Callan

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

Performance Summary

September 30, 2016

Ann O’Bradovich
Senior Vice President

John Jackson, CFA
Senior Vice President

Michael Joecken
Senior Vice President

County Employees' and Officers' Annuity & Benefit Fund of Cook County
Performance Evaluation Executive Summary
Third Quarter 2016

Table of Contents

General Market & Economic Conditions	1
Cook County Pension Fund Commentary	6
Cook County Pension Fund Performance	6

General Market and Economic Conditions

Investor angst over the unexpected vote on Brexit was short-lived with a "risk-on" theme returning to the markets in July and leading to stock market highs for the Dow, NASDAQ and S&P 500 in August. Highly unusual election antics and continued geopolitical concerns on a number of fronts did not dampen investors' risk appetite or their quest for yield. Emerging markets equities posted their best quarterly return since 2012, outperforming developed markets, and high yield bonds were also top performers. Volatility was exceptionally low throughout the quarter as investors appeared to be somewhat complacent about continued accommodative policies from central banks and steady, albeit slow, economic growth.

The Fed continued to stay the course, leaving the Fed Funds rate unchanged at a target range of 0.25% - 0.50%, but the number of dissenting votes at the September meeting marked a shift in sentiment for the Board. Three of the Federal Reserve officials voted to hike rates; the most since December 2014. As of quarter-end, the markets were pricing in a roughly 50% likelihood of a rate hike before year-end. Fed policymakers now expect growth for all of 2016 to be 1.8%, down from the June expectation of 2.0%. Longer term, the Fed expects the Fed Funds rate to be close to 2% in 2018 while markets are far more dovish. Markets are pricing in a Fed Funds rate of less than 1% in 2018.

Real GDP grew at a surprisingly strong 2.9% in the third quarter, the best rate in two years. Personal consumption has been driving growth in the U.S. for the past several years, but its influence has weakened. Residential investment slowed but remains up 6% over the past twelve months. The average price of a single family home ($274,000) is now just shy of the high hit in October of 2005. Unemployment remained unchanged at 4.9% but wages showed signs of improvement, rising 2.4% over the last twelve months; down slightly from July's 2.7% which had been the highest in seven years. CPI remained muted, +1.1% for the trailing one year period, but Core CPI was up 2.3% year-over-year. Prices of services (less energy) climbed 3.2% with medical care (+5.1%), shelter (+3.4%) and transportation (+3.1%) showing the largest gains. Prices of goods were down modestly and energy prices remain down 9.2% year-over-year. The Fed's favored measure, the core Personal Consumption Expenditures Index, rose 1.7% over the past year, short of the Fed's 2% target but the highest in 6 months. Consumer confidence jumped to its highest level since August 2007, according to the Conference Board's Consumer Confidence Index.

In the Eurozone, fears around Brexit faded though economic growth remained weak. 3rd quarter GDP came in at 0.3%, in line with that of the 2nd quarter. Unemployment remained stubbornly high at just over 10% but down from the high of 12% in July 2013. The range is highly divergent among countries, with Spain's unemployment nearly 20% and Germany anchoring the low end at 4.2%. Inflation remained well short of the 2% goal but has stopped falling; the latest print for Eurozone core inflation was +0.8% (headline +0.4%). The European Central Bank left interest rates unchanged and as the quarter ended, there was speculation that it may taper its bond buying program sooner than the markets expected. While it committed to the €80 billion monthly program through March, 2017, the markets were expecting an extension through September. Also late in the quarter, the Bank of Japan announced a shift in policy and while it is maintaining asset purchases, it has added a new tool to its quantitative easing kit – "yield curve control." The Bank intends to adjust its purchases to target a yield of 0% for the 10-year JGB while maintaining negative short rates with a goal to steepen the yield curve and thus help increase profitability for banks.

