



PENSION
CONSULTING
ALLIANCE



2017

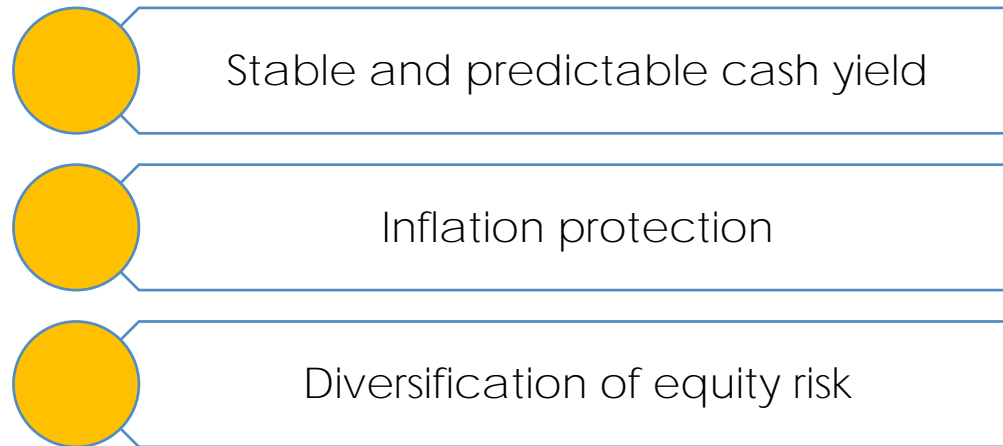
CalPERS Investment Committee
Annual Real Estate Program Review
November 2017

This report is solely for the use of client personnel. No part of it may be circulated, quoted, or reproduced for distribution outside the client organization without prior written approval from Pension Consulting Alliance, LLC.

Nothing herein is intended to serve as investment advice, a recommendation of any particular investment or type of investment, a suggestion of purchasing or selling securities, or an invitation or inducement to engage in investment activity.

Role of Real Estate

CalPERS' role for real estate is to provide:



Benchmark:

- National Council of Real Estate Investment Fiduciaries - Open End Diversified Core Equity (NCREIF-ODCE)

Portfolio Performance

- Real estate portfolio performance is aligned with CalPERS' organizational values and investment beliefs
- Real estate is fulfilling its intended role, achieving a 5-year net income return for fiscal year 2016/2017 of 3.3%
- Real estate outperformed the 2013 ALM expected return of 7.0% for the one-, three- and five-year time periods

	1-Year Net Return	3-Year Net Return	5-Year Net Return	10-Year Net Return
CalPERS Real Estate Portfolio	7.6%	9.4%	10.8%	-1.3%
NCREIF-OCDE Benchmark	7.4%	10.8%	11.1%	7.8%
Over (Under) Performance	+0.2%	-1.4%	-0.3%	-9.1%

- Portfolio is positioned to be cost-efficient

Portfolio Characteristics

Then and now:

Portfolio characteristics continue to move towards the Strategic Plan and Vision 2020

CalPERS Real Estate Portfolio	2007	2009	2017
Core NAV	\$10.9 Billion	\$6.9 Billion	\$23.6 Billion
LTV	60.1%	61.9%	31.4%
Lifecycle			
Core	54%	33%	77%
Value-Add	0%	21%	9%
Opportunistic	46%	46%	14%
External Managers	68	69	21
Commingled Funds	88	74	12
Separate Accounts	58	63	28
Recourse Debt	\$7.0 Billion*	\$4.1Billion	\$4.5 <u>Million</u>

*Recourse debt amount shown represents data as of March 2008

A Year of Accomplishments

Fortifying investment portfolio

More focus on base core assets

Investment in existing assets

Lower, fixed-rate leverage

Shifting gears on international investments

Emerging
Manager program
evolution

Improvements in
risk assessment
and reporting

Promotions
and team
development



Real Assets Portfolio – At inflection point

- Simpler, lower risk portfolio construction
- Significant dry powder
- Well-positioned to weather a market correction
- And take advantage of opportunities as they arise in a timely manner
- Shift from focus on portfolio issues to focus on management issues:
 - Investment Beliefs and ESG Integration
 - Governance
 - Segment plans
 - Manager Oversight and RCP programs
 - Team growth and career advancement

