



# **Q4 2019 PERFORMANCE REPORT**

## **POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO**

**March 30, 2020**

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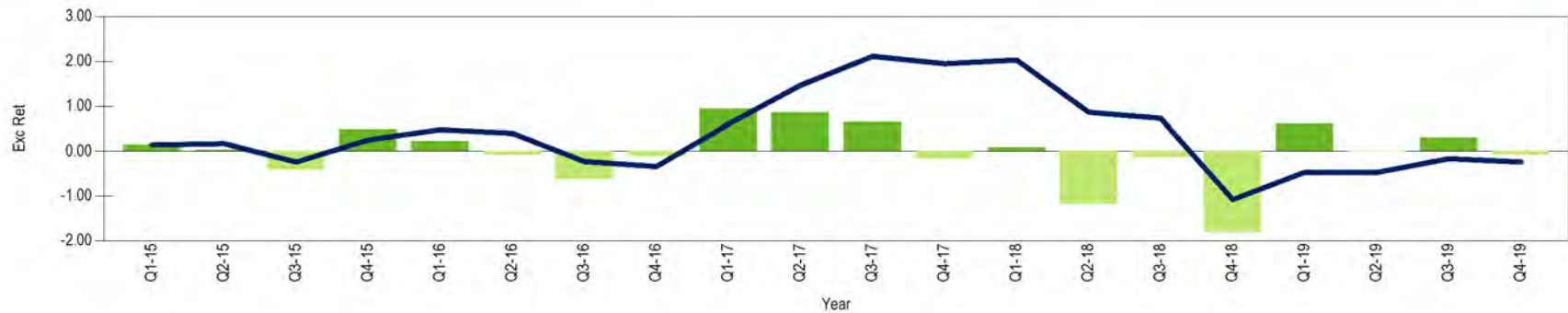
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## Chicago Policemen's Annuity and Benefit Fund

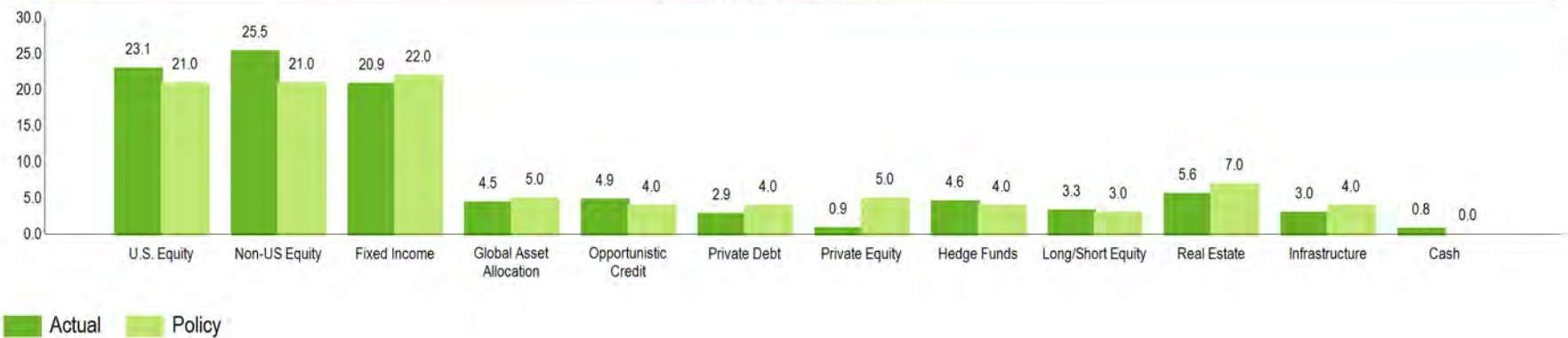
# TOTAL PLAN PERFORMANCE SUMMARY

	Market Value	3 Mo	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
<b>Composite</b>	<b>\$2,561,819,334</b>	<b>4.99%</b>	<b>69</b>	<b>16.31%</b>	<b>87</b>	<b>8.86%</b>	<b>69</b>	<b>6.50%</b>	<b>72</b>
<i>Policy Index</i>		5.06%	66	15.38%	93	8.91%	67	6.60%	67
<i>Allocation Index</i>		5.00%	69	15.50%	93	8.23%	86	6.17%	85
<i>InvMetrics Public DB Net Median</i>		5.37%		19.22%		9.47%		6.92%	

Quarterly and Cumulative Excess Performance



Actual vs Target Allocation (%)



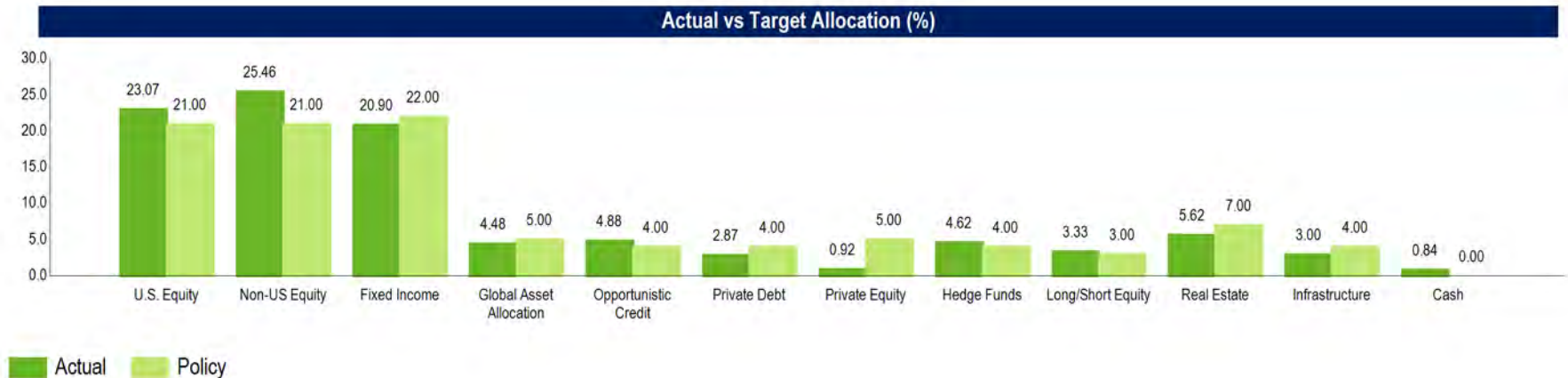
## Chicago Policemen's Annuity and Benefit Fund