Third Quarter 2016 Market Performance

Reduced fears of slowing global growth, particularly in China, optimism about the U.S. economy, and further delays in rate hike contributed to a rebound in domestic equity in the 3rd quarter. The S&P 500 climbed to its all-time high of 2,193 on August 15 and closed up 3.9% for the quarter. Small capitalization stocks outperformed by a large margin for the quarter as the Russell 2000 rose 9.1% and the Russell Mid Cap posted a 4.5% result. Growth outperformed Value modestly across market capitalizations with the largest difference seen in large caps. The Russell 1000 Growth outperformed its Value counterpart by 1.1% (4.6% vs 3.5%). Year-to-date, investors have shown a strong preference for income. The top performing sector based upon MSCI's factor indices was High Dividend Yield, with a 13.2% return year to date At the bottom of the pack, Quality is up 6% for the year. The largest growth sector, Technology (+12.9%) posted the strongest return among all sectors and contributed to the excess return of growth over value. Utilities (-5.9%) and Telecom (-5.6%) were the worst performing sectors, hurt by the prospect of rising short-term rates.

In a new development, REITs and other listed real estate companies were extracted from the Financials Sector and elevated to a new Real Estate sector in the Global Industry Classification Standard (GICS). The new Real Estate sector, representing 3.1% of the S&P 500, finished the quarter with a -2.1% return.

Foreign developed market indices outperformed the S&P 500 and consistent with the quarter's risk-on theme, emerging markets were the top performers. The MSCI ACWI ex-US posted a 6.9% return, modestly above the MSCI EAFE's 6.4% result. Currency fluctuations were modest and thus had a relatively muted impact on results. In developed markets, Germany (+10%) and Austria (+17%) were top performers while Denmark (-6%) was the laggard. The MSCI EM Index surged 9.0% for the quarter. Among emerging markets, Brazil continued to post lofty results (+11%) and the country is up nearly 63% year-to-date. Russia (+8%) and China (+14%) were also top performers while Turkey (-5%) and Mexico (-2%) were laggards.

Yields in the US moved modestly higher during the 3rd quarter with the 10-year US Treasury yield rising 11 bps to close at 1.60%. However, the Treasury note did hit a record low of 1.37% on July 8th at the height of the Brexit-induced worries before trending higher through the remainder of the quarter. July was the only positive return month during the quarter for the broad investment grade market. The curve continued its flattening trend in anticipation of eventual Fed rate hikes. The spread between the 2-year US Treasury note and the 30-year US Treasury bond shrank from 171 bps to 154 bps. Spread sectors outperformed US Treasuries with corporates, and especially high yield, being the strongest.

The Bloomberg Barclays US Aggregate returned +0.5% for the quarter and is up 5.8% year-to-date. The Credit sector rose 1.2% even with record issuance in the month of August. (Note that Bloomberg acquired the Barclays indices and rebranded the names in August). Lower quality bonds outperformed, consistent with the resurgence in risk appetite, and high yield performed the best. The Bloomberg Barclays High Yield Index gained 5.6% and is up over 15% year-to-date. At the same time, the default rate for the trailing twelve months ticked up to 4.9%, according to Fitch Ratings; with defaults in the energy sector approaching 16% thus far this year (58 companies through September 13th).

Robust supply overwhelmed demand for municipal bonds, and the sector lagged Treasuries for the quarter. The Bloomberg Barclays 1-10 Year Municipal Bond Index returned -0.1% in the 3rd quarter.

Overseas, yields were generally lower with Mexico and Japan being exceptions. There is now over $12 trillion of negative yielding debt globally with Japan accounting for nearly half of that amount and Western Europe the other half; namely France, Germany, and the Netherlands. Currency fluctuations were relatively muted over the course of the quarter; the yen and euro both gained just over 1% versus the dollar while the pound lost nearly 3%. The Bloomberg Barclays Global Aggregate ex-US Index returned 1.0% for the quarter; up 0.5% on a hedged basis. Emerging markets debt, like its equity counterpart, outperformed developed markets. The JP Morgan EMBI Global Diversified Index gained 4.0% for the quarter and the local currency GBI-EM Global Diversified was up 2.7%.

