Real Asset Class Review

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Executive Summary

- Real Assets (as opposed to unreal assets?) contribute to the FCERA portfolio as an inflation hedge, and source of “carry” or yield
- In 2019, real assets delivered both carry and appreciation
- The FCERA real estate portfolio: $251mil at 12/31/19, 1 year return of 6.4%
- The FCERA infrastructure portfolio: $165mil at 12/31/19, 1 year return of 14.6%
- Late in a business cycle, not all real assets are the same
- Potential Market dislocations (nobody knows)
    - Transactions may slow or freeze
    - Occupancy may be affected
    - Rental income may stall and/or reverse
    - Property prices may rise with lower rates (or fall due to uncertainty)
- The Board recently agreed to add to real estate, and a small bit to infrastructure
- Staff recommends adding another diversified and conservative RE manager

Real Estate and Real Assets
The Role in the Portfolio

- Inflation hedge
- Source of income (aka “carry”): operating income + growth
- Appreciation potential: properties increase in value over time
- Annuity-like characteristics
- Low correlation with other assets: (Commercial RE)
  - Correlation to Equities: 0.15
  - Correlation to Bonds: -0.16
  - Correlation to REIT’s: 0.17

Real Asset Types

- Gold
- Real Estate
  - Commercial
  - Residential
- Farmland and Crops
- Commodities: oil, metals, ag products
- Infrastructure (ports, bridges, toll roads, pipelines, perhaps certain utilities)

FRESNO COUNTY
FCERA
EMPLOYEES' RETIREMENT ASSOCIATION

Real Assets Performance

Portfolio construction continues to be key in constructing a real assets portfolio given the variance of sector performance

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Q3 2019
Mining 36.93%	Mining 98.26%	Agriculture 15.84%	Mining 45.39%	Mining 64.39%	Energy 15.17%	Agriculture 18.58%	Agriculture 20.93%	Agriculture 12.69%	Real Estate 13.33%	Mining 24.20%	Infrastructure 16.56%	Agriculture 6.74%	Infrastructure 5.89%
Energy 34.05%	Energy 36.11%	Timber 9.52%	Energy 14.47%	Infrastructure 15.61%	Agriculture 15.16%	Real Estate 10.54%	Real Estate 10.99%	Real Estate 11.81%	Agriculture 10.34%	Energy 18.22%	Real Assets 8.55%	Infrastructure 6.73%	Real Estate 4.79%
Infrastructure 24.12%	Real Assets 22.91%	Infrastructure 4.16%	Agriculture 6.32%	Real Assets 14.94%	Real Estate 14.26%	Timber 7.75%	Timber 9.69%	Timber 10.48%	Timber 4.97%	Real Assets 10.11%	Real Estate 6.98%	Real Estate 6.71%	Real Assets 2.49%
Real Assets 22.75%	Timber 18.44%	Real Assets -2.65%	Infrastructure 3.29%	Real Estate 13.11%	Real Assets 10.02%	Infrastructure 6.60%	Infrastructure 8.55%	Infrastructure 9.46%	Infrastructure 3.33%	Infrastructure 8.26%	Agriculture 6.19%	Real Assets 4.26%	Agriculture 2.42%
Agriculture 21.15%	Agriculture 15.90%	Mining -3.63%	Real Assets -2.00%	Energy 9.79%	Infrastructure 6.79%	Energy 3.26%	Real Assets 7.64%	Real Assets 8.16%	Real Assets 2.56%	Real Estate 7.97%	Timber 3.63%	Timber 3.21%	Timber 1.34%
Real Estate 16.59%	Real Estate 15.84%	Real Estate -6.46%	Timber -4.75%	Agriculture 8.81%	Timber 1.57%	Real Assets 2.63%	Energy 6.04%	Energy -2.76%	Mining -13.13%	Agriculture 7.09%	Energy 2.47%	Energy -2.28%	Energy -6.12%
Timber 13.68%	Infrastructure 13.30%	Energy -16.74%	Real Estate -16.86%	Timber -0.15%	Mining -14.74%	Mining -9.57%	Mining -28.88%	Mining -4.88%	Energy -22.16%	Timber 2.59%	Mining 0.02%	Mining -12.08%	Mining -8.17%

Real assets consists of 40% real estate, 30% infrastructure, 15% energy, 5% mining, 5% timber and 5% agriculture
Source: Bloomberg, Bison data via Cobalt and NCREIF, as of September 2019
For illustrative purposes only. Actual results may vary.