Investment Beliefs

Investment Beliefs Integration increasing within Real Assets and Across INVO/ISG

1. Liabilities must influence the asset structure.
CalPERS invests in real estate to generate income, provide diversification, and as an inflation hedge.
2. A long term investment horizon is a responsibility and an advantage.
Real estate is a private, illiquid asset class; assets are generally held for longer periods of time.
3. CalPERS investment decisions may reflect wider stakeholder views.
Targeted investment programs are being used effectively in the RE program, including emerging managers, responsible contractor policy (RCP) programs.
4. Long-term value creation requires effective management of three forms of capital: financial, physical, and human.
The RE portfolio continues to improve governance and engagement on ESG initiatives.
8. Costs matter and need to be effectively managed.
The RE portfolio invests primarily through separate accounts that offer lower fees than funds.
9. Risk is multi-faceted and not fully captured through measures such as volatility or tracking error.
Staff continues to improve risk management in RE through investment process, analysis, and reporting.

ESG Integration



SWOT Analysis – Real Estate Program

Strengths

- Strong leadership and diversity of team
- Increasingly positive market profile and reputation
- Improved responsiveness
- Disciplined approach
- Utilizing ideas and experience of other asset class professionals

Weaknesses

- Limited control over constraints that impact ability to deploy capital
 - Required rates of return
 - Market conditions
 - Business model
 - Resources
- Manager concentration; need to re-underwrite periodically

Opportunities

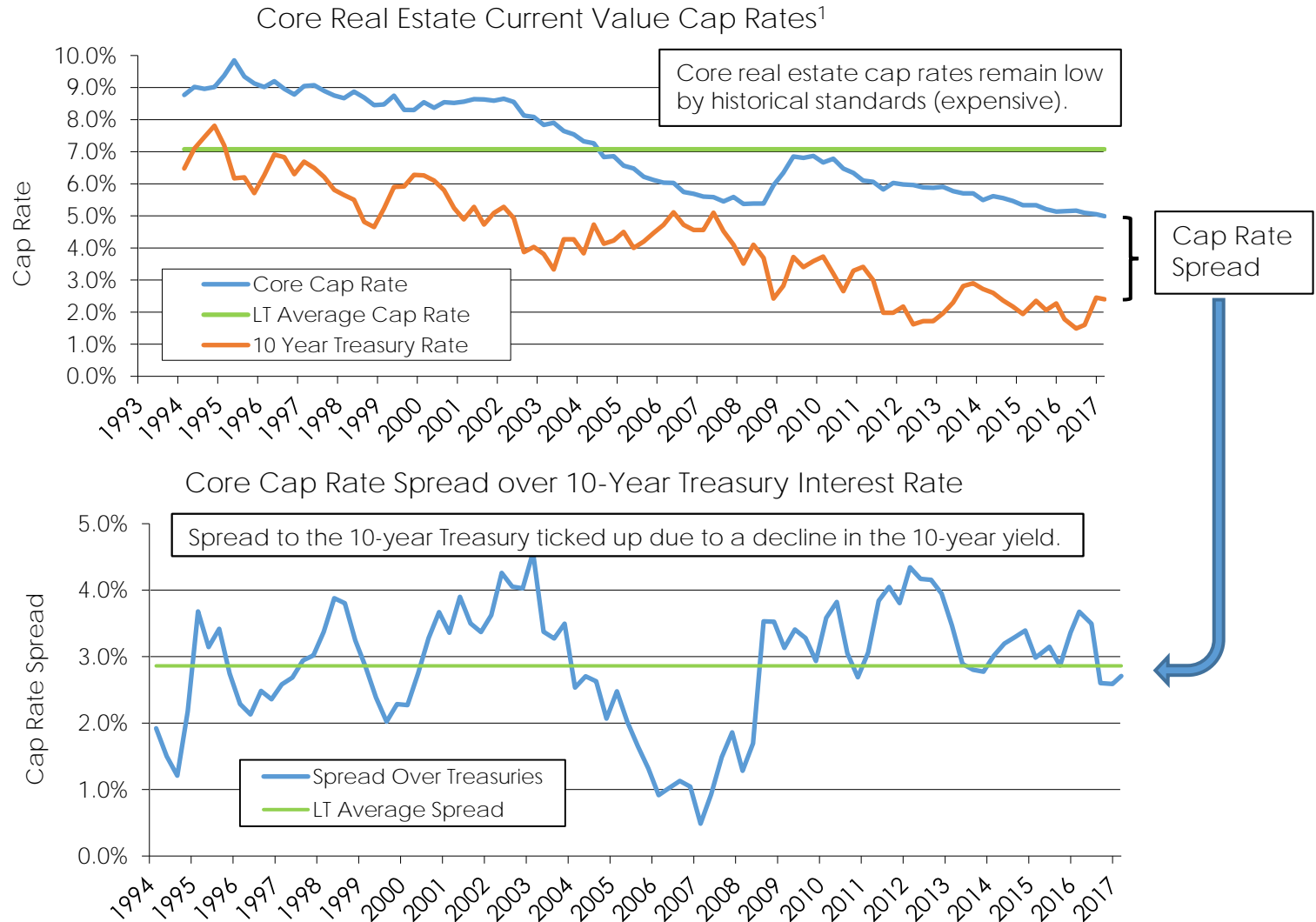
- Cross-pollination of best sustainable investment practices
- Explore/assess “harder” investment opportunities: residential development, international, etc.
- Big data
 - Investment strategy – fine tuning
 - Risk management
 - ESG initiatives

