Equity Investing in Real Estate Through Public and Private Markets

January 17, 2018
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What is a REIT?

REITs are companies and own and manage income-producing real estate. REITs were developed to democratize real estate investment.

- **Asset and income** tests ensure returns reflect real estate investment.
  - At least 75 percent of assets are real estate.
  - At least 75 percent of income comes from ownership of real estate.

- **Ownership** tests ensure ordinary individuals are the main beneficiaries.
  - At least 100 shareholders with transferable shares.
  - Largest five shareholders cannot collectively own more than 50 percent.

- **Distribution** test ensures that real estate returns flow to individuals.
  - Must distribute at least 90 percent of taxable income in the form of dividends.
  - Distributions are deducted from taxable income to prevent double-taxation.
  - Most REITs distribute at least 100 percent of taxable income, so have no remaining income subject to taxation at the corporate level.

- The tests ensure that REIT shareholders have the same tax treatment as individuals or partnerships.

_Nareit._
What is “Public Real Estate”? 

- “Private real estate” can be offered to *qualified investors* but not to the general public. 
  - Private non-REITs 
    - Direct investment 
    - Co-investment (including joint ventures managed by a REIT) 
    - Separate accounts 
    - Many private equity investment funds 
  - Private REITs (including many other private equity investment funds) 
- “Public real estate” must be registered with the SEC and can be offered to the general public. 
  - Includes real estate operating companies (REOCs) as well as REITs 
- Public REITs may be *listed or unlisted*. 
  - Listed REITs are traded on major stock exchanges. 
  - Non-Listed REITs are sold directly to investors through broker-dealers. 
- Equity REITs own primarily physical real estate (e.g., buildings). 
- Mortgage REITs own primarily real estate debt (e.g., MBS). 
- My discussion focuses on listed equity REITs. 

Nareit
What Should We Talk About Today?

1. Long-term investment attributes of public and private real estate
   ▪ Correlations
   ▪ Volatilities
   ▪ Returns

2. The fundamental mixed-asset portfolio

3. The current real estate market situation
   ▪ Duration of the real estate market cycle
   ▪ The macro and interest rate environment
   ▪ Current REIT valuations
Long-Term Investment Attributes of Public and Private Real Estate
Who Is Getting Accurate Performance Measures?

Public and private measures of hotel returns, 2001-2002

NCREIF Hotel Index continued to decline until 2004Q1 and didn't recover to pre-9/11 levels until 2006Q2.
Most Sectors Show an Upward-Sloping Term Structure of Correlations with the Broad Stock Market

*Upward*-sloping term structure means long-term returns respond to the *same* drivers.

- Short-term returns may be affected by information that is of questionable value to investors with long horizons.
- Returns for most companies are driven by developments in the *business cycle*.

*Downward*-sloping term structure means long-term returns respond to *different* drivers.

- Returns in the Materials and Energy sectors are driven by developments in the *commodities market cycle*.

Source: Nareit analysis of monthly total returns for the Russell 3000 and S&P sector indices, January 1990 through December 2017. Note: Consumer Discretionary sector not shown for reasons of space.
Declining REIT-stock correlation over increasing investment horizons indicates that asset returns increasingly differ as spillover (mispricing) effects are corrected.

Declining correlation as errors are corrected is a sign that underlying return drivers are fundamentally different—that is, REITs and non-REITs represent different asset classes.

REIT returns respond to the long real estate market cycle, whereas the broad stock market responds to the much shorter business cycle.
Measurement Lag in Private Real Estate

Source: Nareit analysis of quarterly appreciation data from FTSE Nareit PureProperty Index, NCREIF (NPI and NTBI), CoStar CRSI, and RCA CPPI, 2002Q3-2017Q3.
**Upward-Sloping Term Structure of Correlations between Public and Private Real Estate**

- An upward-sloping term structure of correlations is characteristic of indices that are in the same asset class but where measurement problems affect reported short-term returns.
  - Private real estate returns are measured with several sources of error:
    - Transaction lag (about two quarters)
    - Appraisal lag (about one quarter)
    - Non-appraisal (one to three quarters)
    - Appraisal error (12 percent on average)
  - Listed REIT returns are affected by spillover from non-REIT segments of the stock market.

