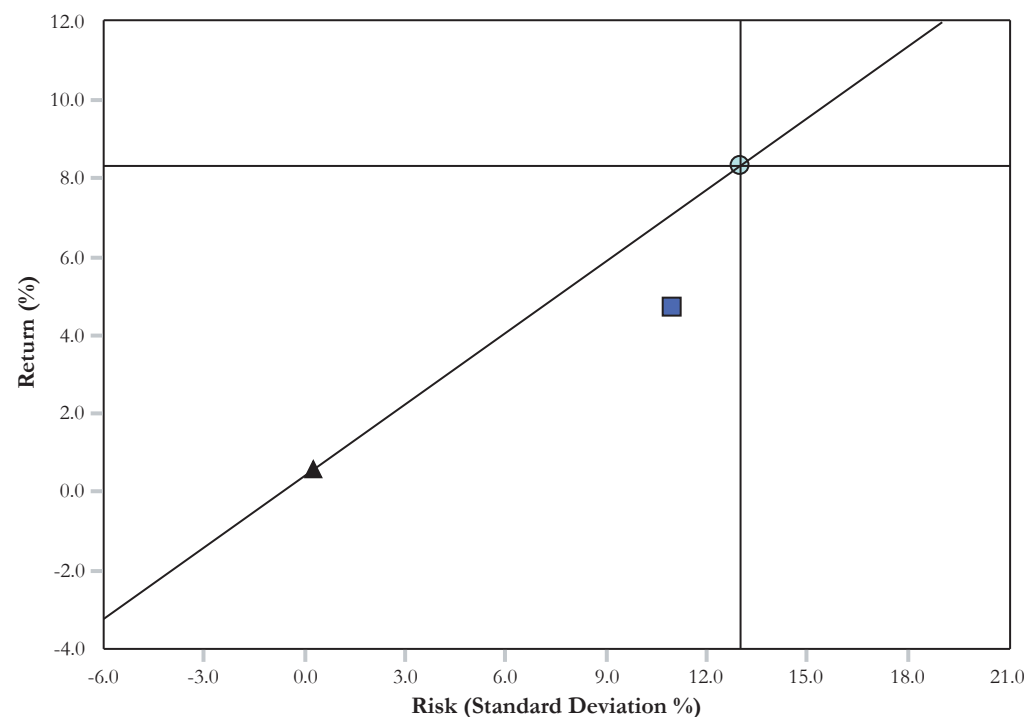
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	Inception 04/01/2010
Neuberger Berman - Private Equity #1							
Beginning Market Value	3,469	3,469	3,431	3,752	3,710	2,085	62
Net Contributions	-	-	-150	-1,225	-2,038	-1,207	832
Fees/Expenses	-	-	-	-	-	-	-
Income	-	-	-	-	-	-	-
Gain/Loss	-	-	188	942	1,796	2,590	2,575
Ending Market Value	3,469	3,469	3,469	3,469	3,469	3,469	3,469

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Neuberger Berman - Private Equity #1	4.69	10.98	-0.07	-31.88	18.28	-10.13	6.07	0.43	0.01	04/01/2010
MSCI ACWI / 90-Day T-Bill (Sept)	8.35	13.02	1.00	-20.27	100.00	100.00	0.00	0.64	1.00	04/01/2010

### Manager Risk & Return



- Neuberger Berman - Private Equity #1
- MSCI ACWI / 90-Day T-Bill (Sept)
- 90-Day T-Bills

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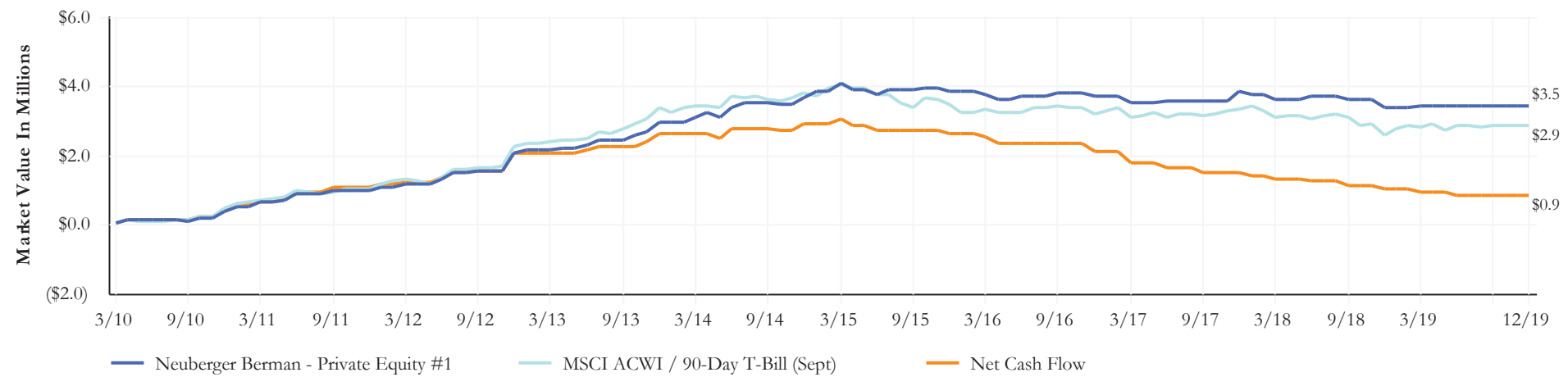


# Pompano Beach Police & Firefighters' Retirement System

## Neuberger Berman - Private Equity #1 - Change in Assets & Distribution of Returns

as of December 31, 2019

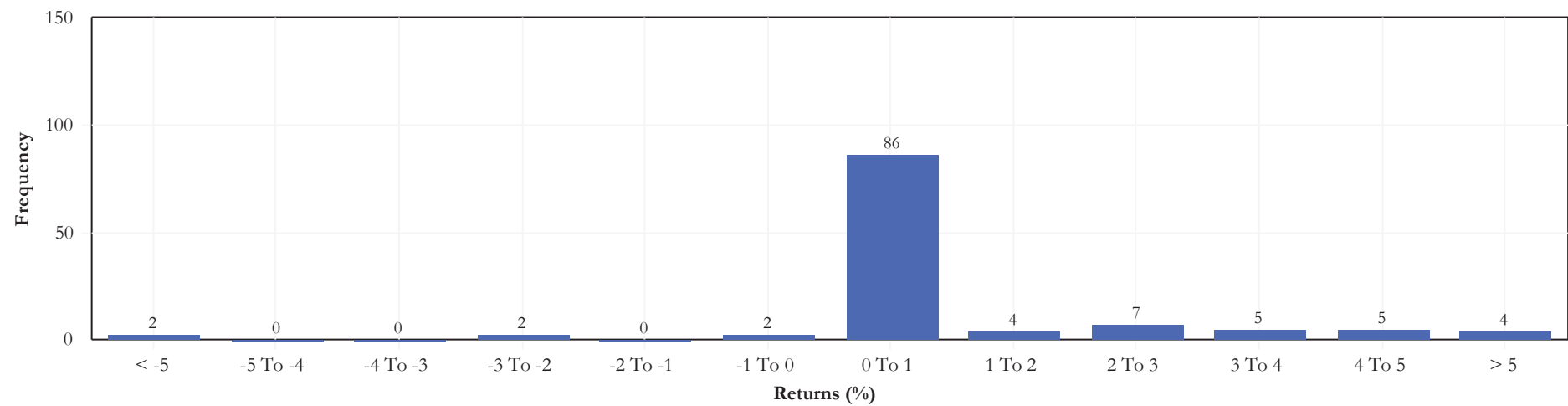
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Neuberger Berman - Private Equity #1	3,468,628.00	-	-	-	-	-	-	3,468,628.00