Threats

- Technology changes, space use disruption/innovation, and obsolescence
- Retention of professionals
- Downturn in market growth rates and demand

MARKET DATA

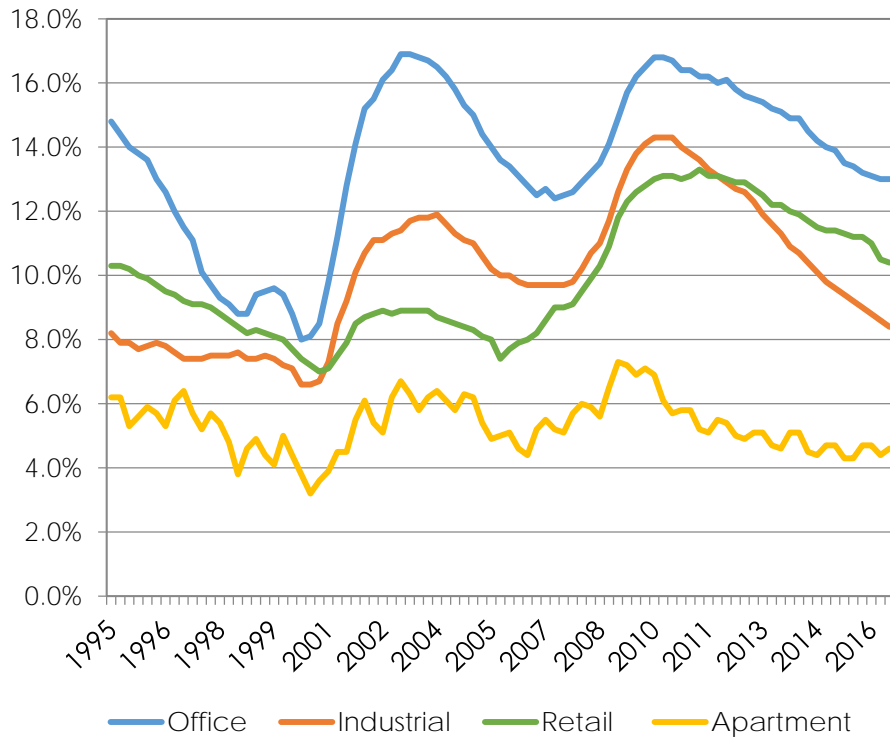
Core Cap Rates



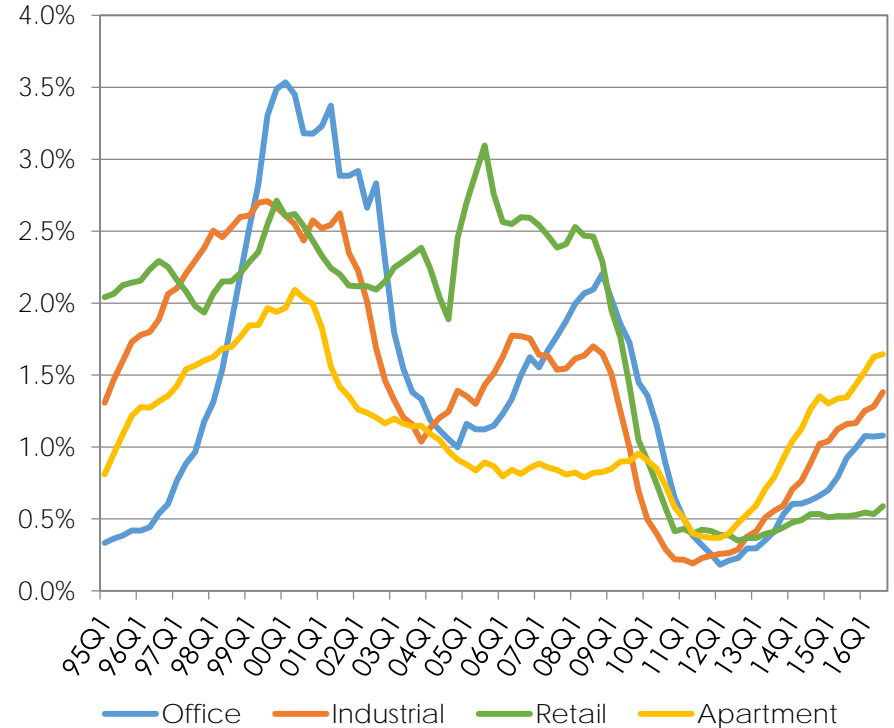
¹A cap rate is the current annual income of the property divided