# TOTAL PLAN PERFORMANCE SUMMARY

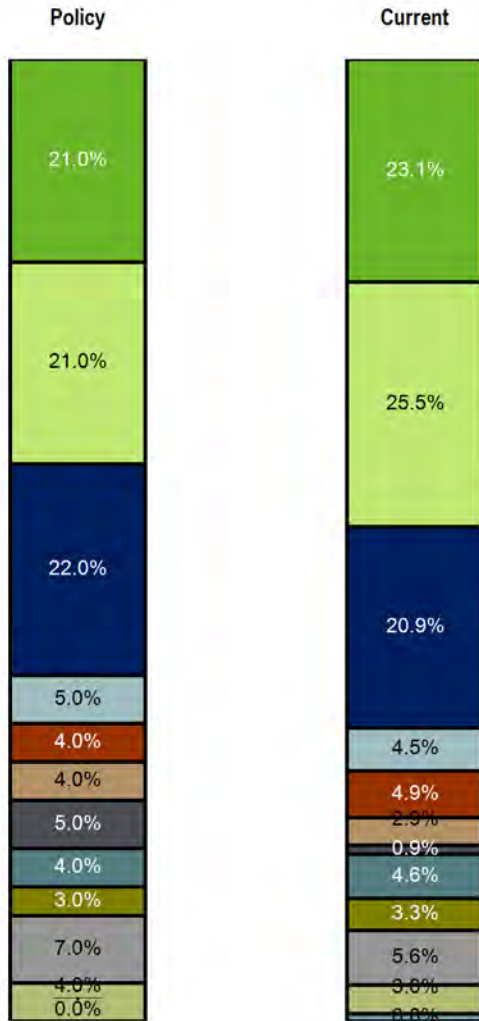
	Market Value	3 Mo	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
<b>Composite</b>	<b>\$2,561,819,334</b>	<b>4.99%</b>	<b>69</b>	<b>16.31%</b>	<b>87</b>	<b>8.86%</b>	<b>69</b>	<b>6.50%</b>	<b>72</b>
<i>Policy Index</i>		5.06%	66	15.38%	93	8.91%	67	6.60%	67
<i>Allocation Index</i>		5.00%	69	15.50%	93	8.23%	86	6.17%	85
<i>InvMetrics Public DB Net Median</i>		5.37%		19.22%		9.47%		6.92%	

3 Years Ending December 31, 2019									
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank	
Composite	8.86%	69	6.24%	20	1.16	34	1.26	15	
Allocation Index	8.23%	86	6.37%	25	1.04	75	1.14	42	
Policy Index	8.91%	67	5.63%	8	1.29	10	1.39	4	

5 Years Ending December 31, 2019									
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio	Rank	
Composite	6.50%	72	6.45%	24	0.84	43	1.30	35	
Allocation Index	6.17%	85	6.38%	23	0.80	59	1.26	46	
Policy Index	6.60%	67	6.04%	14	0.92	18	1.51	9	



# TOTAL ASSET ALLOCATION VS. POLICY TARGETS



Asset Allocation vs. Target				
	Current	Policy	Current	Difference*
U.S. Equity	\$591,019,377	21.00%	23.07%	2.07%
Non-US Equity	\$652,183,043	21.00%	25.46%	4.46%
Fixed Income	\$535,519,824	22.00%	20.90%	-1.10%
Global Asset Allocation	\$114,677,625	5.00%	4.48%	-0.52%
Opportunistic Credit	\$125,063,924	4.00%	4.88%	0.88%
Private Debt	\$73,614,900	4.00%	2.87%	-1.13%
Private Equity	\$23,516,693	5.00%	0.92%	-4.08%
Hedge Funds	\$118,351,269	4.00%	4.62%	0.62%
Long/Short Equity	\$85,347,797	3.00%	3.33%	0.33%
Real Estate	\$144,096,338	7.00%	5.62%	-1.38%
Infrastructure	\$76,884,846	4.00%	3.00%	-1.00%
Cash	\$21,543,696	0.00%	0.84%	0.84%
<b>Total</b>	<b>\$2,561,819,334</b>	<b>100.00%</b>	<b>100.00%</b>	