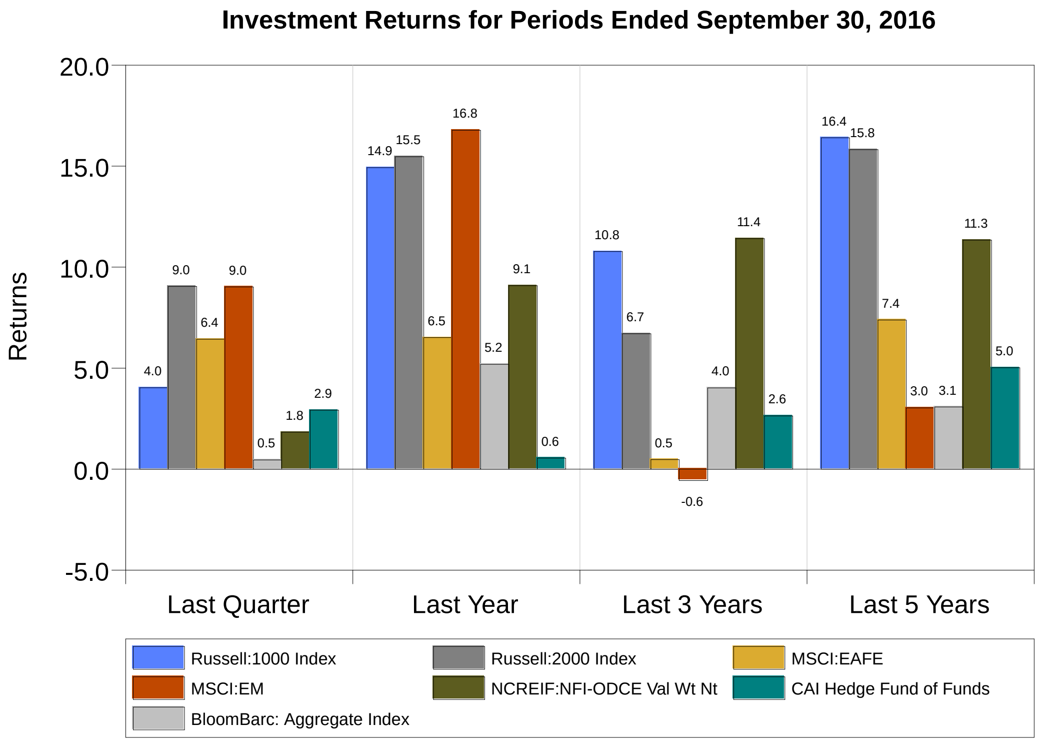
In the wake of Brexit, "risk-on" strategies outperformed as investors shrugged off concerns. The Credit Suisse Hedge Fund Index (CS HFI) gained 1.74% while the median manager in the Callan Hedge Fund-of-Funds Database edged ahead at 2.92%, net of fees. As measured by the CS Hedge Fund Indices, returns across the underlying strategies were varied. The strongest performing strategy was Emerging Markets (+4.20%), supported by strong debt and equity amid growing economies. Tightening credit spreads and improving fundamentals supported Convertible Arbitrage (+3.83%), Event-Driven Multi-Strategy (+3.06%) and Distressed (+2.75%). Aided by strong equity tailwinds, Long/Short Equity gained 1.88%.

Low long-term interest rates have provided a strong tailwind for U.S. Real Estate and this asset class posted another steady return for the quarter. Real Estate gained 1.83% as measured by the preliminary return of the NFI-ODCE Index. The return was comprised of a 0.90% income return and 0.94% appreciation. Publicly traded U.S. REITS as measured by the FTSE NAREIT Equity Index lost 1.43% during the quarter as mixed economic data fueled concerns of a Federal Reserve rate increase.

