

Callan



## **Executive Summary**

**June 30, 2023**

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**Chicago Teachers' Pension Fund  
Performance Evaluation Executive Summary  
Second Quarter 2023**

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# Chicago Teachers' Pension Fund

## Performance Evaluation Executive Summary

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#### Total Fund Commentary

The Fund was valued at \$11,895 million at the end of the second quarter, representing an increase of approximately \$224 million from March 31, 2023. The change in the Fund's market value was attributable to capital appreciation and cash outflows. Investment performance resulted in an increase in the Fund's valuation of \$356 million, and outflows totaled \$132 million over the period. Overall, the Fund's asset allocation was close to the permissible Investment Policy ranges, with the exception of private equity and fixed income. The private equity component of the portfolio exceeded the upper bound of the range by approximately 1.4% while fixed income was below the lower bound of the range by approximately 1.3%. Based on a recent study, the Board voted to adopt a new strategic asset allocation for the Fund, resulting in a reduction to non-U.S. equities and the introduction of private credit. We believe it is prudent to take advantage of cash flow activity and the impending strategic reduction to non-U.S. equity to rebalance the fixed income allocation. Conversely, given the illiquid nature of private equity investments, the overweight position in this asset class should be corrected over time by employing an appropriate pacing strategy. With respect to the Fund's asset allocation versus the current target at the end of the second quarter, underweights to domestic equity (-1.3%), international equity (-2.8%), and fixed income (-4.3%) were offset by overweights to real estate (+2.3%), private equity (+3.4%) and cash (+2.6%).

A recession in the U.S. does not appear imminent, despite the most aggressive rate hikes since the 1980s over the past 15 months. The labor market remains strong, expectations for second quarter GDP growth are positive, consumer spending has exceeded expectations, and even housing has shown signs of life. Further good news comes from inflation, which has moderated, though largely due to falling energy prices.

In this environment, the Fund had a net return of 2.99% over the quarter (3.09% gross of fees), underperforming the Policy Target by 26 basis points, but ranking in the 44<sup>th</sup> percentile of peers. Longer-term performance (trailing three-, five-, seven-, and ten-year periods) is ahead of the Policy Target and, with the exception of the trailing three-year period, ranks ahead of the peer group median. Over the quarter, fixed income, international equity, and infrastructure contributed most to results. The rest of the asset classes in the portfolio produced slightly negative attribution results over the quarter. It is important to note that private market investments, such as private equity, infrastructure, and real estate are valued on a lagged basis and therefore should be evaluated in more detail separately, using appropriate metrics to capture the magnitude and timing of the cash flows associated with these investments. Callan prepares separate reports on behalf of CTPF to evaluate the performance of these investments in more detail.

#### Closing Thoughts

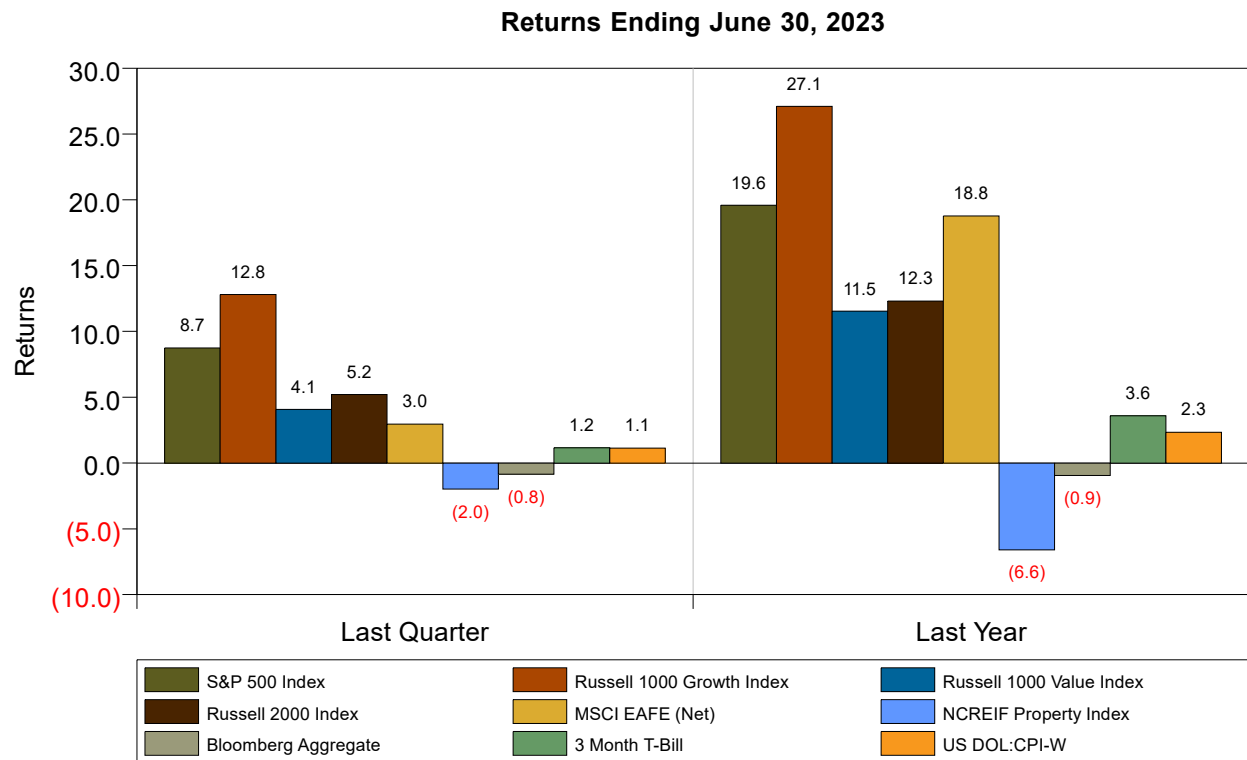
The ultimate path of interest rates remains unknown, as does the eventual impact on inflation and the global economy. Economies are widely expected to slow and inflation to be conquered eventually, but there are disagreements around the timing and the depth of downturns. The World Bank estimates that global growth will be 2.1% in 2023, down from 3.1% in 2022. Its prediction for the U.S. is a muted 1.1% in 2023 and to decelerate to 0.8% in 2024. Bond and stock markets present a perplexing picture. The U.S. Treasury yield curve is more inverted than it has been since the early 1980s. (Historically, an inversion has been a good predictor of a recession, though the curve has

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been inverted since April 2022). Stock markets, conversely, do not appear to have priced in a significant slowdown. While 2023 has thus far felt “too good to be true” for some of us, geopolitics continue to be a source of concern and storm clouds on the global economic horizon have mounted. With uncertainty ahead, Callan continues to recommend a disciplined investment process that includes a well-defined long-term asset-allocation policy.

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**Select Market Returns**



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**QUARTERLY REVIEW**

• **Second Quarter, 2023 Investment Performance Update:**

- Performance: For the second quarter, the Fund underperformed the market benchmark by 16 basis points, gross of investment management fees (26 basis points net of fees) and ranked in the 44<sup>th</sup> percentile of its peers. Longer-term performance (trailing three-years and longer) continues to be competitive relative to benchmarks.

• **Watch Status Report:** The following managers are on the Watch List:

- Ariel: Included on the Watch List due to underperformance.
- Lazard: Included on the Watch List due to underperformance. Lazard's performance improved in the second quarter. Lazard announced a reduction in personnel across the asset management business, representing about 4% of the business. Specific to Lazard's international equity and emerging markets equity platform, Kevin Matthews, former Managing Director and Portfolio Manager/Analyst, left the firm effective January 17, 2023. The international equity and emerging markets platforms continue to be supported by a bench of qualified professionals. We will continue to monitor this manager closely going forward.
- Strategic Global Advisors: Included on the Watch List due to underperformance.
- State Street Global Advisors: Included on the watch list due to missing MWDBE brokerage goals.
- Leading Edge: Included on the Watch List due to underperformance.
- Attucks: Attucks announced several initiatives impacting their technology platform and investment team during the fourth quarter of 2022. The firm made enhancements to its back office operations, which will allow them to improve data flow in the areas of accounting, performance, compliance, billing and content distribution. With respect to the investment team, Attucks added two individuals, Dhruvi Shah, who joined as a Senior Investment Analyst, and Sinclair Nagy, who joined as a Vice President. Shah will focus on fixed income, while Nagy will provide support in the areas of portfolio management, manager research and private markets coverage. In addition, Attucks announced that former CIO, Patrick Silvestri, decided to leave the firm effective January 1, 2023. The role of Chief Investment Officer is being eliminated, as part of Attucks' strategic plan. Given the magnitude of these changes and the portfolio's underperformance, Attucks has been placed on watch.
- William Blair International Small Cap: Included on the Watch List due to underperformance.

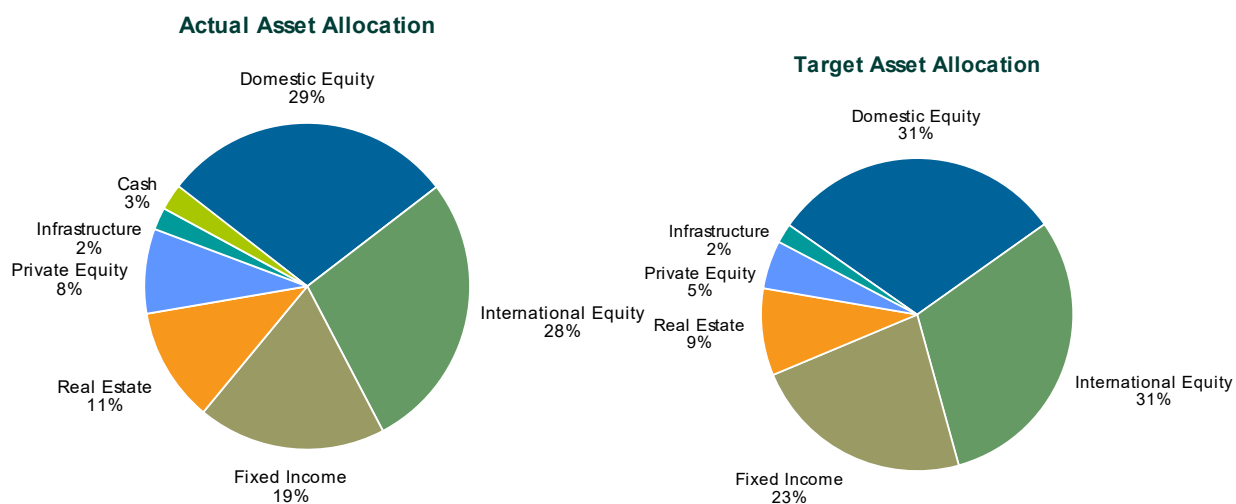
# Chicago Teachers' Pension Fund

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#### Asset Allocation

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Asset Class	\$Millions Actual	Weight Actual	Target	Percent Difference	\$Millions Difference
Domestic Equity	3,469	29.2%	30.5%	(1.3%)	(158)
International Equity	3,293	27.7%	30.5%	(2.8%)	(335)
Fixed Income	2,218	18.7%	23.0%	(4.3%)	(517)
Real Estate	1,348	11.3%	9.0%	2.3%	278
Private Equity	996	8.4%	5.0%	3.4%	401
Infrastructure	264	2.2%	2.0%	0.2%	26
Cash	306	2.6%	0.0%	2.6%	306
Total	11,895	100.0%	100.0%		

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**INVESTMENT MANAGER ASSET ALLOCATIONS**

**Investment Manager Asset Allocation**

The table below contrasts the distribution of assets across the Fund's investment managers as of June 30, 2023, with the distribution as of March 31, 2023. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

