Forest Preserve District Employees' Annuity and Benefit Fund of Cook County

Performance Summary

September 30, 2022

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Macroeconomic Environment

Mayhem Continues in the Capital Markets

Capital markets abhor uncertainty, and we have seen nothing but uncertainty this year. The Russian invasion of Ukraine threw expectations for an orderly transition from the pandemic era out the window. Kinks in supply chains were expected to be smoothed, energy prices and inflation in general were projected to calm and subside after surging in 2021, and market participants anticipated an orderly transition from zero interest rate policy to a more "normal" yield curve. All these were key components to a consensus view that U.S. and global economies, and their capital markets, would slow gradually toward trend growth and reach the proverbial "Goldilocks" scenario: not too hot, not too cold. Like a soft landing for the Fed, the Goldilocks scenario is aspirational and has never really been achieved.

Instead, inflation is burning out of control. Global energy markets are surging and volatile. Geopolitical uncertainty is moving toward a level some experts liken to the period after World War II, when the United States and the Soviet Union were trying to figure out a new world order. This time, China represents a third axis of power with another agenda. Stock and bond markets around the globe are down together for three quarters in a row through September 2022. The S&P 500 plunged 24% year-to-date, and developed and emerging market equities are down a similar amount, punished by the strong dollar. While painful, such a drawdown in the equity markets is expected periodically. What is not expected is the 14.6% loss in the bond market (Bloomberg Aggregate) at the same time. The nine-month returns for the Aggregate are the worst in its history. There is no place to hide for a diversified portfolio.

The losses in both the bond and stock markets this year are primarily due to the sharp rise in interest rates. The lack of any yield cushion at the start of 2022 makes the rise in rates particularly painful for bonds. Rates have risen this much in the past, but the last time was during the regime change for monetary policy in the early 1980s. The giant capital losses were cushioned by yields as high as 14%. We began this year with the yield on the Aggregate at 1.75%; by Sept. 30, it reached 4.75%. With a duration of over six years for the Aggregate, the capital loss implied by such a rate rise is close to 20%. The rising yield collected offsets some of this capital loss.

The Fed announced plans to raise rates aggressively in 2022, targeting a Fed Funds rate of 3.25% to 3.5% by December, but the market didn't really believe it until the Russian invasion in February. Then investors fully priced in the Fed's plans all at once. During the long period of zero interest rate policy over the past decade, we often mused that the best way to return to normal in the bond market would be to rip the "low-rate bandage" off and move at once to the new normal. Get the pain over with, absorb the capital loss, and start collecting the higher yield. Be careful what you wish for.

Still, U.S. Economy Stays Healthy

Underneath this mayhem in the capital markets, the U.S. economy has been strong, with a particularly robust job market and healthy consumer spending. The economy added 263,000 jobs in September, down from the torrid pace set earlier this year, but for the quarter nonfarm employment increased by more than 1.1 million jobs. Even more importantly, we finally reached the pre-pandemic level for total employment in August 2022. Personal income growth has recovered from the withdrawal of pandemic support (transfer payments), rising 5.9% in 2Q

and 5.5% in 3Q. Disposable income (after tax) rose by similar rates. However, inflation has taken a toll this year; real disposable income is 4% to 5% lower than the same month one year ago starting in May 2022, while real consumption expenditures are 6% to 7% higher.

Inflation reports continue to scare. CPI-U, known as headline inflation, it is still up 8.2% year-over-year through September. The energy component is up 19.8%, food is up 11.2%. Core CPI, which removes the volatile food and energy sectors, is up 6.6%. This 12-month rise in core CPI is the highest since 1982. The only good news is that after hitting 9.1% year-over-year in June, month-to-month changes in the CPI are essentially flat in July, August, and September. The year-over-year changes are influenced by the base effect, as prices really began to rise in early 2021, but were still depressed. The Fed's preferred measure of inflation, PCE, is up 6.2% through September, and core PCE is up 5.1%, both year-over-year measures. Both measures of PCE have flattened month-to-month since early summer.