Private equity fundraising fell from the 2nd quarter's $102.2 billion to $38.6 billion with 143 new partnerships formed in the 3rd quarter. Distressed debt surged to $13.3 billion from only $2.4 billion in the first quarter. New investments in venture capital companies saw a decrease of 11% since the last quarter. Venture-backed M&A exits totaled 192 transactions with a disclosed dollar volume of $13.4 billion. Private sale exits increased by 19%, yet dollar volume declined during the quarter. M&A exits of buyout-backed companies were up 20% with increased dollar value.

Closing Thoughts

The quarter ended with OPEC surprising markets with an announcement that it would curtail production and worries over the financial health of Deutsche Bank, (whose assets total one-half of Germany's GDP) which is facing a large fine for its mortgage-related dealings during the crisis. The focus in coming weeks will likely be on the US election as well as more speculation as to when the Fed decides to lift rates. Volatility, which has been subdued amidst investor complacency, is likely to pick up and we would further caution clients to temper expectations for returns from the robust gains we have seen thus far in 2016. As always, prudent asset allocation with appropriate levels of diversification and a long-term perspective remain Callan's recommended course.



Domestic equities were positive, but trailed as non-U.S. developed (MSCI EAFE) and emerging market equities (MSCI EM) exhibited strong returns. Fixed income, real estate, and hedge funds were also positive as measured by the representative market indices.

County Employees' and Officers' Annuity & Benefit Fund of Cook County
Performance Evaluation Executive Summary
Third Quarter 2016

2007	2008	2009	2010	2011	2012	2013	2014	2015	3 Qtrs. 2016
MSCI:EM 39.4%	BC Aggregate 5.2%	MSCI:EM 78.5%	Russell:2000 Index 26.9%	NCREIF:NFI-ODCE Eq Wt Net 15.0%	MSCI:EM 18.2%	Russell:2000 Index 38.8%	Russell:1000 Index 13.2%	NCREIF:NFI-ODCE Eq Wt Net 14.2%	MSCI:EM 16.0%
Cambridge:PE Index 22.7%	NCREIF:NFI-ODCE Eq Wt Net (11.1%)	MSCI:EAFE 31.8%	MSCI:EM 18.9%	BC Aggregate 7.8%	MSCI:EAFE 17.3%	Russell:1000 Index 33.1%	Cambridge:PE Index 11.8%	Cambridge:PE Index 8.5%	Russell:2000 Index 11.5%
NCREIF:NFI-ODCE Eq Wt Net 15.0%	HFRI Fund of Funds Index (21.4%)	Russell:1000 Index 28.4%	Cambridge:PE Index 18.8%	Cambridge:PE Index 7.1%	Russell:1000 Index 16.4%	MSCI:EAFE 22.8%	NCREIF:NFI-ODCE Eq Wt Net 11.4%	Russell:1000 Index 0.9%	Russell:1000 Index 7.9%
MSCI:EAFE 11.2%	Cambridge:PE Index (26.7%)	Russell:2000 Index 27.2%	Russell:1000 Index 16.1%	Russell:1000 Index 1.5%	Russell:2000 Index 16.3%	Cambridge:PE Index 21.2%	BC Aggregate 6.0%	BC Aggregate 0.5%	NCREIF:NFI-ODCE Eq Wt Net 6.3%
HFRI Fund of Funds Index 10.3%	Russell:2000 Index (33.8%)	Cambridge:PE Index 17.3%	NCREIF:NFI-ODCE Eq Wt Net 15.1%	Russell:2000 Index (4.2%)	Cambridge:PE Index 14.0%	NCREIF:NFI-ODCE Eq Wt Net 12.4%	Russell:2000 Index 4.9%	HFRI Fund of Funds Index (0.3%)	BC Aggregate 5.8%
BC Aggregate 7.0%	Russell:1000 Index (37.6%)	HFRI Fund of Funds Index 11.5%	MSCI:EAFE 7.8%	HFRI Fund of Funds Index (5.7%)	NCREIF:NFI-ODCE Eq Wt Net 9.9%	HFRI Fund of Funds Index 9.0%	HFRI Fund of Funds Index 3.4%	MSCI:EAFE (0.8%)	MSCI:EAFE 1.7%
Russell:1000 Index 5.8%	MSCI:EAFE (43.4%)	BC Aggregate 5.9%	BC Aggregate 6.5%	MSCI:EAFE (12.1%)	HFRI Fund of Funds Index 4.8%	BC Aggregate (2.0%)	MSCI:EM (2.2%)	Russell:2000 Index (4.4%)	HFRI Fund of Funds Index (0.2%)
Russell:2000 Index (1.6%)	MSCI:EM (53.3%)	NCREIF:NFI-ODCE Eq Wt Net (31.3%)	HFRI Fund of Funds Index 5.7%	MSCI:EM (18.4%)	BC Aggregate 4.2%	MSCI:EM (2.6%)	MSCI:EAFE (4.9%)	MSCI:EM (14.9%)	Private Equity not yet available