\*Difference between Policy and Current Allocation



## Chicago Policemen's Annuity and Benefit Fund

# TOTAL PLAN NET PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Composite</b>	<b>2,561,819,334</b>	<b>100.00</b>	<b>100.00</b>	<b>4.99</b>	<b>69</b>	<b>16.31</b>	<b>87</b>	<b>8.86</b>	<b>69</b>	<b>6.50</b>	<b>72</b>	<b>7.85</b>	<b>60</b>	<b>8.52</b>	<b>Jan-84</b>
Policy Index				5.06	66	15.38	93	8.91	67	6.60	67	7.61	74	--	Jan-84
Over/Under				-0.07		0.93		-0.05		-0.10		0.24			
Allocation Index				5.00	69	15.50	93	8.23	86	6.17	85	7.73	65	--	Jan-84
InvMetrics Public DB Net Median				5.37		19.22		9.47		6.92		8.05		8.25	Jan-84
<b>Total Equity</b>	<b>1,328,550,218</b>	<b>51.86</b>	<b>45.00</b>	<b>9.27</b>	<b>37</b>	<b>25.79</b>	<b>53</b>	<b>12.91</b>	<b>39</b>	<b>8.57</b>	<b>43</b>	<b>9.87</b>	<b>38</b>	<b>7.14</b>	<b>Oct-96</b>
MSCI ACWI				8.95	43	26.60	47	12.44	44	8.41	45	8.79	59	6.69	Oct-96
Over/Under				0.32		-0.81		0.47		0.16		1.08		0.45	
eV All Global Equity Net Median				8.61		26.12		11.74		8.02		9.30		8.11	Oct-96
<b>Total Domestic Equity</b>	<b>591,019,377</b>	<b>23.07</b>	<b>21.00</b>	<b>8.33</b>	<b>46</b>	<b>26.87</b>	<b>57</b>	<b>12.95</b>	<b>42</b>	<b>10.09</b>	<b>40</b>	<b>12.45</b>	<b>49</b>	<b>10.78</b>	<b>Jan-84</b>
Russell 3000				9.10	33	31.02	32	14.57	32	11.24	26	13.42	27	11.05	Jan-84
Over/Under				-0.77		-4.15		-1.62		-1.15		-0.97		-0.27	
eV All US Equity Net Median				8.05		28.02		11.66		9.34		12.34		11.59	Jan-84
<b>Total Large Cap</b>	<b>408,095,029</b>	<b>15.93</b>	<b>13.00</b>	<b>9.40</b>	<b>32</b>	<b>28.81</b>	<b>51</b>	<b>13.16</b>	<b>52</b>	<b>10.14</b>	<b>50</b>	<b>12.41</b>	<b>54</b>	<b>9.10</b>	<b>Oct-95</b>
Russell 1000				9.04	37	31.43	35	15.05	37	11.48	30	13.54	25	9.45	Oct-95
Over/Under				0.36		-2.62		-1.89		-1.34		-1.13		-0.35	
eV US Large Cap Equity Net Median				8.26		28.91		13.31		10.12		12.57		9.58	Oct-95
NTGI Russell 1000	298,507,827	11.65		9.04	37	31.43	35	15.02	38	11.47	30	--	--	13.41	Mar-12
Russell 1000				9.04	37	31.43	35	15.05	37	11.48	30	13.54	25	13.84	Mar-12
Over/Under				0.00		0.00		-0.03		-0.01				-0.43	
eV US Large Cap Equity Net Median				8.26		28.91		13.31		10.12		12.57		12.68	Mar-12
Great Lakes	109,587,202	4.28		10.04	15	27.98	34	9.71	60	8.57	43	11.90	36	10.38	Jul-89
S&P 500/Citi Pure Value				7.56	53	25.45	59	9.13	69	7.39	72	13.83	5	--	Jul-89
Over/Under				2.48		2.53		0.58		1.18		-1.93			
eV US Large Cap Value Equity Net Median				7.67		26.31		10.28		8.21		11.33		10.06	Jul-89

\*Current Policy Index: 9% Russell 1000, 3% Russell 2500 Growth, 3% Russell 2500 Value, 4% S&P 500/Citi Pur Value, 2% Russell Micro Cap Index, 6% MSCI Emerging Markets, 3% MSCI EAFE, 4% MSCI EAFE Small Cap, 8% MSCI ACWI ex USA, 3% HFRI Equity Hedge (Total) Index, 16% BBgBarc US Aggregate TR, 3% BBgBarc Global Aggregate TR, 3% JP Morgan GBI - EM Global Diversified Index, 4% NCREIF Property Index, 5% - 60% MSCI ACWI (Net) / 40% CITI WGBI, 5% Cambridge Associates US All PE, 7% NCREIF Property (1 Qtr Lag), 4% HFRI Fund of Funds Composite Index, 4% 50% BBgBarc High Yield/ 50% ICE BofA ML US HY BB-B Rated Constrained Index, 4% 30% CPI+3%/70% S&P/LSTA Leveraged Loan Index



## Chicago Policemen's Annuity and Benefit Fund

# TOTAL PLAN NET PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Total SMID Cap</b>	<b>133,674,229</b>	<b>5.22</b>	<b>6.00</b>	<b>5.74</b>	<b>86</b>	<b>25.79</b>	<b>69</b>	<b>13.75</b>	<b>29</b>	<b>10.74</b>	<b>23</b>	<b>12.75</b>	<b>38</b>	<b>9.87</b>	<b>Nov-04</b>
Russell 2500				8.54	35	27.77	57	10.33	51	8.93	42	12.58	42	9.48	Nov-04
Over/Under				-2.80		-1.98		3.42		1.81		0.17		0.39	
eV US Small-Mid Cap Equity Net Median				7.76		28.56		10.50		8.39		12.08		9.78	Nov-04
William Blair SMID Growth	84,153,679	3.28		4.35	97	30.65	58	18.31	32	13.19	16	14.70	28	11.42	Nov-04
Russell 2500 Growth				10.57	26	32.65	40	15.17	59	10.84	52	14.01	42	10.55	Nov-04
Over/Under				-6.22		-2.00		3.14		2.35		0.69		0.87	
eV US Small-Mid Cap Growth Equity Net Median				8.48		31.26		16.69		10.89		13.51		10.60	Nov-04
Fisher Investment	53,055	0.00		7.05	57	25.70	54	11.35	11	9.50	9	--	--	11.46	Feb-13
Russell 2500 Value				7.07	57	23.56	63	6.12	57	7.18	41	11.25	38	9.65	Feb-13
Over/Under				-0.02		2.14		5.23		2.32		--		1.81	
eV US Small-Mid Cap Value Equity Net Median				7.28		26.38		6.46		6.64		11.01		9.62	Feb-13
Chicago Equity SMID Value	49,467,495	1.93		6.23	74	18.33	90	--	--	--	--	--	--	1.68	May-18
Russell 2500 Value				7.07	57	23.56	63	6.12	57	7.18	41	11.25	38	5.91	May-18
Over/Under				-0.84		-5.23		--		--		--		-4.23	
eV US Small-Mid Cap Value Equity Net Median				7.28		26.38		6.46		6.64		11.01		5.23	May-18
<b>Total Micro Cap</b>	<b>49,250,119</b>	<b>1.92</b>	<b>2.00</b>	<b>11.26</b>	<b>--</b>	<b>17.96</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-0.26</b>	<b>Oct-18</b>
BMO Micro Cap Equity	49,250,119	1.92		11.26	22	17.96	65	--	--	--	--	--	--	-0.26	Oct-18
Russell Microcap				13.45	4	22.43	43	6.39	31	6.57	71	11.26	62	-3.76	Oct-18
Over/Under				-2.19		-4.47		--		--		--		3.50	
eV US Micro Cap Value Equity Net Median				8.32		21.43		5.04		7.72		12.02		-1.28	Oct-18
<b>Total International Equity</b>	<b>652,183,043</b>	<b>25.46</b>	<b>21.00</b>	<b>11.27</b>	<b>31</b>	<b>26.74</b>	<b>39</b>	<b>13.09</b>	<b>29</b>	<b>7.66</b>	<b>36</b>	<b>6.85</b>	<b>46</b>	<b>8.83</b>	<b>Jan-84</b>
MSCI ACWI ex USA				8.92	72	21.51	70	9.87	64	5.51	69	4.97	84	--	Jan-84
Over/Under				2.35		5.23		3.22		2.15		1.88		--	
eV All ACWI ex-US Equity Net Median				10.06		24.82		11.16		6.40		6.81		--	Jan-84