by an estimate of the current value of the property. It is the current yield of the property. Low cap rates indicate high valuations. Sources: NCREIF, www.ustreas.gov

Real Estate Fundamentals

U.S. Average Vacancy Rate



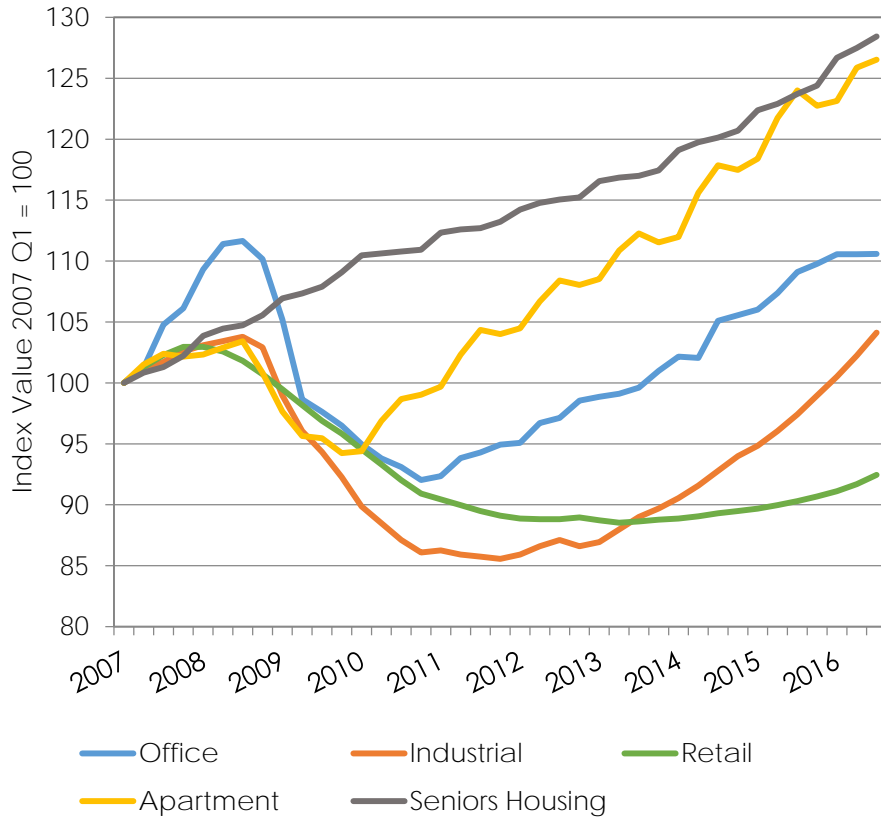
Additions to Stock Over Prior 4 Quarters as a Share of Total Stock



