



May 2017

**CONFIDENTIAL**

**Real Assets Performance  
Review**

Callan Associates

---

**Sally Haskins**

Senior Vice President

**Lauren Sertich**

Vice President

# Agenda

---

- Market Overview
- Real Estate Performance Review
- Infrastructure Performance Review
- Appendix
  - Supplemental Performance Information



## Market Overview

# Market Overview

---

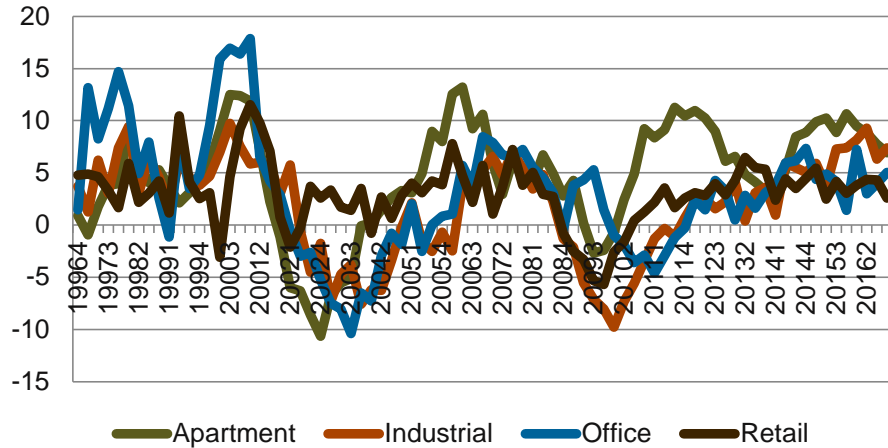
## Big Picture

- U.S. economic growth is slowing
  - Slowdown in job growth, close to full employment
  - GDP lower than expected
- US property fundamentals are still healthy, but may be peaking
  - Vacancy is now flattening at long term averages
  - Rent and NOI growth are still positive
  - Supply and demand dynamics are under the microscope, availability of construction loans a key driver
- Real Estate flows from outside the U.S. subject to some political uncertainty
  - 2017 flows from international investors likely to be strong
  - While Real Estate continues to offer yield, globally, every region experiencing some political event in 2017 that may effect desirability of investing in the U.S.
- Return expectations moderating
  - Institutional investors expect strong and stable income returns for core property
  - Appreciation expectations are lower than inflation.

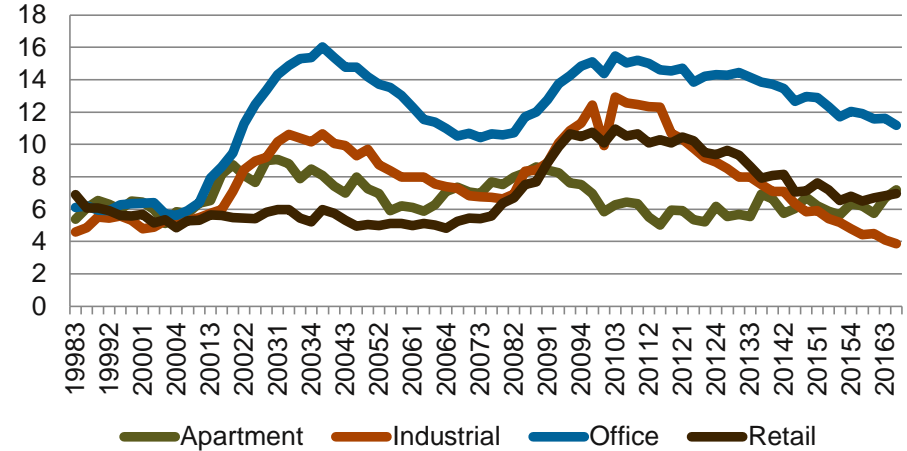
# Market Overview

## U.S. Market Trends

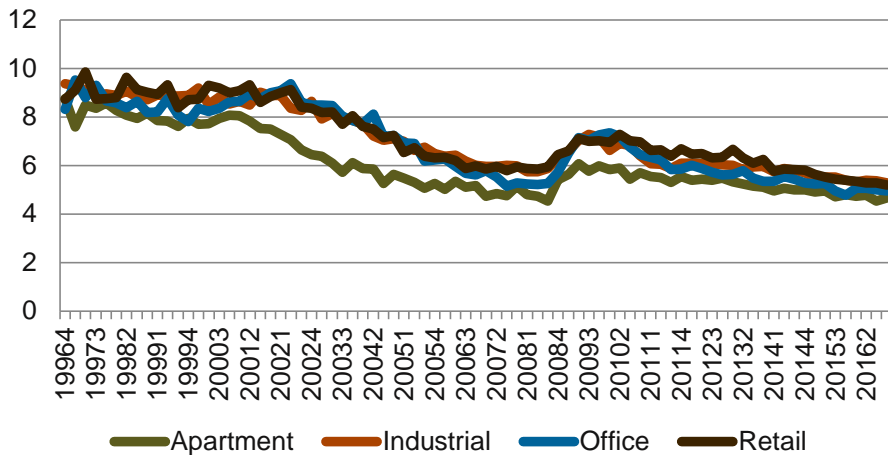
4-Qtr Rolling NOI Growth by Property Type