Traditional measures of economic health are still out of whack as they often were during the pandemic. GDP is the biggest puzzle so far this year. GDP fell 1.6% in 1Q and another 0.6% in 2Q, while at the same time we generated more than 2 million new jobs. The GDP declines were deemed to be anomalies driven by inventory swings and net exports, not underlying economic weakness. Third quarter GDP grew by 2.6%, with strong contributions from exports, business fixed investment (equipment and intellectual property), and a resumption of government spending. However, fourth quarter GDP is now projected to fall. After all the mayhem, GDP growth will likely end up being positive in 2022—but it is projected to be negative in 2023, signaling more challenges ahead and the potential for a recession to extend through 2Q23.

Global Equities

The S&P 500 Index sank 4.9% in 3Q22 and is down 23.9% year-to-date (YTD). Returns were quite mixed across sectors with Energy (+2.3%) and Consumer Discretionary (+4.4%) posting positive results and Communication Services (-12.7%) and Real Estate (-11.0%) delivering the lowest returns. Somewhat counterintuitively, value underperformed growth (Russell 1000 Value: -5.6%; Russell 1000 Growth: -3.6%) but value remains ahead on a YTD basis (Russell 1000 Value: -17.8%; Russell 1000 Growth: -30.7%). Small caps outperformed large (Russell 2000: -2.2%; Russell 1000: -4.6%), narrowing the YTD differential (Russell 2000: -25.1%; Russell 1000: -24.6%).

Global ex-U.S. markets fared worse, driven mostly by U.S. dollar strength. The MSCI ACWI ex USA Index fell 9.9% (Local: -4.9%), bringing its YTD loss to 26.5% (Local: -16.2%). The U.S. dollar continued to strengthen, benefiting from its "safe haven" status as well as attractive interest rates relative to other developed markets. The yen and euro lost 6% versus the greenback and the British pound fell 8%. Across developed market countries, losses were broad-based with several posting double-digit declines. As in the U.S., value (MSCI ACWI ex USA Value: -10.4%) underperformed growth (MSCI ACWI ex USA Growth: -9.4%). Unlike the U.S., no sectors delivered a positive return in 3Q.

Emerging markets (MSCI Emerging Markets: -11.6%; Local: -8.2%) underperformed developed markets for the quarter but returns were mixed across countries. China (MSCI China: -22.5%) was one of the worst performers while several countries posted positive returns; two of the best were India (+6.5%) and Brazil (+8.5%). Returns were also mixed across regions: Latin America (+3.6%), Emerging Europe (-12.4%), and Emerging Asia (-14.0%).

Global Fixed Income

The 10-year U.S. Treasury briefly touched an intra-quarter high of 4.0% in late September, the highest since 2008, before closing the quarter at 3.83%. At quarter-end, the yield curve was inverted by about 40 bps with the 10-year at 3.8% and the 2-year at 4.2%. The Bloomberg US Aggregate Bond Index fell 4.8% in 3Q, bringing its YTD loss to a startling 14.6%, a historic worst for the first nine months of a year. Notably, the sharp sell-off has eroded gains over the past 10 years; the Aggregate's 10-year annualized gain is now a muted 0.9%.

Mortgages and corporates underperformed U.S. Treasuries, with mortgage-backed securities doing especially poorly, underperforming like-duration U.S. Treasuries by 160 bps on poor technicals and rising rates. The yield-to-worst of the Aggregate Index climbed to 4.75%, up sharply from 1.75% at the beginning of the year. TIPS (Bloomberg TIPS: -5.1%; -13.6% YTD) were not immune from the sell-off. High yield corporates (Bloomberg High Yield: -0.6%) fared better, but the Index is down a similar 14.7% YTD. The yield-to-worst was 9.7% as of quarter-end.

Interest rates also rose overseas and the U.S. dollar continued to strengthen, hurting unhedged fixed income returns. The Bloomberg Global Aggregate ex USD fell 8.8% (hedged: -2.2%). The YTD differential for hedged and unhedged investors is 14 percentage points (unhedged: -23.9%; hedged: -9.9%). Losses were broad-based but the U.K. fell the most sharply; 13.2% in local currency terms and 20.2% in US$ in response to announced plans for massive fiscal stimulus in the form of unfunded tax cuts. Emerging markets performed similarly, with the JPM EMBI Global Diversified down 4.6% and the local currency JPM GBI-EM Global Diversified off 4.7%. Negative returns were broad-based across countries for both indices, with Brazil being a notable exception. Brazil was up 0.5% in the EMBI Global Diversified (debt issued in U.S. dollars) and up 1.8% in the GBI-EM Global Diversified (issued in local currency).