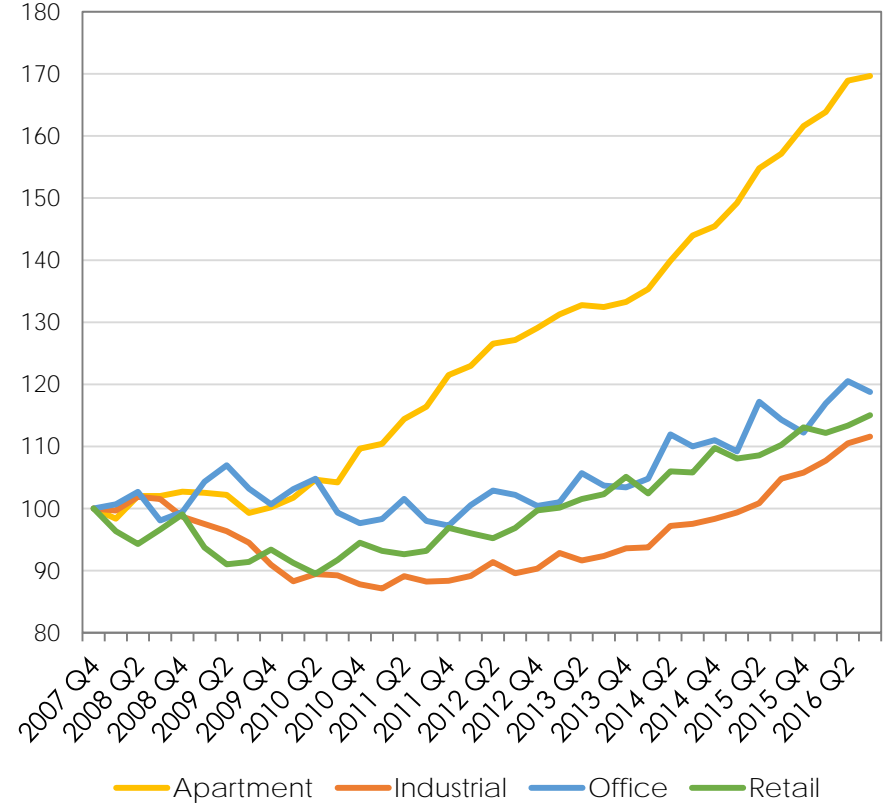
Source: AEW

Real Estate Fundamentals

Rents



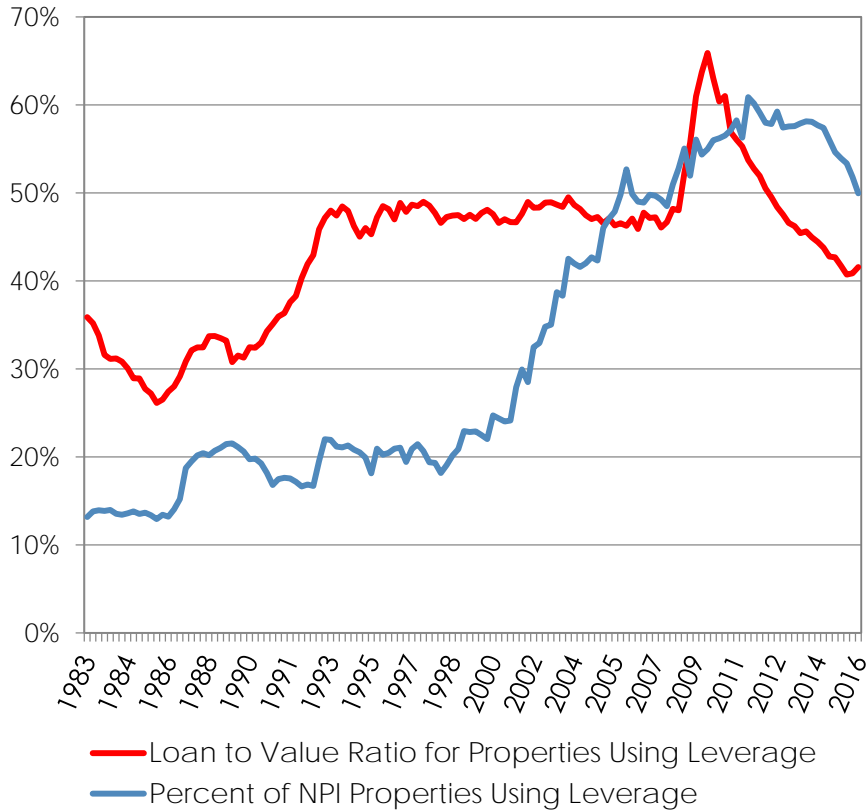
NOI Growth



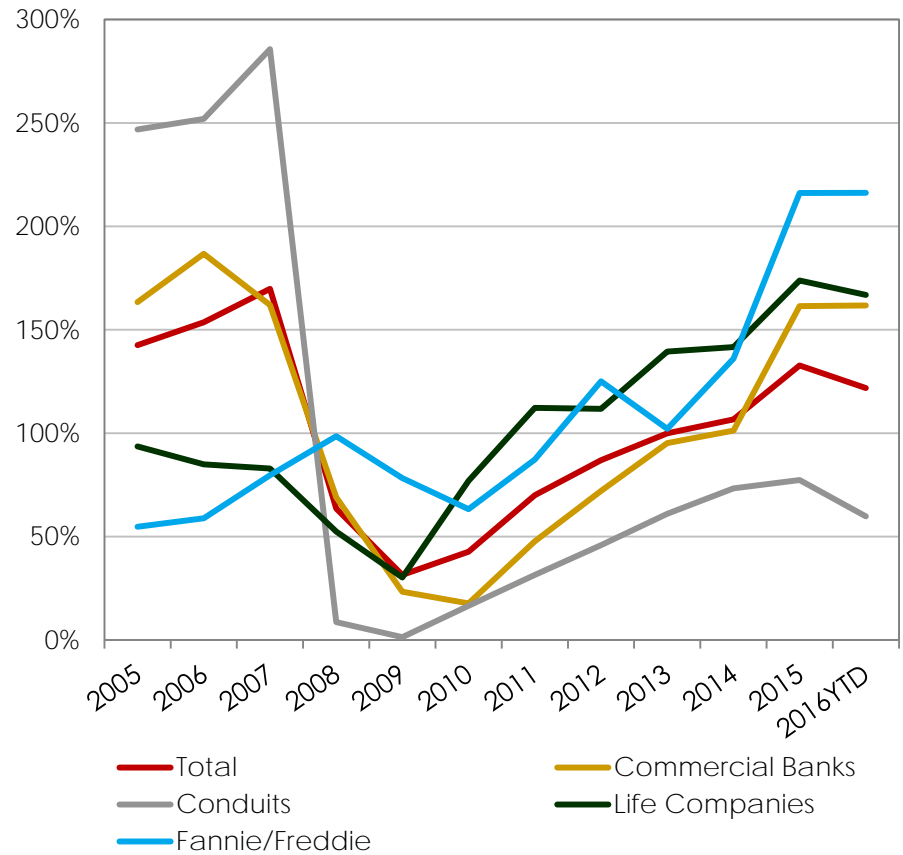
Source: AEW

Leverage

Leverage Use in the NCREIF Universe



Origination Volume Over Time by Lender
(2005-2015 average = 100%)



Sources: NCREIF, AEW, Hawkeye Partners

DISCLOSURES: This document is provided for informational purposes only. It does not constitute an offer of securities of any of the issuers that may be described herein. Information contained herein may have been provided by third parties, including investment firms providing information on returns and assets under management, and may not have been independently verified. The past performance information contained in this report is not necessarily indicative of future results and there is no assurance that the investment in question will achieve comparable results or that the Firm will be able to implement its investment strategy or achieve its investment objectives. The actual realized value of currently unrealized investments (if any) will depend on a variety of factors, including future operating results, the value of the assets and market conditions at the time of disposition, any related transaction costs and the timing and manner of sale, all of which may differ from the assumptions and circumstances on which any current unrealized valuations are based.