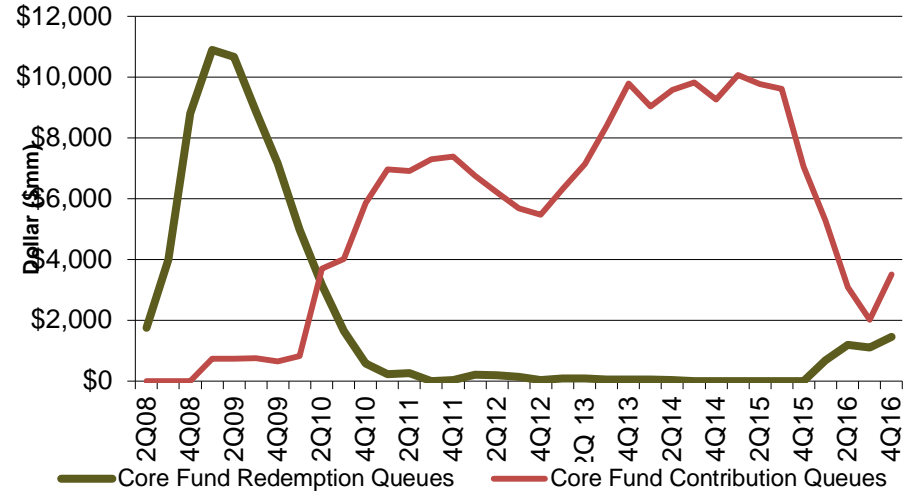
Vacancy by Property Type



Current Value Cap Rates by Property Type



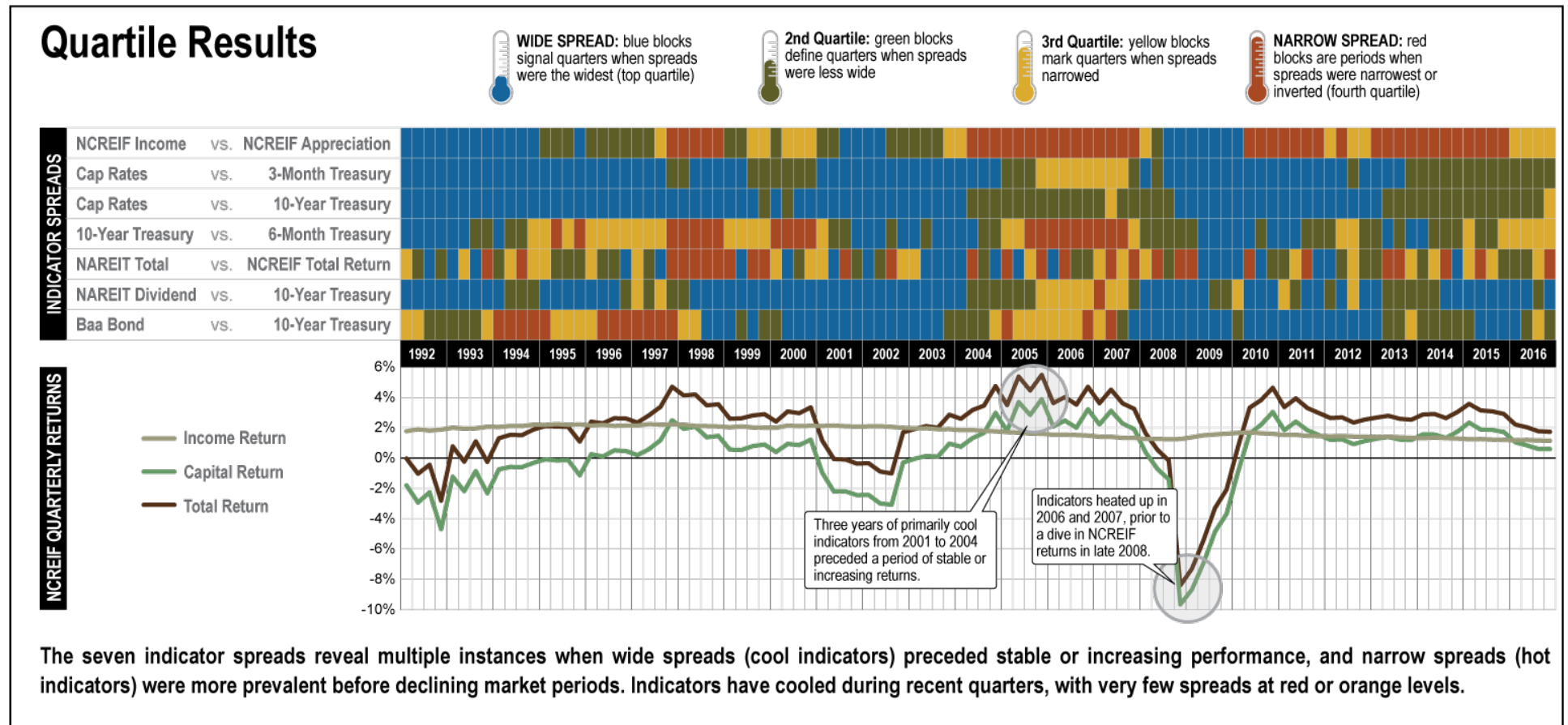
Core Open-End Fund Entry & Exit Queues



Source: NCREIF

# Market Overview

## Real Estate Indicator Analysis



- Very few indicators are at their coolest, red is back in the picture in 4Q16
- Narrow spreads (yellow and red) are a cautionary signal and may be a sign of a declining market approaching



**Real Estate Performance Review**

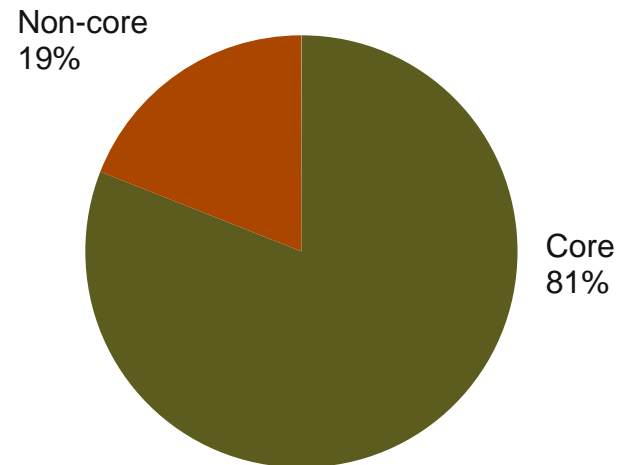
# Real Estate Portfolio Summary

December 31, 2016

- Portfolio is comprised of private real estate; REIT portfolio liquidated during fourth quarter
- Unfunded commitments as of December 31 includes commitments to Blackstone High Grade Debt Fund, Oak Street Real Estate Capital Fund IV, CityView, IC Berkeley, and Newport Capital Partners II. An additional commitment of \$25 million was made in the first quarter to GreenOak US Fund III
- Portfolio is well positioned with 81% of the portfolio in funds that pursue “Core” strategies with income producing properties