### Distribution of Returns

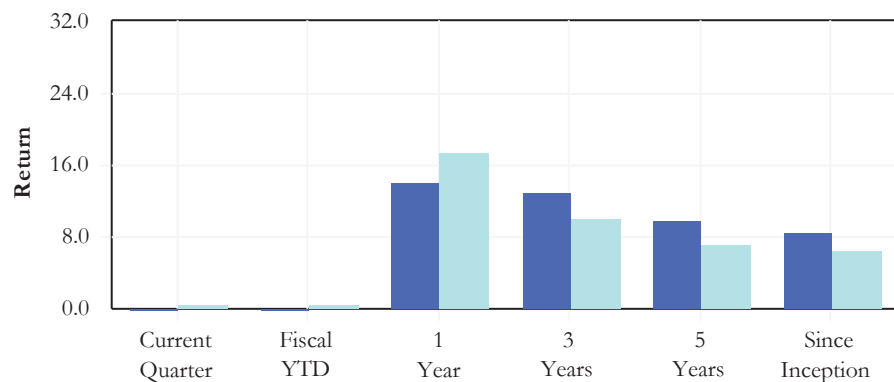


# Pompano Beach Police & Firefighters' Retirement System

## Neuberger Berman - Private Equity #2 - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	Inception 08/01/2014
Neuberger Berman - Private Equity #2	0.00	0.00	13.93	12.81	9.83	8.53
MSCI ACWI / 90-Day T-Bill (Sept)	0.46	0.46	17.25	9.99	7.22	6.55
Differences	-0.46	-0.46	-3.32	2.82	2.61	1.98

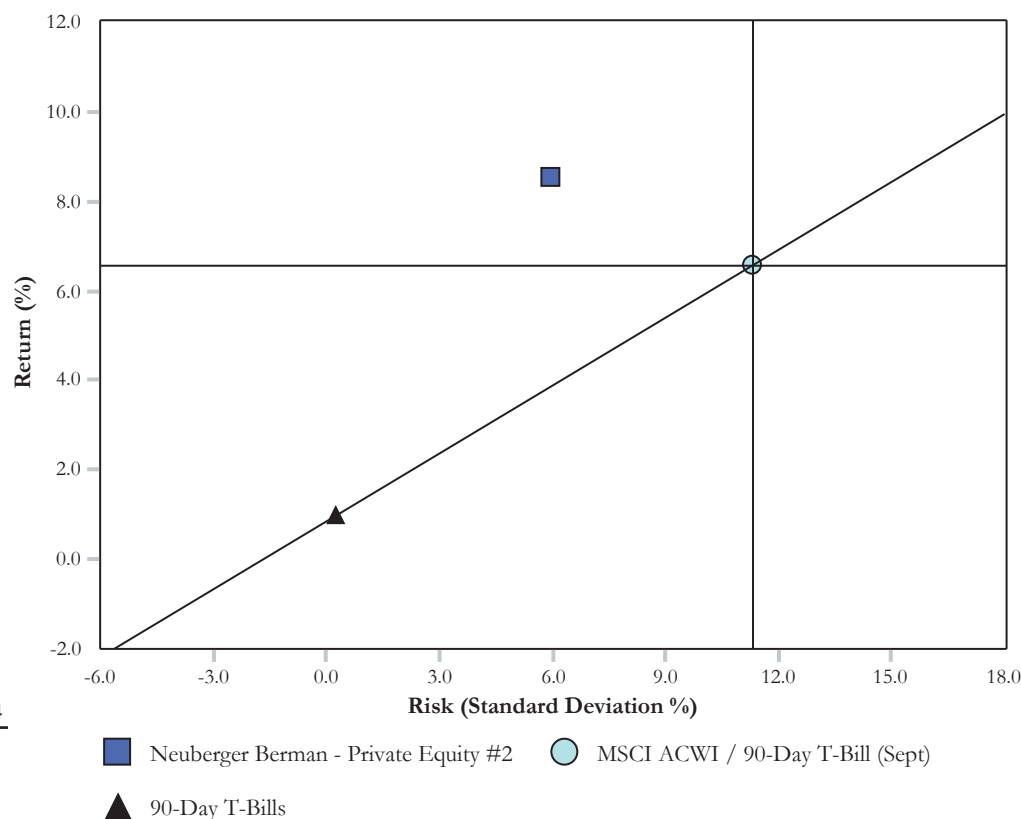
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	Inception 08/01/2014
Neuberger Berman - Private Equity #2						
Beginning Market Value	3,057	3,057	2,813	1,785	514	300
Net Contributions	-120	-120	-255	240	1,350	1,575
Fees/Expenses	-	-	-	-	-	-
Income	-	-	-	-	-	-
Gain/Loss	-	-	379	912	1,073	1,062
Ending Market Value	2,937	2,937	2,937	2,937	2,937	2,937

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Neuberger Berman - Private Equity #2	8.53	5.97	0.07	-4.12	40.99	-7.43	8.16	1.25	0.02	08/01/2014
MSCI ACWI / 90-Day T-Bill (Sept)	6.55	11.30	1.00	-13.81	100.00	100.00	0.00	0.53	1.00	08/01/2014