	June 30, 2023				March 31, 2023	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
<b>DOMESTIC EQUITY</b>	<b>\$3,469,441,172</b>	<b>29.17%</b>	<b>\$(14,156,644)</b>	<b>\$258,990,017</b>	<b>\$3,224,607,800</b>	<b>27.63%</b>
Rhumblin Rsl 1000 LCC	2,275,841,284	19.13%	(9,059,486)	176,823,493	2,108,077,277	18.06%
Rhumblin Rsl 1000 LCG	332,582,315	2.80%	(766,294)	37,545,283	295,803,326	2.53%
Zevenbergen US ACE	106,177,624	0.89%	(110,315)	14,287,239	92,000,699	0.79%
Channing US ACE	129,370,446	1.09%	(983,207)	1,958,030	128,395,623	1.10%
Rhumblin LCV	289,792,512	2.44%	(1,687,202)	10,809,397	280,670,318	2.40%
NTGI Structured SCC	78,701,885	0.66%	(448,418)	3,182,031	75,968,271	0.65%
Conestoga SCG	103,892,953	0.87%	(287,494)	4,993,438	99,187,009	0.85%
Phocas SCV	85,027,477	0.71%	(582,889)	4,039,944	81,570,422	0.70%
<b>Attucks Domestic Equity (Mgr of Mgrs)</b>	<b>\$68,054,675</b>	<b>0.57%</b>	<b>\$(231,339)</b>	<b>\$5,351,161</b>	<b>\$62,934,853</b>	<b>0.54%</b>
Attucks Matarin SCC	1,652	0.00%	(13)	559	1,106	0.00%
Attucks Heard ACC	31,739,299	0.27%	(127,592)	3,402,639	28,464,251	0.24%
Attucks Lasanti	22,916,223	0.19%	(20,012)	1,391,129	21,545,105	0.18%
Attucks Paradigm LCV	13,386,039	0.11%	(87,797)	556,760	12,917,077	0.11%
Attucks Cash Acct LCE	336	0.00%	(45)	152	230	0.00%
Attucks Transition	11,127	0.00%	4,121	(77)	7,084	0.00%
<b>INTERNATIONAL EQUITY</b>	<b>\$3,292,907,482</b>	<b>27.68%</b>	<b>\$(36,274,358)</b>	<b>\$100,577,204</b>	<b>\$3,228,604,636</b>	<b>27.66%</b>
Ariel EAFE ILCV	73,514,557	0.62%	(1,404,065)	1,387,377	73,531,245	0.63%
DFA ISCV	165,961,182	1.40%	(152,383)	(764,309)	166,877,874	1.43%
Earnest Partners EME	190,799,200	1.60%	(2,148,319)	3,735,619	189,211,900	1.62%
Earnest Partners ILCE	580,319,168	4.88%	(6,635,903)	17,223,316	569,731,755	4.88%
Lazard Asst Mgt ILCE	582,691,844	4.90%	(6,286,174)	25,036,730	563,941,289	4.83%
Leading Edge IE MOM	133,930,343	1.13%	(1,720,942)	4,698,340	130,952,945	1.12%
Morgan Stanley ILCE	573,931,176	4.83%	(8,855,300)	18,424,389	564,362,088	4.84%
Strategic Global Adv. EAFE	77,635,649	0.65%	(1,115,021)	2,578,959	76,171,711	0.65%
William Blair ILCG	581,383,934	4.89%	(4,524,312)	17,561,645	568,346,600	4.87%
William Blair ISCE	206,553,216	1.74%	(2,194,798)	4,851,875	203,896,139	1.75%
<b>Attucks Int'l Equity</b>	<b>\$126,187,212</b>	<b>1.06%</b>	<b>\$(1,237,140)</b>	<b>\$5,843,263</b>	<b>\$121,581,090</b>	<b>1.04%</b>
Attucks ARI	309	0.00%	0	7	302	0.00%
Attucks Globeflex Int'l ACC	8,102	0.00%	0	1	8,102	0.00%
Attucks GlobeFlex Global Eq	31,720,098	0.27%	(549,061)	2,112,526	30,156,633	0.26%
Attucks Brown Capital Int'l SCG	26,070,166	0.22%	(151,672)	1,639,994	24,581,843	0.21%
Attucks Ativo Capital EM	0	0.00%	(4,131)	4,131	0	0.00%
Attucks Glovista EM Equity	18,316,156	0.15%	(19,064)	252,227	18,082,993	0.15%
Attucks Redwood Int'l ACC	24,980,626	0.21%	(198,145)	1,083,334	24,095,437	0.21%
Attucks Paradigm ILCC	25,091,754	0.21%	(315,067)	751,042	24,655,780	0.21%
<b>FIXED INCOME</b>	<b>\$2,218,463,783</b>	<b>18.65%</b>	<b>\$(21,465,929)</b>	<b>\$(13,045,833)</b>	<b>\$2,252,975,545</b>	<b>19.30%</b>
Garcia Hamilton FIC	263,089,960	2.21%	(1,938,919)	(2,864,200)	267,893,080	2.30%
LM Capital FICP	303,270,555	2.55%	(3,193,368)	(1,513,372)	307,977,295	2.64%
Pugh FIC	258,598,004	2.17%	(2,599,029)	(1,326,570)	262,523,603	2.25%
SSgA Agg Bond Index FI	400,075,553	3.36%	(3,289,911)	(3,033,682)	406,399,146	3.48%
Ramirez Fixed Income	109,175,516	0.92%	(1,331,727)	(563,151)	111,070,394	0.95%
WAMCO FICP	569,040,364	4.78%	(6,399,812)	(2,464,688)	577,904,863	4.95%
Wellington Core Bond	259,853,534	2.18%	(2,280,028)	(1,203,840)	263,337,401	2.26%
<b>Attucks Fixed Income</b>	<b>\$55,360,297</b>	<b>0.47%</b>	<b>\$(433,135)</b>	<b>\$(76,330)</b>	<b>\$55,869,762</b>	<b>0.48%</b>
Attucks Barksdale	17,246,617	0.14%	(169,303)	(135,970)	17,551,889	0.15%
Attucks New Century GI TIPS	19,451,096	0.16%	(67,517)	(179,218)	19,697,830	0.17%
Attucks LM Capital EMD	18,662,584	0.16%	(196,316)	238,857	18,620,043	0.16%
<b>TOTAL FUND</b>	<b>\$11,894,695,143</b>	<b>100.0%</b>	<b>\$(132,458,357)</b>	<b>\$356,566,281</b>	<b>\$11,670,587,220</b>	<b>100.0%</b>



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**INVESTMENT MANAGER ASSET ALLOCATIONS (Continued)**

	June 30, 2023			Inv. Return	March 31, 2023	
	Market Value	Weight	Net New Inv.		Market Value	Weight
<b>INFRASTRUCTURE</b>	<b>\$263,731,108</b>	<b>2.22%</b>	<b>\$10,078,552</b>	<b>\$8,021,989</b>	<b>\$245,630,567</b>	<b>2.10%</b>
Brookfield Infra III	50,863,776	0.43%	(2,886,113)	2,024,831	51,725,058	0.44%
Brookfield Infrastructure IV	24,014,163	0.20%	(1,639,516)	851,103	24,802,576	0.21%
Brookfield Infrastructure Fund V	3,628,466	0.03%	3,628,466	0	-	-
JLC Infrastructure Fund I	4,552,076	0.04%	(34,563)	6,001	4,580,638	0.04%
IFM Global Fund	46,499,700	0.39%	(144,104)	2,082,172	44,561,632	0.38%
JP Morgan Infr-OE	83,049,149	0.70%	(1,137,689)	2,381,029	81,805,809	0.70%
Macquarie European Fd III Infr	336,733	0.00%	3,036	(13,791)	347,488	0.00%
Macquarie Infrastructure V	25,199,385	0.21%	2,353,345	535,736	22,310,303	0.19%
Macquarie Infrastructure VI	9,935,689	0.08%	9,935,689	0	-	-
Ullico Taxable Fund	15,651,970	0.13%	0	154,908	15,497,063	0.13%
<b>REAL ESTATE</b>	<b>\$1,348,476,220</b>	<b>11.34%</b>	<b>\$(5,348,749)</b>	<b>\$(32,623,368)</b>	<b>\$1,386,448,338</b>	<b>11.88%</b>
BIG RE Fund I	20,266,278	0.17%	443,392	1,774,736	18,048,150	0.15%
BIG RE Fund II	20,503,515	0.17%	6,268,211	978,137	13,257,167	0.11%
BREDS HG LP	20,991,204	0.18%	(324,915)	433,080	20,883,039	0.18%
Clarion Lion Indus Tr	237,456,976	2.00%	(531,235)	(2,865,227)	240,853,438	2.06%
Europa Fd III PRE	294,663	0.00%	(4)	(4,315)	298,982	0.00%
Fortress Japan PRE	988,826	0.01%	(58,633)	(53,610)	1,101,069	0.01%
Fortress Japan Fd II PRE	2,166,608	0.02%	(23,916)	123,241	2,067,283	0.02%
Franklin Temp PREMOM	1,478,048	0.01%	0	0	1,478,048	0.01%
GreenOak Fund III	17,467,405	0.15%	(107,259)	(184,825)	17,759,489	0.15%
Heitman IV LP	22,318,844	0.19%	(2,954,744)	(280,238)	25,553,825	0.22%
Heitman V LP	16,153,172	0.14%	(48,258)	(346,163)	16,547,593	0.14%
JP Morgan Strat PRE-OE	186,583,649	1.57%	(1,473,606)	(2,978,285)	191,035,541	1.64%
LaSalle Property PRE-OE	254,585,045	2.14%	(2,943,809)	(12,658,403)	270,187,257	2.32%
Longpoint RE Fd I	81,363	0.00%	(213,642)	(73,114)	368,119	0.00%
Longpoint RE Fd II	28,938,192	0.24%	2,725,345	674,096	25,538,751	0.22%
Long Wharf VI	24,122,861	0.20%	19,876	1,368,815	22,734,170	0.19%
MB Asia RE Fd PRE	147,329	0.00%	(98,015)	(1,029)	246,373	0.00%
Newport Cap Fund II	21,011,692	0.18%	(66,027)	(104,585)	21,182,304	0.18%
Newport Cap Fund III	14,450,159	0.12%	1,622,886	360,399	12,466,874	0.11%
Oak Street Fund IV RE	10,571,091	0.09%	(883,717)	240,465	11,214,343	0.10%
PRISA Fd I PRE-OE	184,221,379	1.55%	(1,736,051)	(7,185,794)	193,143,224	1.65%
PRISA Fd II PRE-OE	132,867,695	1.12%	(1,213,940)	(6,245,085)	140,326,721	1.20%
SASC II	11,834,324	0.10%	474,727	151,874	11,207,722	0.10%
TA Associates Realty Fund XII	47,587,267	0.40%	(3,241,661)	177,731	50,651,197	0.43%
UBS Realty PRE-OE	58,187,899	0.49%	(530,542)	(6,629,259)	65,347,700	0.56%
Walton St Fd III PRE	52,766	0.00%	0	(885)	53,651	0.00%
Walton St Fd V PRE	721,918	0.01%	(438,458)	(117,552)	1,277,927	0.01%
Walton St Fd VI PRE	10,892,615	0.09%	(12,065)	772,314	10,132,366	0.09%
Walton St Mexico Fd I PRE	1,533,438	0.01%	(2,688)	50,113	1,486,013	0.01%
<b>TOTAL FUND</b>	<b>\$11,894,695,143</b>	<b>100.0%</b>	<b>\$(132,458,357)</b>	<b>\$356,566,281</b>	<b>\$11,670,587,220</b>	<b>100.0%</b>

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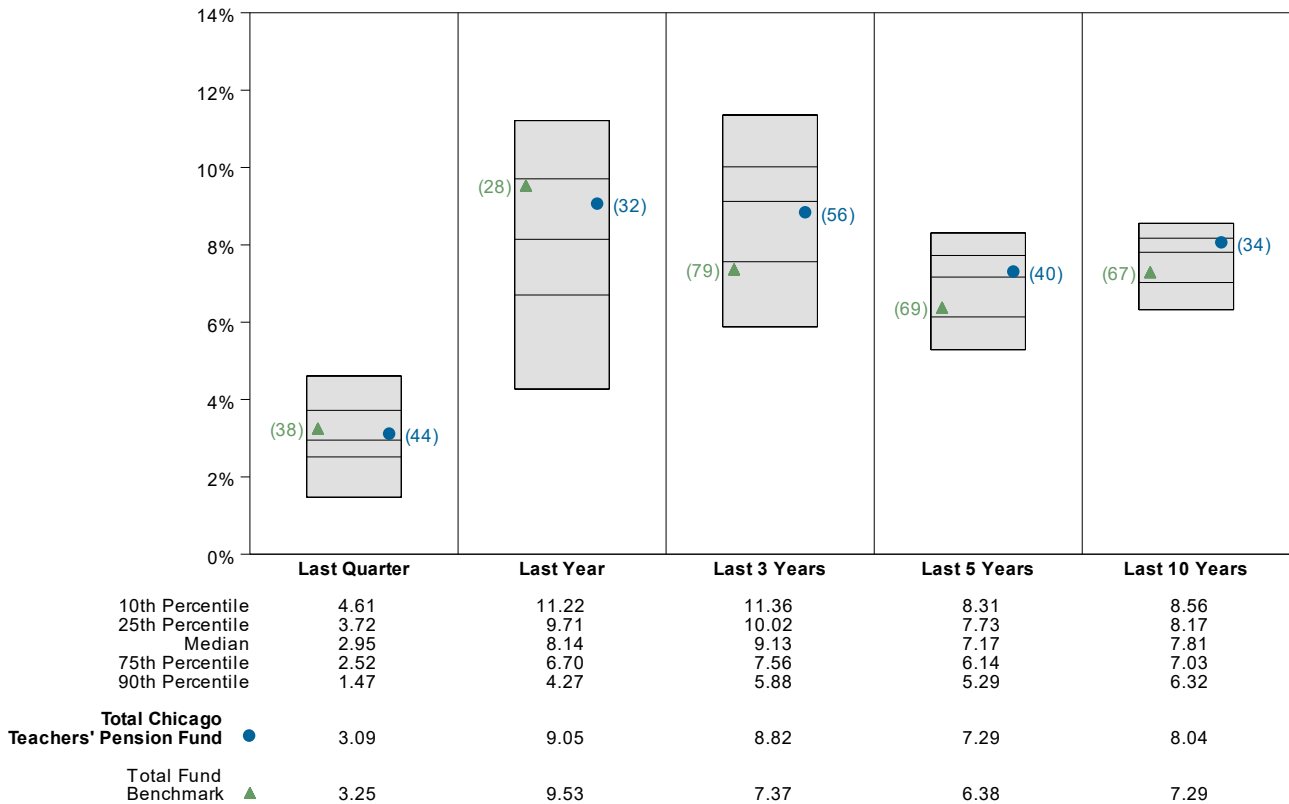
**INVESTMENT MANAGER ASSET ALLOCATIONS (Continued)**