Real Estate Market Distinctions

- Commercial vs. Residential
- Debt vs. Equity: most real estate investments involve both
- Open-end vs. Closed-end funds (think liquidity)
- Direct (you own the building) vs. Indirect (a share in a fund)
- Property Type
  - Retail
  - Office
  - Industrial
  - Multi-Family

- *“Buy land, they’re not making it any more”* –Mark Twain

The Big Picture

Real estate market remains healthy, with late-cycle risk indicators in check

- Real estate fundamentals have been stable with continued rent growth and absorption fueled by household formation, growth in absolute employment numbers, year-over-year wage increases and GDP growth
- Primary and secondary markets with job growth related to science, technology, education and media are expected to remain as the strongest real estate markets
- Cap rates are at all time lows and are expected to remain low given historically low financing costs and strong investor appetite

Income is in the driver's seat, while appreciation is becoming increasingly more elusive

- Properties with low CapEx needs that produce durable distributable cash flows which are less susceptible to economic volatility are favored
- The NCREIF Property Index has shown a steady decline in returns coming from property appreciation leading managers to reduce total return expectations and reduce exposure to assets with little to no income
- Savvy investors can produce meaningful valuation increases through the repositioning of underutilized assets. Repositioning strategies include development of excess land or parking, the introduction of improved amenities, and improved more responsive management

Valuations look "full", although yields look attractive on a relative basis

- Most property types have benefited from high occupancy, growing rents and relatively low debt service costs, leading to attractive cash on cash returns
- Cap rate spreads are at post-GFC lows, however remain significantly above prior recessionary periods of 1989 and 2007
- The use of leverage remains conservative and has not risen to pre-GFC levels when LTVs often exceeded 75%

Fundamental shifts in the way people live and work are having significant impacts on demand for real estate

- E-commerce sales continue to grow leading to the well documented divergent paths of industrial and retail properties
- The lack of single family affordability in certain markets is negatively affecting employers ability to recruit talent and producing demand for moderately priced rental housing
- Traffic congestion and truck pollution are growing concerns that are directly tied to Industrial supply growth and have become issues that we believe could turn local municipalities against issuing building permits for industrial properties on a go-forward basis

Attractive Areas for U.S. Investment

Multifamily

- Modest anticipated NOI growth supported by:
  - Occupancy near peak-cycle highs
  - Strong continued demand drivers
  - Contained supply growth
- West Coast and Southeast markets continue to exhibit:
  - Strong demographic drivers, with well-educated workforce
  - Robust labor market, population growth
  - Rising input costs pose barriers to future supply additions
- Market specific that surfaced in 2019 include Class-A oversupply and rent control legislation
  - Despite such headwinds, multifamily continues to be attractive on a relative basis

Office

- Target select markets with:
  - Educated workforce with job growth in high paying industries
  - Easily accessible, efficient public transport
  - Examples include Austin, Nashville, Raleigh Durham, Seattle, Portland, San Francisco
- West Coast and opportunities to repurpose space into highest and best use (ex. life science or creative office)
- Space densification putting downward pressure on rents
  - Efficient floor plans, desire for collaborative spaces, and co-working all contributors

Industrial

- Growth in e-commerce provides extensive global opportunity set
- Logistics / warehouse demand de-coupling from GDP due to structural demand drivers:
  - E-commerce requires approximately 3x the warehouse space of traditional retail [1]
  - Globalization, trade reconfiguring supply chains
- Target select property characteristics / locations:
  - XXL regional bulk distribution centers configured for maximum throughput of goods / services
  - Last mile distribution / light industrial facilities with diversified tenancy and shorter remaining lease terms may allow owners to capture upside in growing markets

Retail

- Structural changes in economy and consumer behavior challenging fundamentals
- Relative risk-reward tradeoff generally unfavorable; however, pockets of value may exist
  - Large experiential retail and local convenience assets likely to be the most defensive areas of the property type

Other/Niche

- Senior housing benefitting from demographically-driven tailwinds
- Select hospitality opportunities, especially those catering to business travelers
- Renaissance in life science capabilities, driving significant demand for specialized space
- Data Centers appear to exhibit growth, with robust demand globally
  - Driven by rapid growth in content, technology-enabled services
  - Demand from large scale service providers continues to be strong, although select users (AMZN, FB, MSFT) invest meaningful capital in developing own facilities, limiting third-party utilization