- Correlations computed from short-term return measures are artificially depressed by return measurement problems.

- Correlations increase as the investment horizon lengthens, reflecting the correction of both return measurement problems in private real estate and mispricings in listed REITs.

- Cointegration analysis confirms that “the correlation between Nareit and NCREIF returns approaches one as the investment horizon lengthens.”

Source: Nareit analysis of quarterly total returns for the FTSE Nareit All Equity REITs Index, NCREIF Property Index, and NCREIF ODCE Index, 1978Q1-2017Q3 and the Cambridge Associates Real Estate Fund Index, 1986Q1-2017Q2. Quotation is from “The Long-Run Dynamics Between Direct and Securitized Real Estate” by Oikarinen, Hoesli & Serrano [2011].
# CEM Benchmarking: REIT Correlations with U.S. Equities and Unlisted Real Estate

## Key Correlations: Equities, REITs and Unlisted Real Estate


<table>
<thead>
<tr>
<th></th>
<th>U.S. Large Cap</th>
<th>U.S. Small Cap</th>
<th>Non-U.S. Equities</th>
<th>Unlisted Real Estate</th>
<th>REITs</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Large Cap</td>
<td>1.00</td>
<td>0.92</td>
<td>0.89</td>
<td>0.49</td>
<td>0.55</td>
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<tr>
<td>U.S. Small Cap</td>
<td></td>
<td>1.00</td>
<td>0.89</td>
<td>0.58</td>
<td>0.64</td>
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<tr>
<td>Non-U.S. Equities</td>
<td></td>
<td></td>
<td>1.00</td>
<td>0.55</td>
<td>0.58</td>
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<td>Unlisted Real Estate</td>
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<td>REITs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
</tr>
</tbody>
</table>

Source: CEM Benchmarking, 2017
What Should We Talk About Today?

1. Long-term investment attributes of public and private real estate
   - Correlations ✓ both provide asset class diversification
   - Volatilities
   - Returns

2. The fundamental mixed-asset portfolio

3. The current real estate market situation
   - Duration of the real estate market cycle
   - The macro and interest rate environment
   - Current REIT valuations
## Public and Private Real Estate Have Virtually Identical Volatilities, Conditional on the Use of Leverage

<table>
<thead>
<tr>
<th>Capital Appreciation</th>
<th>Total Return</th>
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<tbody>
<tr>
<td></td>
<td>Unlevered REITs</td>
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<tr>
<td>Apartment</td>
<td>10.4%</td>
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<tr>
<td>Industrial</td>
<td>10.9%</td>
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<tr>
<td>Office</td>
<td>11.2%</td>
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<tr>
<td>Retail</td>
<td>11.8%</td>
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<tr>
<td>East Region*</td>
<td>11.7%</td>
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<tr>
<td>Midwest Region*</td>
<td>10.6%</td>
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<tr>
<td>South Region*</td>
<td>10.0%</td>
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<tr>
<td>West Region*</td>
<td>11.6%</td>
</tr>
<tr>
<td>Aggregate*</td>
<td>10.9%</td>
</tr>
</tbody>
</table>

Source: Nareit analysis of quarterly data from NCREIF Transaction Based Index (NTBI) and FTSE Nareit PureProperty® Index Series, 2002Q3-2017Q3. Quarterly returns for the NTBI are based on all properties in the NCREIF Property Index (NPI) data base that transacted at any time during each quarter; quarterly returns for the PureProperty are based on only the last transaction of stock for each constituent REIT during each quarter. *Includes health care and hotel properties, which are typically slightly more volatile.

Private real estate is illiquid, and therefore significantly more risky than public real estate.
What Should We Talk About Today?