	June 30, 2023				March 31, 2023	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
<b>PRIVATE EQUITY</b>	<b>\$995,639,375</b>	<b>8.37%</b>	<b>\$2,933,162</b>	<b>\$30,282,525</b>	<b>\$962,423,688</b>	<b>8.25%</b>
Adams St Many Fd PE	423,590,828	3.56%	(1,657,092)	9,082,938	416,164,982	3.57%
African Dev Ptr III	7,607,034	0.06%	2,369,932	(218,841)	5,455,943	0.05%
AFIG Fund II LP	7,618,768	0.06%	(27,277)	(29,649)	7,675,694	0.07%
Aldrich Capital Partners II	853,101	0.01%	(30,553)	(41,143)	924,797	0.01%
Astra Partners I	11,580,140	0.10%	1,280,138	(414,568)	10,714,570	0.09%
AUA II	4,718,743	0.04%	(157,347)	585,092	4,290,998	0.04%
AVP XI LP	36,680,701	0.31%	501,204	(1,381,273)	37,560,770	0.32%
AVP XII LP	18,653,650	0.16%	723,510	(440,770)	18,370,910	0.16%
AVP XIII	3,190,061	0.03%	573,125	(78,302)	2,695,238	0.02%
Data Focus I	13,046,085	0.11%	681,609	4,246,314	8,118,162	0.07%
EQT Fund VIII	24,604,688	0.21%	(151,604)	162,206	24,594,086	0.21%
EQT IX LP	26,784,943	0.23%	(345,578)	1,402,296	25,728,225	0.22%
EQT X LP	86,598	0.00%	64,716	21,882	-	-
Estancia II	11,473,201	0.10%	(7,517)	(107,907)	11,588,625	0.10%
Farol Fund II	17,128,383	0.14%	(99,337)	(2,484,964)	19,712,684	0.17%
HarbourVest Ptrs VI PE	75,564	0.00%	0	(22,394)	97,958	0.00%
HarbourVest Ptrs VII PE	19,615,896	0.16%	(1,080,582)	1,366,788	19,329,690	0.17%
HarbourVest Ptrs VIII PE	1,645,526	0.01%	(7,952)	(23,849)	1,677,327	0.01%
HVP Buyout X PE	18,005,567	0.15%	(216,784)	920,677	17,301,674	0.15%
HVP Venture X PE	16,512,892	0.14%	(220,187)	(763,473)	17,496,552	0.15%
HVP Brand Fd II	2,813,210	0.02%	125,000	1,377,726	1,310,484	0.01%
Hispania Fd II PE	40,233	0.00%	0	(3,965)	44,198	0.00%
ICV Capital Ptrs III PE	8,347,431	0.07%	(3,354)	(226,400)	8,577,185	0.07%
ICV Capital Ptrs IV PE	20,070,421	0.17%	(31,827)	429,267	19,672,981	0.17%
KKR Americas Fd XII	28,681,314	0.24%	(1,877,917)	1,324,138	29,235,093	0.25%
KKR Americas Fd XIII	8,556,370	0.07%	(6,729)	332,106	8,230,993	0.07%
Long Arc Capital Fd I	7,598,363	0.06%	264,446	(190,873)	7,524,790	0.06%
MB SPO FD II	3,521,776	0.03%	530,823	(91,988)	3,082,942	0.03%
Mesrow Fd IV PE	2,944,007	0.02%	(274,500)	123,738	3,094,769	0.03%
Mesrow Fd V PE	10,750,878	0.09%	(609,210)	176,414	11,183,674	0.10%
Mesrow Fd VII A PE	19,904,273	0.17%	(73,124)	737,139	19,240,258	0.16%
Mesrow Fd VII B PE	15,412,358	0.13%	(43,750)	1,385,717	14,070,391	0.12%
Mesrow Fund VIII	13,670,350	0.11%	(100,000)	393,875	13,376,475	0.11%
Mesrow Fd IX PE	198,236	0.00%	0	1,642	196,594	0.00%
Mesrow Fd X PE	5,009,434	0.04%	(225,226)	153,094	5,081,566	0.04%
Muller M2 MPEFF PE	0	0.00%	(3,256)	0	3,256	0.00%
NMS Capital Fund III	19,206,302	0.16%	673,404	798,022	17,734,876	0.15%
NMS Capital Fund IV	11,088,632	0.09%	985,029	1,047,076	9,056,528	0.08%
P4G I	7,290,689	0.06%	(251,203)	283,150	7,258,742	0.06%
Palladium Ptrs III PE	9,567	0.00%	0	0	9,567	0.00%
Palladium Ptrs IV PE	9,283,483	0.08%	(37,530)	1,199,118	8,121,896	0.07%
Palladium Ptrs V PE	16,266,703	0.14%	2,632,174	1,241,538	12,392,991	0.11%
Pantheon Asia Fd V PE	390,055	0.00%	(10,495)	(34,857)	435,407	0.00%
Pantheon Europe Fd II PE	14,984	0.00%	0	62	14,921	0.00%
Pantheon Europe Fd VI PE	1,722,474	0.01%	(7,313)	1,539	1,728,248	0.01%
Pantheon GI Fd 2014	34,423,962	0.29%	(495,417)	1,096,782	33,822,597	0.29%
Pantheon Select Fd	21,964,831	0.18%	853,596	577,672	20,533,563	0.18%
Pantheon USA Fd III PE	212,138	0.00%	0	0	212,138	0.00%
Pantheon USA Fd IV PE	417,120	0.00%	0	(5,244)	422,364	0.00%
Pharos Fd II PE	3,888,492	0.03%	0	155,397	3,733,095	0.03%
Pharos Fd III PE	10,817,828	0.09%	0	312,464	10,505,364	0.09%
Red Arts Capital Opp Fd I	2,874,075	0.02%	(5,859,454)	1,819,939	6,913,590	0.06%
RLJ Equity Fund II	12,454,985	0.10%	1,006,138	445,843	11,003,004	0.09%
Turning Rock Fd I	5,129,472	0.04%	(434,271)	184,515	5,379,228	0.05%
Turning Rock Fd II	10,919,219	0.09%	1,108,069	265,925	9,545,225	0.08%
WM Partners II	12,966,344	0.11%	(416,946)	3,305,323	10,077,967	0.09%
WM Partners III	3,306,997	0.03%	3,320,156	(111,001)	97,842	0.00%
<b>CASH</b>	<b>\$306,036,002</b>	<b>2.57%</b>	<b>\$(68,175,798)</b>	<b>\$4,363,635</b>	<b>\$369,848,165</b>	<b>3.17%</b>
<b>TOTAL FUND</b>	<b>\$11,894,695,143</b>	<b>100.0%</b>	<b>\$(132,458,357)</b>	<b>\$356,566,281</b>	<b>\$11,670,587,220</b>	<b>100.0%</b>

# Chicago Teachers' Pension Fund Performance Evaluation Executive Summary Second Quarter 2023

## Total Fund Performance vs. Target

### Performance vs Callan Public Fund Spons - Large (>1B) (Gross)



Note: Performance is shown gross-of-fees.

Current quarter Policy Target = 30.5% Russell 3000 Index, 30.5% MSCI ACWI ex US Index, 23% Bloomberg Aggregate Bond Index, 9% NFI ODCE Value Weight Index, 5% Russell 3000 Index+3.0% and 2% FTSE Developed Core Infrastructure 50/50 Net.

For the second quarter, the Fund underperformed the market benchmark by 16 basis points, gross of investment management fees (26 basis points net of fees) and ranked in the 44<sup>th</sup> percentile of its peers. Longer-term performance continues to be competitive relative to benchmarks and peers.

The manager attribution effect was negative over the quarter, with private equity detracting the most from relative results. However, the manager attribution for fixed income, real estate, international equity, and infrastructure added to results. Total attribution for domestic equity detracted from results.

The following is a brief summary of the performance of each of the major asset classes represented in the Fund (performance commentary relative to benchmarks is net of fees, while results relative to peers is gross of fees):

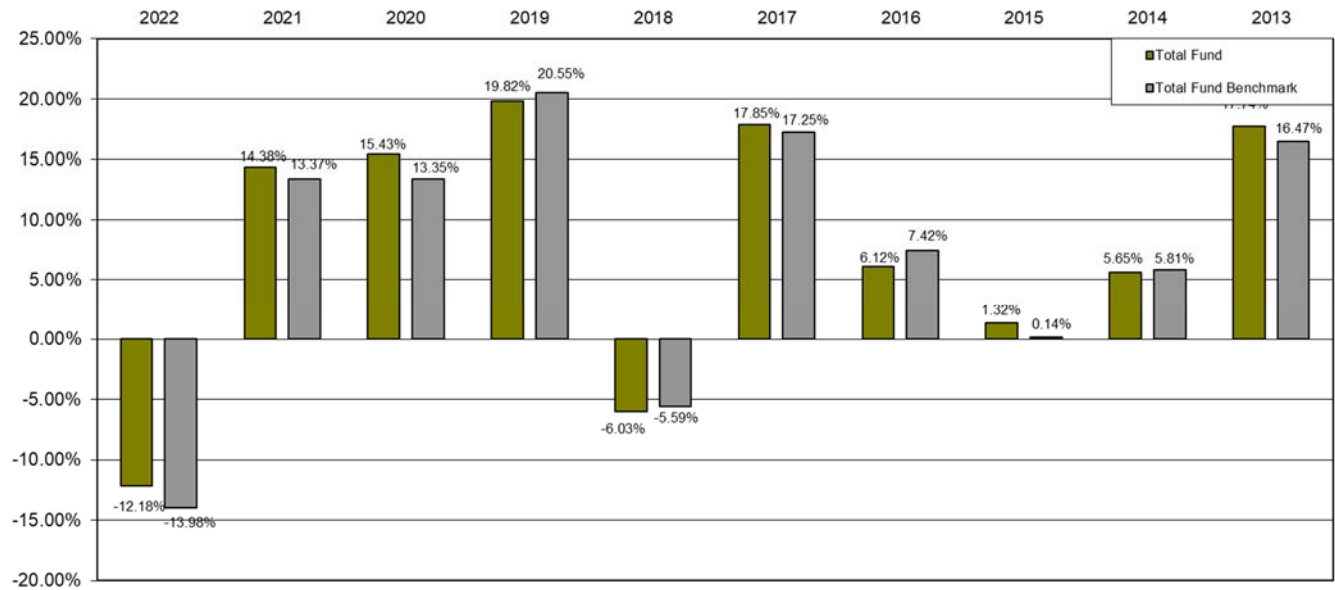
- Domestic Equity:** The domestic equity composite trailed the Russell 3000 Index by 33 basis points over the second quarter, ranking in the 30<sup>th</sup> percentile of its peers. The majority of small cap and large cap managers trailed their benchmarks. However, Zevenbergen and Phocas outperformed their benchmarks by 308 and 182 basis points respectively.

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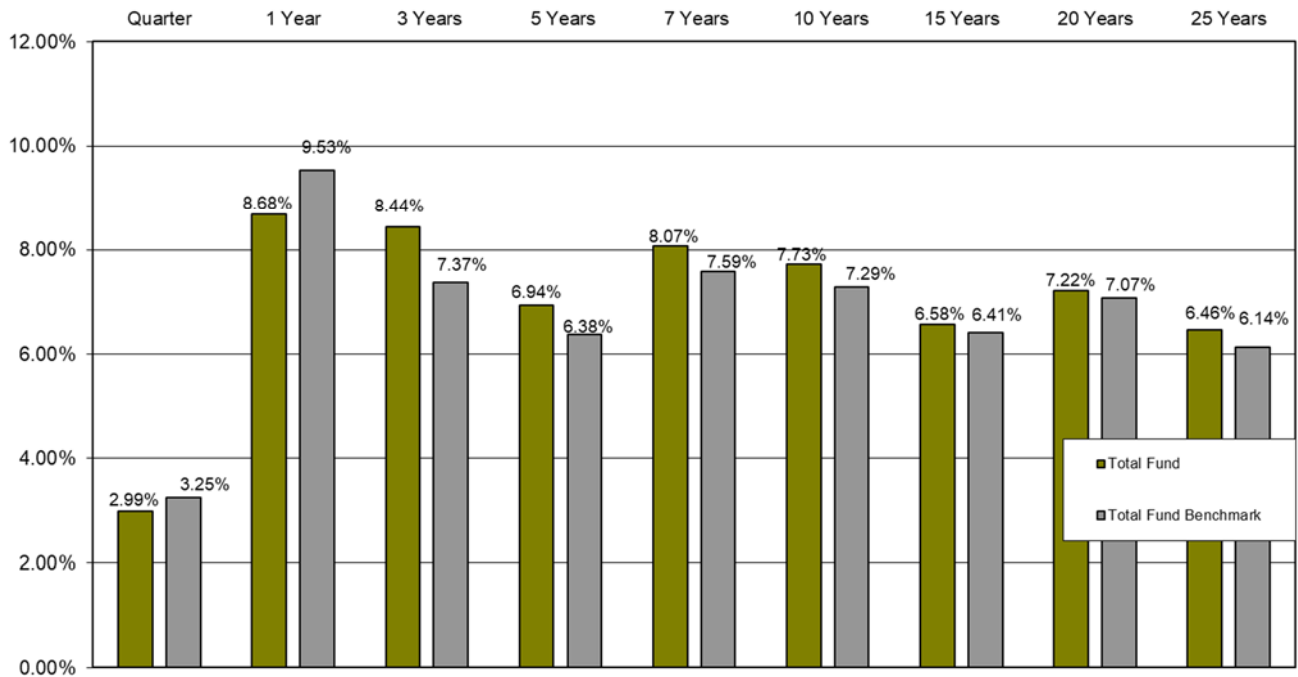
- **International Equity:** The international equity composite outperformed the MSCI ACWI Ex-US IMI Index by 77 basis points for the quarter and ranked in the 15<sup>th</sup> percentile of its peer group. Relative performance was mixed for the international equity managers this quarter. Ariel and DFA were the lone managers to underperform their benchmarks while Lazard had a strong quarter and outperformed their benchmark by 204 basis points.
- **Fixed Income:** The fixed income composite outperformed the Bloomberg Aggregate Index by 26 basis points for the quarter and ranked in the 72<sup>nd</sup> percentile of its peers. SSgA, Wellington, LM, Ramirez and Western all outperformed their respective benchmarks and contributed to the portfolio's success.
- **Alternative Investments:** The real estate and infrastructure portfolios outperformed their respective benchmarks while private equity underperformed on a time-weighted return basis. It is important to note that performance evaluation for these instruments should encompass several metrics that go beyond time-weighted return calculations. These metrics take into account the timing and magnitude of distributions and contributions over the life of these investments. This cash flow activity is imperative in evaluating the success of these instruments. Hence, these portfolios are evaluated separately and more rigorously under separate cover.

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**Total Fund Calendar Year Performance, Net of Fees**



**Total Fund Performance Over Various Trailing Periods, Net of Fees**



**Chicago Teachers' Pension Fund**  
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**MANAGER PERFORMANCE**

Table 1 presents returns for the public market domestic and international equity and fixed income managers and composites in the Chicago Teacher Pension Fund relative to appropriate benchmarks on a net of fee basis. Managers highlighted in red are currently on the Watch List.

**Table 1 (Net-of-Fees):**

CTPF Investment Strategies	Net Investment Returns as of 6/30/2023						Inception Date	Qtr-End MV
	Qtr	1 Yr	3 Yr	5 Yr	7 Yr	Since Inception		
<b>FUND</b>								
<b>Fixed Income</b>								
<b>SSgA Aggregate Bond Index</b>	<b>-0.76</b>	<b>-1.18</b>	<b>-4.03</b>	-	-	<b>-1.76</b>	Aug-19	\$400m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	-	-	-1.69		
Variance	0.08	-0.24	-0.07	-	-	-0.07		
<b>Wellington Core Bond</b>	<b>-0.51</b>	<b>-0.59</b>	<b>-3.96</b>	-	-	<b>-1.49</b>	Aug-19	\$260m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	-	-	-1.69		
Variance	0.33	0.35	0.00	-	-	0.20		
<b>Garcia Hamilton</b>	<b>-1.11</b>	<b>-0.85</b>	<b>-3.19</b>	<b>0.96</b>	<b>0.85</b>	<b>2.61</b>	Oct-10	\$263m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	0.77	0.44	1.82		
Variance	-0.27	0.09	0.77	0.19	0.41	0.79		
<b>LM Capital*</b>	<b>-0.53</b>	<b>0.10</b>	<b>-2.84</b>	<b>1.32</b>	<b>0.96</b>	<b>3.23</b>	Nov-04	\$303m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	0.77	0.44	2.99		
Variance	0.31	1.04	1.12	0.55	0.52	0.24		
<b>Pugh Capital Management</b>	<b>-0.54</b>	<b>-0.68</b>	<b>-3.71</b>	<b>1.01</b>	<b>0.63</b>	<b>2.03</b>	Oct-10	\$259m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	0.77	0.44	1.82		
Variance	0.30	0.26	0.25	0.24	0.19	0.21		
<b>Ramirez Fixed Income</b>	<b>-0.56</b>	<b>-0.51</b>	-	-	-	<b>-7.12</b>	Dec-21	\$109m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-	-	-	-7.37		
Variance	0.28	0.43	-	-	-	0.25		
<b>Western Asset Management</b>	<b>-0.47</b>	<b>0.11</b>	<b>-3.91</b>	<b>1.11</b>	<b>1.14</b>	<b>4.02</b>	Feb-03	\$569m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	0.77	0.44	3.13		
Variance	0.37	1.05	0.05	0.34	0.70	0.89		

\*LM mandate changed from Core Bond to Core Plus Bond as of 7/1/13. Peer group rankings are not applicable to the full track record given the change in mandates.