### Manager Risk & Return



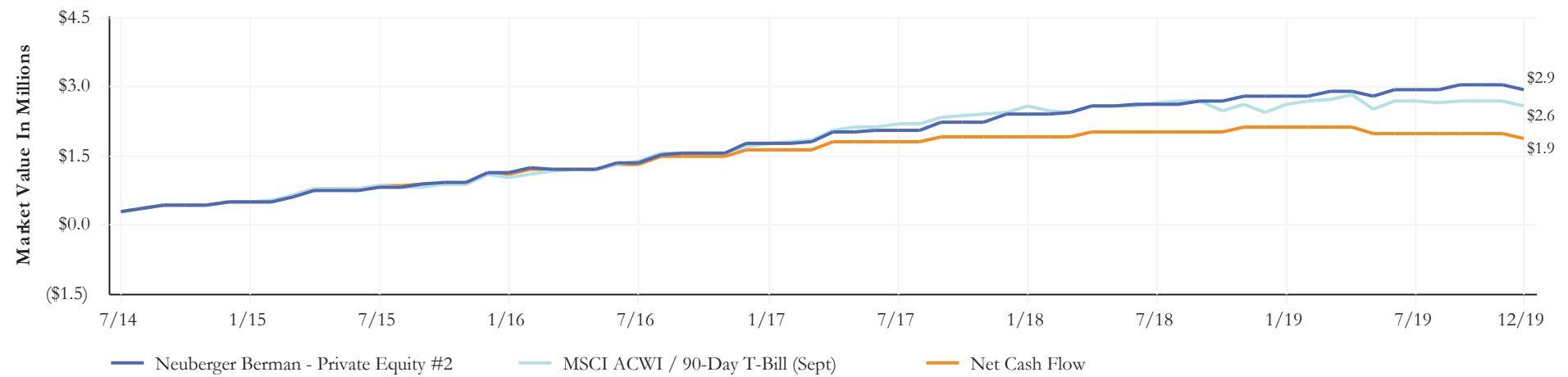
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# Pompano Beach Police & Firefighters' Retirement System

## Neuberger Berman - Private Equity #2 - Change in Assets & Distribution of Returns

as of December 31, 2019

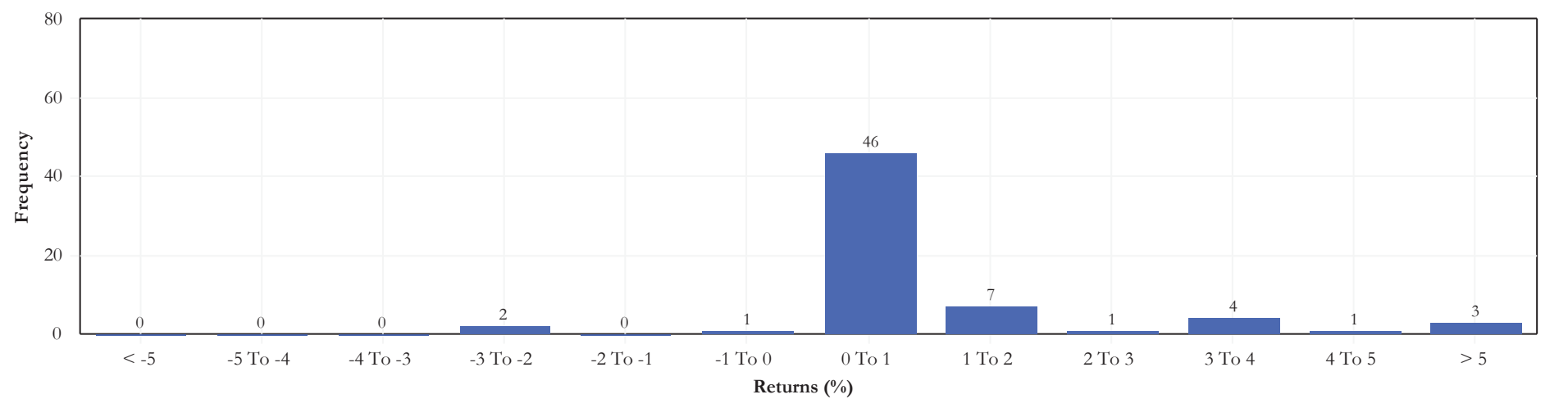
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Neuberger Berman - Private Equity #2	3,056,821.00	-	-	-120,000.00	-	-	-	2,936,821.00

### Distribution of Returns

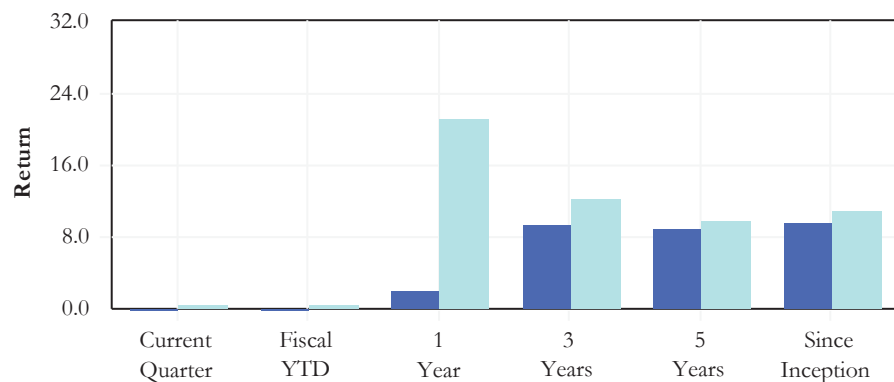


# Pompano Beach Police & Firefighters' Retirement System

## Blackstone - Private Equity - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	Inception 12/01/2013
Blackstone - Private Equity	0.00	0.00	2.04	9.37	8.80	9.57
Dynamic S&P 500/90-Day T-Bill (Sept)	0.46	0.46	21.11	12.16	9.88	10.81
Differences	-0.46	-0.46	-19.07	-2.79	-1.08	-1.24

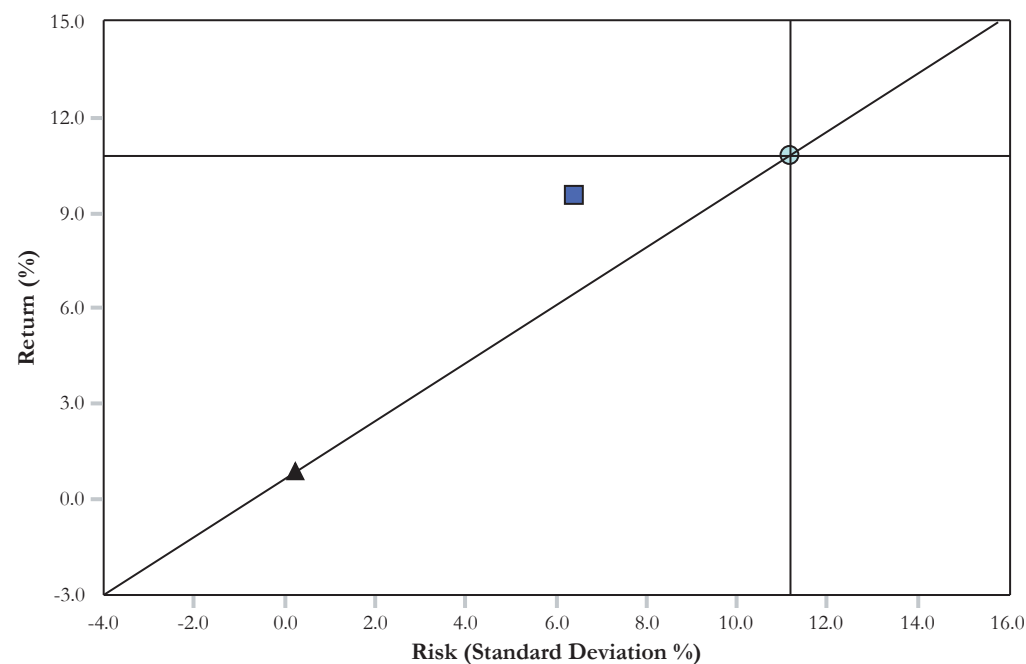
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	Inception 12/01/2013
Blackstone - Private Equity						
Beginning Market Value	1,262	1,262	2,049	2,514	2,028	17
Net Contributions	-46	-46	-861	-1,855	-1,666	258
Fees/Expenses	-4	-4	-23	-89	-165	-201
Income	-	-	-	-	-	-
Gain/Loss	-	-	47	642	1,015	1,138
Ending Market Value	1,212	1,212	1,212	1,212	1,212	1,212