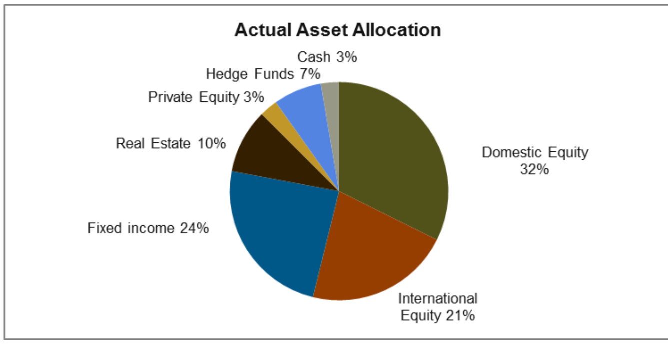
Emerging Market equities (MSCI EM) have staged an impressive turnaround from a dismal 2015. Assisted by a strong quarter where small caps surged by over 9%, the U.S. Small Cap Index (Russell 2000) has returned over 11.5% year to date and now leads the U.S. Large Cap Index (Russell 1000) by 3.6% in 2016. It should be noted that the Russell 1000 Index outperformed the Russell 2000 by 5.3% in 2015.

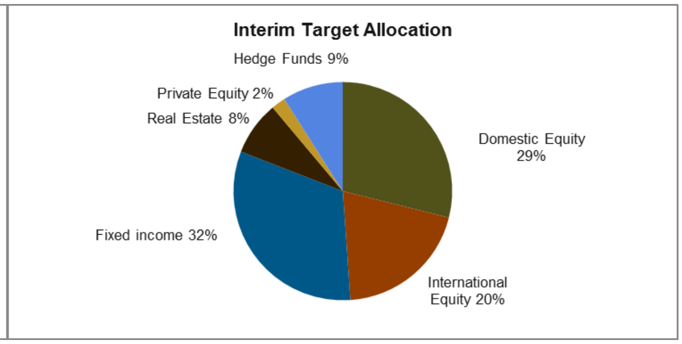
Cook County Pension Fund Commentary

Asset Allocation

The Cook County Pension Fund value at the end of September 2016 was $8.9 billion, representing a net increase of $335.2 million from the prior quarter end. Investments returned $332.4 million for the quarter while net flows to fund benefit payments were $2.8 million.

Currently, assets are overweight to public equities and real estate, with an underweight to fixed income. The fund continued its progress toward its target allocation to private equity with a net investment of approximately $24.7 million in the third quarter.





Asset Class	9/30 Actual Allocation (%)	Interim Target (%)*	Strategic Target (%)
Domestic Equity	32.3%	28.8%	25.0%
International Equity	21.5%	20.0%	20.0%
Fixed income	24.1%	32.0%	32.0%
Real Estate	9.5%	8.0%	8.0%
Private Equity	2.7%	2.2%	6.0%
Hedge Funds	7.1%	9.0%	9.0%
Cash	2.7%	0.0%	0.0%
Misc.	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%

*Interim target reflect modifications for non-public asset classes such as private equity that cannot be funded or rebalanced as regularly as public market strategies due to the illiquid nature of the investments.