	\$ Millions	(%)
CTPF Total Plan Assets	\$9,805.65	100.00%
Real Estate Target	\$882.51	9.00%
Plan's Real Estate Market Value	\$755.82	7.71%
Unfunded Commitments	\$75.01	0.76%
Market Value & Unfunded Commitments	\$830.83	8.47%

## Real Estate Portfolio Risk



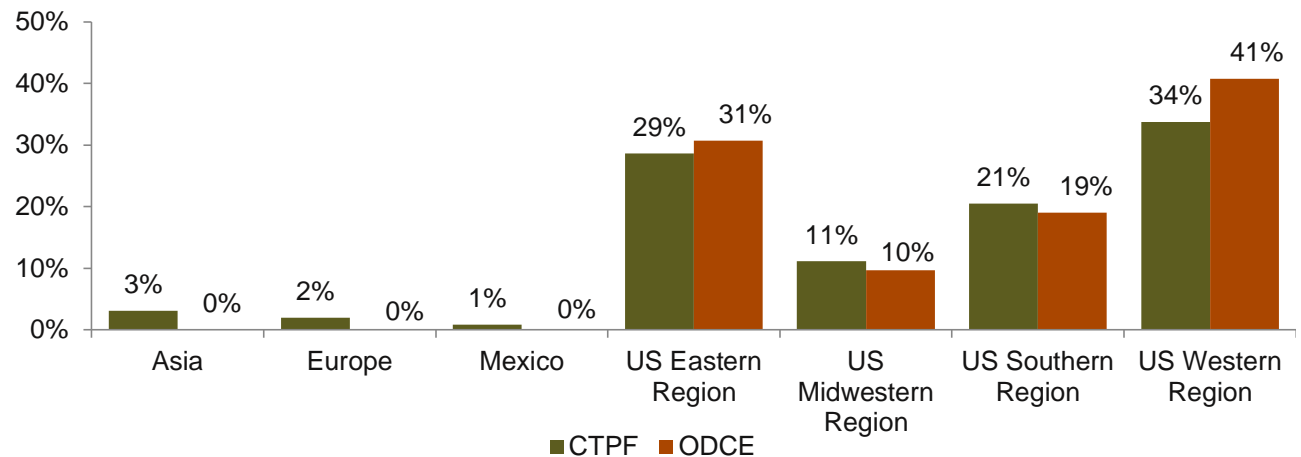


# Real Estate Portfolio Diversification

December 31, 2016

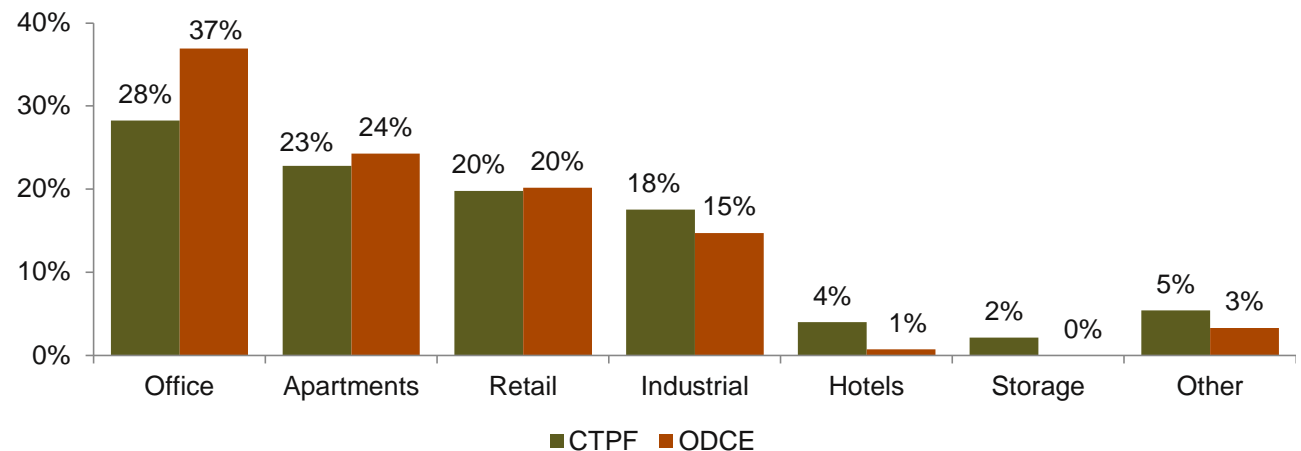
- The private real estate portfolio is primarily U.S. at 94% with 6% in Non-U.S. markets including Asia, the United Kingdom, Continental Europe and Mexico. Non-U.S. exposure is in Fortress, MB Asia, Europa, RREEF and Walton Street.

Geographic Diversification



- Primary property types comprise 88% of the portfolio. Hotels, Storage and Other comprise 12%. Property Types in Other include mixed use, for sale residential, senior housing, land, diversified, and for sale residential. ODCE does not break Storage out from other.