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**Table 1 (Net-of-Fees, Continued):**

CTPF Investment Strategies		Net Investment Returns as of 6/30/2023					Inception Date	Qtr-End MV
FUND	Qtr	1 Yr	3 Yr	5 Yr	7 Yr	Since Inception		
Large Cap Equity								
Rhumbline Russell 1000 Index Fund	8.41	18.96	14.10	11.88	13.09	9.01	Jun-07	\$2,276m
Russell 1000 Index	8.58	19.36	14.09	11.92	13.15	8.98		
Variance	-0.17	-0.40	0.01	-0.04	-0.06	0.03		
Rhumbline Russell 1000 Growth Index Fund	12.72	27.21	14.04	15.24	-	16.02	Oct-17	\$333m
Russell 1000 Growth Index	12.81	27.11	13.73	15.14	-	15.94		
Variance	-0.09	0.10	0.31	0.10	-	0.08		
Zevenbergen Capital Management	15.44	45.62	-2.91	9.58	16.43	11.11	Oct-92	\$106m
Russell 3000 Growth Index	12.47	26.60	13.24	14.39	16.40	10.11		
Variance	2.97	19.02	-16.15	-4.81	0.03	1.00		
Channing*	1.41	8.90	16.60	8.74	10.46	12.59	Jul-09	\$129m
Channing Benchmark	4.03	11.22	14.38	7.79	8.87	11.73		
Variance	-2.62	-2.32	2.22	0.95	1.59	0.86		
Rhumbline LCV	3.87	10.83	-	-	-	-2.28	Jan-22	\$290m
Russell 1000 Value Index	4.07	11.54	-	-	-	-1.88		
Variance	-0.20	-0.71	-	-	-	-0.40		
Small Cap Equity								
Northern Trust Small Cap	4.20	11.04	13.86	5.58	9.45	11.41	Jan-91	\$79m
Russell 2000 Index	5.21	12.31	10.82	4.21	8.76	10.03		
Variance	-1.01	-1.27	3.04	1.37	0.69	1.38		
Conestoga Small Cap Growth	4.87	19.30	8.70	-	-	5.93	Jul-18	\$104m
Russell 2000 Growth Index	7.05	18.50	6.10	-	-	2.71		
Variance	-2.18	0.80	2.60	-	-	3.22		
Phocas Small Cap Value	4.77	8.98	18.24	4.67	7.72	7.72	Jul-16	\$85m
Russell 2000 Value Index	3.18	6.01	15.43	3.54	7.70	7.70		
Variance	1.59	2.97	2.81	1.13	0.02	0.02		
Manager of Managers								
Attucks**	4.50	12.47	5.48	3.78	6.40	5.41	Dec-13	\$250m
Custom Benchmark	3.42	12.19	7.97	5.68	7.70	6.09		
Variance	1.08	0.28	-2.49	-1.90	-1.30	-0.68		

\*Channing mandate changed from Mid Cap Value to All Cap Value as of 10/1/11. Channing Benchmark reflects Russell MC Value Index through 9/30/11 and Russell 3000 Value thereafter. Peer group rankings are not applicable to the full track record given the change in mandates.

\*\*In 4Q13, Attucks was transitioned from a domestic equity portfolio to a Best-in-Class portfolio.

**Chicago Teachers' Pension Fund**  
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**Table 1 (Net-of-Fees, Continued):**

CTPF Investment Strategies		Net Investment Returns as of 6/30/2023					Inception Date	Qtr-End MV
FUND	Qtr	1 Yr	3 Yr	5 Yr	7 Yr	Since Inception		
<b>International Equity</b>								
<b>Ariel Investments</b>	<b>1.75</b>	<b>5.60</b>	<b>3.76</b>	<b>2.50</b>	<b>3.89</b>	<b>3.89</b>	Jul-16	\$74m
MSCI EAFE Index	2.95	18.77	8.93	4.39	6.88	6.88		
Variance	-1.20	-13.17	-5.17	-1.89	-2.99	-2.99		
<b>EARNEST Partners</b>	<b>2.96</b>	<b>14.57</b>	<b>12.11</b>	<b>5.25</b>	<b>8.56</b>	<b>5.48</b>	Apr-07	\$580m
MSCI ACWI ex-US Index	2.44	12.72	7.22	3.52	6.32	2.71		
Variance	0.52	1.85	4.89	1.73	2.24	2.77		
<b>Lazard</b>	<b>4.44</b>	<b>17.01</b>	<b>8.33</b>	<b>3.69</b>	<b>5.43</b>	<b>5.29</b>	Jan-01	\$583m
MSCI ACWI ex-US Index	2.44	12.72	7.22	3.52	6.32	4.46		
Variance	2.00	4.29	1.11	0.17	-0.89	0.83		
<b>Morgan Stanley</b>	<b>3.19</b>	<b>19.73</b>	<b>7.29</b>	<b>4.56</b>	<b>6.59</b>	<b>7.87</b>	Apr-95	\$574m
MSCI EAFE Index	2.95	18.77	8.93	4.39	6.88	4.98		
Variance	0.24	0.96	-1.64	0.17	-0.29	2.89		
<b>Strategic Global Advisors</b>	<b>3.30</b>	<b>19.65</b>	<b>7.86</b>	<b>2.82</b>	<b>5.49</b>	<b>5.49</b>	Jul-16	\$78m
MSCI EAFE Index	2.95	18.77	8.93	4.39	6.88	6.88		
Variance	0.35	0.88	-1.07	-1.57	-1.39	-1.39		
<b>William Blair Growth</b>	<b>3.02</b>	<b>17.23</b>	<b>5.29</b>	<b>5.39</b>	<b>8.00</b>	<b>7.53</b>	Feb-10	\$581m
MSCI ACWI ex-US IMI Growth Index	1.93	12.90	4.12	3.83	6.59	5.78		
Variance	1.09	4.33	1.17	1.56	1.41	1.75		
<b>William Blair International Small Cap</b>	<b>2.18</b>	<b>17.04</b>	<b>1.91</b>	<b>1.83</b>	<b>4.95</b>	<b>3.79</b>	Apr-07	\$207m
William Blair ISCE Benchmark*	1.83	10.60	5.21	2.41	5.96	3.15		
Variance	0.35	6.44	-3.30	-0.58	-1.01	0.64		
<b>Dimensional Fund Advisors</b>	<b>-0.46</b>	<b>13.56</b>	<b>12.10</b>	<b>1.95</b>	<b>5.92</b>	<b>7.49</b>	Jun-12	\$166m
MSCI World Small Cap ex-US Value	0.71	10.58	9.79	1.88	5.62	6.71		
Variance	-1.17	2.98	2.31	0.07	0.30	0.78		
<b>EARNEST Partners Emerging Markets</b>	<b>1.88</b>	<b>8.72</b>	<b>9.80</b>	<b>4.26</b>	<b>7.02</b>	<b>3.30</b>	Mar-13	\$191m
MSCI Emerging Markets Index	0.90	1.75	2.32	0.93	4.95	1.85		
Variance	0.98	6.97	7.48	3.33	2.07	1.45		
<b>International Manager of Managers</b>								
<b>Leading Edge</b>	<b>3.43</b>	<b>16.63</b>	<b>6.80</b>	<b>2.64</b>	<b>5.79</b>	<b>4.62</b>	Apr-10	\$134m
MSCI ACWI ex-US Index	2.44	12.72	7.22	3.52	6.32	4.33		
Variance	0.99	3.91	-0.42	-0.88	-0.53	0.29		

\* The William Blair ISCE benchmark is comprised of the MSCI ACWI ex US Small Cap Index through 5/31/12 and the MSCI ACWI ex US Small Cap Growth Index thereafter.



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**Table 1 (Net-of-Fees, Continued):**

CTPF Investment Strategies		Net Investment Returns as of 6/30/2023					Inception Date	Qtr-End MV
FUND	Qtr	1 Yr	3 Yr	5 Yr	7 Yr	Since Inception		
Infrastructure								
Infrastructure Composite	2.89	9.39	14.43	12.97	12.57	8.61	Nov-08	\$264m
Infrastructure Benchmark*	-0.58	-1.29	6.72	4.81	5.00	6.56		
Variance	3.47	10.68	7.71	8.16	7.57	2.05		
Real Estate								
Real Estate Composite	-2.59	-4.74	11.51	8.58	8.06	7.63	Jan-02	\$1,349m
NFI-ODCE Value Weight	-2.88	-10.73	7.04	5.56	6.02	6.77		
Variance	0.29	5.99	4.47	3.02	2.04	0.86		
Private Equity								
Private Equity Composite	2.84	-1.85	25.04	17.19	16.51	10.86	Jan-02	\$996m
Private Equity Benchmark**	9.00	22.76	17.54	15.20	15.94	9.65		
Variance	-6.16	-24.61	7.50	1.99	0.57	1.21		

\*The Infrastructure Benchmark is 8% Annualized Return through 9/30/17 and FTSE Developed Core Infrastructure 50/50 (Net) thereafter.

\*\*The Private Equity Benchmark is Russell 3000 through 9/30/17, thereafter Russell 3000+3%.

Note: Private market investments shown above are typically reported on a one quarter lag. Private Equity returns are, at times, reported on a longer lag. Comments on Infrastructure, REITS and Real Estate are covered in the quarterly Real Estate Report. Private Equity is discussed in the quarterly Private Equity Report.

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**MANAGER PERFORMANCE**

Table 1 presents returns for the public market domestic and international equity and fixed income managers and composites in the Chicago Teacher Pension Fund relative to appropriate benchmarks on a gross of fee basis. Managers highlighted in red are currently on the Watch List.

**Table 2 (Gross-of-Fees):**

CTPF Investment Strategies	Gross Investment Returns as of 6/30/2023						Inception Date	Qtr-End MV
	Qtr	1 Yr	3 Yr	5 Yr	7 Yr	Since Inception		
<b>FUND</b>								
<b>Fixed Income</b>								
<b>SSgA Aggregate Bond Index</b>	<b>-0.75</b>	<b>-1.14</b>	<b>-4.00</b>	-	-	<b>-1.72</b>	Aug-19	\$400m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	-	-	-1.69		
Variance	0.09	-0.20	-0.04	-	-	-0.03		
Peer Ranking – CAI Core Bond	70	92	96	-	-			
<b>Wellington Core Bond</b>	<b>-0.46</b>	<b>-0.41</b>	<b>-3.79</b>	-	-	<b>-1.32</b>	Aug-19	\$260m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	-	-	-1.69		
Variance	0.38	0.53	0.17	-	-	0.37		
Peer Ranking – CAI Core Bond	10	59	91	-	-			
<b>Garcia Hamilton</b>	<b>-1.08</b>	<b>-0.72</b>	<b>-3.06</b>	<b>1.09</b>	<b>0.99</b>	<b>2.78</b>	Oct-10	\$263m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	0.77	0.44	1.82		
Variance	-0.24	0.22	0.90	0.32	0.55	0.96		
Peer Ranking – CAI Core Bond	92	74	22	77	48			
<b>LM Capital*</b>	<b>-0.50</b>	<b>0.25</b>	<b>-2.70</b>	<b>1.46</b>	<b>1.11</b>	<b>3.41</b>	Nov-04	\$303m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	0.77	0.44	2.99		
Variance	0.34	1.19	1.26	0.69	0.67	0.42		
Peer Ranking - CAI Core Plus Bond	53	55	57	59	80			
<b>Pugh Capital Management</b>	<b>-0.51</b>	<b>-0.54</b>	<b>-3.57</b>	<b>1.15</b>	<b>0.77</b>	<b>2.20</b>	Oct-10	\$259m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	0.77	0.44	1.82		
Variance	0.33	0.40	0.39	0.38	0.33	0.38		
Peer Ranking - CAI Core Bond	17	64	78	70	85			
<b>Ramirez Fixed Income</b>	<b>-0.51</b>	<b>-0.32</b>	-	-	-	<b>-6.97</b>	Dec-21	\$109m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-	-	-	-7.37		
Variance	0.33	0.62	-	-	-	0.40		
Peer Ranking - CAI Core Bond	18	49	-	-	-			
<b>Western Asset Management</b>	<b>-0.43</b>	<b>0.28</b>	<b>-3.76</b>	<b>1.28</b>	<b>1.31</b>	<b>4.20</b>	Feb-03	\$569m
Bloomberg Barclays Aggregate Index	-0.84	-0.94	-3.96	0.77	0.44	3.13		
Variance	0.41	1.22	0.20	0.51	0.87	1.07		
Peer Ranking - CAI Core Plus Bond	46	55	97	71	64			

\*LM mandate changed from Core Bond to Core Plus Bond as of 7/1/13. Peer group rankings are not applicable to the full track record given the change in mandates.

