



Pennsylvania Association of Public Employee Retirement Systems

May 26, 2016

12th Annual Spring Forum



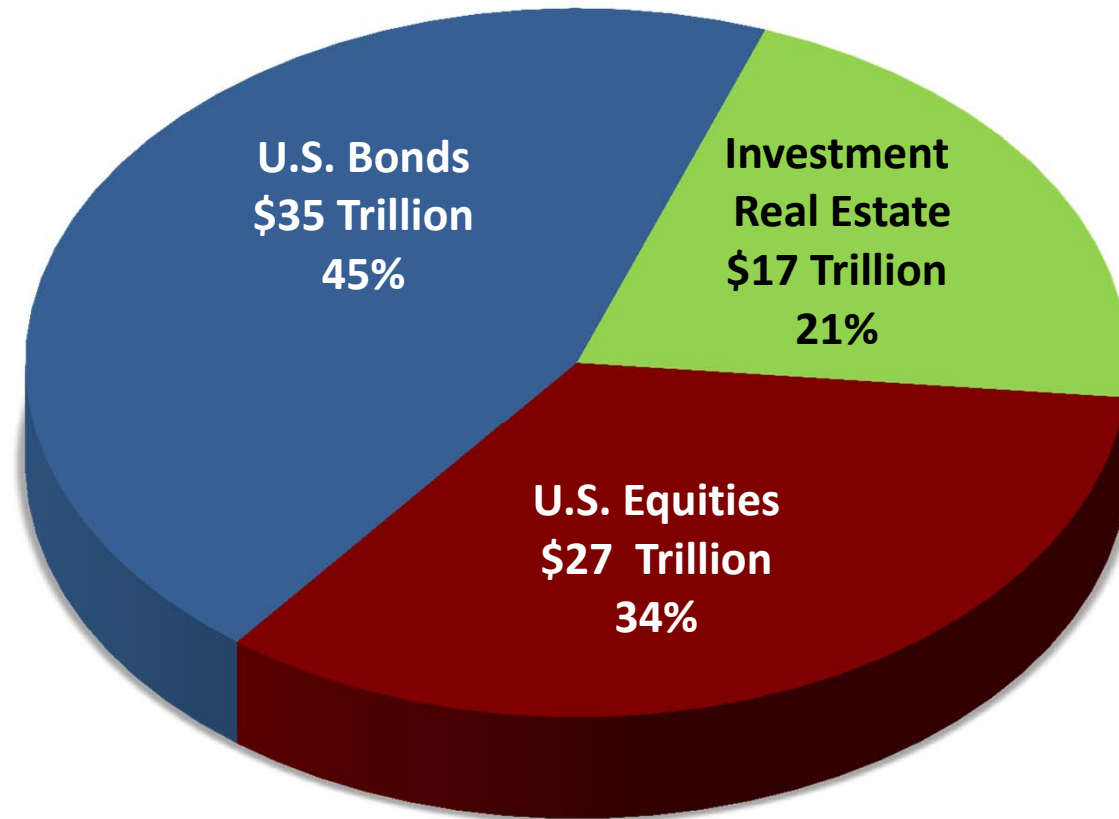
National Association of Real Estate Investment Trusts®
REITs: Building Dividends & Diversification®

1875 I St, NW Suite 600, Washington, DC 20006 • 202-739-9400

REIT.com®
All Things REIT®

Investment Real Estate is a Large Asset Class

Third Largest Asset in U.S. Investment Market Basket

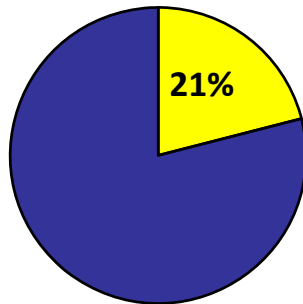


Sources: Stock and Bond data from Financial Accounts of the United States; investment real estate market data from NAREIT analysis based on Florance, Miller, Peng & Spivey, "Slicing, Dicing, and Scoping the Size of the U.S. Commercial Real Estate Market" (2010), adjusted using Moody's/RCA CPPI, CoStar CRSI, and FTSE NAREIT PureProperty Index.

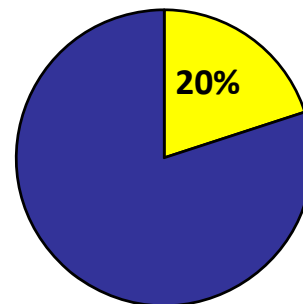
Portfolio Allocations to Global Real Estate

Different Researchers, Methodologies And Time Periods

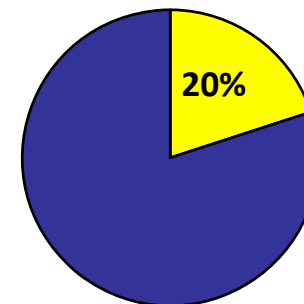
**Morningstar Analysis
Mean Variance Optimization
1990-2007**