[1] CBRE – Logistics: The Big Picture (March 2018)

Risk-Profile Overview

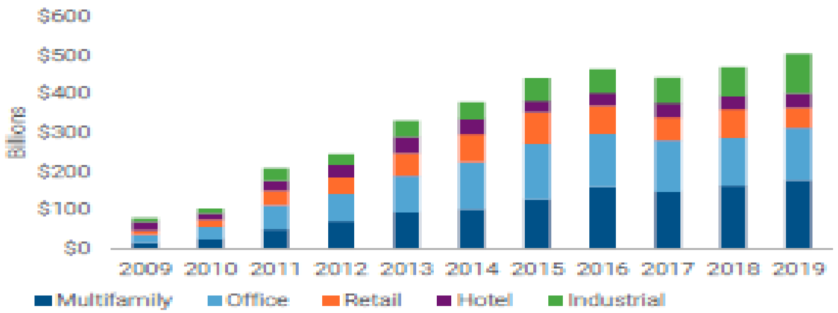
	Core	Core Plus	Value-add	Opportunistic	Debt
Pros	• Consistent demand for high quality, stabilized assets • Active managers are able to rotate exposure across sectors and markets to maintain accretive exposure • Trophy assets typically maintain value in challenged market environments	• Core-like exposure with attractive cash on cash returns resulting from enhanced leverage and modest value-add initiatives • Wider opportunity set given the sector's ability to take lease-up risk and engage in light renovation	• Ability to proactively manufacture returns through physical renovation • Rent growth opportunities exist in Class B/C properties that offer a similar location and amenities to Class A • Core and Core-Plus managers continue to be a reliable buyer of refurbished properties	• Large funds may be able to acquire attractively priced portfolios at wholesale prices • Distressed single-asset opportunities exist, although are largely elusive in the current market	• Defensive characteristics with equity absorbing first loss • Attractive relative returns in a late cycle environment • Flexibility to choose appropriate risk level
Cons	• Compressed entry yields driving returns to historical norms, as appreciation moderates in a late-cycle environment • Exposure to large, underperforming retail has been a drag on returns	• Aggressive fundraising from new entrants • Competition from both value add and core managers • Higher leverage levels in the sector can prohibit LPs from investing	• Increased labor and materials costs has been a headwind on returns • Highly competitive environment between institutional and private investors has driven up pricing	• Higher leverage • Lower cash flow • Counterparty risk • Strategies tend to introduce higher levels of FX risk	• Capped upside in traditional debt • Competitive origination environment

Benchmark(s) Performance
FTSE Nareit (FNERTR)
5 year

REIT's behave like equities

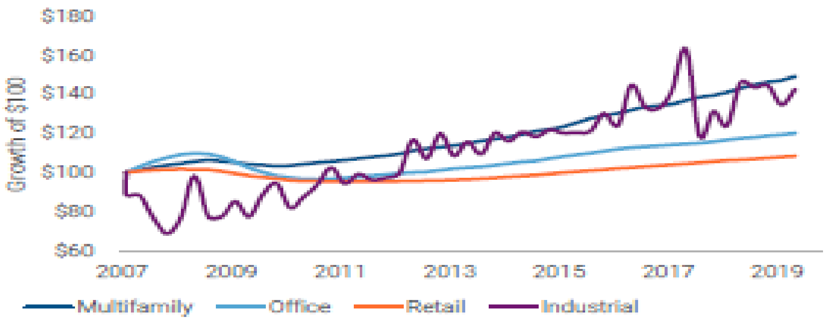
Real Estate Fundamentals

Transaction Volume



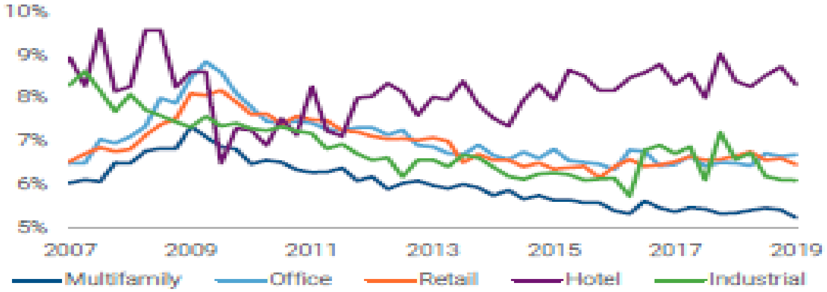
Source: Bloomberg (As of 9/30/19)