## Chicago Policemen's Annuity and Benefit Fund

# TOTAL PLAN NET PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Total Developed Int'l Equity</b>	<b>466,874,470</b>	<b>18.22</b>	<b>15.00</b>	<b>10.75</b>	<b>37</b>	<b>27.36</b>	<b>37</b>	<b>12.86</b>	<b>32</b>	<b>7.27</b>	<b>39</b>	<b>--</b>	<b>--</b>	<b>6.89</b>	<b>Jan-11</b>
MSCI ACWI ex USA				8.92	72	21.51	70	9.87	64	5.51	69	4.97	84	4.30	Jan-11
Over/Under				1.83		5.85		2.99		1.76				2.59	
eV All ACWI ex-US Equity Net Median				10.06		24.82		11.16		6.40		6.81		5.82	Jan-11
Artisan Partner	109,060,746	4.26		7.96	90	29.59	24	15.09	14	6.02	59	7.72	30	7.16	Apr-05
MSCI ACWI ex USA				8.92	72	21.51	70	9.87	64	5.51	69	4.97	84	5.33	Apr-05
Over/Under				-0.96		8.08		5.22		0.51		2.75		1.83	
eV All ACWI ex-US Equity Net Median				10.06		24.82		11.16		6.40		6.81		6.35	Apr-05
William Blair International Growth	135,721,598	5.30		10.47	27	30.65	9	12.23	20	6.60	43	7.27	36	6.05	Apr-05
MSCI EAFE				8.17	70	22.01	52	9.56	48	5.67	58	5.50	79	4.94	Apr-05
Over/Under				2.30		8.64		2.67		0.93		1.77		1.11	
eV All EAFE Equity Net Median				9.00		22.07		9.31		6.10		6.69		5.65	Apr-05
UBS International	93,885,921	3.66		11.79	23	23.67	57	11.71	47	5.87	61	5.86	70	9.82	Jan-84
MSCI ACWI ex USA				8.92	72	21.51	70	9.87	64	5.51	69	4.97	84	--	Jan-84
Over/Under				2.87		2.16		1.84		0.36		0.89		--	
eV All ACWI ex-US Equity Net Median				10.06		24.82		11.16		6.40		6.81		--	Jan-84
Acadian	128,206,205	5.00		12.75	32	25.18	39	12.27	24	10.79	9	--	--	8.56	Jan-14
MSCI EAFE Small Cap				11.52	62	24.96	40	10.92	47	8.85	42	8.74	68	6.42	Jan-14
Over/Under				1.23		0.22		1.35		1.94				2.14	
eV EAFE Small Cap Equity Net Median				12.12		23.82		10.62		8.38		9.26		6.08	Jan-14



## Chicago Policemen's Annuity and Benefit Fund

# TOTAL PLAN NET PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Total Emerging Markets Equity</b>	<b>185,308,574</b>	<b>7.23</b>	<b>6.00</b>	<b>12.61</b>	<b>27</b>	<b>25.35</b>	<b>26</b>	<b>13.54</b>	<b>31</b>	<b>7.03</b>	<b>25</b>	--	--	<b>6.81</b>	<b>Jan-14</b>
<i>MSCI Emerging Markets</i>				<u>11.84</u>	42	<u>18.44</u>	66	<u>11.57</u>	58	<u>5.61</u>	58	<u>3.68</u>	73	<u>4.27</u>	<i>Jan-14</i>
Over/Under				0.77		6.91		1.97		1.42				2.54	
<i>eV Emg Mkts All Cap Equity Net Median</i>				11.51		21.02		12.06		5.88		4.30		4.60	<i>Jan-14</i>
<b>EARNEST Partners</b>	<b>88,823,067</b>	<b>3.47</b>		<b>12.08</b>	<b>35</b>	<b>22.95</b>	<b>34</b>	<b>13.10</b>	<b>36</b>	<b>5.58</b>	<b>58</b>	--	--	<b>6.38</b>	<b>Jan-14</b>
<i>MSCI Emerging Markets</i>				<u>11.84</u>	42	<u>18.44</u>	66	<u>11.57</u>	58	<u>5.61</u>	58	<u>3.68</u>	73	<u>4.27</u>	<i>Jan-14</i>
Over/Under				0.24		4.51		1.53		-0.03				2.11	
<i>eV Emg Mkts All Cap Equity Net Median</i>				11.51		21.02		12.06		5.88		4.30		4.60	<i>Jan-14</i>
<b>Lazard</b>	<b>96,485,507</b>	<b>3.77</b>		<b>13.10</b>	<b>21</b>	<b>27.66</b>	<b>16</b>	<b>13.97</b>	<b>27</b>	<b>8.57</b>	<b>9</b>	--	--	<b>7.23</b>	<b>Jan-14</b>
<i>MSCI Emerging Markets</i>				<u>11.84</u>	42	<u>18.44</u>	66	<u>11.57</u>	58	<u>5.61</u>	58	<u>3.68</u>	73	<u>4.27</u>	<i>Jan-14</i>
Over/Under				1.26		9.22		2.40		2.96				2.96	
<i>eV Emg Mkts All Cap Equity Net Median</i>				11.51		21.02		12.06		5.88		4.30		4.60	<i>Jan-14</i>
<b>Long/Short Equities</b>	<b>85,347,797</b>	<b>3.33</b>	<b>3.00</b>	<b>2.50</b>	<b>68</b>	<b>10.94</b>	<b>61</b>	--	--	--	--	--	--	<b>3.59</b>	<b>Mar-18</b>
<i>Long/Short Custom Index</i>				<u>0.46</u>	82	<u>2.26</u>	85	<u>1.65</u>	83	<u>1.05</u>	86	<u>0.56</u>	94	<u>2.13</u>	<i>Mar-18</i>
Over/Under				2.04		8.68								1.46	
<i>eV Alt Fundamental - Long/Short Equity Median</i>				4.69		13.87		6.69		5.64		7.06		3.29	<i>Mar-18</i>
<b>UBS Bucktown CPD LLC</b>	<b>53,498,500</b>	<b>2.09</b>		<b>3.01</b>	<b>65</b>	<b>13.25</b>	<b>53</b>	--	--	--	--	--	--	<b>4.14</b>	<b>May-18</b>
<i>Long/Short Custom Index</i>				<u>0.46</u>	82	<u>2.26</u>	85	<u>1.65</u>	83	<u>1.05</u>	86	<u>0.56</u>	94	<u>2.18</u>	<i>May-18</i>
Over/Under				2.55		10.99								1.96	
<i>eV Alt Fundamental - Long/Short Equity Median</i>				4.69		13.87		6.69		5.64		7.06		3.58	<i>May-18</i>
<b>Pluscios L/S EQ FD</b>	<b>31,849,297</b>	<b>1.24</b>		<b>1.65</b>	<b>73</b>	<b>7.27</b>	<b>74</b>	--	--	--	--	--	--	<b>3.48</b>	<b>Apr-18</b>
<i>Long/Short Custom Index</i>				<u>0.46</u>	82	<u>2.26</u>	85	<u>1.65</u>	83	<u>1.05</u>	86	<u>0.56</u>	94	<u>2.15</u>	<i>Apr-18</i>
Over/Under				1.19		5.01								1.33	
<i>eV Alt Fundamental - Long/Short Equity Median</i>				4.69		13.87		6.69		5.64		7.06		3.63	<i>Apr-18</i>

