Callan

County Employees’ and Officers’ Annuity and Benefit Fund of Cook County

Performance Summary

September 30, 2021

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County Employees' and Officers' Annuity & Benefit Fund of Cook County
Performance Evaluation Executive Summary
Third Quarter 2021

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Macroeconomic Environment
Will Headwinds or Tailwinds Prevail?

So much for the summer doldrums. The third quarter ended with a host of potential headwinds as well as some notable tailwinds. In the headwinds category, political gridlock around lifting the debt ceiling and infrastructure/social spending bills, massive supply chain issues, real estate woes in China, and repercussions from the Fed's likely 4Q21 "taper" of bond purchases topped the list. At the same time, the Delta surge appears to be abating, the consumer is in excellent shape, job openings are at record highs, and near-term growth prospects remain solid. The prospect for inflation remains uncertain and will likely be a key driver for asset class returns in coming quarters.

Risk appetite was mixed during the quarter, with September results being the bleakest across asset classes; the notable exception was commodities (specifically natural gas). For the quarter, broad developed market equity and fixed income returns were flat, with U.S. dollar strength being a headwind for overseas investments. The dollar gained about 2% vs. a basket of developed market currencies. Emerging market equities sank, led by sharply lower returns from China and Brazil.

GDP for 2Q21 was revised up slightly to an annualized 6.7% (from 6.6%), but expectations for 3Q21 growth have moderated. Bloomberg's monthly survey of economists showed that the median 3Q GDP forecast is 5.0%, down from July's forecast of 7.1%. While still a strong number, it reflects how the Delta variant impacted consumer spending over the summer and the pace and consistency of the "re-opening" around the country. Cities and states differed with respect to re-openings, but across the nation many employees continued to work remotely. Worries over the Delta variant affected consumer sentiment; the Conference Board Consumer Confidence Index weakened for the third consecutive month in September and is down more than 15% over this period (though still much higher than its low in 2020). As further evidence of the moderation in growth, the Citigroup Economic Surprise Index has been below zero since July 2021 (a reading of zero indicates that data are meeting estimates).

On the COVID-19 front, we faced a grim reminder of the toll taken with deaths surpassing 700,000 in the U.S. alone. In the tailwind category, the vaccination rate continued to slowly climb, and confirmed cases and fatalities continued to ebb. A vaccine for children is in the works, and the recently announced antiviral pill from Merck adds to the list of reasons to be optimistic that the worst is behind us. Retail spending was up over 15% in August from one year prior; gas stations (+36%) and restaurants/bars (+32%) notched the biggest gains.

The Federal Open Market Committee (FOMC) left rates on hold at its September meeting, but Fed Chair Jerome Powell suggested that bond purchases would likely be cut back in 4Q with the goal of ending them by mid-2022. The FOMC has been transparent about its plans in this regard, so a repeat of the "taper tantrum" witnessed in 2013 seems unlikely. Nevertheless, fiscal and monetary stimulus will be reduced in coming quarters, and the economic ramifications of less support remain to be seen. The Fed's new "dot plot" revealed that half of the 18 FOMC members now expect at least one rate hike in 2022. This is a significant change from the December 2020 meeting, when only one saw a hike in 2022 and five slated 2023 for the first hike. Notably, Powell disassociated the taper of bond purchases from rate hikes, suggesting that they would be considered separately.

The FOMC also lowered real growth expectations from 7.0% to 5.9% for 2021 but raised its inflation forecast for the year to 4.2% from 3.4%. The Fed continues to expect price pressures to be transitory and for inflation to fall back to 2.2% next year. As of August, U.S. headline CPI was up 5.3% year-over-year (core +4.0%), with Energy up 25% over the period. The PPI soared 8.3%, the highest 12-month rate in more than 10 years. Supply chain bottlenecks have affected prices for shipping, materials, labor, parts, and equipment. Ports and rail yards are clogged and ships are anchored offshore, waiting to unload. Truck drivers are in short supply, as are the chassis needed to offload containers. A prolonged shortage of semiconductor chips persists due to increased demand for electronics from automakers and is further exacerbated by a host of issues facing suppliers as well as transportation glitches. This supply chain dysfunction could persist through 2022 and falls distinctly into the headwinds category.