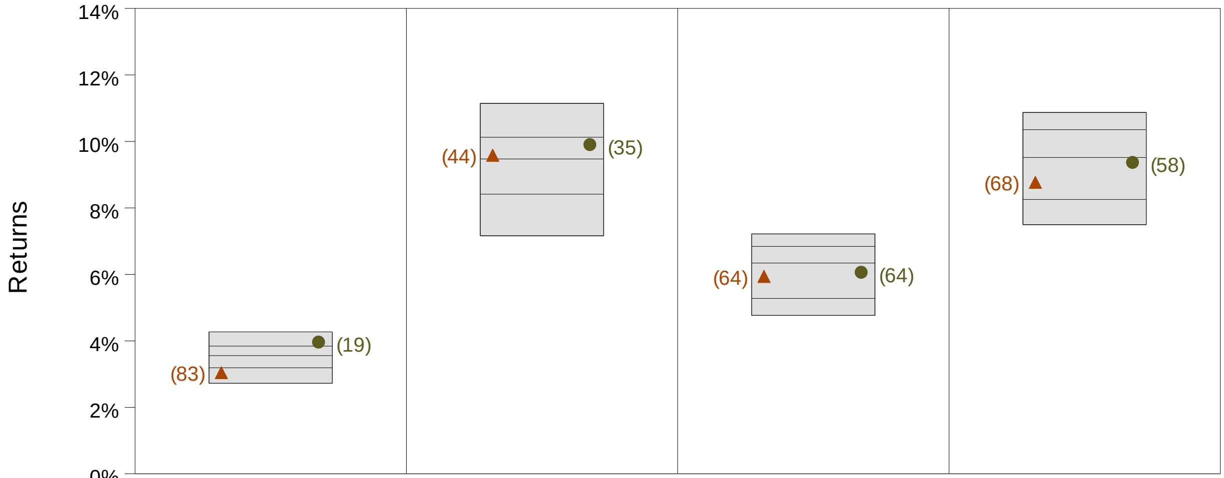
Cook County Performance vs. Target

The Cook County Pension Fund generated a 3.9% return in the third quarter, outperforming its benchmark and peers with strong contributions from equities. The fund has exceeded its custom benchmark over the last three- and five-year periods with annualized returns of 6.01% and 9.33%, respectively. Active management in international equity and private real estate coupled with an overweight to domestic equities provided the largest contributions to outperformance.

In the last twelve months, the fund generated a 9.86% return, beat its benchmark, and outperformed 65% of its public fund peers (Table 1.0). Relative outperformance over the last twelve months has been driven in part by an overweight to Domestic Equities and REITS and an underweight to Fixed Income.

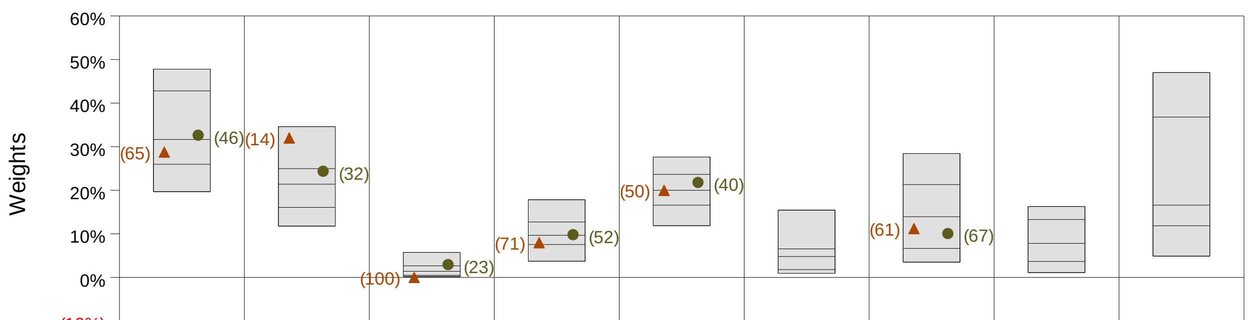
County Employees’ and Officers’ Annuity & Benefit Fund of Cook County
Performance Evaluation Executive Summary
Third Quarter 2016