\*Long/Short Custom Index: 100% FTSE T-Bill 3 Months TR





## Chicago Policemen's Annuity and Benefit Fund

# TOTAL PLAN NET PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Total Fixed Income</b>	<b>535,519,824</b>	<b>20.90</b>	<b>22.00</b>	<b>0.20</b>	<b>83</b>	<b>7.12</b>	<b>57</b>	<b>3.61</b>	<b>60</b>	<b>2.81</b>	<b>60</b>	<b>4.10</b>	<b>48</b>	<b>7.08</b>	<b>Jan-84</b>
BBgBarc US Aggregate TR				0.18	84	8.72	45	4.03	49	3.05	54	3.75	56	7.03	Jan-84
Over/Under				0.02		-1.60		-0.42		-0.24		0.35		0.05	
eV All US Fixed Inc Net Median				0.56		8.05		3.98		3.17		3.99		7.13	Jan-84
<b>Core/Core Plus Fixed Income</b>	<b>396,493,284</b>	<b>15.48</b>	<b>16.00</b>	<b>0.07</b>	<b>67</b>	<b>9.18</b>	<b>42</b>	<b>4.22</b>	<b>41</b>	<b>3.35</b>	<b>31</b>	<b>--</b>	<b>--</b>	<b>3.94</b>	<b>Dec-10</b>
BBgBarc US Aggregate TR				0.18	44	8.72	68	4.03	56	3.05	64	3.75	71	3.28	Dec-10
Over/Under				-0.11		0.46		0.19		0.30				0.66	
eV US Core Fixed Inc Net Median				0.15		8.96		4.09		3.14		3.97		3.50	Dec-10
LM	527,162	0.02		0.00	76	9.09	48	3.90	74	3.18	47	4.11	40	4.88	May-06
BBgBarc US Aggregate TR				0.18	44	8.72	68	4.03	56	3.05	64	3.75	71	4.45	May-06
Over/Under				-0.18		0.37		-0.13		0.13		0.36		0.43	
eV US Core Fixed Inc Net Median				0.15		8.96		4.09		3.14		3.97		4.61	May-06
Wellington	101,882,139	3.98		0.54	10	10.24	9	4.91	4	3.86	6	4.84	11	5.07	Dec-04
BBgBarc US Aggregate TR				0.18	44	8.72	68	4.03	56	3.05	64	3.75	71	4.19	Dec-04
Over/Under				0.36		1.52		0.88		0.81		1.09		0.88	
eV US Core Fixed Inc Net Median				0.15		8.96		4.09		3.14		3.97		4.33	Dec-04
Wells Capital	289,148	0.01		0.00	76	8.59	73	3.99	61	3.17	47	4.36	26	4.78	Mar-04
BBgBarc US Aggregate TR				0.18	44	8.72	68	4.03	56	3.05	64	3.75	71	4.08	Mar-04
Over/Under				-0.18		-0.13		-0.04		0.12		0.61		0.70	
eV US Core Fixed Inc Net Median				0.15		8.96		4.09		3.14		3.97		4.24	Mar-04
Earnest Partners	99,757,980	3.89		--	--	--	--	--	--	--	--	--	--	-0.71	Nov-19
BBgBarc US Aggregate TR				0.18	44	8.72	68	4.03	56	3.05	64	3.75	71	-0.12	Nov-19
Over/Under														-0.59	
eV US Core Fixed Inc Net Median				0.15		8.96		4.09		3.14		3.97		-0.13	Nov-19
Garcia Hamilton	100,099,594	3.91		--	--	--	--	--	--	--	--	--	--	-0.15	Nov-19
BBgBarc US Aggregate TR				0.18	44	8.72	68	4.03	56	3.05	64	3.75	71	-0.12	Nov-19
Over/Under														-0.03	
eV US Core Fixed Inc Net Median				0.15		8.96		4.09		3.14		3.97		-0.13	Nov-19
National Investment Services	93,937,259	3.67		--	--	--	--	--	--	--	--	--	--	0.47	Nov-19
BBgBarc US Aggregate TR				0.18	44	8.72	68	4.03	56	3.05	64	3.75	71	-0.12	Nov-19
Over/Under														0.59	
eV US Core Fixed Inc Net Median				0.15		8.96		4.09		3.14		3.97		-0.13	Nov-19

\*Earnest Partners, Garcia Hamilton and National Investment Services were funded in November 2019, therefore three month performance is unavailable