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**Table 2 (Gross-of-Fees, Continued):**

CTPF Investment Strategies		Gross Investment Returns as of 6/30/2023					Inception Date	Qtr-End MV
FUND	Qtr	1 Yr	3 Yr	5 Yr	7 Yr	Since Inception		
<b>Large Cap Equity</b>								
<b>Rhumblin Russell 1000 Index Fund</b>	<b>8.42</b>	<b>18.97</b>	<b>14.11</b>	<b>11.89</b>	<b>13.10</b>	<b>9.02</b>	Jun-07	\$2,276m
Russell 1000 Index	8.58	19.36	14.09	11.92	13.15	8.98		
Variance	-0.16	-0.39	0.02	-0.03	-0.05	0.04		
Peer Ranking – CAI Large Cap	51	49	48	42	51			
<b>Rhumblin Russell 1000 Growth Index Fund</b>	<b>12.72</b>	<b>27.22</b>	<b>14.05</b>	15.25	-	<b>16.03</b>	Oct-17	\$333m
Russell 1000 Growth Index	12.81	27.11	21.67	15.14	-	15.94		
Variance	-0.09	0.11	-7.62	0.11	-	0.09		
Peer Ranking - CAI Large Cap Growth	43	30	13	12	-			
<b>Zevenbergen Capital Management</b>	<b>15.55</b>	<b>46.19</b>	<b>-2.49</b>	<b>10.03</b>	<b>16.90</b>	<b>11.55</b>	Oct-92	\$106m
Russell 3000 Growth Index	12.47	26.60	13.24	14.39	16.40	10.11		
Variance	3.08	19.59	-15.73	-4.36	0.50	1.44		
Peer Ranking - CAI All Cap Growth	9	9	90	81	21			
<b>Channing*</b>	<b>1.54</b>	<b>9.42</b>	<b>17.16</b>	<b>9.26</b>	<b>10.99</b>	<b>13.12</b>	Jul-09	\$129m
Channing Benchmark	4.03	11.22	14.38	7.79	8.87	11.73		
Variance	-2.49	-1.80	2.78	1.47	2.12	1.39		
Peer Ranking – CAI All Cap Value	99	82	47	58	52			
<b>Rhumblin LCV</b>	<b>3.87</b>	<b>10.84</b>	-	-	-	<b>-2.28</b>	Jan-22	\$290m
Russell 1000 Value Index	4.07	11.54	-	-	-	-1.88		
Variance	-0.20	-0.70	-	-	-	-0.40		
Peer Ranking – CAI Large Cap Value	82	79	-	-	-			
<b>Small Cap Equity</b>								
<b>Northern Trust Small Cap</b>	<b>4.22</b>	<b>11.14</b>	<b>13.96</b>	<b>5.68</b>	<b>9.55</b>	<b>11.49</b>	Jan-91	\$79m
Russell 2000 Index	5.21	12.31	10.82	4.21	8.76	10.03		
Variance	-0.99	-1.17	3.14	1.47	0.79	1.46		
Peer Ranking - CAI Small Cap	55	76	64	68	64			
<b>Conestoga Small Cap Growth</b>	<b>5.05</b>	<b>20.10</b>	<b>9.43</b>	-	-	<b>6.67</b>	Jul-18	\$104m
Russell 2000 Growth Index	7.05	18.50	6.10	-	-	2.71		
Variance	-2.00	1.60	3.33	-	-	3.96		
Peer Ranking - CAI Small Cap Growth	65	26	40	-	-			
<b>Phocas Small Cap Value</b>	<b>5.00</b>	<b>9.89</b>	<b>19.20</b>	<b>5.56</b>	<b>8.59</b>	<b>8.59</b>	Jul-16	\$85m
Russell 2000 Value Index	3.18	6.01	15.43	3.54	7.70	7.70		
Variance	1.82	3.88	3.77	2.02	0.89	0.89		
Peer Ranking - CAI Small Cap Value	22	61	41	52	67			
<b>Manager of Managers</b>								
<b>Attucks**</b>	<b>4.66</b>	<b>13.13</b>	<b>6.09</b>	<b>4.38</b>	<b>7.02</b>	<b>6.02</b>	Dec-13	\$250m
Custom Benchmark	3.42	12.19	7.97	5.68	7.70	6.09		
Variance	1.24	0.94	-1.88	-1.30	-0.68	-0.07		

\*Channing mandate changed from Mid Cap Value to All Cap Value as of 10/1/11. Channing Benchmark reflects Russell MC Value Index through 9/30/11 and Russell 3000 Value thereafter. Peer group rankings are not applicable to the full track record given the change in mandates.

\*\*In 4Q13, Attucks was transitioned from a domestic equity portfolio to a Best-in-Class portfolio.

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**Table 2 (Gross-of-Fees, Continued):**

CTPF Investment Strategies		Gross Investment Returns as of 6/30/2023					Inception Date	Qtr-End MV
FUND	Qtr	1 Yr	3 Yr	5 Yr	7 Yr	Since Inception		
International Equity								
Ariel Investments	1.92	6.32	4.47	3.20	4.57	4.57	Jul-16	\$74m
MSCI EAFE Index	2.95	18.77	8.93	4.39	6.88	6.88		
Variance	-1.03	-12.45	-4.46	-1.19	-2.31	-2.31		
Peer Ranking - CAI Non-US Equity	87	99	93	87	98			
EARNEST Partners	3.07	15.04	12.56	5.68	9.00	5.96	Apr-07	\$580m
MSCI ACWI ex-US Index	2.44	12.72	7.22	3.52	6.32	2.71		
Variance	0.63	2.32	5.34	2.16	2.68	3.25		
Peer Ranking - CAI Non-US Equity	58	82	12	29	17			
Lazard	4.48	17.22	8.51	3.87	5.61	5.60	Jan-01	\$583m
MSCI ACWI ex-US Index	2.44	12.72	7.22	3.52	6.32	4.46		
Variance	2.04	4.50	1.29	0.35	-0.71	1.14		
Peer Ranking - CAI Non-US Equity	9	66	59	76	91			
Morgan Stanley	3.30	20.23	7.72	4.98	7.02	8.33	Apr-95	\$574m
MSCI EAFE Index	2.95	18.77	8.93	4.39	6.88	4.98		
Variance	0.35	1.46	-1.21	0.59	0.14	3.35		
Peer Ranking - CAI Non-US Equity	47	26	70	48	65			
Strategic Global Advisors	3.43	20.23	8.39	3.33	5.99	5.99	Jul-16	\$78m
MSCI EAFE Index	2.95	18.77	8.93	4.39	6.88	6.88		
Variance	0.48	1.46	-0.54	-1.06	-0.89	-0.89		
Peer Ranking - CAI Non-US Equity	41	26	61	86	83			
William Blair Growth	3.11	17.64	5.66	5.76	8.37	7.92	Feb-10	\$581m
MSCI ACWI ex-US IMI Growth Index	1.93	12.90	4.12	3.83	6.59	5.78		
Variance	1.18	4.74	1.54	1.93	1.78	2.14		
Peer Ranking - CAI Core Growth Int'l Equity	31	44	67	41	39			
William Blair International Small Cap	2.39	18.01	2.76	2.67	5.82	4.75	Apr-07	\$207m
William Blair ISCE Benchmark*	1.83	10.60	5.21	2.41	5.96	3.15		
Variance	0.56	7.41	-2.45	0.26	-0.14	1.60		
Peer Ranking - CAI Int'l Small Cap Equity	11	10	80	39	60			
Dimensional Fund Advisors	-0.46	13.56	12.10	1.95	5.92	7.50	Jun-12	\$166m
MSCI World Small Cap ex-US Value	0.71	10.58	9.79	1.88	5.62	6.71		
Variance	-1.17	2.98	2.31	0.07	0.30	0.79		
Peer Ranking - CAI Int'l Small Cap Equity	84	33	12	52	58			
EARNEST Partners Emerging Markets	2.02	9.30	10.37	4.81	7.58	3.83	Mar-13	\$191m
MSCI Emerging Markets Index	0.90	1.75	2.32	0.93	4.95	1.85		
Variance	1.12	7.55	8.05	3.88	2.63	1.98		
Peer Ranking - CAI EM Equity	47	35	20	24	30			
International Manager of Managers								
Leading Edge	3.63	17.56	7.65	3.47	6.64	5.44	Apr-10	\$134m
MSCI ACWI ex-US Index	2.44	12.72	7.22	3.52	6.32	4.33		
Variance	1.19	4.84	0.43	-0.05	0.32	1.11		
Peer Ranking - CAI Non-US Equity	35	62	72	84	74			

\* The William Blair ISCE benchmark is comprised of the MSCI ACWI ex US Small Cap Index through 5/31/12 and the MSCI ACWI ex US Small Cap Growth Index thereafter.

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**Table 2 (Gross-of-Fees, Continued):**

CTPF Investment Strategies		Gross Investment Returns as of 6/30/2023					Inception Date	Qtr-End MV
FUND	Qtr	1 Yr	3 Yr	5 Yr	7 Yr	Since Inception		
Infrastructure								
Infrastructure Composite	3.24	10.55	15.96	14.18	13.60	9.36	Nov-08	\$264m
Infrastructure Benchmark*	-0.58	-1.29	6.72	4.81	5.00	6.56		
Variance	3.82	11.84	9.24	9.37	8.60	2.80		
Real Estate								
Real Estate Composite	-2.36	-4.11	12.44	9.41	8.87	8.18	Jan-02	\$1,349m
NFI-ODCE Value Weight	-2.88	-10.73	7.04	5.56	6.02	6.77		
Variance	0.52	6.62	5.40	3.85	2.85	1.41		
Private Equity								
Private Equity Composite	3.14	-1.07	26.25	18.26	17.37	11.16	Jan-02	\$996m
Private Equity Benchmark**	9.00	22.76	17.54	15.20	15.94	9.65		
Variance	-5.86	-23.83	8.71	3.06	1.43	1.51		

\*The Infrastructure Benchmark is 8% Annualized Return through 9/30/17 and FTSE Developed Core Infrastructure 50/50 (Net) thereafter.

\*\*The Private Equity Benchmark is Russell 3000 through 9/30/17, thereafter Russell 3000+3%.

Note: Private market investments shown above are typically reported on a one quarter lag. Private Equity returns are, at times, reported on a longer lag. Comments on Infrastructure, REITS and Real Estate are covered in the quarterly Real Estate Report. Private Equity is discussed in the quarterly Private Equity Report.

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**Manager Watch List**

MANAGER/STRATEGY	REASON	DATE PLACED ON WATCH LIST	LAST DUE DILIGENCE MEETING	ACTIONS TAKEN	POLICY/RECOMMENDED ACTIONS	AUM as of 6/30/2023	Current Quarter Watch List Score	Previous Quarter Watch List Score
Ariel - International Equity	Performance Reasons	July 2020/August 2020	July 2023	Monitor	Monitor	\$74 mil.	0.9	0.9
Lazard - International Equity	Performance Reasons/Personnel Turnover	March 2021	July 2023	Monitor	Monitor	\$564 mil.	0.5	0.7
State Street Global Advisors - Passive Bond	Brokerage	April 2022	March 2023	Monitor	Monitor	\$406 mil.	N/A	N/A
Leading Edge - International Equity	Performance Reasons	September 2022	July 2023	Monitor	Monitor	\$131 mil.	0.6	0.8
Strategic Global Advisors - International Equity	Performance Reasons	March 2021	July 2023	Monitor	Monitor	\$76 mil.	0.7	0.7
Attucks	Performance Reasons/Personnel Turnover	March 2023	July 2023	Monitor	Monitor	\$240 mil.	N/A	N/A
William Blair - International Small Cap	Performance Reasons	March 2023	July 2023	Monitor	Monitor	\$204 mil.	0.7	0.7

**Policy/Recommended Actions Legend**

Remove = Policy action taken due to IPS guidelines. Remove manager from the watch list as performance improves.

Termination = Recommended action for the Board

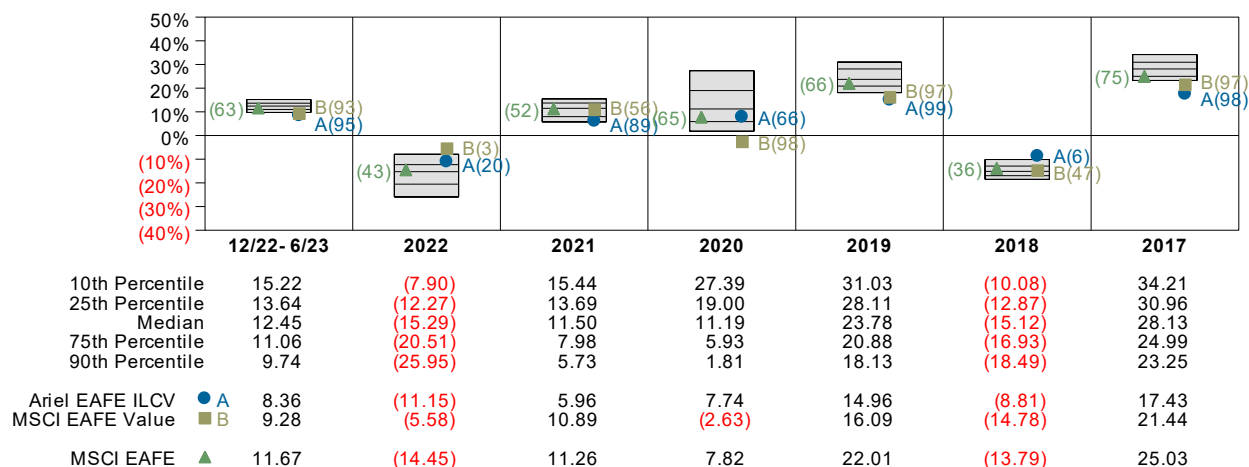
Monitor = Recommended action for the Board

Search = Board authorized a manager search

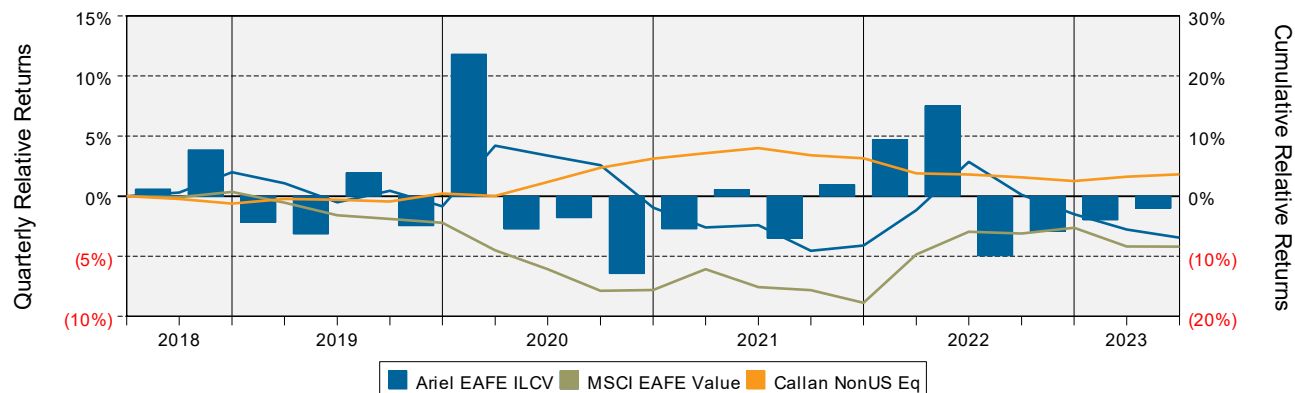
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## Manager Watch List: Ariel