1. Long-term investment attributes of public and private real estate
   - Correlations ✓ both provide *asset class* diversification
   - Volatilities ✓ almost identical equity-like volatility for both
   - Returns

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## Net Total Returns Through a Full Real Estate Market Cycle

<table>
<thead>
<tr>
<th>Form of Real Estate Investment</th>
<th>Typical Leverage</th>
<th>Average Fees and Expenses</th>
<th>Duration of Real Estate Cycle</th>
<th>Full-Cycle Net Total Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlevered Properties</td>
<td>0 percent</td>
<td>≈100 basis points</td>
<td>17¼ years 1990Q3 - 2008Q2</td>
<td>275 percent 7.7 percent / year</td>
</tr>
<tr>
<td>Open-End Diversified Core Funds</td>
<td>≈22 percent</td>
<td>107 basis points</td>
<td>17¼ years 1990Q3 - 2008Q2</td>
<td>272 percent 7.7 percent / year</td>
</tr>
<tr>
<td>Value-Add Private Equity Real Estate Funds</td>
<td>≈51 percent</td>
<td>170 basis points</td>
<td>17¼ years 1990Q3 - 2007Q4</td>
<td>348 percent 8.9 percent / year</td>
</tr>
<tr>
<td>Opportunistic Private Equity Real Estate Funds</td>
<td>≈64 percent</td>
<td>257 basis points</td>
<td>17½ years 1990Q3 - 2008Q1</td>
<td>716 percent 12.9 percent / year</td>
</tr>
<tr>
<td>Exchange-Traded Equity REITs</td>
<td>≈38 percent</td>
<td>≈52 basis points</td>
<td>17½ years 1989Q3 - 2007Q1</td>
<td>802 percent 13.4 percent / year</td>
</tr>
</tbody>
</table>

Source: Nareit analysis of quarterly net total returns. Unlevered properties: NCREIF Property Index, assuming fees and expenses of 25 basis points per quarter. Open-End Diversified Core Funds: NCREIF ODCE Index. Value-Add and Opportunistic Private Equity Real Estate Funds: NCREIF/Townsend Funds Index. Exchange-Traded Equity REITs: FTSE Nareit All Equity REIT Index, assuming fees and expenses of 13 basis points per quarter. Returns are not adjusted for differences in leverage.

REITs significantly outperformed every category of private real estate, especially at the property level.
Net Income and Capital Appreciation Components of Net Total Return, 1988q3-2013q3

Source: Nareit analysis of data from NCREIF Property Index (unlevered core properties), NCREIF ODCE Index (core funds), NCREIF/Townsend Fund Indices (value added and opportunistic funds), and FTSE Nareit All Equity REITs Index (equity REITs). Expenses for equity REITs are estimated at 50 bps per year, distributed equally across all months; expenses for unlevered core properties are assumed to equal 100 bps per year, distributed equally across all quarters. Expenses are attributed to income returns only, in accordance with ODCE. Assumes no reinvestment of net income.
Every Academic Study Ever Conducted Has Found that Public Real Estate Outperformed Private Real Estate

- Kiehelä & Fakenbach (2015): PERE funds constantly and significantly underperformed the public market.
- Andonov, Eichholtz & Kok (2014): REITs delivered a higher gross return as compared to direct real estate investments.
- Ling & Naranjo (2014): Unlevered core REITs outperformed their private market benchmark by 49 basis points (annualized) over the 1994-2012 sample period.
- Fisher & Hartzell (2013): Real estate private equity rarely out-performed REITs, and for some vintages the underperformance was substantial.
- Alcock, Baum, Colley & Steiner (2013): We find evidence for systematic underperformance (by private equity real estate investment funds).
- Andonov, Kok & Eichholtz (2013): Indirect real estate has done better for pension funds in three ways: the gross return was higher, the cost wedge between gross and net was lower, and the benchmark-adjusted return was positive.
- Urban Land Institute (2011): This research concludes that real estate funds in general have not delivered the required risk/return characteristics that investors would have expected or are led to believe.
- Bond & Mitchell (2010): The widespread finding is that very few managers investing in the direct real estate market appear to be able to generate excess risk-adjusted returns.
- Tsai (2007): At the all-sector level, the difference in mean returns between the REIT index and NPI is found to be 2.66% after return restatement.
- Riddiough, Moriarty & Yeatman (2005): Annualized NCREIF index returns over the entire sample period were 7.36%, compared to an adjusted annualized return of 10.44% for the REIT index.
- Pagliari, Scherer & Monopoli (2005): The data indicate that REITs outperformed private-market real estate by approximately 3.0% per annum.
CEM Benchmarking: REITs Outperformed Other Major Asset Classes: 1998 to 2015