Neither PCA nor PCA's officers, employees or agents, make any representation or warranty, express or implied, in relation to the accuracy or completeness of the information contained in this document or any oral information provided in connection herewith, or any data subsequently generated herefrom, and accept no responsibility, obligation or liability (whether direct or indirect, in contract, tort or otherwise) in relation to any of such information. PCA and PCA's officers, employees and agents expressly disclaim any and all liability that may be based on this document and any errors therein or omissions therefrom. Neither PCA nor any of PCA's officers, employees or agents, make any representation of warranty, express or implied, that any transaction has been or may be effected on the terms or in the manner stated in this document, or as to the achievement or reasonableness of future projections, management targets, estimates, prospects or returns, if any. Any views or terms contained herein are preliminary only, and are based on financial, economic, market and other conditions prevailing as of the date of this document and are therefore subject to change.

The information contained in this report may include forward-looking statements. Forward-looking statements include a number of risks, uncertainties and other factors beyond the control of the Firm, which may result in material differences in actual results, performance or other expectations. The opinions, estimates and analyses reflect PCA's current judgment, which may change in the future.

Any tables, graphs or charts relating to past performance included in this report are intended only to illustrate investment performance for the historical periods shown. Such tables, graphs and charts are not intended to predict future performance and should not be used as the basis for an investment decision.

All trademarks or product names mentioned herein are the property of their respective owners. Indices are unmanaged and one cannot invest directly in an index. The index data provided is on an "as is" basis. In no event shall the index providers or its affiliates have any liability of any kind in connection with the index data or the portfolio described herein. Copying or redistributing the index data is strictly prohibited.

The Russell indices are either registered trademarks or trade names of Frank Russell Company in the U.S. and/or other countries.

The MSCI indices are trademarks and service marks of MSCI or its subsidiaries.

Standard and Poor's (S&P) is a division of The McGraw-Hill Companies, Inc. S&P indices, including the S&P 500, are a registered trademark of The McGraw-Hill Companies, Inc.

CBOE, not S&P, calculates and disseminates the BXM Index. The CBOE has a business relationship with Standard & Poor's on the BXM. CBOE and Chicago Board Options Exchange are registered trademarks of the CBOE, and SPX, and CBOE S&P 500 BuyWrite Index BXM are servicemarks of the CBOE. The methodology of the CBOE S&P 500 BuyWrite Index is owned by CBOE and may be covered by one or more patents or pending patent applications.

The Barclays Capital indices (formerly known as the Lehman indices) are trademarks of Barclays Capital, Inc.

The Citigroup indices are trademarks of Citicorp or its affiliates.

The Merrill Lynch indices are trademarks of Merrill Lynch & Co. or its affiliates.

Supplement for real estate and private equity partnerships:

While PCA has reviewed the terms of the Fund referred to in this document and other accompanying financial information on predecessor partnerships, this document does not constitute a formal legal review of the partnership terms and other legal documents pertaining to the Fund. PCA recommends that its clients retain separate legal and tax counsel to review the legal and tax aspects and risks of investing in the Fund. Information presented in this report was gathered from documents provided by third party sources, including but not limited to, the private placement memorandum and related updates, due diligence responses, marketing presentations, limited partnership agreement and other supplemental materials. Analysis of information was performed by PCA.

An investment in the Fund is speculative and involves a degree of risk and no assurance can be provided that the investment objectives of the Fund will be achieved. Investment in the Fund is suitable only for sophisticated investors who are in a position to tolerate such risk and satisfy themselves that such investment is appropriate for them. The Fund may lack diversification, thereby increasing the risk of loss, and the Fund's performance may be volatile. As a result, an investor could lose all or a substantial amount of its investment. The Fund's governing documents will contain descriptions of certain of the risks associated with an investment in the Fund. In addition, the Fund's fees and expenses may offset its profits. It is unlikely that there will be a secondary market for the shares. There are restrictions on redeeming and transferring shares of the Fund. In making an investment decision, you must rely on your own examination of the Fund and the terms of the offering.