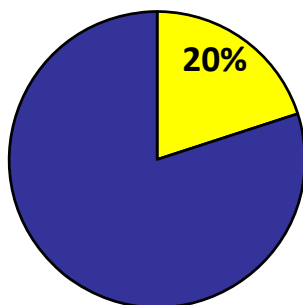
**Morningstar Analysis
Mean Variance Optimization
1990-2010**



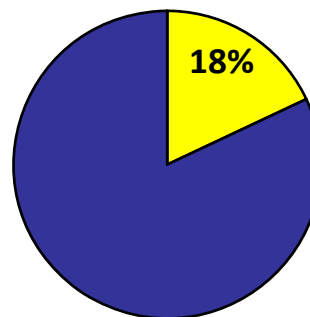
**Morningstar Analysis
Fat Tail Optimization
1990-2009**



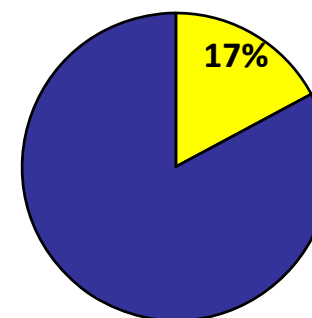
**Morningstar Analysis
Liability Relative Investing
1990-2009**



**Wilshire Analysis
Surplus Optimization
1990-2012**

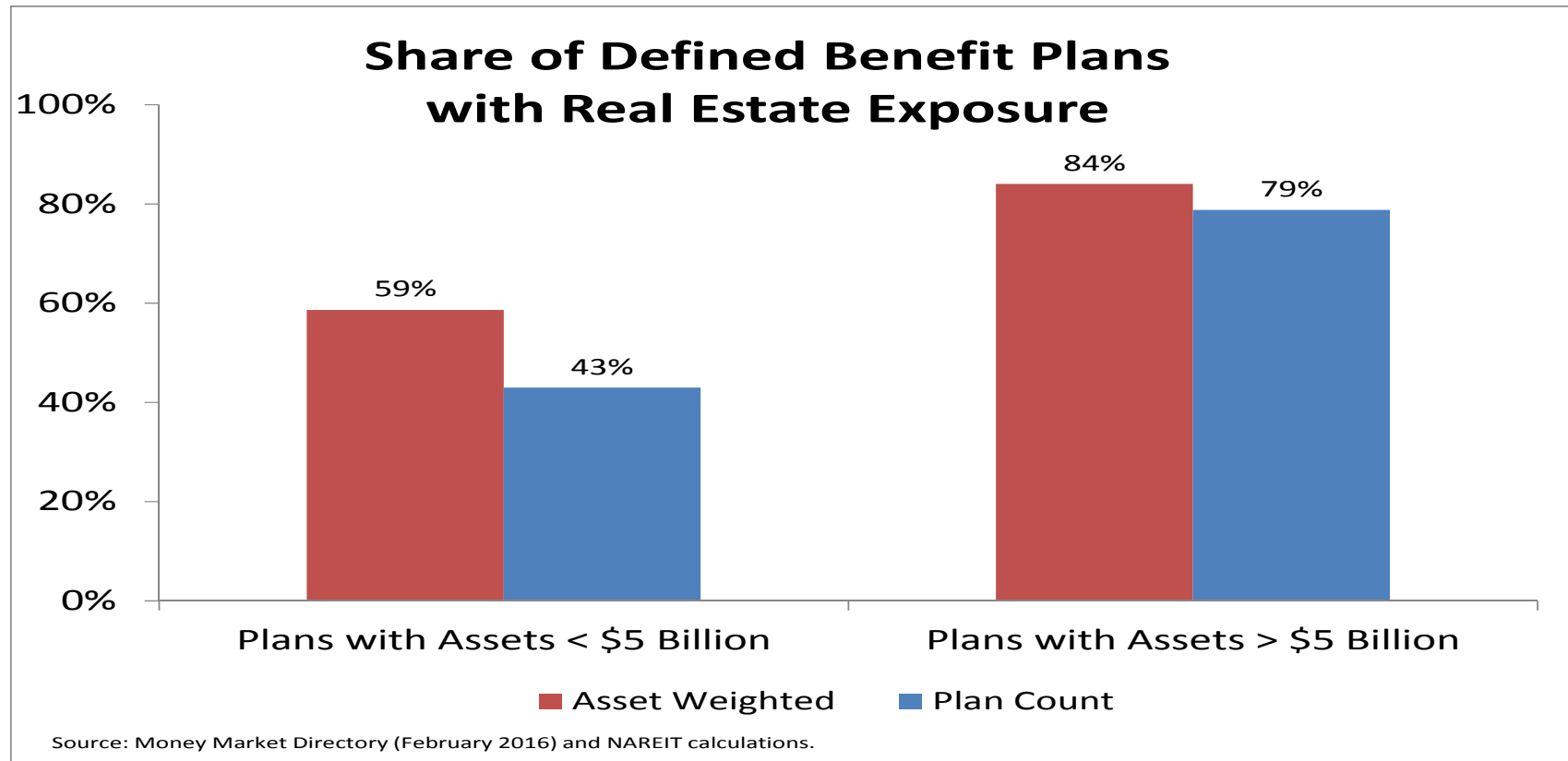


**Wilshire Analysis
Surplus Optimization
1990-2015**



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.