Property Type Diversification

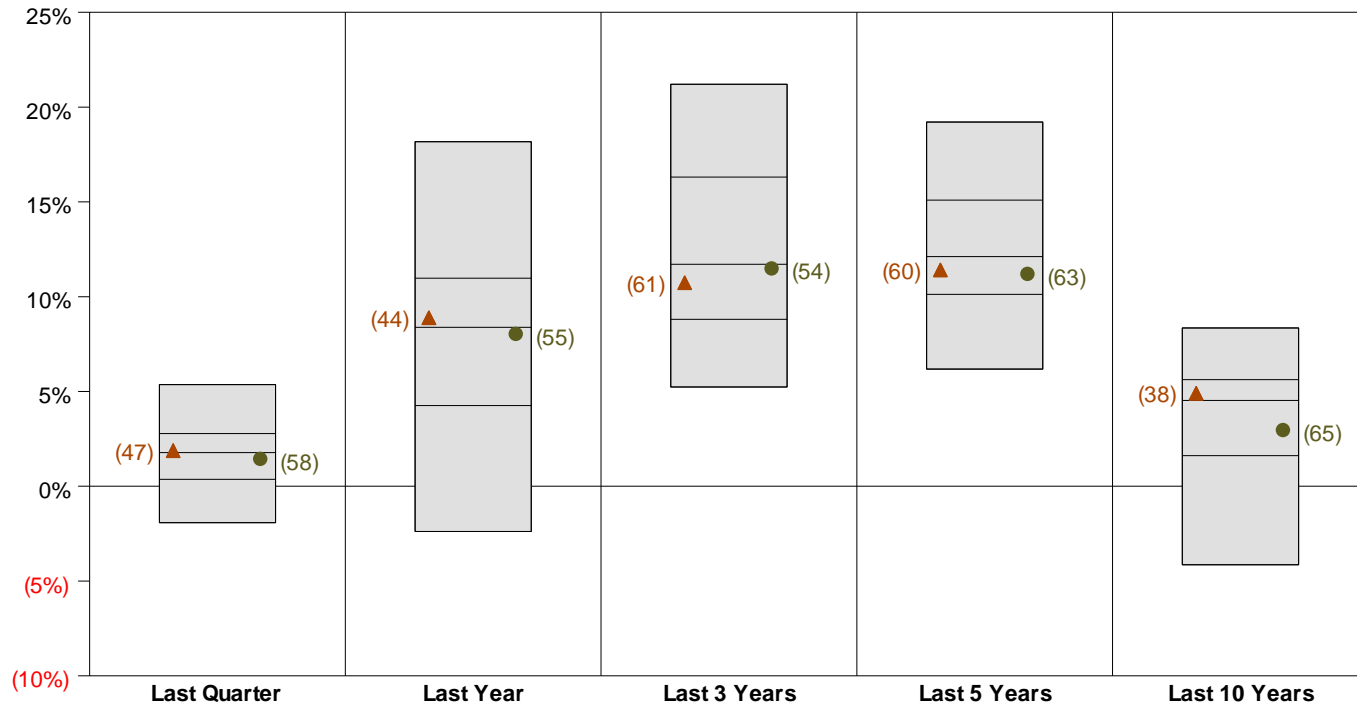


Note: Subtotals reflect actual weights, not the sum of rounded weights shown.

# Total Real Estate Performance

Periods Ending December 31, 2016

## Performance vs CAI Total Real Estate Database



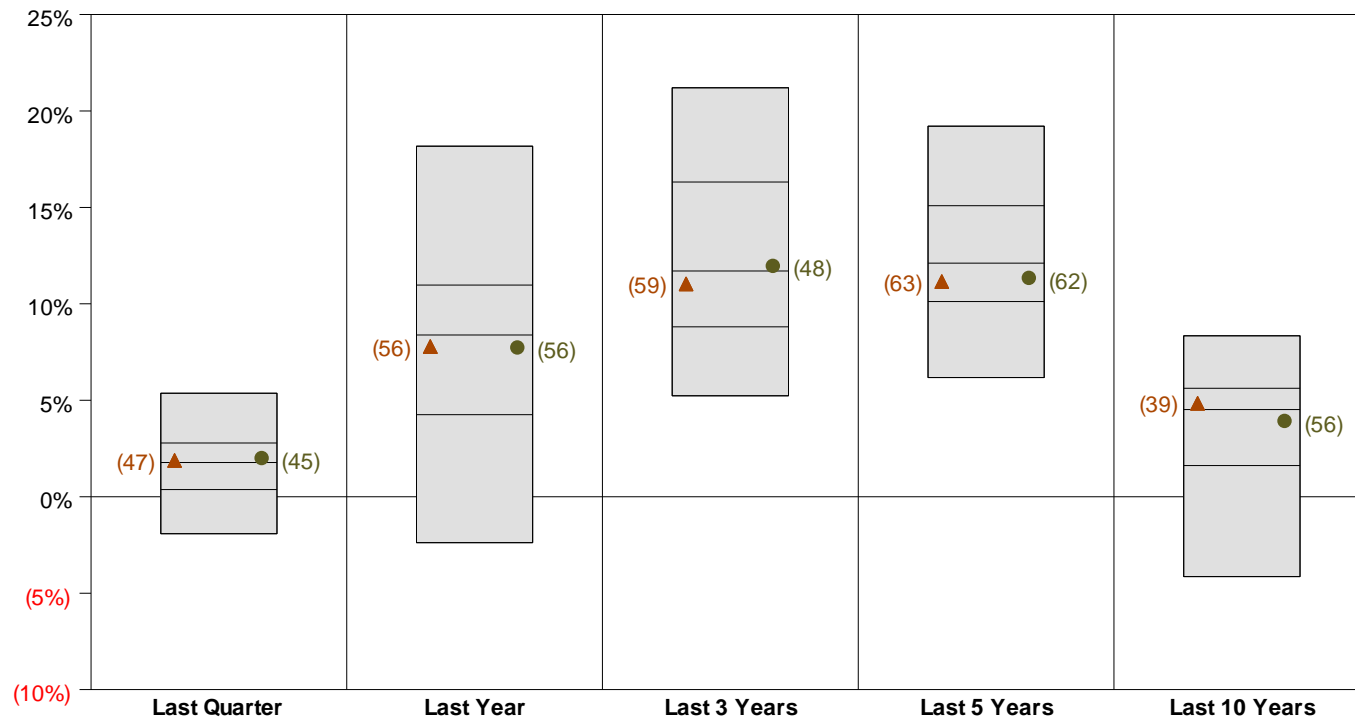
10th Percentile	5.37	18.18	21.20	19.21	8.35
25th Percentile	2.78	10.97	16.31	15.09	5.63
Median	1.78	8.39	11.71	12.11	4.52
75th Percentile	0.37	4.26	8.81	10.12	1.62
90th Percentile	(1.92)	(2.39)	5.24	6.18	(4.14)
<b>Total Real Estate</b> ●	1.36	7.96	11.40	11.12	2.89
<b>Total Real Estate Custom Index</b> ▲	1.88	8.89	10.74	11.41	4.91