Effective Rent Growth



Source: Bloomberg (As of 9/30/19)

Cap Rates by Property Type



Source: Bloomberg (As of October 2019)

- 2019 transaction volume on pace to reach new all-time highs. Pricing is strongly correlated to liquidity
- Multifamily continued to comprise the largest proportion of transaction volume
- Industrial transaction volume grew 34% year-over-year, demonstrating continued interest in the space
- Cap rates continue to edge down for most property types with the exception of retail
- At a national level, rent growth remains positive across property types, with industrial and multifamily leading the way

FRESNO COUNTY FCERA EMPLOYEES' RETIREMENT ASSOCIATION

Performance by Property Type

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD Q3'19
Retail -10.95%	Apartments 18.21%	Apartments 15.45%	Retail 11.60%	Retail 12.86%	Industrial 13.42%	Retail 15.26%	Industrial 12.31%	Industrial 13.07%	Industrial 14.30%	Industrial 9.91%
NPI -16.86%	NPI 13.11%	Industrial 14.59%	Apartments 11.24%	Industrial 12.32%	Retail 13.12%	Industrial 14.87%	Retail 9.04%	NPI 6.96%	Hotels 7.57%	Office 4.81%
Apartments -17.51%	Retail 12.62%	NPI 14.26%	Industrial 10.71%	NPI 10.99%	NPI 11.82%	NPI 13.33%	NPI 7.97%	Apartments 6.16%	Office 6.85%	NPI 4.80%
Industrial -17.85%	Office 11.74%	Retail 13.76%	NPI 10.54%	Apartments 10.41%	Office 11.50%	Hotels 13.20%	Apartments 7.33%	Office 6.03%	NPI 6.72%	Apartments 3.99%
Office -19.10%	Industrial 9.37%	Office 13.76%	Office 9.49%	Office 9.86%	Hotels 11.06%	Office 12.50%	Office 6.20%	Retail 5.67%	Apartments 6.07%	Hotels 3.34%
Hotels -20.40%	Hotels 8.97%	Hotels 11.80%	Hotels 8.25%	Hotels 7.69%	Apartments 10.29%	Apartments 11.99%	Hotels 4.71%	Hotels 4.93%	Retail 2.18%	Retail 1.85%

Source: NCREIF Property Index (As of September 2019). For illustrative purposes only. Actual results may vary.

Trailing Total Return Performance					Risk Metrics		Count of Periodic Ranking Since Inception					
3 Years	5 Years	10 Years	20 years	SI Return	SI Std. Dev.	SI Sharpe Ratio	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
Industrial 13.54%	Industrial 13.74%	Industrial 12.18%	Industrial 10.00%	Industrial 9.94%	Hotels 5.84%	Apartments 1.30	Retail 15	Industrial 14	NPI 16	NPI 14	Office 16	Hotels 19
NPI 6.76%	NPI 8.57%	Apartments 9.83%	Retail 9.75%	Retail 9.41%	Office 5.19%	Industrial 1.29	Apartments 10	Apartments 8	Industrial 8	Industrial 10	Retail 8	Office 8
Office 6.37%	Office 7.90%	NPI 9.77%	NPI 8.80%	NPI 9.12%	Apartments 4.27%	Retail 1.28	Hotels 6	NPI 8	Apartments 8	Apartments 7	Industrial 5	Retail 7
Apartments 5.99%	Apartments 7.66%	Retail 9.60%	Apartments 8.65%	Apartments 8.71%	NPI 4.12%	NPI 1.08	Office 6	Retail 4	Hotels 3	Retail 4	Apartments 5	Apartments 3
Hotels 5.50%	Hotels 7.60%	Office 8.93%	Office 8.07%	Office 8.38%	Industrial 4.10%	Office 0.68	Industrial 4	Office 4	Retail 3	Office 4	Hotels 4	Industrial 0
Retail 3.78%	Retail 7.26%	Hotels 7.71%	Hotels 6.75%	Hotels 8.07%	Retail 3.79%	Hotels 0.61	NPI 0	Hotels 3	Office 3	Hotels 2	NPI 3	NPI 0

Source: NCREIF Property Index (As of September 2019). For illustrative purposes only. Actual results may vary.