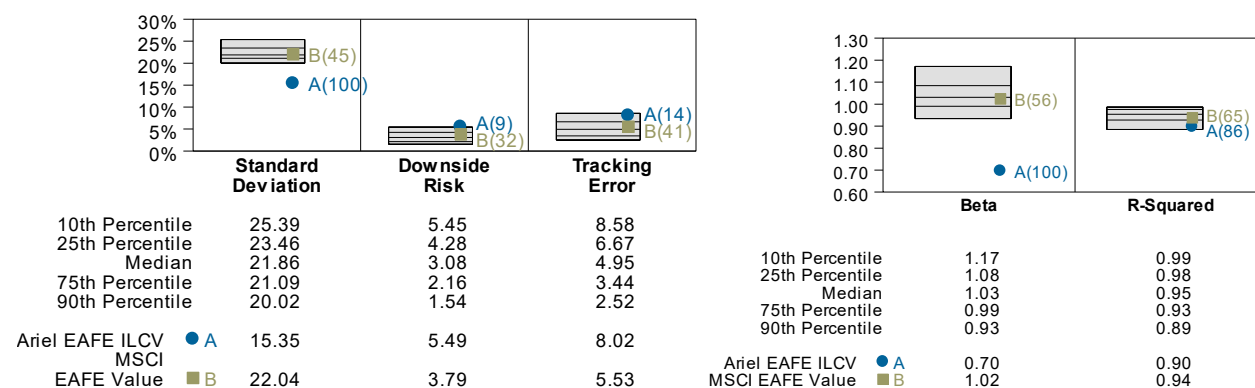
### Performance vs Callan Non-US Equity (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI EAFE



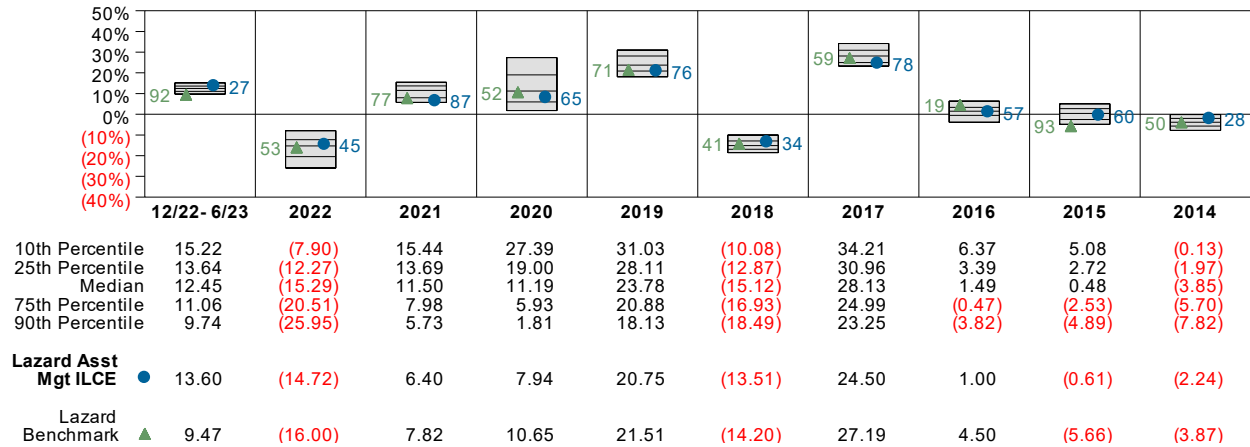
### Risk Statistics Rankings vs MSCI EAFE (Net) Rankings Against Callan Non-US Equity (Gross) Five Years Ended June 30, 2023



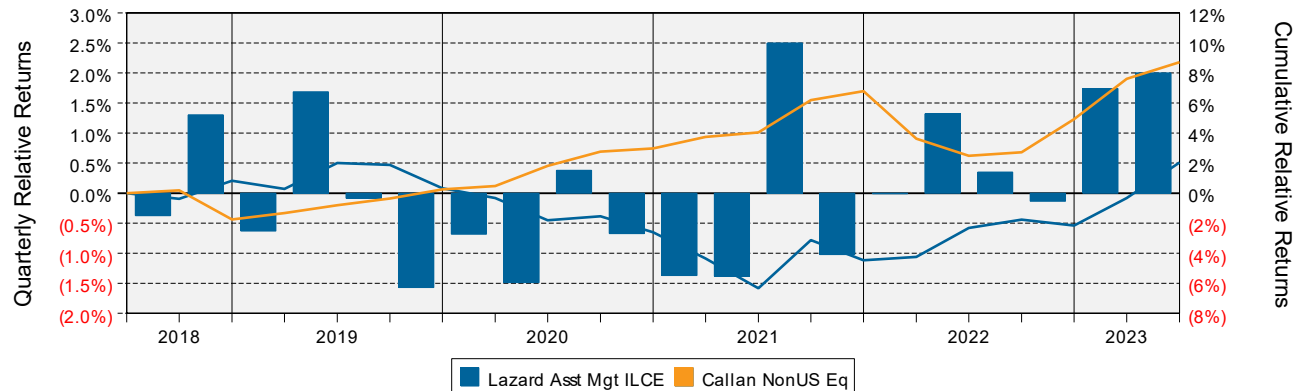
# Chicago Teachers' Pension Fund Performance Evaluation Executive Summary Second Quarter 2023

## Manager Watch List: Lazard

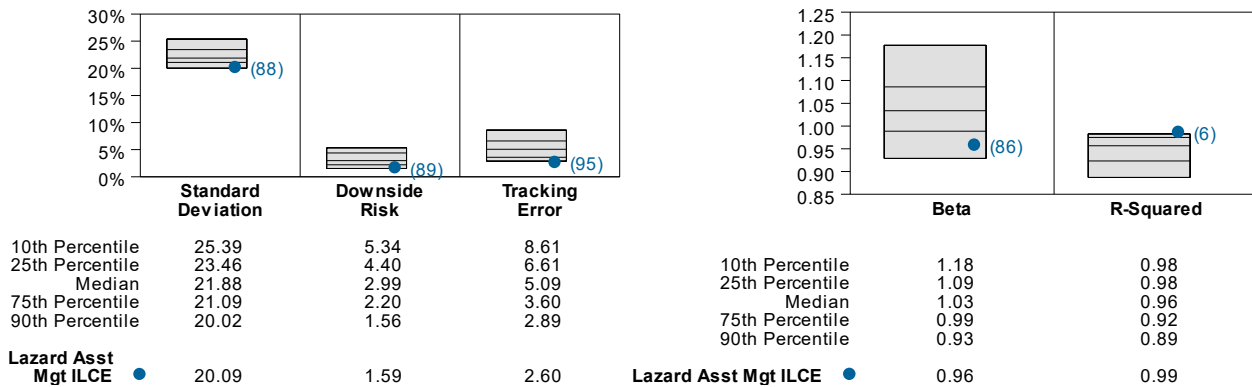
### Performance vs Callan Non-US Equity (Gross)



### Cumulative and Quarterly Relative Returns vs Lazard Benchmark



### Risk Statistics Rankings vs Lazard Benchmark Rankings Against Callan Non-US Equity (Gross) Five Years Ended June 30, 2023

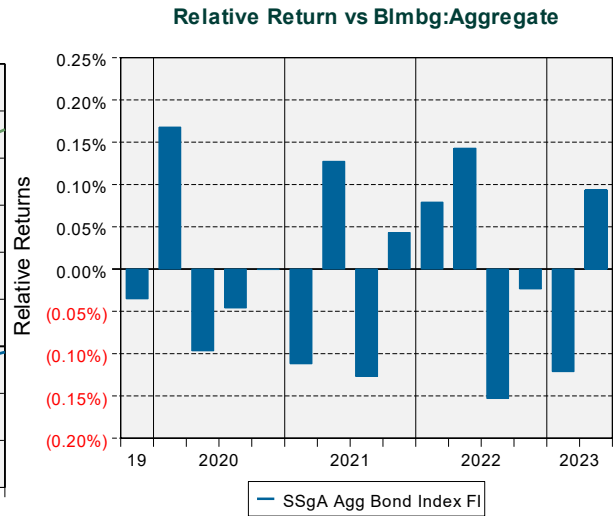
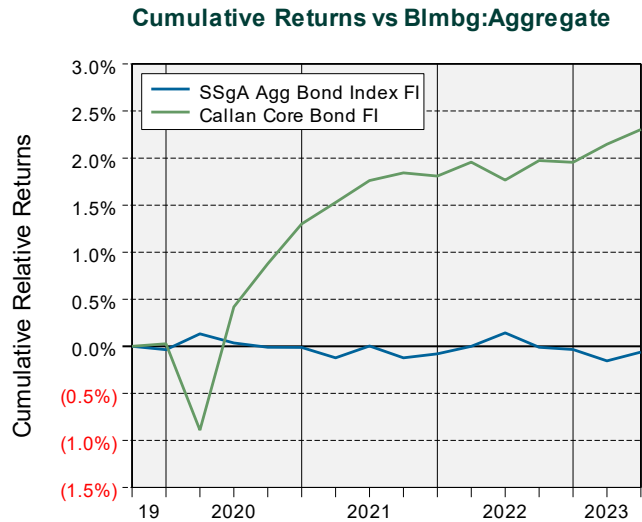
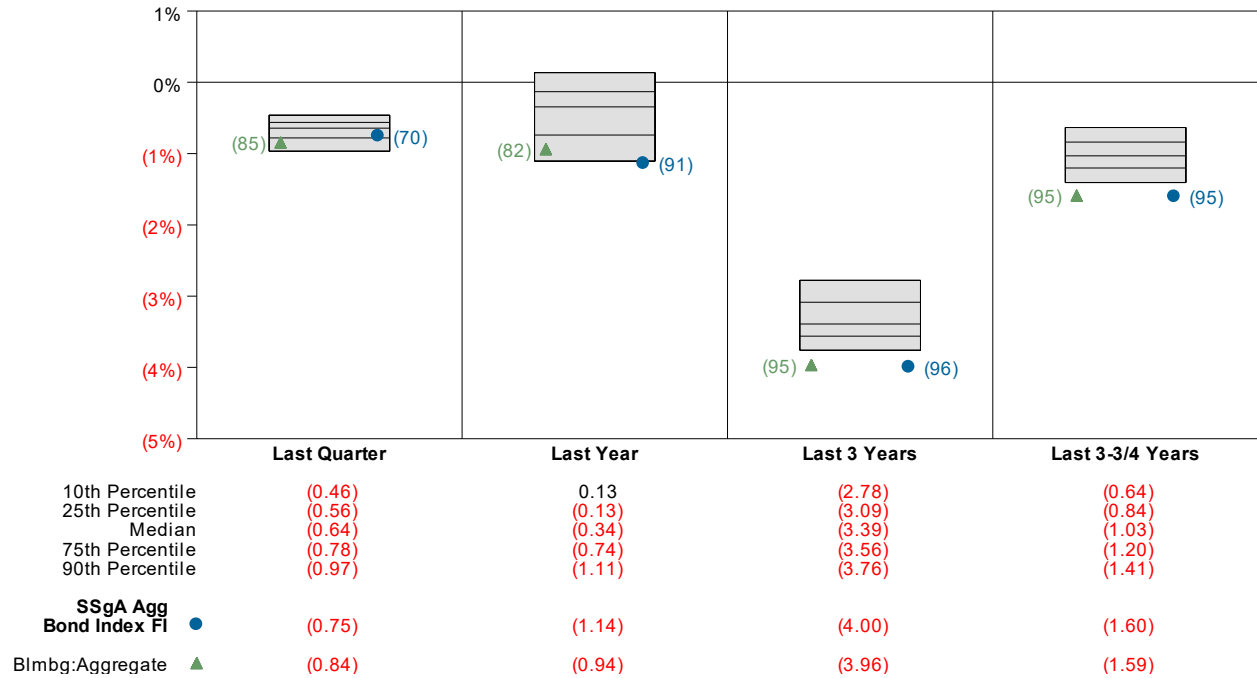




# Chicago Teachers' Pension Fund Performance Evaluation Executive Summary Second Quarter 2023

## Manager Watch List: State Street Global Advisors

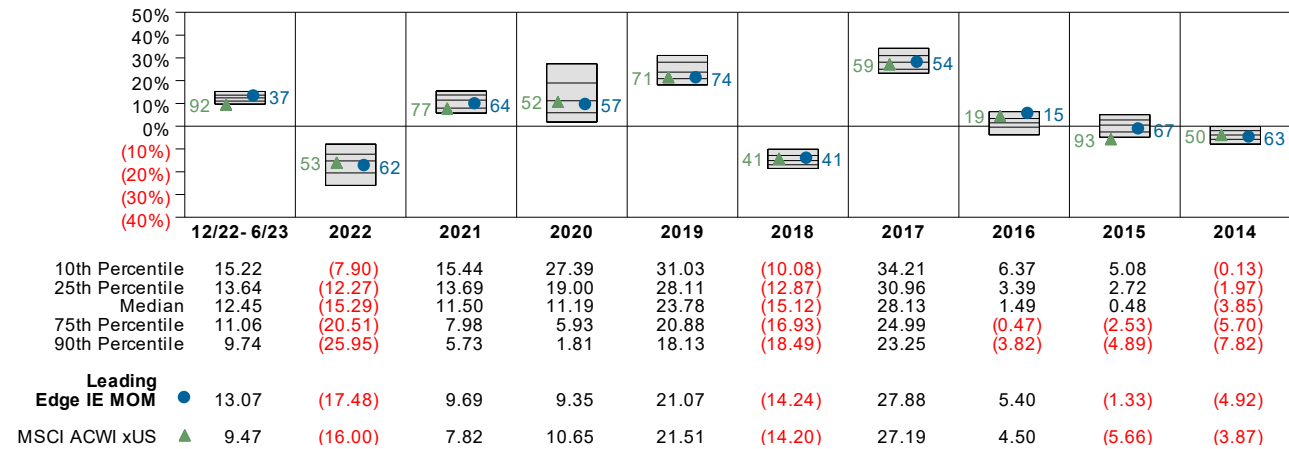
### Performance vs Callan Core Bond Fixed Income (Gross)