The labor market also shows signs of dysfunction. A large disconnect exists between job openings—which are at record levels—and labor shortages reported by employers. According to the U.S. JOLTS report, there were a record 10.9 million job openings on the last day of July. At the same time, there are more than 8 million people actively looking for work. The National Federation of Independent Business recently reported that 50% of small businesses have job openings they cannot fill. "Help wanted" signs proliferate in many of our communities. As the shopping season approaches, the largest employers will seek to hire hundreds of thousands of workers. There are a number of factors that have contributed to the mismatch between job seekers and job providers, some of which may be resolved with higher wages. Market participants are closely watching wage growth for its important contribution to inflation; the August jobs report showed average hourly earnings rose 4.3% YOY.

Inflation and supply chain issues are also evident overseas. Natural gas prices have surged in Asia, Europe, and Latin America as demand for the "cleaner" fuel and for manufactured goods that rely on this input has increased while supply has been constrained. In the U.K., post-Brexit issues and a dearth of truckers have resulted in a shortage of even basic supplies. But the economic picture has improved; euro zone growth was 9.2% (annualized) in 2Q21, ending five quarters of contracting growth. The ECB announced that it would "recalibrate" (i.e., lower) its asset purchases and also raised its GDP forecast for 2021, expecting it to reach the pre-pandemic level by 4Q21. The outlook for inflation was also raised, with the headline number expected to be 3.1% in 4Q before falling to 1.7% in 2022.

China faces several headwinds and remains top of mind given its part in the global economy. Its massive real estate sector (30% of its economy) is under stress, with the fate of property giant Evergrande unknown at this juncture. Widespread power outages have resulted from coal production not keeping pace with demand, and the country's regulatory crackdown has taken a toll on several companies, erasing roughly $3 trillion in market capitalization.

While the recovery remains intact for much of the world, tailwinds from consumer spending and unprecedented stimulus may be thwarted by any number of headwinds in coming quarters.

Global Equities

The S&P 500 Index was up a modest 0.6% in 3Q with results mixed across sectors. Industrials (-4.2%) and Materials (-3.5%) were at the bottom of the pack while Financials (+2.7%) were the best performers. Since the market low in February 2020, the S&P is up 97.3%. Growth stocks outperformed value (R1000 Growth: +1.2%; R1000 Value: -0.8%) but lag for the YTD period (+14.3% vs. +16.1%). Small cap stocks underperformed (R2000: -4.4% vs. R1000: +0.2%) and now lag YTD (12.4% vs. 15.2%).

The MSCI ACWI ex-USA Index lost 3.0% for the quarter, hurt primarily by U.S. dollar strength and the benchmark's exposure to emerging markets. The best-performing sector was Energy (+7%), while Consumer Discretionary (-11%) and Communication Services (-10%) posted steep declines. Note that these sectors include some of the Chinese stocks that have been hit hard by the country's regulatory crackdown (Alibaba, Tencent, and Baidu). The MSCI EAFE Index (Europe, Australia, and Far East) lost 0.4% but in local terms it was up 1.3%.

Japan (+4.6%) performed relatively well while many of the larger constituents were down for the quarter. The MSCI Emerging Markets Index sank 8.1%, making it the worst-performing asset class for the quarter. Within emerging markets, Brazil (-20%), China (-18%), and Korea (-13%) fell sharply while India (+13%), Russia (+10%), and Colombia (+10%) were up strongly.

Global Fixed Income

Yields in the U.S. were relatively unchanged from 6/30/21, masking intra-quarter volatility. The 10-year U.S. Treasury closed the quarter at 1.52%, up sharply from early August when it traded at 1.19%. TIPS outperformed nominal Treasuries for the quarter (Bloomberg US TIPS Index: +1.8%; Bloomberg US Treasury Index: +0.1%). The Bloomberg US Aggregate Bond Index returned 0.1% but remains down 1.6% YTD. Lower quality continued to outperform. The Bloomberg High Yield Index rose 0.9%, and leveraged loans (S&P LSTA Lev Loan: +1.1%) also performed well. Municipals (Bloomberg Municipal Bond Index: -0.3%) underperformed Treasuries for the quarter.