REITs provided higher average net total returns than all other asset categories over:
- all three available 15-year periods
- five of the eight 10-year periods
- four of the thirteen 5-year periods
- six of the fifteen 3-year periods

Source: CEM Benchmarking, 2017
CEM Benchmarking: REITs Delivered Superior Risk Adjusted Returns


REITs provided higher Sharpe ratios than all other equity asset categories over:
- all three available 15-year periods
- five of the eight 10-year periods
- four of the 13 5-year periods
- three of the 15 3-year periods

Source: CEM Benchmarking, 2017
Why Have REITs Outperformed Private Real Estate?

- **Transparency vs Opacity**
  - Myth: investment managers must protect their ideas and strategies.
  - Reality: opacity protects managers when they make poor decisions; transparency subjects them to *capital market discipline*.

- **Liquidity vs Lock-Up**
  - Myth: good investments can be made only if investors lock up capital.
  - Reality: illiquidity protects managers when they make poor decisions; liquidity subjects them to *capital market discipline*.

- **Access to Capital**
  - Myth: the distribution requirement prevents REITs from having access to capital, so prevents them from making good investments.
  - Reality: REITs have access to capital from all parts of the market; unrestricted capital enables managers to make poor decisions, while the REIT distribution requirement subjects them to *capital market discipline*. 
Why Have REITs Outperformed Private Real Estate?

- Corporate Governance / Alignment of Interest
  - Incentive compensation for REIT executives is almost entirely restricted stock.
  - Management fees and “promotes” drive a wedge between the interests of private equity fund managers and investors.

- Public/Private Arbitrage Opportunity
  - REITs tend to
    - buy properties (and sell securities) when properties are inexpensive on the private market
    - sell properties (and buy securities) when properties are expensive on the private market
  - REITs own about 20 percent of institutional-quality real estate assets
What Should We Talk About Today?

1. Long-term investment attributes of public and private real estate
   - Correlations ✓ both provide asset class diversification
   - Volatilities ✓ almost identical equity-like volatility for both
   - Returns ✓ REITs have consistently outperformed private real estate

2. The fundamental mixed-asset portfolio

3. The current real estate market situation
   - Duration of the real estate market cycle
   - The macro and interest rate environment
   - Current REIT valuations
The Fundamental Mixed-Asset Portfolio
Long-Term Average Total Returns for REITs are Similar to Other Equity Investments

<table>
<thead>
<tr>
<th></th>
<th>1-year</th>
<th>3-year</th>
<th>5-year</th>
<th>10-year</th>
<th>15-year</th>
<th>20-year</th>
<th>25-year</th>
<th>30-year</th>
<th>35-year</th>
<th>40-year</th>
<th>45-year</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTSE Nareit All Equity REITs</td>
<td>8.67</td>
<td>6.67</td>
<td>9.83</td>
<td>7.77</td>
<td>11.13</td>
<td>9.12</td>
<td>10.89</td>
<td>10.78</td>
<td>11.60</td>
<td>12.52</td>
<td>11.94</td>
</tr>
<tr>
<td>FTSE EPRA/Nareit Developed</td>
<td>11.16</td>
<td>5.30</td>
<td>7.15</td>
<td>4.07</td>
<td>10.41</td>
<td>8.35</td>
<td>9.94</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Russell 1000 (Large-Cap Stocks)</td>
<td>21.69</td>
<td>11.23</td>
<td>15.71</td>
<td>8.59</td>
<td>10.18</td>
<td>7.39</td>
<td>9.78</td>
<td>10.84</td>
<td>11.49</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Russell 2000 (Small-Cap Stocks)</td>
<td>14.65</td>
<td>9.96</td>
<td>14.12</td>
<td>8.71</td>
<td>11.17</td>
<td>7.89</td>
<td>9.54</td>
<td>10.46</td>
<td>10.19</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Bloomberg Barclays US Aggregate Bond</td>
<td>3.54</td>
<td>2.24</td>
<td>2.10</td>
<td>4.01</td>
<td>4.15</td>
<td>4.98</td>
<td>5.48</td>
<td>6.36</td>
<td>7.22</td>
<td>7.37</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: Nareit analysis of monthly total returns through December 2017.
Steady Dividends are an Important Component of Total Returns

- REIT income returns have averaged 5.22 percent per year
  - 49 percent of their total
- U.S. stock income returns have averaged 1.98 percent per year
  - 20 percent of their total
- U.S REITs distributed $60 billion in dividends in 2016.