Table 1.0
CAI Public Fund Sponsor - Large (>1B)



	Last Quarter	Last Year	Last 3 Years	Last 5 Years
10th Percentile	4.27	11.15	7.22	10.87
25th Percentile	3.84	10.13	6.84	10.36
Median	3.56	9.47	6.34	9.52
75th Percentile	3.19	8.42	5.28	8.26
90th Percentile	2.72	7.16	4.77	7.49
Total Fund ●	3.92	9.86	6.01	9.33
Policy Target ▲	3.04	9.59	5.94	8.77

Asset Class Weights vs CAI Public Fund Sponsor - Large (>1B)



	Domestic Equity	Fixed Income	Cash	Real Estate	International Equity	Intl Fixed-Inc	Alternative	Global Balanced	Global Equity Broad
10th Percentile	47.79	34.59	5.75	17.81	27.63	15.44	28.44	16.26	47.02
25th Percentile	42.80	24.98	2.66	12.74	23.64	6.56	21.29	13.29	36.80
Median	31.65	21.40	1.41	9.65	19.99	4.82	13.94	7.80	16.59
75th Percentile	25.98	16.07	0.50	7.56	16.58	1.80	6.65	3.67	11.86
90th Percentile	19.67	11.78	0.21	3.72	11.86	0.95	3.52	1.13	4.88
Fund ●	32.35	24.09	2.69	9.55	21.51	-	9.82	-	-
Target ▲	28.77	32.00	0.00	8.00	20.00	-	11.23	-	-

Table 1.1
Asset Class Performance vs. Target

	Market Value $(Dollars)	Ending Weight	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Domestic Equity	**$2,865,295,414**	**32.35%**	**5.86%**	**14.29%**	**9.06%**	**15.55%**
Domestic Equity Benchmark (2)	-	-	4.40%	14.96%	10.44%	16.36%
International Equity	**$1,905,100,366**	**21.51%**	**6.71%**	**10.12%**	**1.81%**	**8.26%**
International Equity Benchmark (3)	-	-	6.91%	9.26%	0.18%	5.94%
Fixed Income	**$2,134,060,657**	**24.09%**	**0.96%**	**5.63%**	**3.77%**	**3.29%**
Fixed Income Benchmark (4)	-	-	0.46%	5.19%	4.03%	3.16%
REITS	**$257,254,910**	**2.90%**	**(1.16%)**	**16.64%**	**12.08%**	**11.75%**
NAREIT Equity Index	-	-	(1.43%)	19.86%	14.22%	15.91%
****Private Real Estate**	**$588,348,669**	**6.64%**	**2.82%**	**11.89%**	**13.15%**	**12.52%**
NFI-ODCE Value Weight Net	-	-	1.83%	9.08%	11.42%	11.34%
****Private Equity**	**$236,835,506**	**2.67%**	**3.95%**	**2.83%**	**8.56%**	**5.95%**
****Hedge Funds**	**$632,725,582**	**7.14%**	**1.71%**	**0.58%**	**4.78%**	**-**
LIBOR + 4%	-	-	1.17%	4.61%	4.37%	4.38%
HFRI Fund of Funds Index	-	-	2.45%	0.54%	2.18%	3.18%
Cash Equivalents	**$237,882,584**	**2.69%**	**0.14%**	**0.40%**	**0.24%**	**0.21%**
3-month Treasury Bill	-	-	0.10%	0.27%	0.11%	0.10%
Total Cook County Fund	**$8,857,504,083**	**100.00%**	**3.92%**	**9.86%**	**6.01%**	**9.33%**
Total Fund Benchmark (1)	-	-	3.04%	9.59%	5.94%	8.77%

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

Table 1.1 illustrates the Cook County Fund's asset class performance versus associated benchmarks. The Cook County Fund's Domestic Equity allocation outperformed the benchmark by 1.46% for the quarter, thus providing the largest contribution to the Fund's excess return over the benchmark.