## Chicago Policemen's Annuity and Benefit Fund

# TOTAL PLAN NET PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Global Multi Sector Fixed Income</b>	<b>22,843,263</b>	<b>0.89</b>	<b>3.00</b>	<b>1.07</b>	<b>81</b>	<b>10.46</b>	<b>19</b>	<b>3.90</b>	<b>56</b>	--	--	--	--	<b>3.13</b>	<b>Jun-15</b>
BBgBarc Global Aggregate TR				0.48	97	6.84	54	4.27	43	2.31	74	2.48	96	3.12	Jun-15
Over/Under				0.59		3.62		-0.37						0.01	
eV Global Unconstrained Fixed Inc Net Median				2.23		7.27		3.99		3.09		3.30		3.19	Jun-15
Manulife Asset Management	22,843,263	0.89		1.07	81	10.46	19	3.90	56	--	--	--	--	3.13	Jun-15
BBgBarc Global Aggregate TR				0.48	97	6.84	54	4.27	43	2.31	74	2.48	96	3.12	Jun-15
Over/Under				0.59		3.62		-0.37						0.01	
eV Global Unconstrained Fixed Inc Net Median				2.23		7.27		3.99		3.09		3.30		3.19	Jun-15
<b>Absolute Return Fixed Income</b>	<b>1,649,945</b>	<b>0.06</b>	<b>0.00</b>	<b>-2.18</b>	<b>99</b>	<b>3.20</b>	<b>93</b>	<b>2.42</b>	<b>88</b>	--	--	--	--	<b>2.00</b>	<b>Jun-15</b>
3-Month LIBOR + 3%				1.23	78	5.42	72	5.07	32	4.46	11	3.90	37	4.57	Jun-15
Over/Under				-3.41		-2.22		-2.65						-2.57	
eV Global Unconstrained Fixed Inc Net Median				2.23		7.27		3.99		3.09		3.30		3.19	Jun-15
Mackay Shields	1,649,945	0.06		-2.18	99	3.20	93	2.42	88	--	--	--	--	2.00	Jun-15
3-Month LIBOR + 3%				1.23	78	5.42	72	5.07	32	4.46	11	3.90	37	4.57	Jun-15
Over/Under				-3.41		-2.22		-2.65						-2.57	
eV Global Unconstrained Fixed Inc Net Median				2.23		7.27		3.99		3.09		3.30		3.19	Jun-15
<b>Short Duration</b>	<b>64,364,897</b>	<b>2.51</b>	<b>--</b>	<b>0.56</b>	<b>10</b>	<b>2.83</b>	<b>99</b>	<b>2.11</b>	<b>99</b>	--	--	--	--	<b>2.11</b>	<b>Jan-17</b>
BBgBarc US Govt/Credit 1-3 Yr. TR				0.59	8	4.03	99	2.15	99	1.67	99	1.54	99	2.15	Jan-17
Over/Under				-0.03		-1.20		-0.04						-0.04	
eV US Core Fixed Inc Net Median				0.15		8.96		4.09		3.14		3.97		4.09	Jan-17
HGK Asset Management	64,364,897	2.51		0.56	41	2.83	99	2.11	76	--	--	--	--	2.11	Jan-17
BBgBarc US Govt/Credit 1-3 Yr. TR				0.59	30	4.03	68	2.15	74	1.67	72	1.54	79	2.15	Jan-17
Over/Under				-0.03		-1.20		-0.04						-0.04	
eV US Short Duration Fixed Inc Net Median				0.54		4.29		2.36		1.89		1.90		2.36	Jan-17
<b>Emerging Market Debt</b>	<b>50,168,435</b>	<b>1.96</b>	<b>3.00</b>	<b>0.05</b>	<b>99</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	--	--	--	--	--	--
JP Morgan GBI - EM Global Diversified Index				5.20	20	13.47	59	7.03	26	2.78	83	2.71	79	--	
Over/Under				-5.15											
eV All Emg Mkts Fixed Inc Net Median				3.52		13.96		6.38		5.33		5.63		--	
Lazard EM Income Fund L	25,436,700	0.99		1.16	99	--	--	--	--	--	--	--	--	2.61	Mar-19
JP Morgan GBI - EM Global Diversified Index				5.20	20	13.47	59	7.03	26	2.78	83	2.71	79	8.79	Mar-19
Over/Under				-4.04										-6.18	
eV All Emg Mkts Fixed Inc Net Median				3.52		13.96		6.38		5.33		5.63		8.47	Mar-19
Blackrock EM Local Curr	24,731,735	0.97		-1.07	99	--	--	--	--	--	--	--	--	-1.07	Aug-19
JP Morgan GBI - EM Global Diversified Index				5.20	20	13.47	59	7.03	26	2.78	83	2.71	79	3.41	Aug-19
Over/Under				-6.27										-4.48	
eV All Emg Mkts Fixed Inc Net Median				3.52		13.96		6.38		5.33		5.63		2.39	Aug-19