Source: Nareit analysis of monthly total returns in USD for the FTSE Nareit All Equity REIT Index, FTSE EPRA/Nareit Developed Real Estate Index, Russell 3000 Total U.S. Stock Market Index, and MSCI All-Country World Stock Index as of December 2017.
## REITs have Relatively Low Correlations with All Major U.S. and Global Asset Classes

<table>
<thead>
<tr>
<th></th>
<th>Listed U.S. Mortgage REITs</th>
<th>Non-U.S. LPCs</th>
<th>U.S. REIT Preferred Stocks</th>
<th>U.S. Large-Cap Stocks</th>
<th>U.S. Small-Cap Value Stocks</th>
<th>Non-U.S. Stocks</th>
<th>U.S. Bonds</th>
<th>Non-U.S. Bonds</th>
<th>Volatility (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity REITs</td>
<td>0.54</td>
<td>0.70</td>
<td>0.48</td>
<td>0.59</td>
<td>0.52</td>
<td>0.46</td>
<td>0.31</td>
<td>0.30</td>
<td>11.7</td>
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<td>Mortgage REITs</td>
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<td>Non-U.S. Listed Property Companies</td>
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<td>U.S. REIT Preferred Stocks</td>
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<td>U.S. Large-Cap Stocks</td>
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<td>U.S. Small-Cap Value Stocks</td>
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<td>U.S. Bonds</td>
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</tbody>
</table>

Portfolio Allocations to Real Estate

Different researchers, methodologies and time periods

- **Wilshire Analysis Surplus Optimization 1990-2016**: 19%
- **Wilshire Analysis Surplus Optimization 1990-2012**: 18%
- **Morningstar Analysis Liability Relative Investing 1990-2009**: 20%
- **Wilshire Analysis Surplus Optimization 1990-2016**: 19%
- **Morningstar Analysis Fat Tail Optimization 1990-2009**: 20%
- **Morningstar Analysis Mean Variance Optimization 1990-2010**: 20%
- **Morningstar Analysis Mean Variance Optimization 1990-2007**: 21%
- **Morningstar Analysis Mean Variance Optimization 1990-2012**: 19%

Note: Allocations to any asset class will depend on the optimization methodology employed, the time period covered by the analysis, the assets included in the opportunity set, and the expected return assumptions.
Real Estate is One of the Four *Fundamental* Asset Classes

- Real estate investment has long been recognized as a core asset class by large and small institutional investors, including pension and retirement funds.
  
  “Basically, there are only four types of investment categories that you need to consider: Cash, Bonds, Common Stocks and Real Estate.”
  
  – Burton G. Malkiel, PhD (Economist, Princeton), *The Random Walk Guide to Investing*

- Real estate investment provides a unique combination of attributes:
  - Hybrid investment returns with elements of both stocks and bonds
  - Investment grade real property assets provide a measure of inflation hedging
  - Real estate cycle does not coincide with the overall economic cycle
  - Moderate correlation with other assets over time provides potential diversification
What Should We Talk About Today?