- Industrial continued its streak of outperformance in 2019, while retail remained challenged
- Assessing property type returns and risks over an extend period (40 years) provides some interesting observations:
  - Apartments and industrial properties have generated the highest historical risk-adjusted returns (highest Sharpe ratio)
  - Apartments, retail and industrial have historically been top-performing sectors, with industrial returns quite notably decoupling from economic growth as e-commerce drives absorption
  - Hotel and office assets have historically underperformed, while exhibiting higher volatility; largely a function of cyclical exposure and elevated ongoing capital requirements

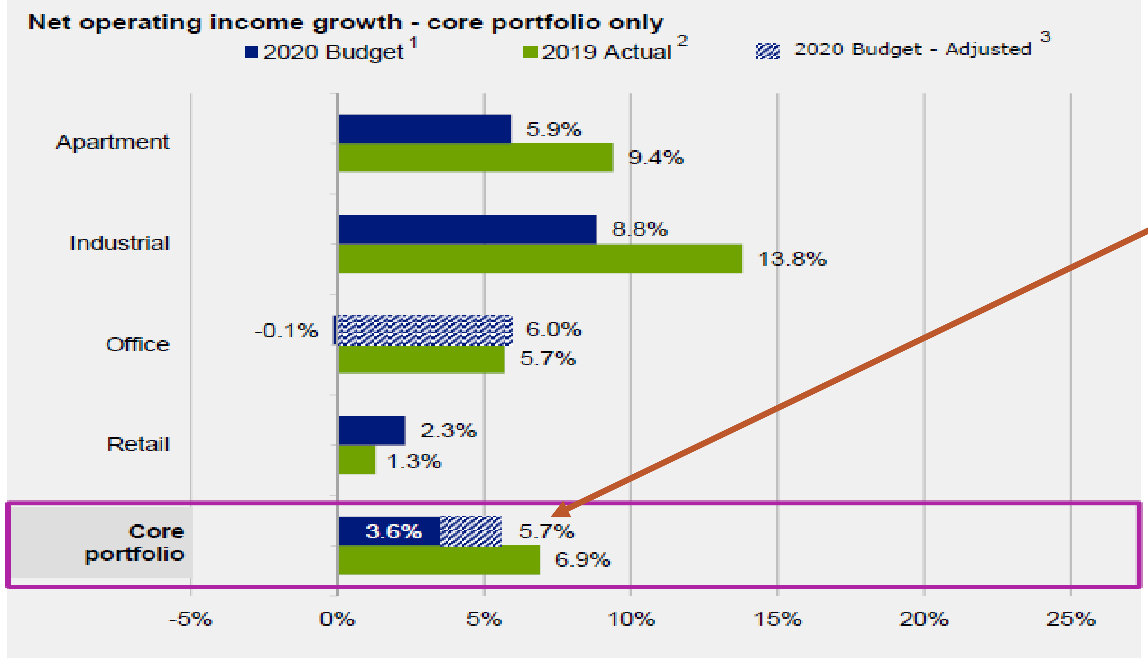
Real Estate considerations

- Investment Term? evergreen vs. closed fund
- Loan to Value? related to leverage and risk
- Cap rate? NOI vs. market value
- Mix by Type? office, industrial, retail, multifamily
- Mix by geography ?
- Vacancy/Occupancy ?
- Economic conditions? in/out migration, employment, housing

Current Investment: Invesco Core
High quality, conservative, US, diversified by property type and by market

Fundamentals
As of December 31, 2019

Growing income



- ICRE's Core Portfolio delivered robust NOI growth of 6.9% in 2019.
- 2020 Budgeted NOI Growth is 5.7% when adjusting for calendar year free rent abatements associated with the successful releasing of three top 20 tenants in the Fund.

Source: Invesco Real Estate internal reporting
[1] Represents the pool of core properties held as of December 31, 2019, including Manage-to-Core assets that migrated to Core in 2019. Excluding recently migrated to Core assets, NOI growth for 2020 is 2.9%.
[2] Represents the pool of core properties held as of December 31, 2018, including Manage-to-Core assets that migrated to Core in 2018. Excluding recently migrated to Core assets, NOI growth for 2019 was 3.6%. This excludes 2019 dispositions.
[3] Excludes free rent on signed leases with Williams Companies (Williams Tower), Reed Smith (101 Second) and Car Gurus (55 Cambridge).