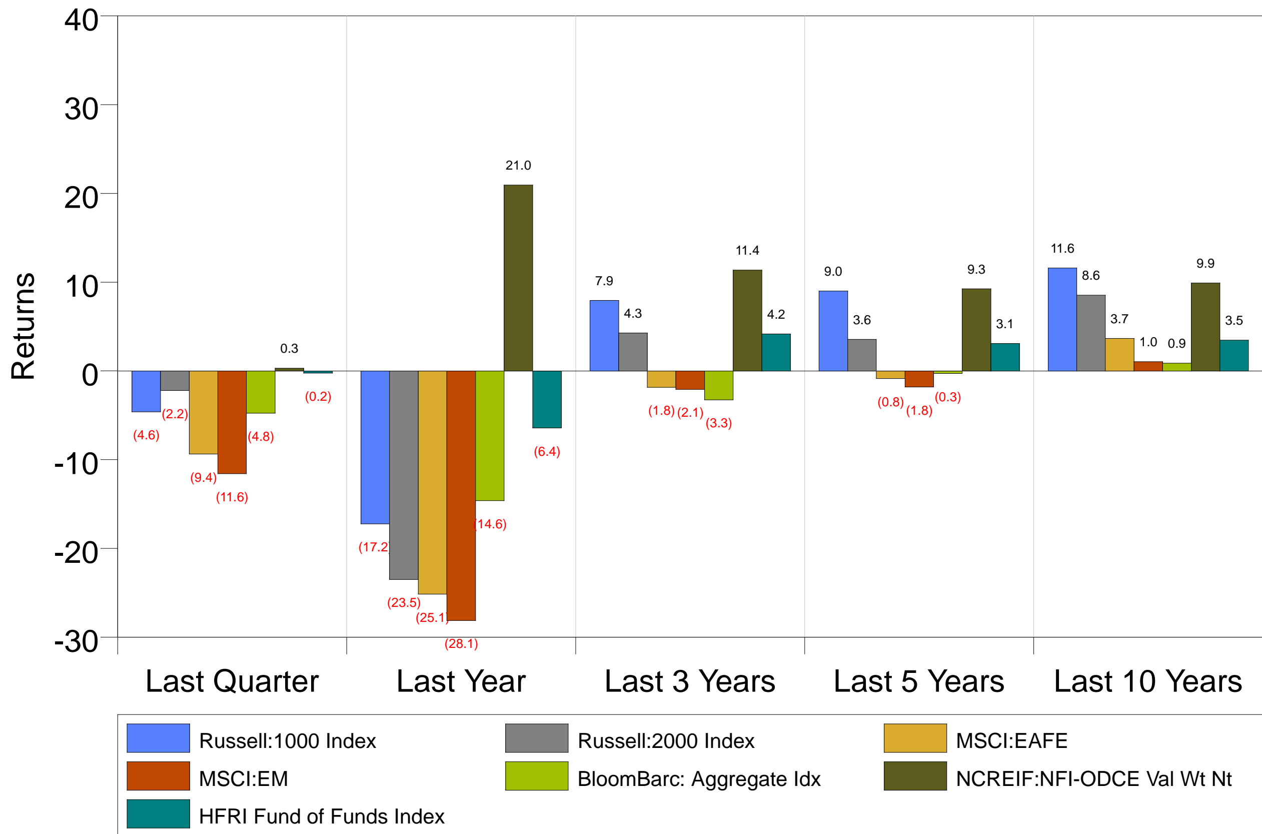
Real Assets

Real assets as a group posted negative returns in 3Q. Commodity prices, especially metals and oil, declined on concerns over slowing global growth; the S&P GSCI Index fell 10.3%. WTI Crude closed the quarter at $79/barrel, down more than 20% from 2Q. Gold (S&P Gold Spot Price Index: -7.5%), listed infrastructure (DJB Global Infrastructure: -1.1%), REITs (MSCI US REIT: -10.0%), and TIPS (Bloomberg TIPS: -5.1%) declined.