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Blackstone - Private Equity	9.57	6.44	-0.04	-4.08	33.12	-25.24	10.28	1.32	0.00	12/01/2013
Dynamic S&P 500/90-Day T-Bill (Sept)	10.81	11.18	1.00	-13.52	100.00	100.00	0.00	0.90	1.00	12/01/2013

### Manager Risk & Return



- Blackstone - Private Equity
- Dynamic S&P 500/90-Day T-Bill (Sept)
- 90-Day T-Bills

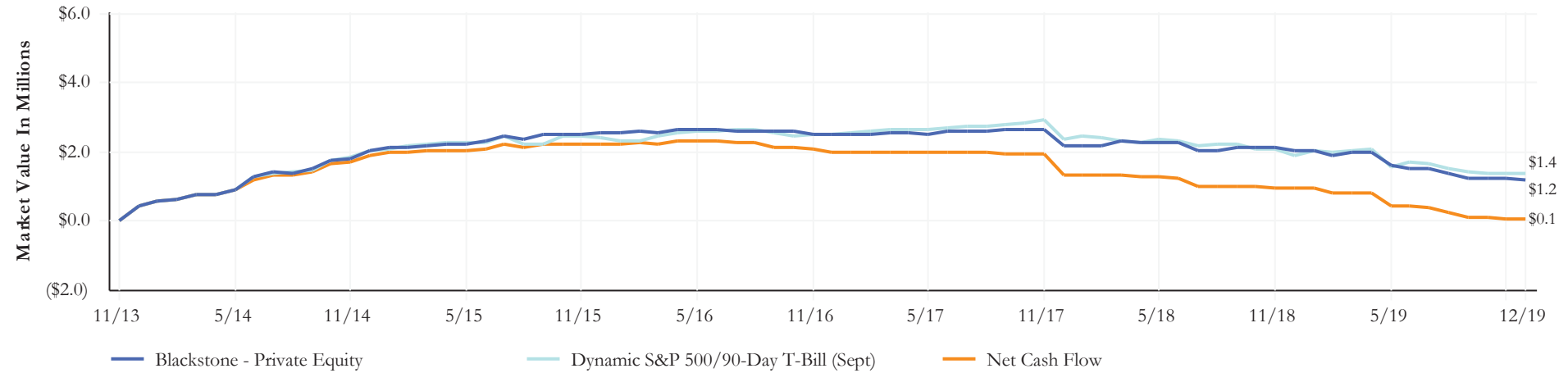
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# Pompano Beach Police & Firefighters' Retirement System

## Blackstone - Private Equity - Change in Assets & Distribution of Returns

as of December 31, 2019

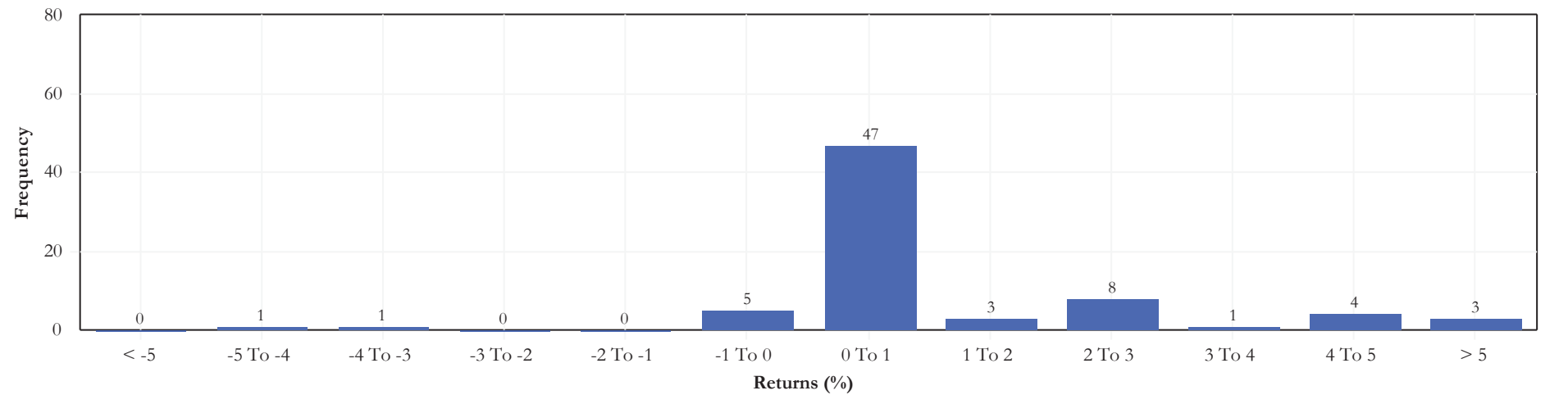
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Blackstone - Private Equity	1,261,620.00	-	4,219.39	-49,881.24	-4,219.39	-	0.24	1,211,739.00

### Distribution of Returns

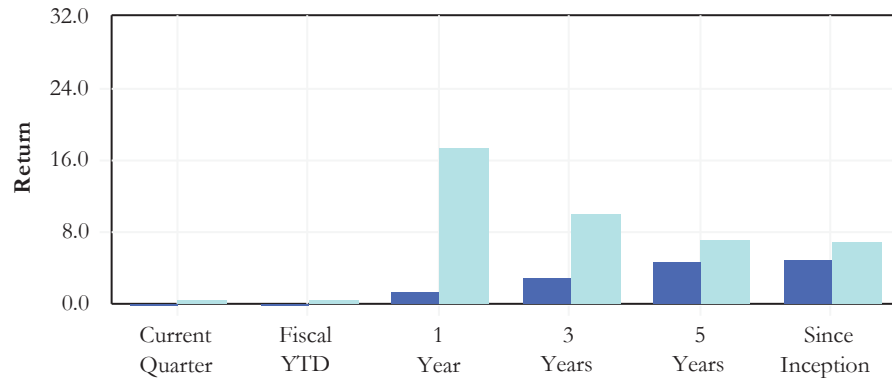


# Pompano Beach Police & Firefighters' Retirement System

## Goldman Sachs - Private Equity - Executive Summary

as of December 31, 2019

### Manager Performance Chart



### Manager Annualized Performance

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	Inception 01/01/2014
Goldman Sachs - Private Equity	0.00	0.00	1.24	2.97	4.61	4.88
MSCI ACWI / 90-Day T-Bill (Sept)	0.46	0.46	17.25	9.99	7.22	6.80
Differences	-0.46	-0.46	-16.01	-7.02	-2.61	-1.92