Note: There was no Real Estate Custom Index in prior reporting. Current Quarter Index is weighted based on CTPF's public/private weights. For 4Q 2016, the weighting was 100% NCREIFODCE Value Weight Net/0% FTSE/EPRA NAREIT Developed Global Index. Custom Index rebalances automatically based on private real estate and public real estate portfolio weights.

# Private Real Estate Performance

Periods Ending December 31, 2016

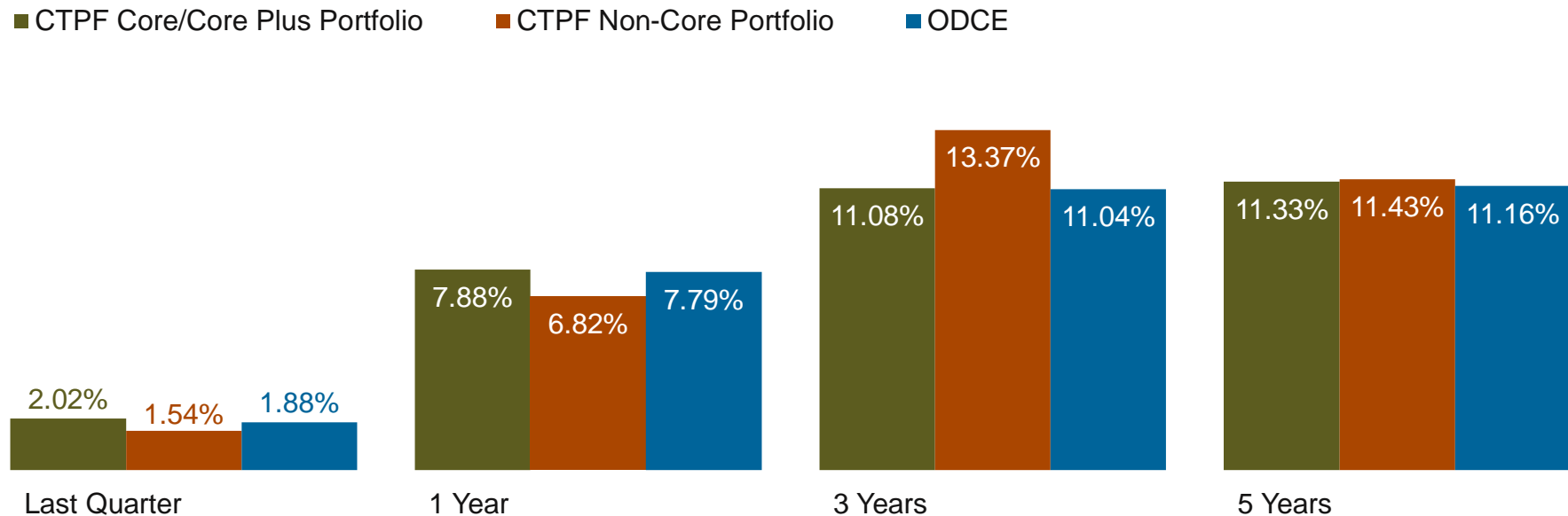
## Performance vs CAI Total Real Estate Database



10th Percentile	5.37	18.18	21.20	19.21	8.35
25th Percentile	2.78	10.97	16.31	15.09	5.63
Median	1.78	8.39	11.71	12.11	4.52
75th Percentile	0.37	4.26	8.81	10.12	1.62
90th Percentile	(1.92)	(2.39)	5.24	6.18	(4.14)
<b>CTPF (RE) - Total Private Real Estate</b> ●	1.93	7.66	11.89	11.26	3.85
<b>NCREIF NFI-ODCE Val Wt Nt</b> ▲	1.88	7.79	11.04	11.16	4.84

# Core/Core Plus and Non Core Returns

Periods Ending December 31, 2016



Portfolio/Index	Last Quarter	1 Year	3 Years	5 Years
<b>CTPF Core/Core Plus Portfolio</b>	2.02%	7.88%	11.08%	11.33%
NFI-ODCE Value Weight Net (ODCE)	1.88%	7.79%	11.04%	11.16%
Relative Performance	0.14%	0.09%	0.04%	0.17%
<b>CTPF Non-Core Portfolio</b>	1.54%	6.82%	13.37%	11.43%
NFI-ODCE Value Weight Net (ODCE)	1.88%	7.79%	11.04%	11.16%
Relative Performance	-0.34%	-0.97%	2.33%	0.27%