Overseas developed market returns were similarly muted, and U.S. dollar strength eroded returns for unhedged U.S. investors. The Bloomberg Global Aggregate ex-US Bond Index fell 1.6% but was flat (+0.1%) on a hedged basis. Emerging market debt posted negative returns; the JPM EMBI Global Diversified Index fell 0.7% and the local JPM GBI-EM Global Diversified Index lost 3.1%, most of which was due to currency depreciation. In local terms, this Index was down only 0.2% for the quarter.

Real Assets

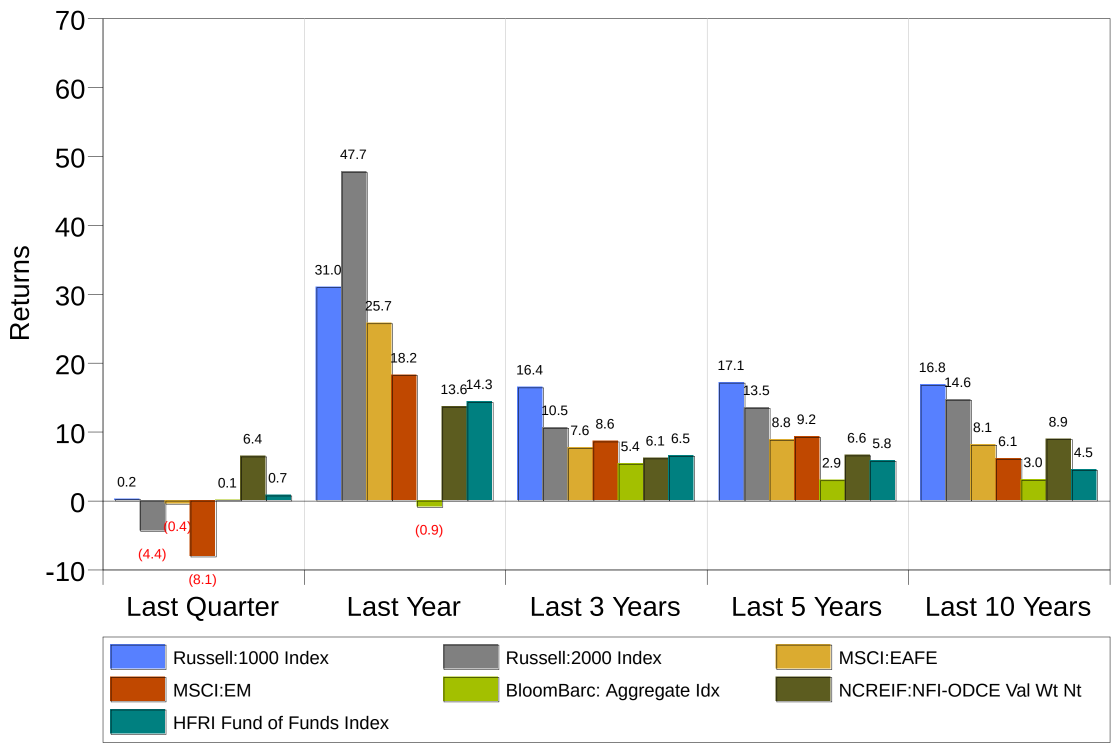
The Bloomberg Commodity Index rose 6.6% for the quarter and is up 29.1% YTD, but what lies under the hood is more interesting. Natural gas prices soared nearly 60% for the quarter, and those gains were relatively muted compared to the experience in Europe, where prices tripled over the quarter. WTI Crude Oil was up 4%. TIPS (Bloomberg TIPS Index: +1.8%) performed well relative to nominal U.S. Treasuries. Several other sectors were essentially flat for the quarter; the MSCI US REIT Index gained 1.0%; gold (S&P Gold Spot Price Index: -0.8%) and infrastructure (DJB Global Infrastructure: -0.9%) fell slightly. Copper fell more than 4% on worries over slowing demand from China.