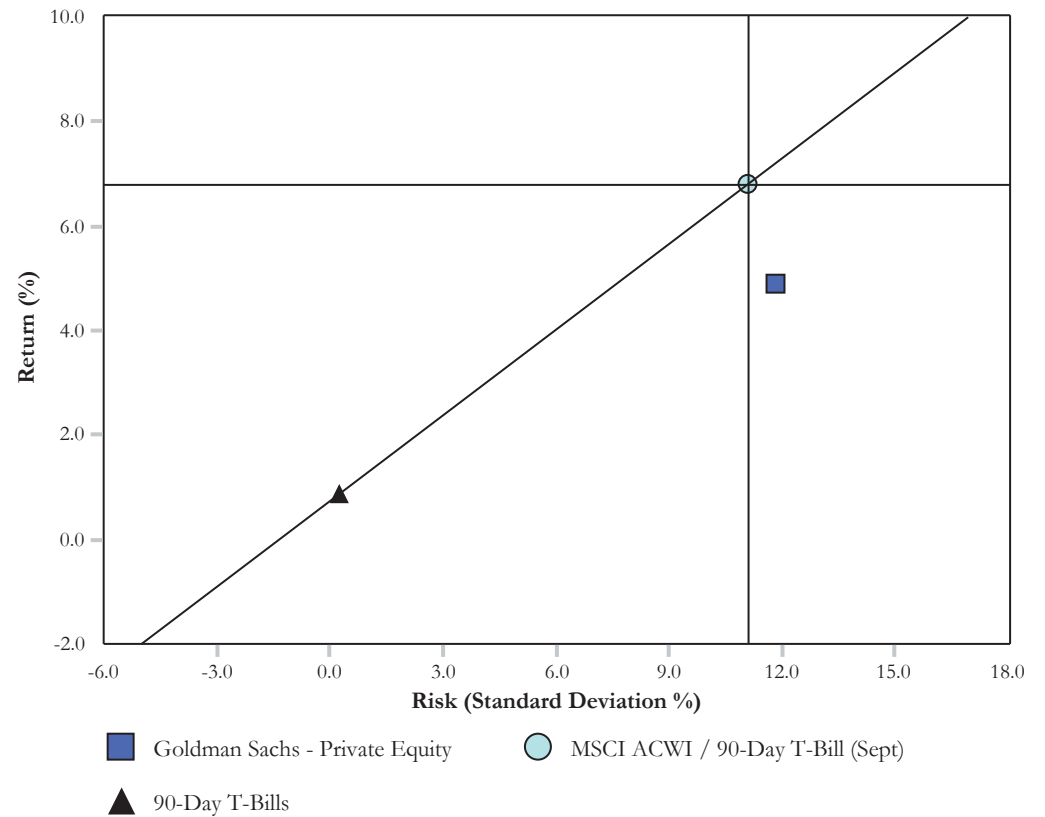
### Historic Asset Growth

	Current Quarter	Fiscal YTD	1 Year	3 Years	5 Years	Inception 01/01/2014
Goldman Sachs - Private Equity	834	834	994	2,049	1,254	214
Beginning Market Value	-165	-165	-343	-1,581	-1,003	-58
Net Contributions	-	-	-	-	-	-
Fees/Expenses	-	-	-	-	-	-
Income	-	-	-	-	-	-
Gain/Loss	-	-	17	201	417	513
Ending Market Value	668	668	668	668	668	668

### Modern Portfolio Statistics

	Return	Standard Deviation	Beta	Maximum Drawdown	Up Market Capture	Down Market Capture	Alpha	Sharpe Ratio	R-Squared	Inception Date
Goldman Sachs - Private Equity	4.88	11.84	0.15	-13.18	33.54	6.03	4.50	0.39	0.02	01/01/2014
MSCI ACWI / 90-Day T-Bill (Sept)	6.80	11.10	1.00	-13.81	100.00	100.00	0.00	0.57	1.00	01/01/2014

### Manager Risk & Return



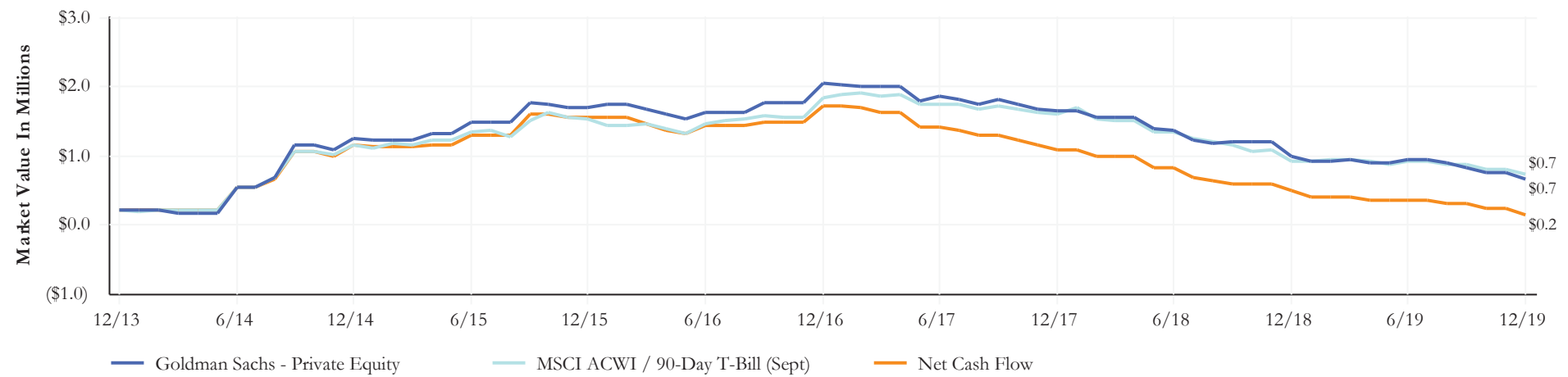
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# Pompano Beach Police & Firefighters' Retirement System