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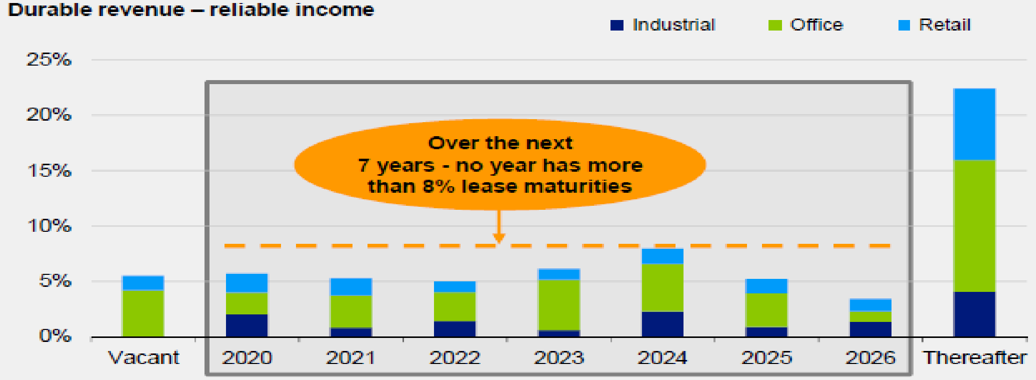
Invesco Core has 135 investors, and assets valued at $10.7B

Fundamentals
As of December 31, 2019

Durable income

Commercial lease rollover (as % of total base rental revenue)

Durable revenue – reliable income



Total portfolio leased	Q4 19
Apartment	95.3%
Industrial	99.0%
Office	93.5%
Retail	93.5%
Other	93.0%
Core portfolio	**94.9%**
Manage-to-core portfolio	61.4%
Total portfolio	**93.1%**

- **34% of Fund revenue is derived from the apartment portfolio – low volatility sector**
- **Top 10 tenants have a WARLT > 11.7 years**
- **Percent of revenue for largest tenant is 1.5%**
- **Favorable lease expiration schedule**

All types of RE, with good occupancy

Source: Invesco Real Estate analysis of underlying contractual lease expirations as of December 31, 2019
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FRESNO COUNTY FCERA EMPLOYEES' RETIREMENT ASSOCIATION

Valuation Summary
As of December 31, 2019

Lower cap rate but higher growth than the avg fund

Invesco

Core portfolio - unleveraged valuation metrics

Property type	Year 1 NOI yield (1)	Stabilized NOI yield (1)	10 year discount Rate	5 year average NOI yield (1)	Year 10 exit cap rate	5 year average rent growth
Apartment	3.94%	4.10%	5.97%	4.26%	4.63%	3.13%
Industrial	4.15%	4.27%	5.74%	4.43%	4.87%	3.11%
Office	4.05%	4.81%	6.35%	4.80%	5.50%	3.07%
Retail	4.40%	4.87%	6.13%	4.90%	5.12%	3.06%
Other	4.95%	4.95%	6.75%	5.33%	5.99%	3.23%
Total core portfolio	4.10%	4.51%	6.10%	4.59%	5.06%	3.10%
Change from prior year	*0.05%*	*0.03%*	*0.01%*	*0.01%*	*-0.01%*	*-0.13%*

- Stabilized NOI yield that is near-term and largely contractual
- Materially below ODCE on "big box" retail and suburban office
- Virtually no change in valuation yields over last 3 years

Contract Rents v Market Rents(2)

Property type	% Below Market
Industrial	-10%
Office	-17%
Retail	-9%
Total core commercial portfolio	-13%

- Commercial rents that are materially below market(2) provide embedded revenue growth

Source: Invesco Real Estate. Note: Figures above are core portfolio numbers only and are unleveraged metrics.
(1) Yields include market real estate taxes. (2) Based on Altus 3rd party data as of December 31, 2019.

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Note: FCERA also has $30mil committed to Value Add V