Closing Thoughts

Markets have been both punishing and humbling in 2022, and the ability of central banks to dampen high and widespread inflation without causing recessions remains a key question for investors. The war in Ukraine and its ultimate implications also weighs heavily. Stock and bond markets have undergone significant corrections, and both represent much better forward-looking opportunities than we have seen in some time, but we expect volatility to continue to be a key theme given significant tail risks. As always, Callan continues to advise adherence to a disciplined investment process that includes a well-defined long-term asset allocation policy.

Third Quarter 2022 Market Performance



The Callan Periodic Table of Investment Returns
Third Quarter 2022

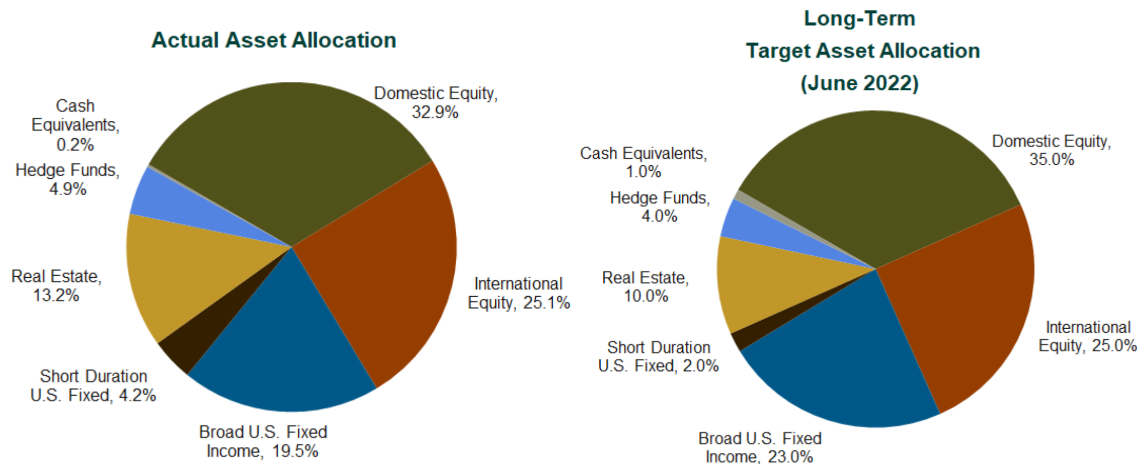
2013	2014	2015	2016	2017	2018	2019	2020	2021	3 Qtrs. 2022
Russell:2000 Index **38.8%**	Russell:1000 Index **13.2%**	NCREIF:NFI-ODCE Val Wt Nt **14.0%**	Russell:2000 Index **21.3%**	MSCI:EM **37.3%**	Cambrdg:Gl Private Equity **10.0%**	Russell:1000 Index **31.4%**	Cambrdg:Gl Private Equity **29.5%**	Cambrdg:Gl Private Equity **36.6%**	NCREIF:NFI-ODCE Val Wt Nt **12.4%**
Russell:1000 Index **33.1%**	Cambrdg:Gl Private Equity **11.8%**	Cambrdg:Gl Private Equity **8.7%**	Russell:1000 Index **12.1%**	MSCI:EAFE **25.0%**	NCREIF:NFI-ODCE Val Wt Nt **7.4%**	Russell:2000 Index **25.5%**	Russell:1000 Index **21.0%**	Russell:1000 Index **26.5%**	HFRI Fund of Funds Index (6.8%)