Closing Thoughts

The 2020 recession was the shortest and steepest on record, and the 2021 recovery has been the sharpest on record. While we don't know what the near-term impact of the prevailing headwinds/tailwinds will be, it is widely acknowledged that growth will be moderating from the lofty levels seen earlier this year. We expect to see volatility increase given the number of political and economic uncertainties that lie ahead and, while welcome, the robust returns experienced thus far in 2021 are not likely to be repeated in the near-term. It will come as no surprise that Callan continues to advise adherence to a disciplined investment process that includes a well-defined long-term asset-allocation policy.

Third Quarter 2021 Market Performance

Time Periods September 30, 2021



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The Callan Periodic Table of Investment Returns
Third Quarter 2021

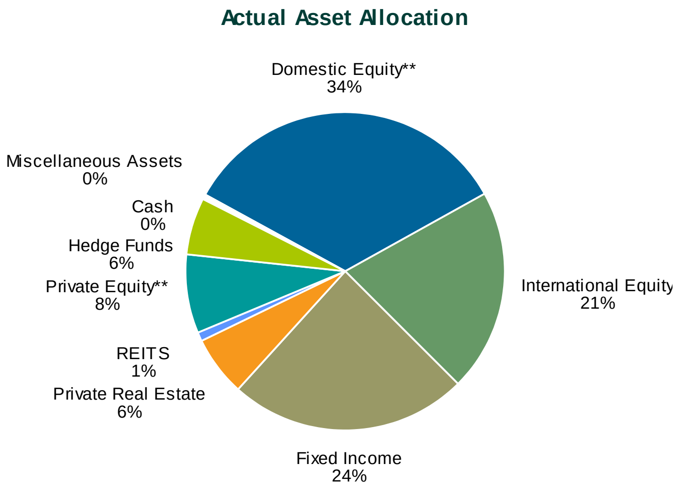
2012	2013	2014	2015	2016	2017	2018	2019	2020	3 Qtrs. 2021
MSCI:EM **18.2%**	Russell:2000 Index **38.8%**	Russell:1000 Index **13.2%**	NCREIF:NFI-ODCE Val Wt Nt **14.0%**	Russell:2000 Index **21.3%**	MSCI:EM **37.3%**	Cambridge:PE Idx **10.1%**	Russell:1000 Index **31.4%**	Cambridge:PE Idx **30.1%**	Russell:1000 Index **15.2%**
MSCI:EAFE **17.3%**	Russell:1000 Index **33.1%**	Cambridge:PE Idx **11.8%**	Cambridge:PE Idx **8.6%**	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:2000 Index **12.4%**
Russell:1000 Index **16.4%**	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 **12.4%**
Russell:2000 Index **16.3%**	Cambridge:PE Idx **21.2%**	BC Aggregate **6.0%**	BC Aggregate **0.5%**	Cambridge:PE Idx **9.5%**	Cambridge:PE Idx **19.7%**	HFRI Fund of Funds Index (4.0%)	MSCI:EM **18.4%**	MSCI:EM **18.3%**	MSCI:EAFE **8.3%**
Cambridge:PE Idx **13.7%**	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%)**	Cambridge:PE Idx **16.3%**	HFRI Fund of Funds Index 10.9%	HFRI Fund of Funds Index 5.7%
NCREIF:NFI-ODCE Val Wt Nt **9.8%**	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%**	MSCI:EM **(1.2%)**
HFRI Fund of Funds Index 4.8%	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 **(1.6%)**
BC Aggregate **4.2%**	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%**	**PE Idx Not Yet Reported**