## Goldman Sachs - Private Equity - Change in Assets & Distribution of Returns

as of December 31, 2019

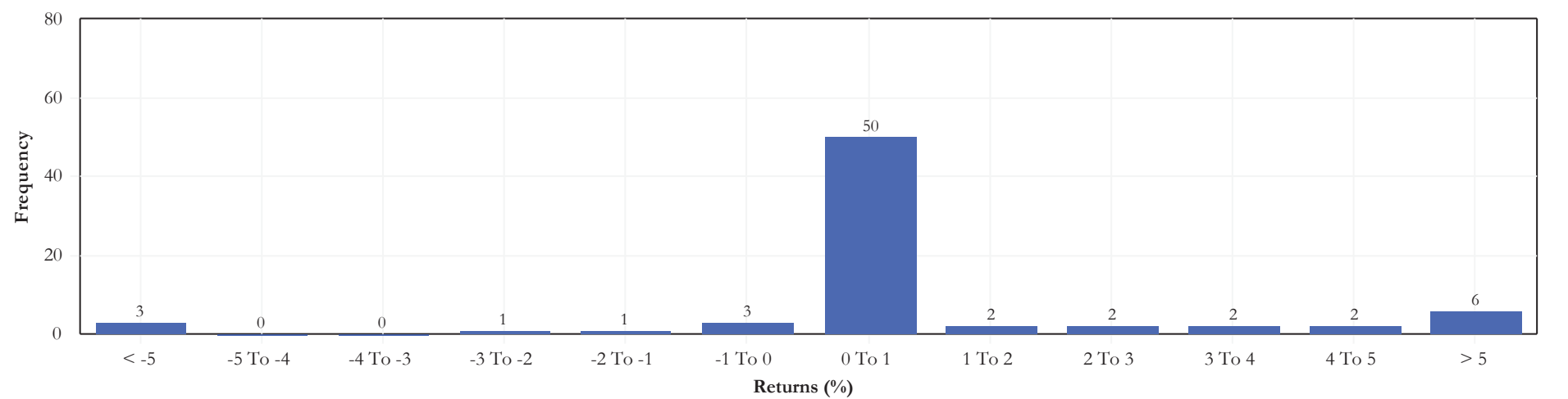
### Historic Change in Assets



### Quarterly Change in Assets

	Market Value As of 10/01/2019	Net Transfers	Contributions	Distributions	Fees	Expenses	Return On Investment	Market Value As of 12/31/2019
Goldman Sachs - Private Equity	833,585.00	-	-	-165,347.66	-	-	-0.34	668,237.00

### Distribution of Returns



# Performance Appendix

Performance Data below is net of fees. Please see the Morgan Stanley Smith Barney LLC Form ADV Part 2 Brochure for advisory accounts and/or any applicable brokerage account trade confirmation statements for a full disclosure of the applicable charges, fees and expenses. Your Financial Advisor will provide those documents to you upon request.

Account Name	QTD	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
BlackRock - Large Cap Value	7.82	28.84	28.84	11.35	9.57	--	10.84	02/01/2013
Blackstone - Private Equity	-0.34	0.60	0.60	7.86	7.22	--	7.47	12/01/2013
Center Coast Capital - Master Limited Partnerships	-2.20	15.05	15.05	-2.13	--	--	-5.32	02/01/2015
Goldman Sachs - Private Equity	0.00	1.24	1.24	2.97	4.61	--	4.88	01/01/2014
Incore/Victory	0.15	8.16	8.16	4.06	3.01	3.82	4.27	10/01/2002
Invesco - Private Real Estate	2.00	5.39	5.39	6.90	8.42	10.46	5.40	08/01/2006
Ironwood - FOHF	2.56	8.15	8.15	5.65	4.29	6.00	3.75	08/01/2008
Lazard - International Value	7.28	19.48	19.48	9.16	5.29	--	4.79	02/01/2013
Neuberger Berman - Private Equity #1	0.00	5.57	5.57	9.02	10.14	--	4.69	04/01/2010
Neuberger Berman - Private Equity #2	0.00	13.93	13.93	12.81	9.83	--	8.53	08/01/2014
Non-Managed Account	0.37	1.88	1.88	1.68	0.95	-2.71	-1.08	10/01/2002
Nuance/RBC Global - Mid Cap Value	7.67	32.36	32.36	--	--	--	17.51	07/01/2018
Office Building - Private Real Estate	1.07	4.71	4.71	4.59	17.82	4.13	1.01	04/01/2007
Pine Grove - FOHF	1.27	4.91	4.91	3.65	2.22	3.31	3.56	10/01/2008
Renaissance - International Growth	8.21	19.56	19.56	6.96	3.57	4.94	8.36	02/01/2009
Sands Capital - Large Cap Growth	10.57	29.06	29.06	23.07	12.30	16.14	12.50	06/01/2003
Sawgrass Asset Management	8.25	--	--	--	--	--	24.10	02/01/2019
Standish Mellon - Fixed Income	0.12	8.28	8.28	3.85	2.74	3.67	3.90	05/01/2003
Wells - SMID Growth	6.79	39.33	39.33	18.91	12.31	15.09	17.78	02/01/2009

All performance above are Time Weighted(TWR) performance

## Glossary of Terms

**Active Contribution Return:** The gain or loss percentage of an investment relative to the performance of the investment benchmark.

**Active Exposure:** The percentage difference in weight of the portfolio compared to its policy benchmark.

**Active Return:** Arithmetic difference between the manager's return and the benchmark's return over a specified time period.

**Actual Correlation:** A measure of the correlation (linear dependence) between two variables X and Y, with a value between +1 and -1 inclusive. This is also referred to as coefficient of correlation.

**Alpha:** A measure of a portfolio's time weighted return in excess of the market's return, both adjusted for risk. A positive alpha indicates that the portfolio outperformed the market on a risk-adjusted basis, and a

negative alpha indicates the portfolio did worse than the market.

**Best Quarter:** The highest quarterly return for a certain time period.

**Beta:** A measure of the sensitivity of a portfolio's time weighted return (net of fees) against that of the market. A beta greater than 1.00 indicates volatility greater than the market.

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

**Core:** Refers to an investment strategy mandate that is blend of growth and value styles without a pronounced tilt toward either style.

**Cumulative Selection Return (Cumulative Return):** Cumulative investment performance over a specified



period of time.

**Distribution Rate:** The most recent distribution paid, annualized, and then divided by the current market price. Distribution rate may consist of investment income, short-term capital gains, long-term capital gains, and/or return of capital.

**Down Market Capture:** The ratio of average portfolio returns over the benchmark during periods of negative benchmark return. Lower values indicate better product performance.

**Downside Risk:** A measure similar to standard deviation, but focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. The higher the value, the more risk the product has.

**Downside Semi Deviation:** A statistical calculation that measures the volatility of returns below a minimum acceptable return. This return measure isolates the negative portion of volatility: the larger the number, the greater the volatility.

**Drawdown:** A drawdown is the peak-to-trough decline during a specific period of an investment, fund or commodity.

**Excess over Benchmark:** The percentage gain or loss of an investment relative to the investment's benchmark.

**Excess Return:** Arithmetic difference between the manager's return and the risk-free return over a specified time period.

**Growth:** A diversified investment strategy which includes investment selections that have capital appreciation as the primary goal, with little or no dividend payouts. These strategies can include reinvestment in expansion, acquisitions, and/or research and development opportunities.

**Growth of Dollar:** The aggregate amount an investment has gained or lost over a certain time period, also referred to as Cumulative Return, stated in terms of the amount to which an initial dollar investment would have grown over the given time period.