# Performance Drivers and Detractors by Style

---

## Total Portfolio For Quarter Ending December 31, 2016

- Core/Core Plus Portfolio Performance Relative to ODCE Benchmark
  - Performance was ahead of NCREIF ODCE benchmark for quarter. Both income and appreciation returns outperformed the index.
  - JP Morgan Strategic Property Fund underperformed NCREIF ODCE income return for the quarter.
  - UBS Trumbull appreciation and total return underperformed on a net and gross of fee basis. The Fund uses significantly lower leverage than the universe of core funds (15%), which has caused the underperformance along with property type and geographic allocation.
    - *The Fund's hotel assets contributed negatively to performance in 4Q. The Fund is hoping to reduce hotel exposure by disposing of hotel assets in the near future.*
  - JP Morgan Strategic Property Fund underperformed the benchmark by two basis points.
    - *The Fund's office assets experience decreased leasing activity in Houston and Dallas markets.*
  - Both core plus funds (Lion Industrial Trust and PRISA II) beat the benchmark.
    - *Industrial assets continue to be the top performers, experiencing the highest NOI growth out of the four main property types, benefiting Lion Industrial Trust*
    - *PRISA II had strong performance from office, apartment and retail.*
- Non Core Portfolio Performance
  - Quarterly time weighted returns for non-core closed end funds are not particularly meaningful.
  - Non-core underperformed the ODCE for the quarter based on negative performance contributions from Capri Select Income II, Fortress Japan Opportunity Fund, Fremont Strategic II, Hudson Realty Capital V, MB Asia RE Fund and Walton Street Mexico Fund, among others.
    - *A number of funds in the portfolio, including Capri Select Income II, Fremont and MB Asia RE Fund, are winding down and have small remaining market values in the portfolio.*



## Infrastructure Performance Review

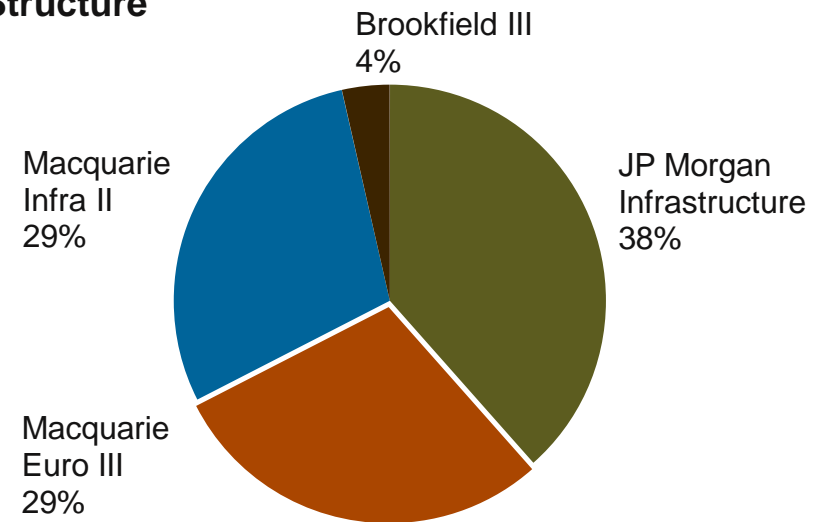
# Infrastructure Portfolio Summary

December 31, 2016

- Infrastructure comprised 2.48% of the total portfolio (\$243 million) on a funded basis compared to a target of 2%.
- During the quarter, CTPF began funding a commitment of \$50 million to Brookfield Infrastructure Fund III.

	\$ Millions	(%)
CTPF Total Plan Assets	\$9,805.65	100.00%
Infrastructure Target	\$196.11	2.00%
Plan's Infrastructure Market Value	\$243.11	2.48%
Unfunded Commitments	\$41.82	0.43%
Market Value & Unfunded Commitments	\$284.93	2.91%

## Manager Structure



# Infrastructure Performance

---

As of December 31, 2016

- All infrastructure investments have underperformed the 8% benchmark over longer time periods.
  - JP Morgan continues to experience significant negative performance due to foreign currency rates. Currency detracted -3.3% for the quarter and -4.9% for the year ended December 31, 2016.
  - Brookfield Infrastructure III and Macquarie European Infrastructure Fund III beat the benchmark during the quarter.
- Like real estate non core funds, performance of the closed end infrastructure funds should be evaluated over the long term and on an IRR and equity multiple basis on an absolute basis and compared to their stated return targets.
  - Macquarie European Infrastructure III has returned a 5.78% net IRR since inception and a 1.44x equity multiple;
  - MIP II has returned a 7.77% net IRR since inception and a 1.39x equity multiple.
  - Neither Macquarie fund is on track to meet target returns for the life of the Fund of 10%-13% or 10%-12%, respectively.
  - Brookfield Infrastructure III returned a net IRR of 8.80% and 1.06x equity multiple but is early in its fund life.