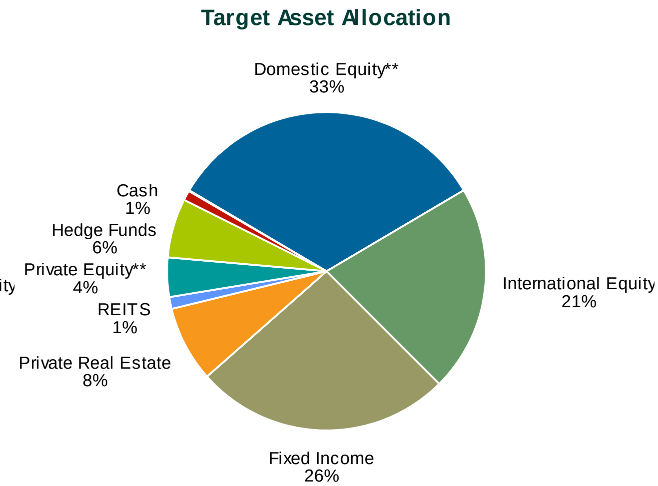
Through the third quarter of 2021, Large Cap Equity was the top performing asset class (Russell 1000 Index: +15.2%), leading Small Cap Equity (Russell 2000 Index: +12.4%). Developed International Equities (MSCI EAFE Index: +8.3%) outperformed Emerging Markets (MSCI Emerging Markets: -1.2%). Real Estate (NCREIF: NFI-ODCE Value Weighted Net Index: +12.4%) outperformed Hedge Funds (HFRI Fund of Funds Index: +5.7%). Fixed Income (Bloomberg US Aggregate Bond Index: -1.6%) also experienced a negative return year to date.

Cook County Pension Fund Commentary

Asset Allocation

The Cook County Fund ("Fund") ended September with a market value of $13.43 billion, a $16 million increase from the second quarter ending value of $13.42 billion.





During the quarter, the Fund gained $136 million from investment returns and experienced net outflows of $120 million. The asset allocation was in line with strategic targets. Private Equity was within its range, but was overweight by 4% given its strong performance.

Asset Class	$000s Actual	Weight Actual	Min Target	Target	Max Target	Percent Difference	$000s Difference
Domestic Equity	4,556,661	33.9%	29.0%	33.0%	37.0%	0.9%	124,251
International Equity	2,768,333	20.6%	17.0%	21.0%	25.0%	(0.4%)	(52,291)
Fixed Income	3,243,722	24.2%	22.0%	26.0%	30.0%	(1.8%)	(248,479)
Private Real Estate	819,642	6.1%	5.0%	7.8%	13.0%	(1.6%)	(221,303)
REITS	119,643	0.9%	0.0%	1.2%	2.6%	(0.4%)	(48,251)
Private Equity	1,079,081	8.0%	0.0%	4.0%	8.0%	4.0%	541,819
Hedge Funds	780,543	5.8%	0.0%	6.0%	10.0%	(0.2%)	(25,350)
Cash	63,860	0.5%	0.0%	1.0%	5.0%	(0.5%)	(70,455)
Miscellaneous Assets	59	0.0%	0.0%	0.0%	0.0%	0.0%	59
Total	13,431,544	100.0%		100.0%			