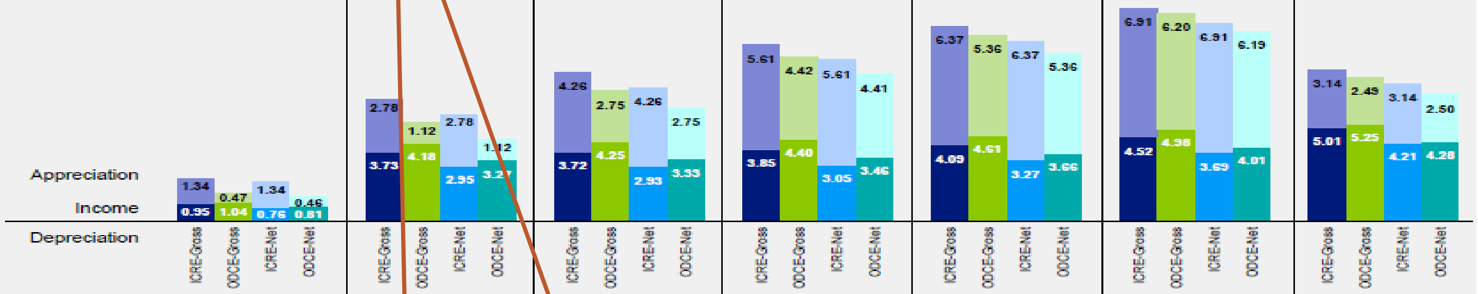
Invesco Core Real Estate

Performance (gross and net)

As of December 31, 2019

- **Strong absolute and relative performance across multiple market cycles.**

Annualized Performance (%)



Total Return (%)	4Q 19	One year	Three years	Five years	Seven years	Ten years	Since inception
ICRE – Gross	2.29	6.58	8.10	9.62	10.66	11.66	8.27
NFI-ODCE – CW Gross	1.51	5.34	7.09	8.97	10.17	11.42	7.84
ICRE – Net	2.10	5.78	7.28	8.78	9.80	10.79	7.45
NFI-ODCE – CW Net	1.27	4.39	6.13	7.98	9.17	10.39	6.85

This chart reflects the fund performance of the Invesco Core Real Estate-U.S.A., LP. The fund inception date is September 30, 2004. Returns for less than one year are not annualized.
More complete information about the Composite's construction and performance and the Global Investment Performance (GIPS®) compliant presentation of the Invesco North American Direct Real Estate Composite can be found in the appendix. A complete list of composites and performance results is available upon request. Past performance is not a guarantee of future results.
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Current Investment: Kennedy-Wilson Value-Add

- 2 Funds, V ($500mil total) and VI ($750mil total)
- Total FCERA commitment: $30mil + $30mil = $60mil
- Total FCERA contributions: $28mil + $19mil = $47mil
- IRR for both funds has been running around 20%
- Portfolio consists of mixture multi-family, office, industrial and a bit of retail, focused on Western US
- Comments from the company, Re: recent developments

  - **We continue to pay a dividend from our funds, and do not expect that to change**
  - **Both funds have been positioned in a conservative manner, comprised of high quality assets backed by good credit tenants in well located areas**
  - **We believe we were early in positioning Fund V in a defensive way when constructing the portfolio in 2014-2016, and Fund VI was, and will continue to be, constructed in the same manner.**
  - **We believe our assets will continue to hold up well in a turbulent market due to the conservative nature of the portfolio construction process**

EXECUTIVE SUMMARY

Fund V Snapshot

Projected Distribution of $2m in 1Q2020

Overview

$500 million U.S. value-add fund

- Acquired 21 assets totaling over $1.1 billion

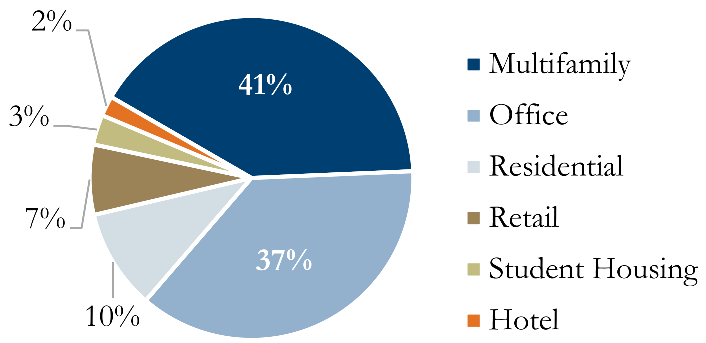
Over 9.5% cash dividend (TTM):

- 82% of contributed capital returned with 56% of assets of the portfolio yet to be realized
- **11 realizations generated a 29% IRR/1.9x MOIC**