MSCI:EAFE **22.8%**	NCREIF:NFI-ODCE Val Wt Nt **11.5%**	Russell:1000 Index **0.9%**	MSCI:EM **11.2%**	Russell:1000 Index **21.7%**	BC Aggregate **0.0%**	MSCI:EAFE **22.0%**	Russell:2000 Index **20.0%**	NCREIF:NFI-ODCE Val Wt Nt **21.0%**	BC Aggregate **(14.6%)**
Cambrdg:Gl Private Equity **21.1%**	BC Aggregate **6.0%**	BC Aggregate **0.5%**	Cambrdg:Gl Private Equity **9.5%**	Cambrdg:Gl Private Equity **19.9%**	HFRI Fund of Funds Index (4.0%)	MSCI:EM **18.4%**	MSCI:EM **18.3%**	Russell:2000 Index **14.8%**	Russell:1000 Index **(24.6%)**
NCREIF:NFI-ODCE Val Wt Nt **12.9%**	Russell:2000 Index **4.9%**	HFRI Fund of Funds Index (0.3%)	NCREIF:NFI-ODCE Val Wt Nt **7.8%**	Russell:2000 Index **14.6%**	Russell:1000 Index **(4.8%)**	Cambrdg:Gl Private Equity **16.2%**	HFRI Fund of Funds Index 10.9%	MSCI:EAFE **11.3%**	Russell:2000 Index **(25.1%)**
HFRI Fund of Funds Index 9.0%	HFRI Fund of Funds Index 3.4%	MSCI:EAFE **(0.8%)**	BC Aggregate **2.6%**	HFRI Fund of Funds Index 7.8%	Russell:2000 Index **(11.0%)**	BC Aggregate **8.7%**	MSCI:EAFE **7.8%**	HFRI Fund of Funds Index 6.2%	MSCI:EAFE **(27.1%)**
BC Aggregate **(2.0%)**	MSCI:EM **(2.2%)**	Russell:2000 Index **(4.4%)**	MSCI:EAFE **1.0%**	NCREIF:NFI-ODCE Val Wt Nt **6.7%**	MSCI:EAFE **(13.8%)**	HFRI Fund of Funds Index 8.4%	BC Aggregate **7.5%**	BC Aggregate **(1.5%)**	MSCI:EM **(27.2%)**
MSCI:EM **(2.6%)**	MSCI:EAFE **(4.9%)**	MSCI:EM **(14.9%)**	HFRI Fund of Funds Index 0.5%	BC Aggregate **3.5%**	MSCI:EM **(14.6%)**	NCREIF:NFI-ODCE Val Wt Nt **4.4%**	NCREIF:NFI-ODCE Val Wt Nt **0.3%**	MSCI:EM **(2.5%)**	**PE Idx Not Yet Reported**