## Chicago Policemen's Annuity and Benefit Fund

# TOTAL PLAN NET PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Total Private Equity</b>	<b>23,516,693</b>	<b>0.92</b>	<b>5.00</b>	<b>-1.53</b>	--	<b>3.20</b>	--	<b>1.51</b>	--	<b>4.53</b>	--	<b>9.54</b>	--	<b>7.91</b>	<b>Oct-95</b>
Cambridge Associates US All PE				0.00	--	9.90	--	12.58	--	11.26	--	13.37	--	14.17	Oct-95
Over/Under				-1.53	--	-6.70	--	-11.07	--	-6.73	--	-3.83	--	-6.26	
Adams Street Partners	2,950,857	0.12		-3.16	--	-10.20	--	-2.54	--	1.27	--	5.95	--	8.15	Oct-95
Invesco Vent Alpha Fund	20,552,714	0.80		-1.29	--	5.50	--	--	--	--	--	--	--	6.77	Jul-17
<b>Total Infrastructure</b>	<b>76,884,846</b>	<b>3.00</b>	<b>4.00</b>	<b>2.84</b>	--	<b>10.21</b>	--	<b>20.26</b>	--	<b>21.61</b>	--	<b>16.79</b>	--	<b>9.24</b>	<b>Nov-07</b>
NCREIF Property Index				1.55	--	6.42	--	6.70	--	8.25	--	10.17	--	6.35	Nov-07
Over/Under				1.29	--	3.79	--	13.56	--	13.36	--	6.62	--	2.89	
Global Infrastructure Partners	1,368,834	0.05		-5.29	--	202.92	--	74.05	--	64.52	--	37.90	--	26.45	Nov-07
Global Infrastructure Partners III	21,114,504	0.82		1.38	--	3.64	--	3.39	--	--	--	--	--	3.39	Jan-17
Ullico Infra Taxable	53,922,316	2.10		3.81	--	9.61	--	--	--	--	--	--	--	8.28	May-18
Global Infrastructure Partners IV	218,751	0.01		0.00	--	--	--	--	--	--	--	--	--	0.00	Jun-19
<b>Total Real Estate</b>	<b>144,096,338</b>	<b>5.62</b>	<b>7.00</b>	<b>2.51</b>	--	<b>7.43</b>	--	<b>4.82</b>	--	<b>5.16</b>	--	<b>6.86</b>	--	<b>5.70</b>	<b>Oct-95</b>
NCREIF Property Index 1 Qtr. Lag				1.41	--	6.23	--	6.76	--	8.57	--	9.77	--	9.39	Oct-95
Over/Under				1.10	--	1.20	--	-1.94	--	-3.41	--	-2.91	--	-3.69	
<b>Private Real Estate</b>	<b>127,547,927</b>	<b>4.98</b>	--	<b>2.61</b>	--	<b>4.73</b>	--	<b>4.21</b>	--	<b>5.64</b>	--	--	--	<b>7.50</b>	<b>Dec-10</b>
Sound Mark Partners LLC	17,823,446	0.70		1.93	--	8.44	--	--	--	--	--	--	--	6.06	Sep-17
Brookfield RE Fund B	4,361,263	0.17		0.49	--	6.61	--	--	--	--	--	--	--	6.64	Jul-17
UBS Realty Investors	14,242,062	0.56		0.54	--	-1.85	--	2.99	--	5.12	--	7.66	--	3.53	Jan-07
M.S. Prime Property	21,131,081	0.82		1.15	--	4.60	--	6.06	--	7.71	--	10.13	--	5.02	Dec-06
Mesirow RE Value	50,547	0.00		5,054,600.00	--	3,691,303.86	--	3,222.81	--	767.82	--	--	--	333.03	Jul-12
DRA Advisors	209,814	0.01		0.70	--	13.12	--	5.46	--	6.25	--	27.06	--	20.84	Oct-07
Morgan Stanley RE VI	647	0.00		7.73	--	14.14	--	12.59	--	8.67	--	9.87	--	-10.82	Jul-07
Lone Star X	12,862,997	0.50		2.44	--	8.21	--	--	--	--	--	--	--	-25.53	Dec-17
Lone Star Global	390,335	0.02		-3.49	--	-36.83	--	-14.13	--	-4.84	--	-0.55	--	-0.09	Aug-08
Lone Star Fund VI	1,515,293	0.06		11.05	--	12.46	--	4.66	--	0.66	--	6.77	--	7.03	Jul-08
Apollo Real Estate Advisors	177,268	0.01		-8.81	--	-18.24	--	-33.58	--	-23.15	--	-8.41	--	-14.78	May-08
AG Core Plus Realty II	400,182	0.02		-1.10	--	0.09	--	-8.79	--	-0.04	--	8.37	--	4.89	Aug-07
ABR Chesapeake III	1	0.00		14.93	--	-23.61	--	-7.24	--	-0.63	--	0.94	--	0.53	Sep-06
Mesirow FIN RE Val III	6,393,416	0.25		0.24	--	6.64	--	--	--	--	--	--	--	-0.77	May-18
Lone Star XI	688,576	0.03		-27.02	--	--	--	--	--	--	--	--	--	-31.22	Jun-19
Blackstone Property	30,634,157	1.20		2.11	--	--	--	--	--	--	--	--	--	2.11	Jun-19
Terracap IV Inst	16,664,059	0.65		11.09	--	--	--	--	--	--	--	--	--	11.09	Aug-19
NCREIF Property Index				1.55	--	6.42	--	6.70	--	8.25	--	10.17	--	2.98	Aug-19
Over/Under				9.54	--	--	--	--	--	--	--	--	--	8.11	