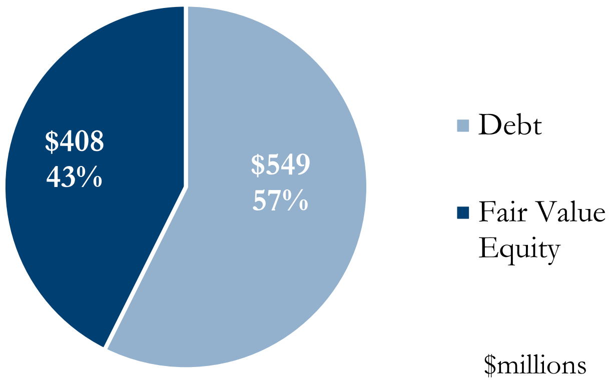
History

First Close:	September 2014
Final Close:	February 2016
Investment Period Ended:	September 2017
Projected End of Life:	2022 (8yr. life)
Targeted Gross IRR / MOIC:	Over 15% / 1.6x

Portfolio Allocation*



Debt/Fair Value Equity



KENNEDY WILSON

* When fully allocated

EXECUTIVE SUMMARY

Fund VI Snapshot

1st dividend paid $17.7m in January 2020
Annualized Dividend of 5.6%*

Overview

$775 million U.S. value-add fund

- To date, acquired 12 assets to date totaling over $800 million

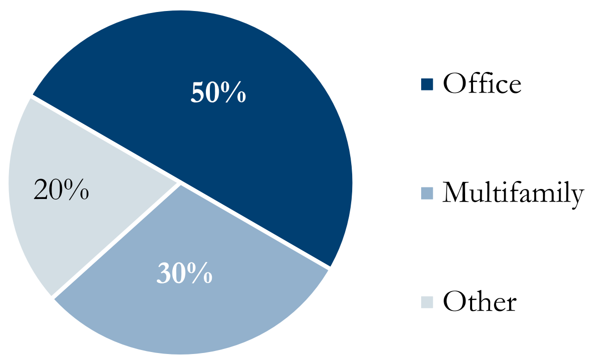
Projected 9.7% levered yield on current investments (TTM)

- 60% called
- 1st dividend paid $17.7 in January 2020

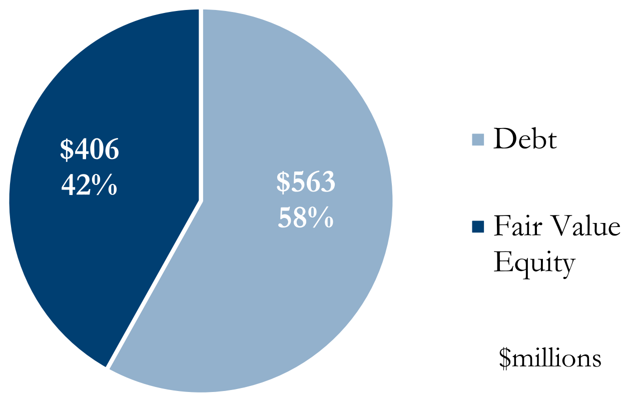
History

First Close:	June 2017
Final Close:	December 2019
Investment Period Ended:	November 2020
Projected End of Life:	2024 (8yr. life)
Targeted Gross IRR / MOIC:	Over 13% / 1.6x

Portfolio Allocation**



Debt/Fair Value Equity



KENNEDY WILSON

* Based on the projected annualized 1Q2020 distribution
** When fully allocated

FRESNO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION FCERA

IFM Infrastructure

- IFM: $42B AUM, 33 portfolio companies, 60 Board seats, Global Footprint
- FCERA is invested in a $23B fund with 16 portfolio companies
- Industries include: energy, utilities, transportation, specialty
- Open ended fund, large enough to take big bite, $500mil-$1.5B deals
- Investments: toll roads, oil pipelines, ports, utilities, airports
- Recent Acquisition: Buckeye Partners, midstream oil & gas
- 2019 Performance: +16.4%
- FCERA ownership: $165mil, with $21mil committed, and plans to add $5-10mil

Potential Board Considerations For Real Assets

- What will complement existing real estate allocations?
- Public (REIT's) or Private?
- Which geography?
- Which type? office, multifamily, retail, industrial, specialty (e.g. data centers)
- Which structure? core, value add, opportunistic, closed or open end

Recommendations

- Stay Active – Passive strategies are not nimble or broadly representative
- Stay Simple – Core Real Estate. Value Add and Opportunistic add too much risk in this environment
- Stay Private – REIT's are liquid and do well over time, but they do not offer diversification from public equities
- Stay Diversified by Type – office, industrial, retail, multifamily
- Stay Diversified Geographically – A focus on Silicon Valley or New York or Florida is ill advised
- Stay conservative – low LTV, high cap rate, good growth potential, long track record of good returns
- Find one new manager for the additional RE allocation