Through the third quarter of 2022, Real Estate was the top performing asset class (NCREIF: NFI-ODCE Value Weighted Net Index: +12.4%), leading Hedge Funds (HFRI Fund of Funds Index: -6.8%). Fixed Income (Bloomberg Aggregate Index: -14.6%) finished with its worst nine-month start to a year in history. Large Caps (Russell: 1000 Index: -24.6%) lead Small Caps (Russell: 2000 Index: -25.1%) year to date. Developed International Equities (MSCI: EAFE Index: -27.1%) performed in line with Emerging Markets (MSCI: EM: -27.2%).

Forest Preserve Pension Fund Commentary

Asset Allocation

The Total Fund ended September with a market value of $182 million, $14 million lower than the second quarter ending value of $196 million. The Fund experienced investment returns of -$9.2 million and outflows of -$4.6 million. Asset class allocations are near their long-term policy targets.



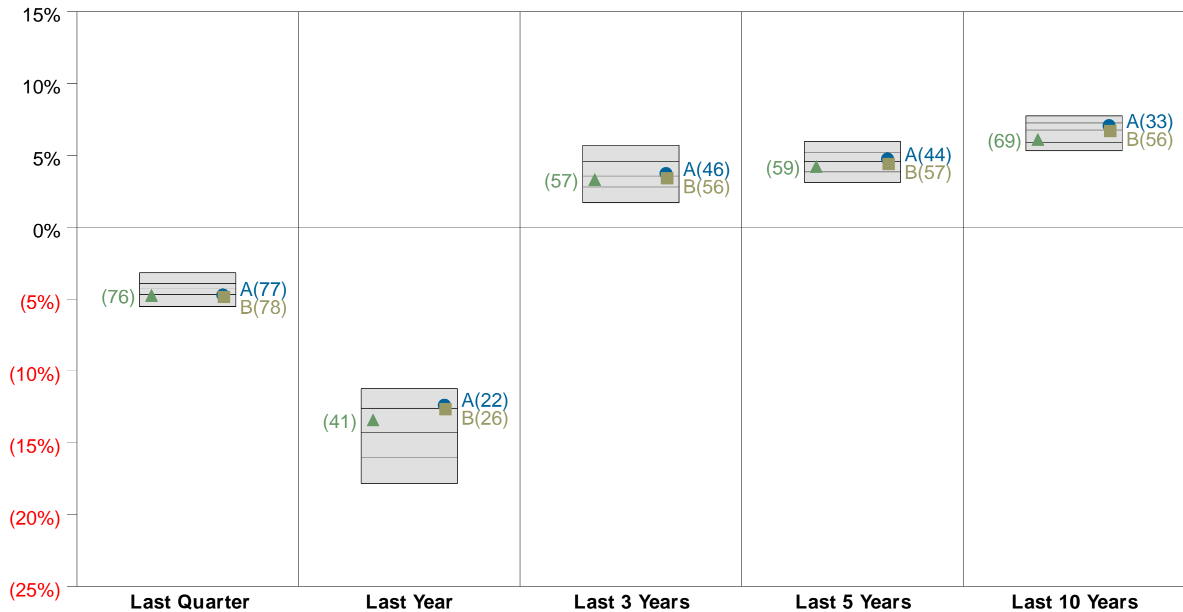
Asset Class	$000s Actual	Weight Actual	Min Target	Long-Term Target	Max Target	Percent Difference	$000s Difference
Domestic Equity	60,015	32.9%	31.0%	35.0%	39.0%	(2.1%)	(3,803)
International Equity	45,833	25.1%	21.0%	25.0%	29.0%	0.1%	249
Broad U.S. Fixed Income	35,547	19.5%	19.0%	23.0%	27.0%	(3.5%)	(6,391)
Short Duration U.S. Fixed	7,656	4.2%	0.0%	2.0%	4.0%	2.2%	4,009
Real Estate	23,990	13.2%	6.0%	10.0%	14.0%	3.2%	5,756
Hedge Funds	8,852	4.9%	0.0%	4.0%	8.0%	0.9%	1,559
Cash Equivalents	444	0.2%	0.0%	1.0%	5.0%	(0.8%)	(1,379)
Total	182,337	100.0%		100%			

Forest Preserve Pension Fund Performance vs. Target

The Total Fund returned -4.85% (Net of Fees) and trailed its benchmark (-4.74%) in the third quarter. Active management was positive overall, but variance from policy weights detracted. Over the last year, the Total Fund fell 12.66% and finished ahead of the benchmark return (-13.41%). The Fund has performed well on a relative basis over longer periods, outpacing its benchmark and ranking ahead of its peer group median (GOF basis) over the trailing three-, five-, and ten-year periods.

Table 1.0

Performance vs Callan Public Fund Spons- Mid (100M-1B) (Gross)



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(3.17)	(11.23)	5.70	5.96	7.75
25th Percentile	(3.92)	(12.60)	4.58	5.22	7.26
Median	(4.23)	(14.29)	3.57	4.56	6.77
75th Percentile	(4.67)	(16.05)	2.80	3.85	5.90
90th Percentile	(5.52)	(17.83)	1.71	3.12	5.33
Total Forest (Gross) ● A	(4.79)	(12.46)	3.66	4.68	6.99
Total Forest (Net) ■ B	(4.85)	(12.66)	3.41	4.40	6.70
Total Forest Preserve Benchmark ▲	(4.74)	(13.41)	3.32	4.23	6.11

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Table 1.1
Asset Class Performance vs. Target (Net of Fees)