The International Equity allocation modestly trailed the composite benchmark for the quarter, but posted the strongest absolute return for the quarter (+6.71%). During the longer-term periods appearing above, active management in the International Equity allocation has outperformed its passive benchmark. In the past five years, Cook County's international equity allocation exceeded the passive benchmark index by over 2.3% per annum. Active management in diversifying strategies such as non-U.S. small cap and emerging market equities was additive for the quarter.

The Fixed Income allocation exceeded the return of the Bloomberg Barclays Aggregate Index for the quarter. Core Plus strategies were additive as this group added approximately 1.2% over the Index. Portfolios with an overweight to corporate securities and longer than benchmark duration outperformed. In contrast, the global fixed income allocation detracted from the asset class return.

Real estate has been one of the best performing asset classes over the last one, three and five years with returns in excess of 11% annualized for each respective period. The real estate allocation is comprised of investments in public real estate securities (REITS) and private real estate. The REIT allocation exceeded its benchmark during the quarter due in large part to active management which represents approximately 30% of the REIT allocation. The Private Real Estate portfolio contains primarily core, (income producing real estate), and a small allocation to non-core, closed-end funds. The non-core funds were funded during the quarter and over the past year or so. Private Real Estate exceeded its benchmark by approximately 1% during the quarter. In the last year, it has beaten its benchmark by 2.8%.

Presently, the private equity program is pursuing a fund-of-funds approach. The current investment of 2.2% is below its long-term strategic target allocation of 6%. Funds committed, but waiting investment have been invested in public equities as the program continues to be implemented. During the quarter, a net investment of $26.0 million was made in funds-of-funds' investments while net distributions of $1.3 million were returned from legacy partnerships.

The Hedge Fund allocation outperformed its absolute return benchmark for the quarter. Although trailing for the last year, it has outperformed over the last three years. The Hedge Fund allocation also outperformed its industry peers as measured by the HFRI Fund-of-Funds Index and the Callan peer universe over the last one- and three-year periods.

Notes and Observations

Hedge Fund of Funds manager DGAM has continued its wind-down and returned approximately $38 million during the 3rd quarter. The September invested balance remaining with DGAM is 0.3% of the fund value.

In the last twelve months, the fund generated a 9.9% return, beat its benchmark, and outperformed 65% of its public fund peers (Table 1.0). An overweight to equities has contributed to performance over the last one-, three-, and five-year time periods.

Notes

1. **Total Fund Benchmark (Target):** Blend of asset class benchmarks at policy weights. The Domestic Equity and Private Equity target weights are adjusted each month such that the Private Equity Interim benchmark weight is set to approximate the invested capital. The uninvested capital is allocated to Domestic Equity. This process reflects the practical implementation of non-publically traded investments.

	Strategic Target	Interim Target
Russell 3000	25.0%	28.8%
MSCI ACWI ex US	20.0	20.0
BloomBarc Aggregate	32.0	32.0
Libor 3 Month + 4.0%	9.0	9.0
Real Estate	8.0	8.0
Private Equity	6.0	2.2
Total Target	100.0%	100.0%

2. **Domestic Equity Benchmark:** Blend of 17% S&P 500, 7% Russell 2000 Value, 7% Russell Mid Cap Growth, 6% Russell 1000 Growth, and 6% Russell 1000 Value through 9/31/2011; Russell 3000 thereafter.
3. **International Benchmark**: 12% MSCI ACWI ex-US, 3% Global ex US under $2 billion through 9/30/2011; then 17% MSCI ACWI ex-US, 3% Global ex US under $2 billion through 12/31/12; MSCI ACWI ex-US thereafter.
4. **Fixed Income Benchmark:** Blend of 25% BloomBarc Aggregate Index, 5% BloomBarc US TIPs Index, 10% BloomBarc Gov/Credit Intermediate Index through 12/31/2012; BloomBarc Aggregate Index thereafter.