## Chicago Policemen's Annuity and Benefit Fund

# TOTAL PLAN NET PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>REIT</b>	<b>16,548,411</b>	<b>0.65</b>	<b>--</b>	<b>1.76</b>	<b>99</b>	<b>23.97</b>	<b>57</b>	<b>8.23</b>	<b>99</b>	<b>4.83</b>	<b>99</b>	<b>7.80</b>	<b>63</b>	<b>12.31</b>	<b>Dec-08</b>
<i>eV EAFE REIT Net Median</i>				7.47		24.32		13.93		8.05		7.91		11.53	Dec-08
ING Clarion	16,548,411	0.65		1.76	99	23.97	57	8.23	99	4.83	99	7.80	63	12.31	Dec-08
<i>NAREIT Equity Index</i>				-0.76	99	26.00	32	8.14	99	7.21	99	11.94	1	14.77	Dec-08
<i>Over/Under</i>				2.52		-2.03		0.09		-2.38		-4.14		-2.46	
<i>eV EAFE REIT Net Median</i>				7.47		24.32		13.93		8.05		7.91		11.53	Dec-08
<b>Total Hedge Funds</b>	<b>158,852,758</b>	<b>6.20</b>	<b>4.00</b>	<b>-0.94</b>	<b>96</b>	<b>0.35</b>	<b>97</b>	<b>3.42</b>	<b>74</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>4.10</b>	<b>Aug-16</b>
<i>HFRI Fund of Funds Composite Index</i>				3.03	44	8.33	52	3.87	69	2.35	77	2.82	85	3.88	Aug-16
<i>Over/Under</i>				-3.97		-7.98		-0.45						0.22	
<i>eV Alt Fund of Funds - Multi-Strategy Median</i>				2.67		8.63		4.88		3.35		4.53		5.11	Aug-16
Pluscios	63,595,284	2.48		1.60	75	1.85	95	3.91	68	--	--	--	--	4.53	Aug-16
<i>HFRI Fund of Funds Composite Index</i>				3.03	44	8.33	52	3.87	69	2.35	77	2.82	85	3.88	Aug-16
<i>Over/Under</i>				-1.43		-6.48		0.04						0.65	
<i>eV Alt Fund of Funds - Multi-Strategy Median</i>				2.67		8.63		4.88		3.35		4.53		5.11	Aug-16
EnTrust Permal	54,755,985	2.14		-3.26	99	-2.27	99	--	--	--	--	--	--	3.16	Feb-17
<i>HFRI Fund of Funds Composite Index</i>				3.03	44	8.33	52	3.87	69	2.35	77	2.82	85	3.62	Feb-17
<i>Over/Under</i>				-6.29		-10.60								-0.46	
<i>eV Alt Fund of Funds - Multi-Strategy Median</i>				2.67		8.63		4.88		3.35		4.53		4.70	Feb-17
Blueprint Capital Advisors	40,501,488	1.58		-1.60	97	2.49	94	--	--	--	--	--	--	1.88	Aug-17
<i>Blueprint Capital Custom Index</i>				3.03	44	8.33	52	--	--	--	--	--	--	3.03	Aug-17
<i>Over/Under</i>				-4.63		-5.84								-1.15	
<i>eV Alt Fund of Funds - Multi-Strategy Median</i>				2.67		8.63		4.88		3.35		4.53		4.06	Aug-17
<b>Total Global Asset Allocation</b>	<b>114,677,625</b>	<b>4.48</b>	<b>5.00</b>	<b>4.32</b>	<b>51</b>	<b>11.91</b>	<b>69</b>	<b>6.71</b>	<b>50</b>	<b>4.31</b>	<b>53</b>	<b>--</b>	<b>--</b>	<b>5.28</b>	<b>Dec-11</b>
<i>60% MSCI ACWI (Net) / 40% FTSE WGBI</i>				5.16	36	18.17	32	9.23	22	6.02	26	6.18	41	6.70	Dec-11
<i>Over/Under</i>				-0.84		-6.26		-2.52		-1.71				-1.42	
<i>eV Global TAA Net Median</i>				4.37		15.72		6.67		4.57		5.92		5.90	Dec-11
PIMCO	114,677,625	4.48		4.32	51	12.14	65	6.63	52	4.58	50	--	--	5.02	Dec-11
<i>PIMCO All Asset Index</i>				1.86	85	11.31	72	5.14	74	4.29	53	5.05	70	4.38	Dec-11
<i>Over/Under</i>				2.46		0.83		1.49		0.29				0.64	
<i>eV Global TAA Net Median</i>				4.37		15.72		6.67		4.57		5.92		5.90	Dec-11



## Chicago Policemen's Annuity and Benefit Fund

# TOTAL PLAN NET PERFORMANCE DETAIL

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Opportunistic Credit</b>	<b>77,330,196</b>	<b>3.02</b>	<b>4.00</b>	<b>0.04</b>	--	<b>4.21</b>	--	<b>4.74</b>	--	--	--	--	--	<b>4.67</b>	<b>Nov-16</b>
Opportunistic Credit Custom Index				2.17	--	11.38	--	5.41	--	--	--	--	--	5.55	Nov-16
Over/Under				-2.13		-7.17		-0.67						-0.88	
Beach Point LP	25,340,354	0.99		4.14	--	9.38	--	7.99	--	--	--	--	--	7.98	Dec-16
Voya	22,541,531	0.88		0.65	--	6.88	--	3.90	--	--	--	--	--	3.85	Nov-16
Eagle Point Credit Management	18,655,543	0.73		-6.54	--	-6.47	--	--	--	--	--	--	--	-2.47	Aug-18
Voya Bank Loan	10,792,768	0.42		1.72	--	7.93	--	--	--	--	--	--	--	7.93	Jan-19
<b>Private Debt</b>	<b>80,847,140</b>	<b>3.16</b>	<b>4.00</b>	<b>1.74</b>	--	<b>9.38</b>	--	<b>9.16</b>	--	--	--	--	--	<b>7.83</b>	<b>Nov-16</b>
Private Debt Custom Index				1.23	--	5.42	--	5.07	--	--	--	--	--	5.01	Nov-16
Over/Under				0.51		3.96		4.09						2.82	
Clareant Euro Dir	20,613,236	0.80		2.97	--	11.23	--	11.22	--	--	--	--	--	9.90	Nov-16
Dorchester Secondaries Offshore IV	16,916,642	0.66		-0.64	--	11.77	--	--	--	--	--	--	--	8.82	Mar-17
Monroe Capital (PE)	16,012,374	0.63		1.57	--	3.77	--	9.90	--	--	--	--	--	8.28	Nov-16
Crestline Opportunity FD III	17,543,365	0.68		2.67	--	9.85	--	--	--	--	--	--	--	7.84	Jun-17
Clareant Euro Dir III	2,529,283	0.10		0.00	--	0.00	--	--	--	--	--	--	--	0.00	Dec-18
Monroe Capital Private	7,232,240	0.28		2.71	--	11.05	--	--	--	--	--	--	--	9.42	Nov-18
<b>Cash</b>	<b>20,607,106</b>	<b>0.80</b>	<b>0.00</b>	<b>0.53</b>	--	<b>2.26</b>	--	<b>1.73</b>	--	<b>1.18</b>	--	--	--	<b>0.79</b>	<b>Dec-10</b>
91 Day T-Bills				0.39	--	2.07	--	1.64	--	1.05	--	0.56	--	0.60	Dec-10
Over/Under				0.14		0.19		0.09		0.13				0.19	
Cash	20,607,106	0.80		0.53	20	2.26	57	1.73	57	1.18	57	0.73	32	2.43	Sep-98
91 Day T-Bills				0.39	91	2.07	87	1.64	71	1.05	72	0.56	72	1.82	Sep-98
Over/Under				0.14		0.19		0.09		0.13		0.17		0.61	
<b>Transitions</b>	<b>936,591</b>	<b>0.04</b>	--	<b>1.53</b>	--	<b>7.25</b>	--	<b>5.85</b>	--	<b>6.15</b>	--	--	--	<b>3.80</b>	<b>Jul-14</b>
Tax Reclaims	936,591	0.04		1.53	--	7.25	--	5.85	--	6.15	--	--	--	3.80	Jul-14

\*Opportunistic Credit Custom Index: 50% BBgBarc High Yield / 50% ICE BofA ML US HY BB-B Rated Constrained Index

\*Private Debt Custom Index: 3 - Month LIBOR + 3%