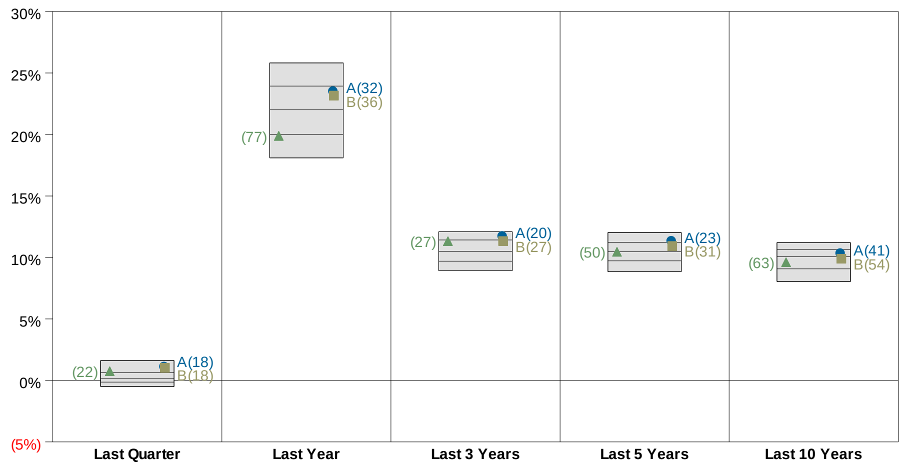
Cook County Performance vs. Target

The Cook County Pension Fund generated a Net of Fee (NOF) return of 1.02% in the third quarter, leading its custom benchmark and ranking in the top quartile of peers. Public Equities posted negative returns for the quarter while other asset classes were positive.

Over the trailing year, the Fund returned 23.17% (NOF) and led its benchmark return (+19.89%). Additionally, over the last five-year period, the Fund experienced an annualized return of 10.93% (NOF), ahead of its custom benchmark (+10.46%). During this period, active management in International Equity and Private Real Estate added the most relative value, while an underweight to Fixed Income and an overweight to Private Equity contributed. In relation to peers, the Fund ranks in the top third of its universe over the trailing quarter and one-, three-, and five-year periods (GOF basis). Over the trailing ten years, the Fund's return of 9.90% (NOF) leads its benchmark (+9.61%).

Table 1.0

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



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.62	25.82	12.09	12.03	11.21
25th Percentile	0.64	23.94	11.43	11.23	10.65
Median	0.18	22.06	10.50	10.47	10.07
75th Percentile	(0.14)	20.00	9.70	9.72	9.07
90th Percentile	(0.50)	18.10	8.92	8.85	8.04
Total Cook (Gross) ● A	1.06	23.45	11.68	11.29	10.27
Total Cook County (Net) ■ B	1.02	23.17	11.34	10.93	9.90
Total Fund Benchmark ▲	0.76	19.89	11.33	10.46	9.61

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Table 1.1
Asset Class Performance vs. Target (NOF)

	Market Value $(Dollars)	Ending Weight	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Domestic Equity	**$4,556,660,657**	**33.93%**	**(0.15%)**	**32.11%**	**14.58%**	**15.98%**	**15.63%**
Domestic Equity Benchmark (2)	-	-	(0.10%)	31.88%	16.00%	16.85%	16.60%
International Equity	**$2,768,333,405**	**20.61%**	**(3.21%)**	**23.26%**	**8.12%**	**9.22%**	**8.54%**
International Equity Benchmark (3)	-	-	(2.56%)	25.16%	8.34%	9.09%	7.50%
Fixed Income	**$3,243,722,172**	**24.15%**	**0.06%**	**1.63%**	**5.15%**	**3.24%**	**3.19%**
Fixed Income Benchmark (4)	-	-	0.06%	(0.77%)	5.28%	2.90%	3.03%
REITS	**$119,642,889**	**0.89%**	**2.58%**	**40.38%**	**12.76%**	**8.44%**	**10.06%**
NAREIT Equity Index	-	-	0.98%	37.39%	10.01%	6.83%	11.27%
****Private Real Estate**	**$819,641,641**	**6.10%**	**5.40%**	**11.64%**	**7.31%**	**6.85%**	**9.15%**
NFI-ODCE Value Weight Net	-	-	6.41%	13.64%	6.13%	6.56%	8.92%
****Private Equity**	**$1,079,080,742**	**8.03%**	**19.24%**	**90.87%**	**41.69%**	**33.09%**	**15.04%**
****Hedge Funds**	**$780,542,598**	**5.81%**	**1.15%**	**9.88%**	**4.59%**	**5.30%**	**-**
LIBOR + 4%	-	-	1.02%	4.18%	5.26%	5.39%	4.88%
HFRI Fund of Funds Index (5)	-	-	1.14%	13.93%	6.37%	5.84%	4.15%
Cash Equivalents	**$63,860,405**	**0.48%**	**0.01%**	**0.07%**	**1.30%**	**1.41%**	**0.79%**
3-month Treasury Bill	-	-	0.01%	0.07%	1.18%	1.16%	0.63%
Total Cook County Fund	**$13,431,543,721**	**100.00%**	**1.02%**	**23.17%**	**11.34%**	**10.93%**	**9.90%**
Total Fund Benchmark (1)	-	-	0.76%	19.89%	11.33%	10.46%	9.61%