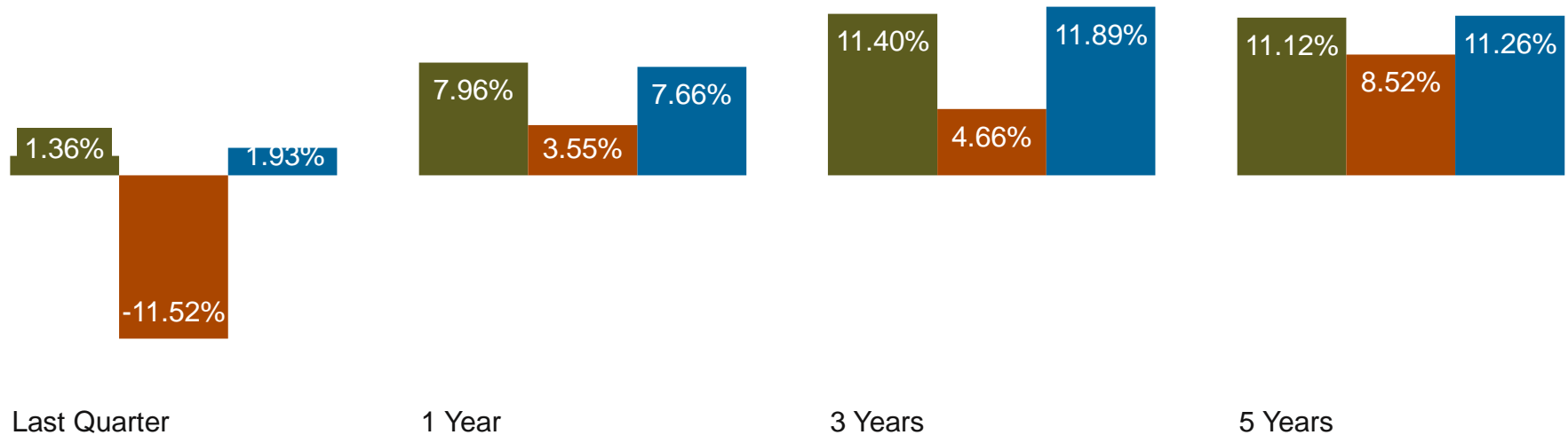


Appendices

# Total Real Estate Performance

Periods Ending December 31, 2016

■ CTPF Total Real Estate   ■ CTPF Public Real Estate   ■ CTPF Private Real Estate



- REIT portfolio was liquidated over the quarter
- Private portfolio shows strong performance with good income returns

# Watch List

---

- UBS Trumbull Property Fund
- Watchlist criteria are being reviewed along with other Investment Policy changes



## Glossary of Terms

# Definitions

---

## Style Groups

**Total Real Estate DB:** The Total Real Estate Funds Database consists of both open and closed-end commingled funds managed by real estate firms that report to the Callan Database.

**Open-End Real Estate:** The Open-End Real Estate Database consists of all open end real estate funds that report to the Callan Database.

**Real Estate Value Added:** The Real Estate Value Added Database consists of all real estate funds that manage to a value add strategy and report to the Callan Database.

**Real Estate Opportunistic:** The Real Estate Opportunistic Database consists of all real estate funds that manage to a value add strategy and report to the Callan Database.

**REIT Global DB:** The REIT Global Database consists of products investing in global equity real estate through portfolios consisting primarily of equity Real Estate Investment Trusts (REIT). The Database is comprised of returns for both separate account composites and commingled vehicles.

\*The above groups are based on time-weighted returns.

**Vintage Year Database Groups:** The Vintage Year Groups are comprised of all funds that report to the database with the initial drawdown taking place in the labeled year. These groups are based on IRRs derived from the cash flows submitted to the Callan Database.

## Indices

**Stylized Index:** Weights the various style group participants to be comparable to the investor portfolio holdings for each period.

**NAREIT Equity Index:** This is an index of Equity Real Estate Investment Trust returns reflecting the stock value changes of REIT issues as determined through public market transactions.

**The NFI-ODCE Value-Weight Index** is a time-weighted return Index with an inception date of 12/31/1977. The Index is comprised of 33 open-end commingled funds, in which 23 are still actively investing. Inclusion within the Index requires (a) minimum of 80% of net fund assets invested in the multifamily, retail, industrial, office, or hotel property type, (b) maximum of 20% of net fund assets invested in real estate debt or private/public company equity, (c) at least 80% of net assets invested in properties with a minimum occupancy of 60%, (d) no more than 70% of real estate net assets invested in a single property type or region, (e) maximum of 40% leverage, and (f) at least 95% of net real estate assets invested within the U.S. market.

# Definitions

---

## Terms

**Beginning Market Value:** Value of real estate, cash and other holdings from prior period end.

**Contributions:** Cash funded to the investment for acquisition and capital items (i.e., initial investment cost or significant capital improvements).

**Distributions:** Actual cash returned from the investment, representing distributions of income from operations. **Withdrawals:** Cash returned from the investment, representing returns of capital or net sales proceeds.

**Ending Market Value:** The value of an investment as determined by actual sales dollars invested and withdrawn plus the effects of appreciation and reinvestment; market value is equal to the ending cumulative balance of the cash flow statement (NAV).

**Unfunded Commitments:** Capital allocated to managers which remains to be called for investment. Amounts are as reported by managers.

**Remaining Allocation:** The difference between the ending market value + the unfunded commitments and the target allocation. This figure represents dollars available for allocation.

**Core:** Direct investments in operating, fully leased, office, retail, industrial, or multifamily properties using little or no leverage (normally less than 30%).

**Value-Added:** Core returning investments that take on moderate additional risk from one or more of the following sources: leasing, re-development, exposure to non-traditional property types, the use of leverage.

**Opportunistic:** Investments that take on additional risk in order to achieve a higher return. Typical sources of risks are: development, land investing, operating company investing, international exposure, high leverage, distressed properties.

**Non Core:** Includes both value added and opportunistic strategies

**Vintage Year:** Year of first drawdown

# Definitions

---

## Performance

**Capitalization rate:** Commonly known as cap rate, is a rate that helps in evaluating a real estate investment.  $\text{Cap rate} = \text{Net operating income} / \text{Current market value (Sales price) of the asset.}$

**Net operating income:** Commonly known as NOI, is the annual income generated by an income-producing property after taking into account all income collected from operations, and deducting all expenses incurred from operations.

**Real Estate Appraisal:** The act of estimating the value of property. A real estate appraisal may take into account the quality of the property, values of surrounding properties, and market conditions in the area.

**Income Return (“INC”):** Net operating income net of debt service before deduction of capital items (e.g., roof replacement, renovations, etc.)

**Appreciation Return (“APP”):** Increase or decrease in investment's value based on internal or third party appraisal, recognition of capital expenditures which did not add value or uncollectible accrued income, or realized gain or loss from sales.

**Total Gross Return:** The sum of the income return and appreciation return before adjusting for fees paid to and/or accrued by the manager.

**Total Net Return:** Total gross return less Advisor fees reported. All fees are requested (asset management, accrued incentives, paid incentives). No fee data is verified.

**Inception Returns:** The total net return for an investment or portfolio over the period of time the client has funds invested. Total portfolio Inception Returns include returns from investments no longer held in the current portfolio.