**Investment Decision Process (IDP):** A model for structuring the investment process and implementing the correct attribution methodologies. The IDP includes every decision made concerning the division of the assets under management over the various asset categories. To analyze each decision's contribution to the total return, a modeling approach must measure the marginal value of every individual decision. In this respect, the hierarchy of the decisions becomes very important. We therefore use the IDP model, which serves as a proper foundation for registering the decisions and relating them to each other.

**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.

**Jensen's Alpha:** The Jensen's alpha measure is a risk-adjusted performance measure that represents the average return on a portfolio or investment above or below that predicted by the capital asset pricing model (CAPM) given the portfolio's or investment's beta and the average market return. This metric is also commonly referred to as alpha..

**Kurtosis:** A statistical measure that is used to describe the distribution, or skewness, of observed data

around the mean, sometimes referred to as the volatility of volatility.

**Maximum Drawdown:** The drawdown is defined as the percent retrenchment from a fund's peak to the fund's trough value. It is in effect from the time the fund's retrenchment begins until a new fund high is reached. The maximum drawdown encompasses both the period from the fund's peak to the fund's valley (length), and the time from the fund's valley to a new fund high (recovery). It measures the largest percentage drawdown that has occurred in any fund's data record.

**Modern Portfolio Theory (MPT):** An investment analysis theory on how risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward.

**Mutual Fund (MF):** An investment program funded by shareholders that trade in diversified holdings and is professionally managed.

**Peer Group:** A combination of funds that share the same investment style combined as a group for comparison purposes.

**Peer/ Plan Sponsor Universe:** A combination of asset pools of total plan investments by specific sponsor and plan types for comparison purposes.

**Performance Ineligible Assets:** Performance returns are not calculated for certain assets because accurate valuations and transaction data for these assets are not processed or maintained by us. Common examples of these include life insurance, some annuities and some assets held externally.

**Performance Statistics:** A generic term for various measures of investment performance measurement terms.

**Portfolio Characteristics:** A generic term for various measures of investment portfolio characteristics.

**Preferred Return:** A term used in the private equity (PE) world, and also referred to as a "Hurdle Rate." It refers to the threshold return that the limited partners of a private equity fund must receive, prior to the PE firm receiving its carried interest or "carry."

**Ratio of Cumulative Wealth:** A defined ratio of the Cumulative Return of the portfolio divided by the Cumulative Return of the benchmark for a certain time period.

**Regression Based Analysis:** A statistical process for estimating the relationships among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables

**Residual Correlation:** Within returns-based style analysis, residual correlation refers to the portion of a strategy's return pattern that cannot be explained by its correlation to the asset-class benchmarks to which it is being compared.

**Return:** A rate of investment performance for the specified period.

**Rolling Percentile Ranking:** A measure of an investment portfolio's ranking versus a peer group for a specific rolling time period (i.e. Last 3 Years, Last 5 years, etc.).

**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.

**SA/CF (Separate Account/Comingled Fund):** Represents an acronym for Separate Account and Commingled Fund investment vehicles.

**Sector Benchmark:** A market index that serves as a proxy for a sector within an asset class.

**Sharpe Ratio:** Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. 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 results in.

**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.

**Total Fund Benchmark:** The policy benchmark for a complete asset pool that could consist of multiple investment mandates.

**Total Fund Composite:** The aggregate of multiple portfolios within an asset pool or household.

**Tracking Error:** A measure of standard deviation for a portfolio's investment performance, relative to the performance of an appropriate market benchmark.

**Treynor Ratio:** A ratio that divides the excess return (above the risk free rate) by the portfolio's beta to arrive at a unified measure of risk adjusted return. It is generally used to rank portfolios, funds and benchmarks. A higher ratio is indicative of higher returns per unit of market risk. This measurement can help determine if the portfolio is reaching its goal of increasing returns while managing market risk.

**Up Market Capture:** The ratio of average portfolio returns over the benchmark during periods of positive benchmark return. Higher values indicate better product performance.

**Upside Semi Deviation:** A statistical calculation that measures the volatility of returns above an acceptable return. This return measure isolates the positive portion of volatility: the larger the number, the greater the volatility.

**Value:** A diversified investment strategy that includes investment selections which tend to trade at a lower price relative to its dividends, earnings, and sales. Common attributes are stocks that include high dividend, low price-to-book ratio, and/or low price-to-earnings ratio.

**Worst Quarter:** The lowest rolling quarterly return for a certain time period.

## Information Disclosures

*Performance results are annualized for time periods greater than one year and include all cash and cash equivalents, realized and unrealized capital gains and losses, and dividends, interest and income. The investment results depicted herein represent historical performance. As a result of recent market activity, current performance may vary from the figures shown. Past performance is not a guarantee of future results.*

*Please see the Morgan Stanley Smith Barney LLC Form ADV Part 2 Brochure for advisory accounts and/or any applicable brokerage account trade confirmation statements for a full disclosure of the applicable charges, fees and expenses. Your Financial Advisor will provide those documents to you upon request.*

*Benchmark indices and blends included in this material are for informational purposes only, are provided solely as a comparison tool and may not reflect the underlying composition and/or investment objective(s) associated with the account(s). Indices are unmanaged and not available for direct investment. Index returns do not take into account fees or other charges. Such fees and charges would reduce performance.*

*The performance data shown reflects past performance, which does not guarantee future results. Investment return and principal will fluctuate so that an investor's shares when redeemed may be worth more or less than original cost. Please note, current performance may be higher or lower than the performance data shown. For up to date month-end performance information, please contact your Financial Advisor or visit the funds' company website.*

*Investors should carefully consider the fund's investment objectives, risks, charges and expenses before investing. The prospectus and, if available the summary prospectus, contains this and other information that should be read carefully before investing. Investors should review the information in the prospectus carefully. To obtain a prospectus, please contact your Financial Advisor or visit the funds' company website.*

Past performance is no guarantee of future results.