**Represents trailing data.
Footnotes found on the back page

Table 1.1 illustrates the Cook County Fund's asset class performance against associated benchmarks. Active management modestly detracted during the quarter while an overweight to Private Equity was beneficial. The Cook County Fund's Domestic Equity allocation trailed its benchmark in the third quarter, and has lagged over longer periods as well. International Equity trailed its benchmark, but has enjoyed success over longer periods, outperforming the benchmark on a trailing five- and ten-year basis. Meanwhile, Fixed Income returned 0.06% and matched its benchmark for the quarter.

The Real Estate allocation is comprised of investments in public real estate securities (REITS) and Private Real Estate. REITS returned 2.58% and led its benchmark by 1.60% for the third quarter. The REITS allocation has performed favorably versus its benchmark over longer periods, leading its benchmark over the trailing one-, three-, and five-year periods. The Private Real Estate allocation contains primarily core investments (income producing real estate) and a small allocation to non-core, closed-end funds. In the third quarter, Private Real Estate did not keep pace with its benchmark, returning 5.40%, compared to the benchmark return of 6.41%. Despite underperforming for the quarter and year, Private Real Estate has consistently bested its benchmark over longer periods.

Private Equity experienced net withdrawals for the quarter, yet the allocation remains above its strategic allocation target. For the quarter, the Private Equity allocation posted a return of 19.24%. Over the trailing year, the Private Equity allocation returned 90.87%. The Private Equity allocation has performed very well over longer periods, enjoying double-digit annualized returns over the trailing one-, three-, five-, and ten-year periods.

The Hedge Fund allocation (+1.15%) led its absolute return benchmark (+1.02%) for the quarter. In the last year, it returned 9.88%, leading its absolute benchmark return.

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Notes

1. **Total Fund Benchmark (Target):** Blend of asset class benchmarks at policy weights. The Domestic Equity and Private Equity policy weights are adjusted each month such that the Private Equity weight is set equal to the invested capital, up to the Long Term Target of 4%. The uninvested capital is allocated to Domestic Equity. This process reflects the practical implementation of non-publicly traded investments.

	Strategic Target	Interim Target
Russell 3000	33.0%	33.0%
MSCI ACWI ex US	21.0	21.0
Bloomberg Aggregate	26.0	26.0
Libor 3 Month + 4.0%	6.0	6.0
Real Estate	9.0	9.0
Private Equity	4.0	4.0
Cash	1.0	1.0
Total Target	100.0%	100.0%

2. **Domestic Equity Benchmark:** Russell 3000 Index; Prior to 9/31/2011 Blend of 40% S&P 500, 16% Russell 2000 Value, 16% Russell Mid Cap Growth, 14% Russell 1000 Growth, and 14% Russell 1000 Value.

3. **International Benchmark:** MSCI ACWI ex-US IMI Index; Prior to 12/31/2017 MSCI ACWI ex-US Index; Prior to 12/31/2012 Blend of 85% MSCI ACWI ex-US, 15% Global ex US under $2 billion; Prior to 9/30/2011 Blend of 80% MSCI ACWI ex-US, 20% Global ex US under $2 billion.

4. **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 62.5% Bloomberg Aggregate Index, 12.5% Bloomberg US TIPs Index, and 25% Bloomberg Gov/Credit Intermediate Index.

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

***Real Estate Benchmark:** Returns are calculated by weighting the benchmark return for each asset class (i.e. Private RE and Public RE). The Private RE benchmark is the NCREIF NFI-ODCE Value Weight Net Index and the Public RE benchmark is the FTSE NAREIT Equity Index.

****Private Equity Benchmark:** is set equal to actual returns.