	Market Value $(Dollars)	Ending Weight	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Domestic Equity	**$60,014,696**	**32.91%**	**(4.83%)**	**(17.08%)**	**7.05%**	**8.01%**	**11.26%**
Domestic Equity Benchmark (2)	-	-	(4.46%)	(17.63%)	7.70%	8.62%	11.30%
International Equity	**$45,832,778**	**25.14%**	**(10.04%)**	**(25.30%)**	**(1.56%)**	**0.27%**	**4.90%**
International Equity Bnmk (4)	-	-	(9.91%)	(25.17%)	(1.52%)	(0.81%)	3.01%
Fixed Income	**$43,203,049**	**23.69%**	**(4.35%)**	**(11.68%)**	**(2.34%)**	**0.12%**	**1.06%**
Fixed Income Benchmark (3)	-	-	(4.42%)	(13.68%)	(2.98%)	(0.10%)	0.98%
****Real Estate**	**$23,990,408**	**13.16%**	**4.69%**	**24.89%**	**11.95%**	**9.60%**	**8.84%**
NFI-ODCE Value Weight Net	-	-	0.31%	20.96%	11.38%	9.26%	9.91%
****Hedge Funds**	**$8,851,793**	**4.85%**	**2.79%**	**4.63%**	**4.20%**	**4.39%**	**5.49%**
LIBOR + 4%	-	-	1.78%	5.45%	4.90%	5.45%	4.98%
HFRI Fund of Funds Index (5)	-	-	(0.00%)	(4.80%)	4.58%	3.52%	3.73%
Cash Equivalents	**$444,061**	**0.24%**	**0.48%**	**0.69%**	**0.62%**	**1.47%**	**0.88%**
3-month Treasury Bill	-	-	0.46%	0.62%	0.59%	1.15%	0.68%
Total Forest Preserve Fund	**$182,336,784**	**100.00%**	**(4.85%)**	**(12.66%)**	**3.41%**	**4.40%**	**6.70%**
Total Fund Benchmark (1)	-	-	(4.74%)	(13.41%)	3.32%	4.23%	6.11%

**Represents trailing data.

Definitions for custom benchmarks can be found on the back page

Table 1.1 illustrates the Forest Preserve Pension Fund's asset class performance against associated benchmarks. In the third quarter, active management in Real Estate and Hedge Funds added value.

The Fund's Domestic Equity allocation declined 4.83% in the third quarter and trailed its benchmark (-4.46%). Domestic Equity (-17.08%) leads its benchmark (-17.63%) over the last year, but has underperformed over longer annualized periods.

International Equity posted a -10.04% return for the quarter versus the benchmark return of -9.91%. Over longer periods, International Equity has fared well relative to the benchmark through positive contributions from active managers.

The Fixed Income allocation returned -4.35% in the third quarter and edged the benchmark return of -4.42% Fixed Income outperformed the benchmark over the trailing one-, three-, five-, and ten-year periods.

The Real Estate allocation is comprised of investments to private real estate. The Real Estate allocation beat its benchmark (+0.31%) in the second quarter, generating a 4.69% return. The Real Estate allocation leads the benchmark over the trailing one-, three-, and five-year periods.

The Hedge Fund allocation outperformed for the quarter, gaining 2.79% versus its absolute return benchmark return of 1.78%. Hedge Funds trail the benchmark over the trailing one-, three-, and five-year periods, but have outperformed over the last ten years on an annualized basis.

Benchmarks

1. **Total Fund Benchmark:** Blend of asset class benchmarks at policy weights. Current Quarter benchmark: 32.0% Russell 3000 Index, 27.0% MSCI ACWI ex US, 21.0% Bloomberg Aggregate Index, 10.0% Libor-3 Month+4.0%, 9.0% NFI-ODCE Value Weight Net, and 1.0% 3-Month Treasury Bill.

Benchmarks	Long-Term Target	3Q 2022
Russell 3000	35.0	32.0
MSCI ACWI ex US	25.0	27.0
Bloomberg Aggregate	23.0	18.9
Bloomberg Govt/Credit 1-3 Yr	2.0	2.1
Libor 3 Month + 4.0%	4.0	10.0
Real Estate	10.0	9.0
Cash (90 day T-Bill)	1.0	1.0
Total Target	100.0%	100.0%

2. **Domestic Equity Benchmark:** Russell 3000 Index; Prior to 6/30/2016 Blend of 70% S&P 500 and 30% Russell 2500 Index; Prior to 12/31/2012 Blend of 55.6% S&P 500, 11.0% Russell 2000 Value, 16.7% Russell 1000 Growth, and 16.7% Russell 1000 Value.

3. **Fixed Income Benchmark:** Blend of 90% Bloomberg Aggregate Index, and 10% Bloomberg Gov/Credit 1-3 Year Index; Prior to 12/31/2019 Bloomberg Aggregate Index; Prior to 12/31/2012 Blend of 75% Bloomberg Aggregate Index, and 25% Bloomberg Gov/Credit Intermediate Index.

4. **International Equity Benchmark:** MSCI ACWI ex U.S.

5. **HFRI Fund of Funds Composite Index:** Returns are lagged 1 month.