Investing involves market risk, including possible loss of principal. **Growth investing** does not guarantee a profit or eliminate risk. The stocks of these companies can have relatively high valuations. Because of these high valuations, an investment in a growth stock can be more risky than an investment in a company with more modest growth expectations. **Value investing** involves the risk that the market may not recognize that securities are undervalued and they may not appreciate as anticipated. **Small and mid-capitalization companies** may lack the financial resources, product diversification and competitive strengths of larger companies. The securities of small capitalization companies may not trade as readily as, and be subject to higher volatility than those of larger, more established companies. **Bond funds** and bond holdings have the same interest rate, inflation and credit risks that are associated with the underlying bonds owned by the funds. The return of principal in bond funds, and in funds with significant bond holdings, is not guaranteed. **International securities'** prices may carry additional risks, including foreign economic, political, monetary and/or legal factors, changing currency exchange rates, foreign taxes and differences in financial and accounting standards. International investing may not be for everyone. These risks may be magnified in emerging markets. **Alternative investments**, including private equity funds, real estate funds, hedge funds, managed futures funds, and funds of hedge funds, private equity, and managed futures funds, are speculative and entail significant risks that can include losses due to leveraging or other speculative investment practices, lack of liquidity, volatility of returns, restrictions on transferring interests in a fund, potential lack of diversification, absence and/or delay of information regarding valuations and pricing, complex tax structures and delays in tax reporting, less regulation and higher fees than mutual funds and risks associated with the operations, personnel and processes of the advisor. **Master Limited Partnerships** (MLPs) are limited partnerships or limited liability companies that are taxed as partnerships and whose interests (limited partnership units or limited liability company units) are traded on securities exchanges like shares of common stock. Currently, most MLPs operate in the energy, natural resources or real estate sectors. Investments in MLP interests are subject to the risks generally applicable to companies in the energy and natural resources sectors, including commodity pricing risk, supply and demand risk, depletion risk and exploration risk; and MLP interests in the real estate sector are subject to special risks, including interest rate and property value fluctuations, as well as risks related to general and economic conditions. Because of their narrow focus, MLPs maintain exposure to price volatility of commodities and/or underlying assets and tend to be more volatile than investments that diversify across many sectors and companies. MLPs are also subject to additional risks including: investors having limited control and rights to vote on matters affecting the MLP, limited access to capital, cash flow risk, lack of liquidity, dilution risk, conflict of interests, and limited call rights related to acquisitions.

**Mortgage backed securities** also involve prepayment risk, in that faster or slower prepayments than expected on underlying mortgage loans can dramatically alter the yield-to-maturity of a mortgage-backed security and prepayment risk includes the possibility that a fund may invest the proceeds at generally lower

interest rates.

**Tax managed funds** may not meet their objective of being tax-efficient.

**Real estate** investments are subject to special risks, including interest rate and property value fluctuations, as well as risks related to general and economic conditions. **High yield** fixed income securities, also known as “junk bonds”, are considered speculative, involve greater risk of default and tend to be more volatile than investment grade fixed income securities.

Credit quality is a measure of a bond issuer’s creditworthiness, or ability to repay interest and principal to bondholders in a timely manner. The credit ratings shown are based on security rating as provided by Standard & Poor’s, Moody’s and/or Fitch, as applicable. Credit ratings are issued by the rating agencies for the underlying securities in the fund and not the fund itself, and the credit quality of the securities in the fund does not represent the stability or safety of the fund. Credit ratings shown range from AAA, being the highest, to D, being the lowest based on S&P and Fitch’s classification (the equivalent of Aaa and C, respectively, by Moody’s). Ratings of BBB or higher by S&P and Fitch (Baa or higher by Moody’s) are considered to be investment grade-quality securities. If two or more of the agencies have assigned different ratings to a security, the highest rating is applied. Securities that are not rated by all three agencies are listed as “NR”.

“**Alpha tilt strategies** comprise a core holding of stocks that mimic a benchmark type index such as the S&P 500 to which additional securities are added to help tilt the fund toward potentially outperforming the market in an effort to enhance overall investment returns. Tilt strategies are subject to significant timing risk and could potentially expose investors to extended periods of underperformance.”

**Custom Account Index:** The Custom Account Index is an investment benchmark based on your historical target allocations and/or manager selection that you may use to evaluate the performance of your account. The Custom Account index does take into consideration certain changes that may have occurred in your portfolio since the inception of your account, i.e., asset class and/or manager changes. However, in some circumstances, it may not be an appropriate benchmark for use with your specific account composition. For detailed report of the historical composition of this blend please contact your Financial Advisor.

## Peer Groups

Peer Groups are a collection of similar investment strategies that essentially group investment products that share the same investment approach. Peer Groups are used for comparison purposes to compare and illustrate a client’s investment portfolio versus its peer across various quantitative metrics like performance and risk. Peer Group comparison is conceptually another form of benchmark comparison whereby the actual investment can be ranked versus its peer across various quantitative metrics.

All Peer Group data are provided by Investment Metrics, LLC.

The URL below provides all the definitions and methodology about the various Peer Groups

<https://www.invmetrics.com/style-peer-groups>

## Peer Group Ranking Methodology

A percentile rank denotes the value of a product in which a certain percent of observations fall within a peer group. The range of percentile rankings is between 1 and 100, where 1 represents a high statistical value and 100 represents a low statistical value.

The 30th percentile, for example, is the value in which 30% of the highest observations may be found, the 65th percentile is the value in which 65% of the highest observations may be found, and so on.

Percentile rankings are calculated based on a normalized distribution ranging from 1 to 100 for all products in each peer group, where a ranking of 1 denotes a high statistical value and a ranking of 100 denotes a low statistical value. It is important to note that the same ranking methodology applies to all statistics, implying that a ranking of 1 will always mean highest value across all statistics.

For example, consider a risk/return assessment using standard deviation as a measure of risk. A percentile ranking equal to 1 for return denotes highest return, whereas a percentile ranking of 1 for standard deviation denotes highest risk among peers.

In addition, values may be used to demonstrate quartile rankings. For example, the third quartile is also known as the 75th percentile, and the median is the 50th percentile.

## Alternatives

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For most investment advisory clients, the program account will be charged an asset-based wrap fee every quarter ("the Fee"). In general, the Fee covers investment advisory services and reporting. In addition to the Fee, clients will pay the fees and expenses of any funds in which their account is invested. Fund fees and expenses are charged directly to the pool of assets the fund invests in and impact the valuations. Clients must understand that these fees and expenses are an additional cost and will not be included in the Fee amount in the account statements.

As fees are deducted quarterly, the compounding effect will be to increase the impact of the fees by an amount directly related to the gross account performance. For example, for an account with an initial value of \$100,000 and a 2.5% annual fee, if the gross performance is 5% per year over a three year period, the compounding effect of the fees will result in a net annual compound rate of return of approximately 2.40% per year over a three year period, and the total value of the client's portfolio at the end of the three year period would be approximately \$115,762.50 without the fees and \$107,372.63 with the fees. Please see the

applicable Morgan Stanley Smith Barney LLC Form ADV Part 2A for more information including a description of the fee schedule. It is available at [www.morganstanley.com/ADV](http://www.morganstanley.com/ADV) <<http://www.morganstanley.com/ADV>> or from your Financial Advisor/Private Wealth Advisor.

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### Money Market Funds

You could lose money in Money Market Funds. Although MMFs classified as government funds (i.e., MMFs that invest 99.5% of total assets in cash and/or securities backed by the U.S government) and retail funds (i.e., MMFs open to natural person investors only) seek to preserve value at \$1.00 per share, they cannot guarantee they will do so. The price of other MMFs will fluctuate and when you sell shares they may be worth more or less than originally paid. MMFs may impose a fee upon sale or temporarily suspend sales if liquidity falls below required minimums. During suspensions, shares would not be available for purchases, withdrawals, check writing or ATM debits. A MMF investment is not insured or guaranteed by the Federal Deposit Insurance Corporation or other government agency.