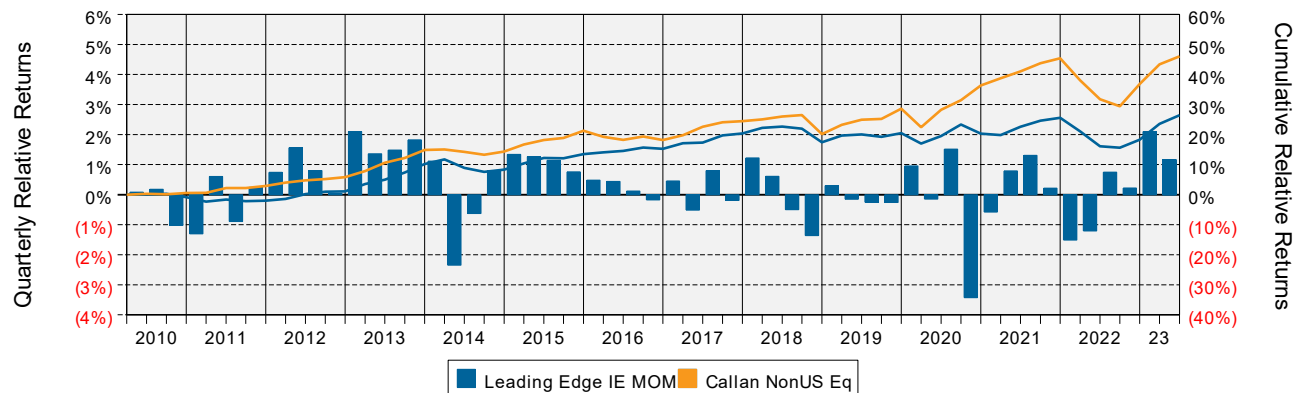
# Chicago Teachers' Pension Fund Performance Evaluation Executive Summary Second Quarter 2023

## Manager Watch List: Leading Edge

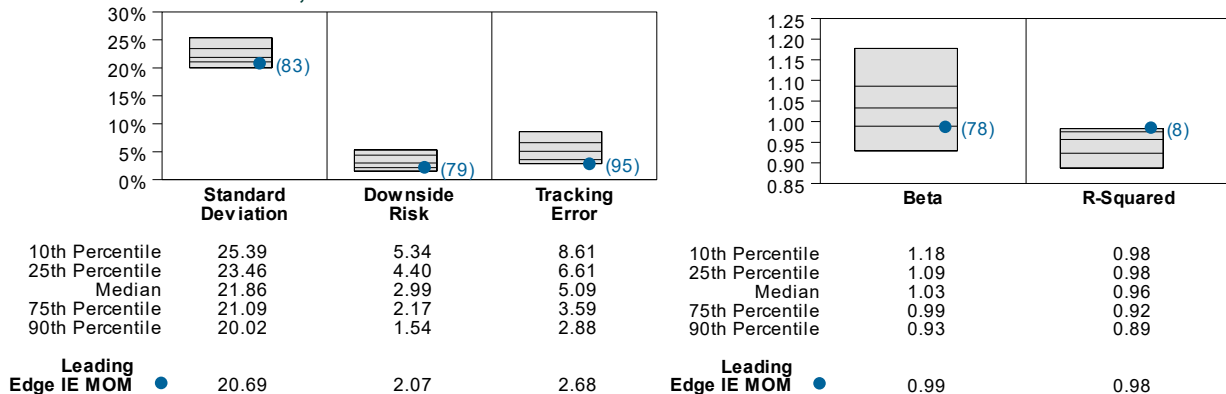
### Performance vs Callan Non-US Equity (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI ACWI xUS



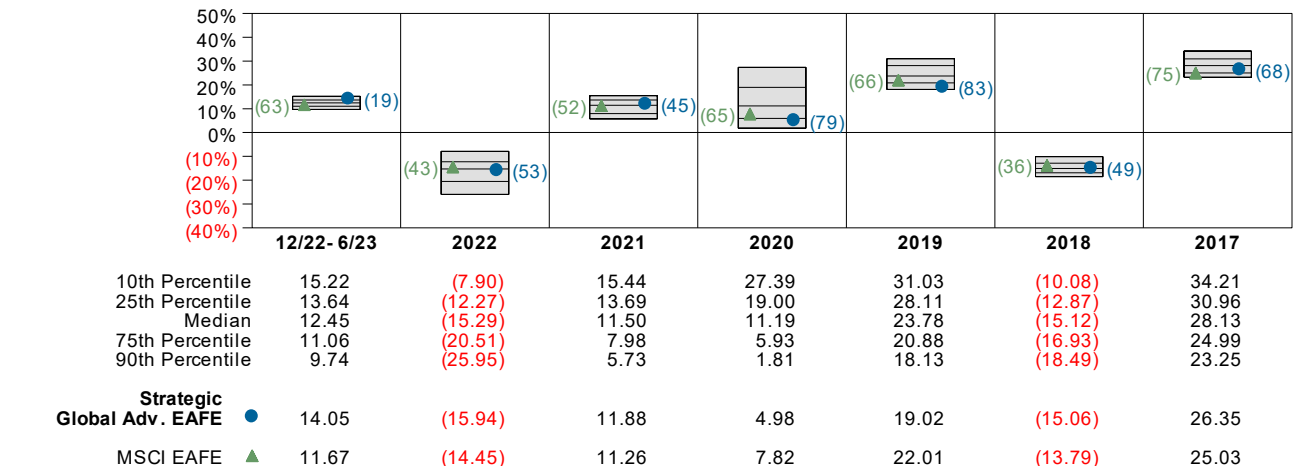
### Risk Statistics Rankings vs MSCI ACWI xUS (Net) Rankings Against Callan Non-US Equity (Gross) Five Years Ended June 30, 2023



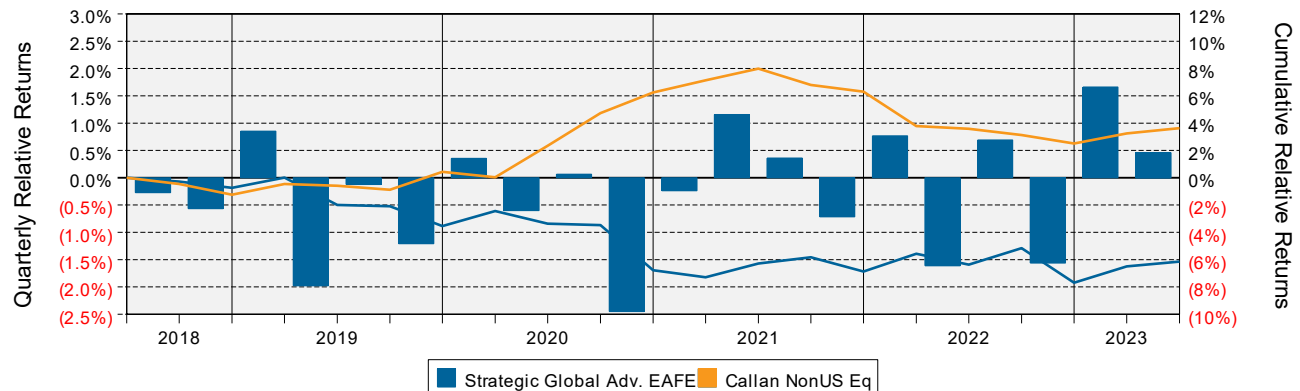
# Chicago Teachers' Pension Fund Performance Evaluation Executive Summary Second Quarter 2023

## Manager Watch List: Strategic Global Advisors

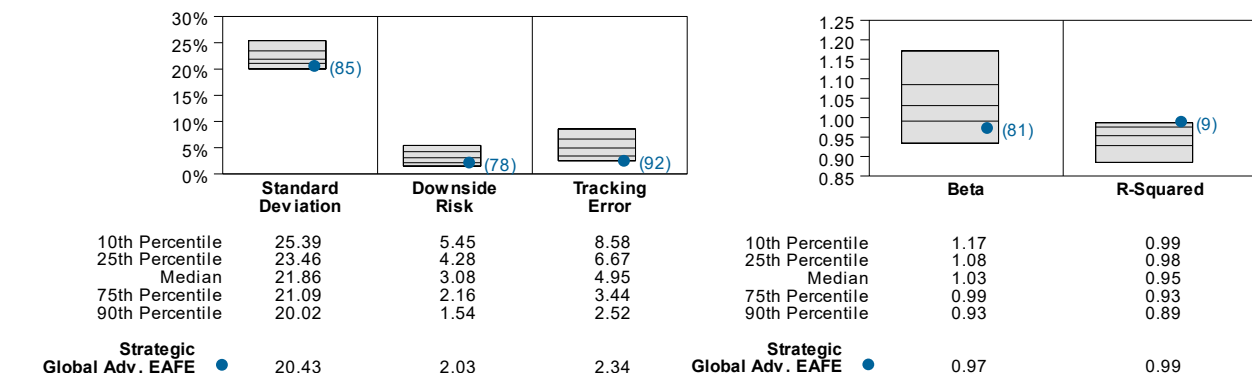
### Performance vs Callan Non-US Equity (Gross)



### Cumulative and Quarterly Relative Returns vs MSCI EAFE



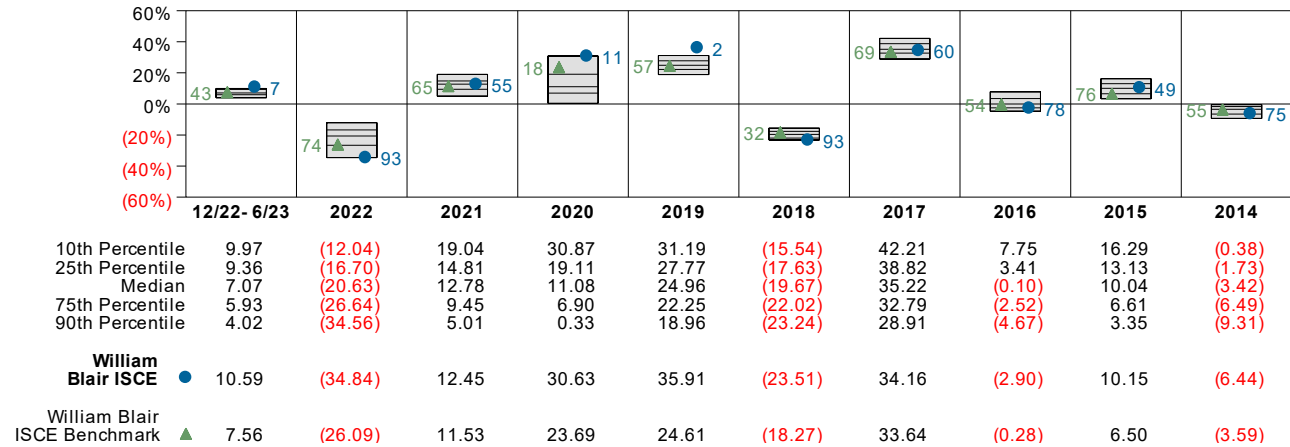
### Risk Statistics Rankings vs MSCI EAFE (Net) Rankings Against Callan Non-US Equity (Gross) Five Years Ended June 30, 2023



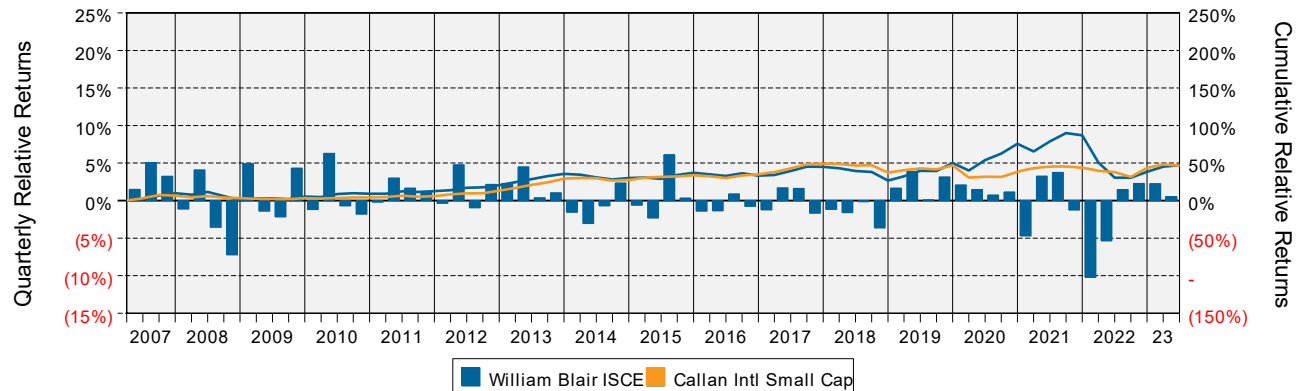
# Chicago Teachers' Pension Fund Performance Evaluation Executive Summary Second Quarter 2023

## Manager Watch List: William Blair

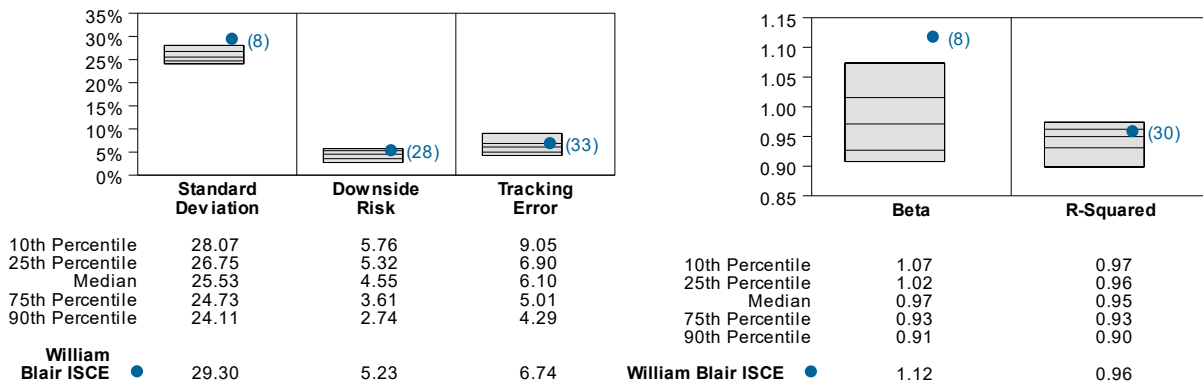
### Performance vs Callan International Small Cap (Gross)



### Cumulative and Quarterly Relative Returns vs William Blair ISCE Benchmark



### Risk Statistics Rankings vs William Blair ISCE Benchmark Rankings Against Callan International Small Cap (Gross) Five Years Ended June 30, 2023



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**General Market and Economic Conditions**

We have managed to successfully navigate several challenges this year; regional bank worries have abated after the collapse of Signature Bank, Silicon Valley Bank, and First Republic, and the debt ceiling saga is behind us. Investors are generally optimistic; stock indices registered strong 2Q gains and risk appetite was evident in bond markets. Consumer confidence has risen, and a recent small business survey from the U.S. Chamber of Commerce showed an increase in overall small business confidence in 2Q, especially regarding revenue and hiring. Just over 70% expected revenue to increase and 47% had plans to hire. (Not surprisingly, inflation remains the top challenge among small businesses with more than 75% citing higher interest rates limiting their ability to raise capital.)