1. Long-term investment attributes of public and private real estate
   ▪ Correlations ✓ both provide asset class diversification
   ▪ Volatilities ✓ almost identical equity-like volatility for both
   ▪ Returns ✓ REITs have consistently outperformed private real estate

2. The fundamental mixed-asset portfolio ✓

3. The current real estate market situation
   ▪ Duration of the real estate market cycle
   ▪ The macro and interest rate environment
   ▪ Current REIT valuations
The Current
Real Estate Market
Situation
Typical Duration of the Cyclical Real Estate Bull Market is 15-16 Years

- The long *cyclical* real estate bull market may include *non-cyclical* months or quarters of negative performance.
- To date the duration of the current cyclical bull market is far less than previous cyclical bull markets.
- Average total returns to date have been comparable to the equivalent segment of previous cyclical bull markets, despite beginning from the trough of a liquidity crisis.
Typical Duration of Cyclical Real Estate Expansions is 13-16 Years

- The cyclical expansion starts when the recovery from the previous cyclical downturn has been completed.

- The long *cyclical* real estate expansion may include *non-cyclical* months or quarters of negative performance.

- To date the duration of the current cyclical expansion is far less than previous cyclical expansions.

- Average total returns to date have been far less than during previous cyclical expansions.

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Monthly data as of December 2017. Source: Nareit analysis of FTSE Nareit All Equity REIT Index total returns.
Typical Duration of the Real Estate Market Cycle is Close to 18 Years

- The long real estate market cycle may encompass several weak non-cyclical months or quarters.
- To date the duration of the current cycle is far less than previous cycles.
- Average total returns to date have been far lower than over full previous market cycles.
- The typical duration of the real estate market cycle was first observed in 1933 by the great real estate market researcher Dr. Homer Hoyt.

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Nareit. Monthly data as of December 2017. Source: Nareit analysis of FTSE Nareit All Equity REIT Index total returns.
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   - Correlations ✓ both provide *asset class* diversification
   - Volatilities ✓ almost identical equity-like volatility for both
   - Returns ✓ REITs have consistently outperformed private real estate

2. The fundamental mixed-asset portfolio ✓

3. The current real estate market situation
   - Duration of the real estate market cycle ✓ still young
   - The macro and interest rate environment
   - Current REIT valuations
Typical Signs of a Downturn Are Absent

- Recessions have typically followed periods when the share of GDP from cyclical segments was abnormally high.
- Currently the share of GDP from cyclical segments is still abnormally low.

Source: Nareit analysis of data from U.S. Bureau of Economic Analysis and Haver Analytics.
Construction Still Hasn’t Recovered to Normal

- From 1993 until the start of the Great Financial Crisis the real value of new construction put in place averaged more than 1.5 percent of GDP.
- As a result of the GFC new construction plummeted to less than half its previous average.
- Since the GFC construction grew to about 1.4 percent of GDP before declining slightly during 2017.

Source: Nareit analysis of data from U.S. Census Bureau, U.S. Bureau of Economic Analysis, and Haver Analytics.
Real Estate Operating Fundamentals Remain Favorable

- Net absorption (i.e. growth of demand) exceeds new supply for most property types in most markets.
- New construction is in check and vacancy rates are low, supporting modest increases in rents.

Source: CoStar, Nareit.
REITs Have Often Outperformed the Broad Stock Market During Periods of Rising Interest Rates

Source: Nareit analysis of quarterly intervals of 12-month rolling returns for Nareit All Equity REIT Index, S&P 500, and 10-Year Treasury Constant Maturity Rate (via FRED).
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   - Returns ✓ REITs have consistently outperformed private real estate

2. The fundamental mixed-asset portfolio ✓

3. The current real estate market situation
   - Duration of the real estate market cycle ✓ still young
   - The macro and interest rate environment ✓ favorable
   - Current REIT valuations

Nareit.
Dividend Yield Spreads have Signaled Future REIT Performance

- The spread between average REIT dividend yields and the yields on other income-oriented investments has provided a valuable signal for future REIT total returns and for future REIT outperformance relative to the broad stock market.
  - Yield spread to Baa-rated corporates (shown)
  - Yield spread to high-quality corporates
  - Yield spread to 10-year Treasuries

- Current REIT dividend yield spreads are abnormally high, suggesting strong future REIT total returns and strong future REIT outperformance relative to the broad stock market.

Source: Nareit analysis of monthly total returns from the FTSE Nareit All Equity REIT Index and Russell 3000 stock index, December 1990 – December 2017; yield spread is month-end average equity REIT yield minus Moody’s Baa-rated bonds (via FRED).
Regression Analysis Also Suggests Bullish Future REIT Return Expectations

- Regression suggests that average annualized returns over subsequent three-year periods have generally been about 21.5 percent plus 7.43 times the yield spread to high-yield corporates.