**Net IRR:** IRR after advisory fees, incentive and promote. This includes actual cash flows and a reversion representing the LP Net Assets at market value as of the period end reporting date.

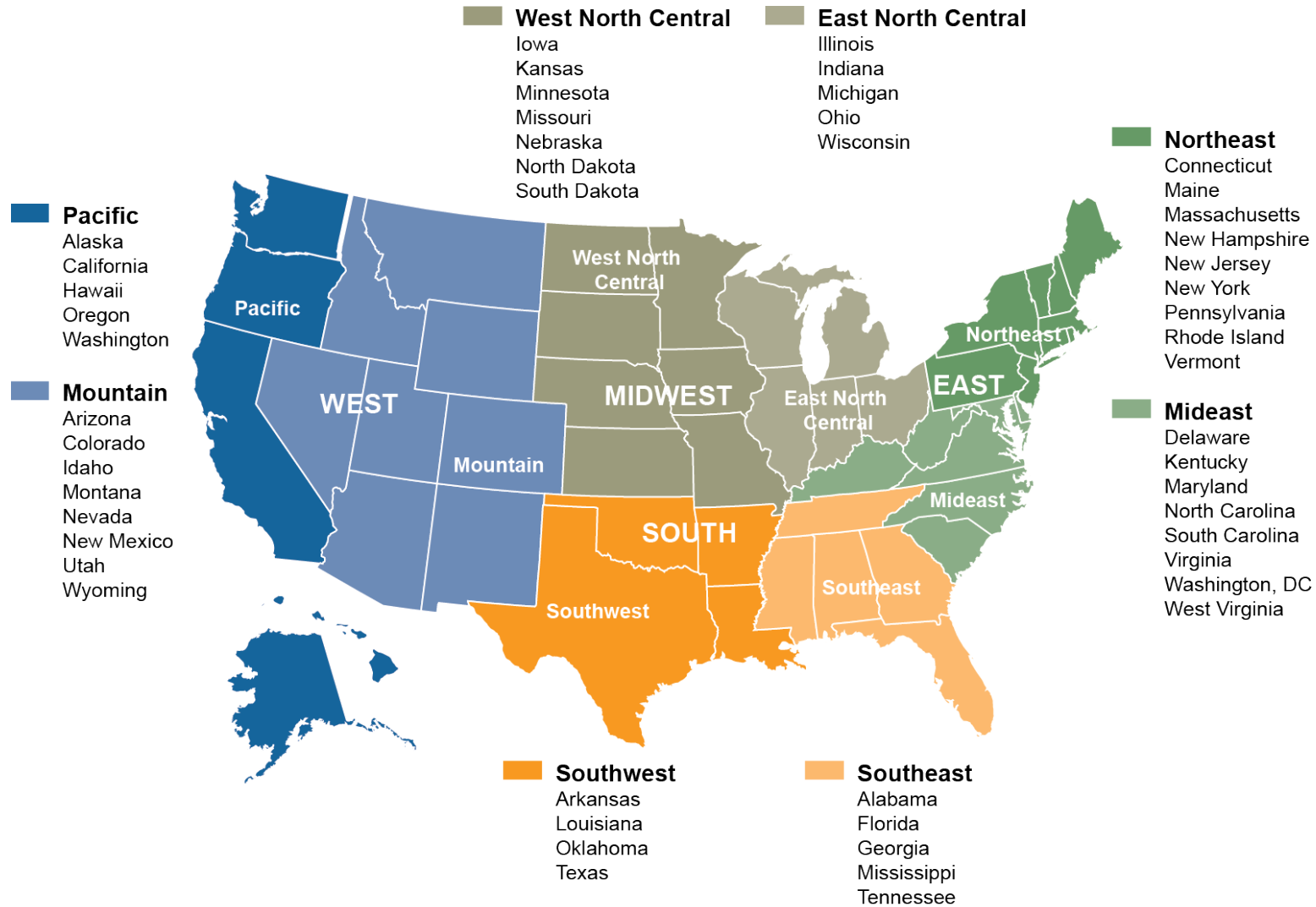
**Equity Multiple:** The ratio of Total Value to Paid-in-Capital (TVPIC). It represents the Total Return of the investment to the original investment not taking into consideration the time invested. Total Value is computed by adding the Residual Value and Distributions. It is calculated net of all investment advisory and incentive fees and promote.

**DPI Multiple:** The ratio of distributions paid to the investor divided by the amount of contributions paid by the investor. It is calculated net of all investment advisory and incentive fees and promote.

**Sharpe Ratio:** Sharpe Ratio is a measure of the risk-adjusted return of a portfolio. The ratio represents the return gained per unit of risk taken. The risk of the portfolio is the Standard Deviation of the portfolio returns.

# NCREIF Region Map

## Geographic Regions and Divisions



Source: NCREIF



# Disclaimers

---

This report is for informational purposes only and should not be construed as legal or tax advice on any matter. Any decision you make on the basis of this content is your sole responsibility. You should consult with legal and tax advisers before applying any of this information to your particular situation.

This report may consist of statements of opinion, which are made as of the date they are expressed and are not statements of fact.

Reference to or inclusion in this report of any product, service or entity should not be construed as a recommendation, approval, affiliation or endorsement of such product, service or entity by Callan.

Past performance is no guarantee of future results.

The statements made herein may include forward-looking statements regarding future results. The forward-looking statements herein: (i) are best estimations consistent with the information available as of the date hereof and (ii) involve known and unknown risks and uncertainties such that actual results may differ materially from these statements. There is no obligation to update or alter any forward-looking statement, whether as a result of new information, future events or otherwise. Undue reliance should not be placed on forward-looking statements.

Performance numbers in this presentation are based on quarterly data collected from CTPF investment managers and calculated by Callan Associates beginning in the fourth quarter of 2015. Quarterly performance history prior to the fourth quarter of 2015 was calculated and provided to Callan by the previous consultant, The Townsend Group.