1Q23 GDP was a robust 2% (raised sharply from the most recent estimate of 1.3%) and the Atlanta Fed's GDPNow estimate is for a repeat performance, 2% in 2Q. Several metrics were revised upward: exports, consumer spending, government spending, and construction. Consumer spending rose 4.2% in 1Q, the strongest growth seen in nearly two years. 2Q releases have also surprised to the upside. Durable goods orders were up a lofty 1.7% in May, beating expectations and suggesting that companies are not in "retrenchment" mode. Strength was widespread across sectors. In June, the Conference Board reported a sharp 7% monthly jump in its Consumer Confidence Index, bringing it to its highest level since January 2022. New home sales surged more than 12% in May (+20% year-over-year (YOY)) with gains broad-based geographically, according to data from the Census Bureau. Housing prices have risen in 2023 and are now just 2.4% off the June peak, according to the S&P Case-Shiller National Home Price Index. Results are mixed across cities, but low inventory has helped to boost prices even as mortgage rates approach 7%. The labor market remained resilient. The Bureau of Labor Statistics reported April job openings, according to the Job Openings and Labor Turnover Survey (JOLTS), remained at just over 10 million with about 6 million unemployed. Unemployment remained low at 3.7% in May and average hourly earnings (\$33.44) were up 4.3% over the past year, a bit higher than core inflation. Employers added a healthy 339,000 jobs in May, far outpacing expectations of 195,000.

However, the Fed has not abandoned its rate hike path and goal of 2% inflation and has suggested that further hikes are coming. Higher interest rates have a lagged effect but the impact can already be seen in some areas. In April, nearly 50% of U.S. banks reported tightening lending standards for loans to small businesses. Rising payments for credit card debt, auto loans, commercial mortgage payments, and corporate debt all have the potential to put the brakes on economic growth. While the default rate for corporations has not ticked up materially, a June report from S&P Global was a bit ominous: "...the tally of companies that have gone bankrupt so far in 2023 is higher than the first four months of any year since 2010." Commercial real estate woes, especially office and retail, are also on the radar of the more pessimistic crowd. The resumption of student loan payments in August could also temper growth later this year. Americans owe roughly \$1.8 trillion in federal and private student loan debt.

And there is mixed news: Headline CPI was up 4.0% over the past 12 months (as of May), the lowest since March 2021, with Core up 5.3% (down from a 6.6% cycle high in September). Headline CPI has benefited from falling energy prices (-12% YOY) while Core has not moderated as much and has the Fed's attention. Within Core, shelter costs (+8% YOY) have been particularly sticky and

## **Chicago Teachers' Pension Fund Performance Evaluation Executive Summary Second Quarter 2023**

comprise around 40% of the measure. The Fed's favored inflation metric, the Personal Consumption Expenditures Index, showed progress with a +3.8% gain in May (YOY), down from 5.4% in January. As with CPI, the Core measure remains more stubborn and was up 4.6% in May (YOY), down only slightly from January's 4.7%.

The Fed took a pause at its June meeting, leaving the Fed Funds target at 5.00% – 5.25%, citing uncertainty over the effects of tighter credit conditions and the lags with which monetary policy affects the economy and inflation. However, more hikes are likely this year. The median projection from the Federal Reserve Board for Fed Funds is 5.6% at the end of 2023, up from the March projection of 5.1%. The Fed's median prediction is 4.6% for the end of 2024, but the distribution reflects a wide range of views that range from 3.6% to 5.9%. The Fed remains committed in its goal to tame inflation and it believes it will be successful. The median projection is for Core PCE inflation to be 2.6% in 2024 and 2.2% in 2025. Markets agree, at least over longer periods. The five-year breakeven spread (a market measure of expected inflation over the next five years) was 2.2% as of quarter-end.

Most of the globe continues to be in "tightening" mode (except for China and Japan) as inflation remains stubbornly high. The Bank of England raised rates 50 bps in June, above expectations, in response to May's 7.1% (YOY) inflation print for core CPI, the highest since 1992. Central banks in Norway, Switzerland, and Turkey also raised rates in June. In the euro zone, inflation has moderated but remains high (6.1% YOY in May). Further hikes from the ECB are also expected. However, the impact has already been felt as the euro zone is in a technical recession, as measured by two consecutive quarters of negative growth. GDP in the 20-nation euro zone fell 0.1% in 1Q23 and 4Q22, hurt by declines in household spending amid higher prices.

China's recovery lost momentum after real GDP growth of 4.5% (YOY) in 1Q. The People's Bank of China cut key interest rates in June after disappointing economic releases. China is grappling with multiple challenges including deteriorating exports, a high youth unemployment rate, a distressed property market, and languishing domestic demand. The Chinese yuan lost 5.4% versus the U.S. dollar in 2Q.

In Japan, core inflation was 3.2% (YOY) in May, higher than the Bank of Japan's 2% target but lower than much of the world. The Bank of Japan has ultra-loose monetary policy, maintaining its -0.1% short-term interest rate target and 50 bps cap on its 10-year government bond yield at its June meeting. The Bank first adopted a negative target in 2016 to fight deflation and a limping economy. The yen lost 8% versus the U.S. dollar in 2Q while the Nikkei 225 hit a 33-year high on optimism for the country. The Nikkei has risen nearly 30% in 2023, far outpacing other developed market countries.

### **Second Quarter 2023 Market Performance**

U.S. stock indices posted positive returns in 2Q with performance dominated by large cap stocks. The S&P 500 Index rose 8.7% (+16.9% YTD) while the tech-heavy Nasdaq Composite returned +13.1% (+32.3% YTD), its best six-month performance since 1999. The 2Q top contributors, coined the "Magnificent Seven," were Nvidia (+52%), Meta Platforms (+35%), Amazon (+26%), Tesla (+26%), Apple (+18%), Microsoft (+18%), and Alphabet (+15%). The Index is now the most

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concentrated that it has been since the 1970s with those stocks accounting for about 25% of the market cap of the Index (and nearly 50% of the Nasdaq). (Of note, the equal-weighted S&P 500 Index was up 4.0% in 2Q and 7.0% YTD). Within the S&P 500, Technology (+17.2%), Communication Services (+13.1%), and Consumer Discretionary (+14.6%) rose sharply while Energy (-0.9%) and Utilities (-2.5%) fell. Growth stocks trounced value for the quarter (Russell 1000 Growth: +12.8%; Russell 1000 Value: +4.1%) due largely to the sharp outperformance of Technology relative to Health Care, Energy, and Financials. Small cap stocks underperformed large (Russell 2000: +5.2%; Russell 1000: +8.6%) across the style spectrum.

Global ex-U.S. equity markets (MSCI ACWI ex USA: +2.4%) trailed U.S. equity markets in 2Q given lower technology exposure. Lacking the U.S. market's exuberance for any company associated with AI, style impacts in developed ex-U.S. equity were more muted with value (MSCI World ex USA Value: +3.1%) in line with growth (MSCI World ex USA Growth: +3.0%). Illustratively, Industrials (EAFE Industrials: +6.4%) outperformed Technology (EAFE Technology: +5.9%). Japan (+6.4%) was a top performer and its Nikkei 225 Index hit its highest level since 1990. The U.S. dollar appreciated versus the Japanese yen (-7.9%) but fell versus the British pound (+2.8%) and was relatively flat (+0.4%) versus the euro.

Emerging market equity (MSCI EM Index: +0.9%) underperformed developed market equity but results varied widely. Emerging Europe (+11.2%) and Latin America (+14.0%) posted double-digit results while Emerging Asia (-0.8%) was hurt by poor performance from China (-9.7%), Malaysia (-8.4%), and Thailand (-8.2%). The economic news out of China remains muted and uncertain.

The Bloomberg US Aggregate Bond Index fell 0.8% in 2Q as interest rates rose. A "risk-on" environment bolstered returns for credit and securitized sectors, both of which outperformed U.S. Treasuries on a duration-adjusted basis. The lowest-quality bucket of the Index (rated BBB) also performed best. The 10-year U.S. Treasury yield was 3.81% as of quarter-end, up from 3.48% as of 3/31. The yield curve was sharply inverted at quarter-end with the 2-year U.S Treasury yielding 4.87%. High yield (Bloomberg High Yield Index: +1.8%) performed well amid robust risk appetite, muted issuance, and promising economic news. Munis outperformed U.S. Treasuries: the Bloomberg Municipal Bond Index dropped 0.1% and the shorter duration 1-10 Year Blend was down 0.5%. As with taxable bonds, lower quality outperformed (Bloomberg Municipal Bond BBB: +0.7%; Bloomberg Municipal Bond AAA: -0.4%).

The Bloomberg Global Aggregate ex USD Index fell 2.2% (hedged: +0.7%). Currency played a strong role in results across countries this quarter with mixed performance from the U.S. dollar. Japan (-8.0%) was the worst-performing constituent, due largely to yen deprecation. Emerging market debt indices performed well (JPM EMBI Global Diversified: +2.2%; local currency JPM GBI-EM Global Diversified: +2.5%). Returns were mixed in the local currency index; Latin America (+11%) performed well with double-digit returns from Brazil (+12%) and Colombia (+23%) while Asia (-2%) was hurt by China (-4%) and Malaysia (-4%). Turkey (-29%) also posted a sharp decline.

**Chicago Teachers' Pension Fund  
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**Appendix**



Appendix - 6/30/23			<b>Watch List Criteria:</b> Rolling three year returns are more than: 1. 200 basis points below the market index (Net of Fees) for equity managers. 2. 50 basis points below the market index (Net of Fees) for core fixed income managers. 3. 100 basis points below the market index (Net of Fees) for core plus fixed income managers.		<b>Watch List Criteria:</b> Rolling seven year returns rank below median (Gross of Fees).		<b>Watch List Criteria:</b> Rolling seven year returns are below the return of the index (Net of Fees).		<b>Watch List Criteria:</b> Five year information ratio is negative and ranks below median.		<b>Watch List Criteria:</b> Five year up market capture is below 90% and ranks below median.		<b>Watch List Criteria:</b> Five year down market capture is above 90% and ranks below median.		<b>Weighted Averages</b>	
	<b>Watch List Criteria:</b> Rolling three year returns rank below median (Gross of Fees).  If the above statement is true, then column reads "Yes". If not, then "No".		If the above statements are true, then column reads "Yes". If not, then "No".		If the above statement is true, then column reads "Yes". If not, then "No".		If the above statement is true, then column reads "Yes". If not, then "No".		If the above statement is true, then column reads "Yes". If not, then "No".		If the above statement is true, then column reads "Yes". If not, then "No".		If the above statement is true, then column reads "Yes". If not, then "No".			
	03/31/2023	06/30/2023	03/31/2023	06/30/2023	03/31/2023	06/30/2023	03/31/2023	06/30/2023	03/31/2023	06/30/2023	03/31/2023	06/30/2023	03/31/2023	06/30/2023	03/31/2023	06/30/2023
<b>Manager</b>																
<i>Small Cap Growth Equity</i> Conestoga**	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	0.10	0.00
<i>Small Cap Value Equity</i> Phocas*	No	No	No	No	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	0.50	0.30
<i>Small Cap Equity</i> NTGI Structured Small Cap	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No	No	No	No	0.30	0.30
<i>All Cap Growth Equity</i> Zevenbergen	Yes	Yes	Yes	Yes	No	No	Yes	No	No	Yes	No	No	Yes	Yes	0.50	0.50
<i>All Cap Value Equity</i> Channing	No	No	No	No	No	Yes	No	No	No	No	No	No	Yes	Yes	0.10	0.30
<i>International Equity</i> EARNEST Partners	No	No	No	No	No	No	No	No	No	No	No	No	No	No	0.00	0.00
Lazard	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	0.70	0.50
Morgan Stanley	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	0.50	0.50
Leading Edge	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	0.80	0.60
William Blair	No	Yes	No	No	No	No	No	No	No	No	No	No	Yes	Yes	0.10	0.20
Ariel*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	0.90	0.90
Strategic Global*	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	0.70	0.70
<i>International Small Cap</i> William Blair	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes	0.70	0.70
DFA	No	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	0.20	0.20
<i>Emerging Market Equity</i> EARNEST Partners	No	No	No	No	No	No	No	No	No	No	No	No	No	No	0.00	0.00
<i>Active Core Fixed Income</i> Ramirez***	No	No	No	No	No	No	No	No	No	No	No	No	No	No	0.00	0.00
Pugh	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No	No	Yes	Yes	0.40	0.40
Garcia Hamilton	No	No	No	No	No	No	No	No	No	No	No	No	No	No	0.00	0.00
Wellington**	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No	No	Yes	Yes	0.00	0.00
<i>Active Core Plus Fixed Income</i> LM Capital	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No	No	No	No	0.30	0.30
<i>Active Opportunistic Fixed Income</i> WAMCO	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No	No	Yes	Yes	0.40	0.40

\*Manager does not yet have 7 years of portfolio data. CTPF portfolio data has been linked with a representative historical manager composite to populate columns requiring at least 7 years of data in the analysis above.

\*\*Manager does not yet have 5 years of portfolio data. CTPF portfolio data has been linked with a representative historical manager composite to populate all columns requiring at least 5 years of data in the analysis above.

\*\*\*Manager does not yet have 3 years of portfolio data. CTPF portfolio data has been linked with a representative historical manager composite to populate all columns in the analysis above.