- The -0.29 percent yield spread at the beginning of January 2018 suggests three-year equity REIT returns averaging around 19.4 percent per year.

- The analysis provides qualitatively similar conclusions for yield spreads to other assets, and for future periods other than the next three years.

Source: Nareit analysis of monthly total returns from the FTSE Nareit All Equity REIT Index and Russell 3000 stock index, December 1990 – October 2017; yield spread is month-end average equity REIT yield minus monthly market yield on Moody’s Baa-rated bonds (via FRED).
Public Real Estate Seems Inexpensive Relative to Private Real Estate

- “Unlevered real estate has historically offered a return that is somewhere between the yield on investment-grade corporate bonds and the yield on high-yield bonds. In order to bring current premium in line with its long-term average relative to these two assets, real estate values need to change by +7%.”
- “On average, REITs have traded roughly at parity relative to asset value/NAV over the last twenty+ years. Based on prevailing share prices and the resultant observed premium/discount, public-market investors are effectively assuming that real estate values will change by -5%.”
- “Assuming that unlevered property values revert to their long-term relationship relative to fixed-income alternatives, REIT share prices should change by +19%.”

Source: Green Street Advisors, Inc., based on NAV estimates for U.S. REITs under coverage (excluding hotels) as of January 2, 2018.
Listed Equity REITs Seem Inexpensive Relative to Private Real Estate

- Equity analysts focusing on the real estate market may provide a valuable source of information for investors making tactical decisions to allocate between
  - REITs and private real estate
  - REITs and non-REIT stocks
- Equity analysts focusing on the real estate market generally believe that REITs have been underpriced since mid-2016.

Graph depicts an indexed version of RMZ, a measure of REIT fair value relative to stock and fixed-income alternatives developed and published by Green Street Advisors. Index values between -1 and +1 represent RMZ values within the “Fair” range defined by Green Street Advisors; index values less than -1 represent RMZ values within the “Cheap” range, while index values greater than +1 represent RMZ values within the “Overpriced” range. Index values between -0.5 and -1 represent RMZ values near the “Inexpensive” end of the Fair Value Range, index values between -0.5 and +1 represent RMZ values near the “Pricey” end of the Fair Value Range, and index values between -0.5 and +0.5 represent RMZ values near the middle of the Fair Value Range. Green Street Advisors includes the following statement of “limitations” of its RMZ analysis: (1) Predictive power is best over long (about 2 years out) time frames; (2) the value of external growth prospects is ignored; (3) it addresses values relative to stocks/bonds, but not absolute valuations; (4) high leverage necessitates a wide range for fair value; and (5) it’s right only a little more often than it’s wrong.” Source: Nareit analysis of data from Green Street Advisors.
Equity REIT Premiums to Net Asset Value Also Signal Future Performance

- The average equity REIT stock price premium / discount to estimated net asset value (P-NAV) has provided a valuable signal for future REIT total returns and for future REIT outperformance relative to the broad stock market.

- Current REIT stock prices are abnormally low relative to net asset value, suggesting strong future REIT total returns and strong future REIT outperformance relative to the broad stock market.

Source: Nareit analysis of monthly total returns from the FTSE Nareit All Equity REIT index and Russell 3000 stock index, December 1990 – December 2017; yield spread is month-end average equity REIT yield minus monthly market yield on Moody’s Baa-rated bonds (via FRED).
What Should We Talk About Today?

1. Long-term investment attributes of public and private real estate
   - Correlations ✓ both provide asset class diversification
   - Volatilities ✓ almost identical equity-like volatility for both
   - Returns ✓ REITs have consistently outperformed private real estate

2. The fundamental mixed-asset portfolio ✓

3. The current real estate market situation
   - Duration of the real estate market cycle ✓ still young
   - The macro and interest rate environment ✓ favorable
   - Current REIT valuations ✓ all metrics seem to be in distinctly bullish ranges
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