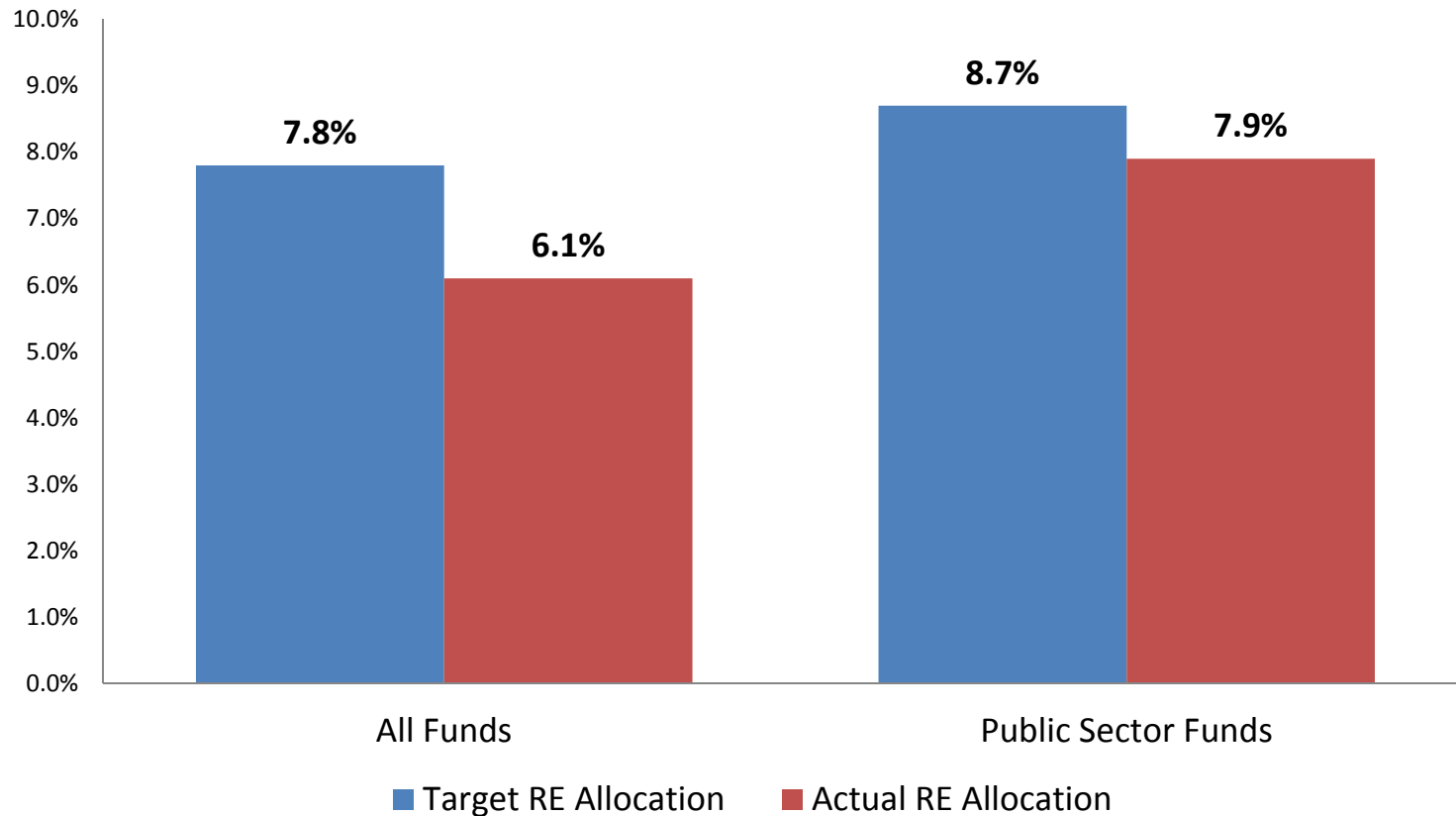
Real Estate: Recognized as a Core Asset Class by Large & Small Institutional Investors



- Commercial real estate investment provides:
 - 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

Real Estate Allocations of Institutional Investors

Current and target allocation Ranges: December 2015



- Across all plans investing in real estate, the average actual allocation is 6.1%; while the average targeted allocation is 7.8%; suggesting more capital is available for investment

Source: Preqin Real Estate Online

Investing in REITs is Investing in Real Estate

Key Classification System Changes

System	Year ¹	Details
North American Industry Classification System (NAICS)	2007	U.S. Office of Management and Budget (OMB) reclassified equity REITs from “Finance and Insurance” to “Real Estate and Rental and Leasing”
Morningstar®	2010	Morningstar® reclassified equity REITs from the Financial Services sector to a new and distinct Real Estate sector
Global Industry Classification Standard® (GICS®)	2016	S&P Dow Jones Indices and MSCI to reclassify REITs in a new 11 th headline sector for Real Estate

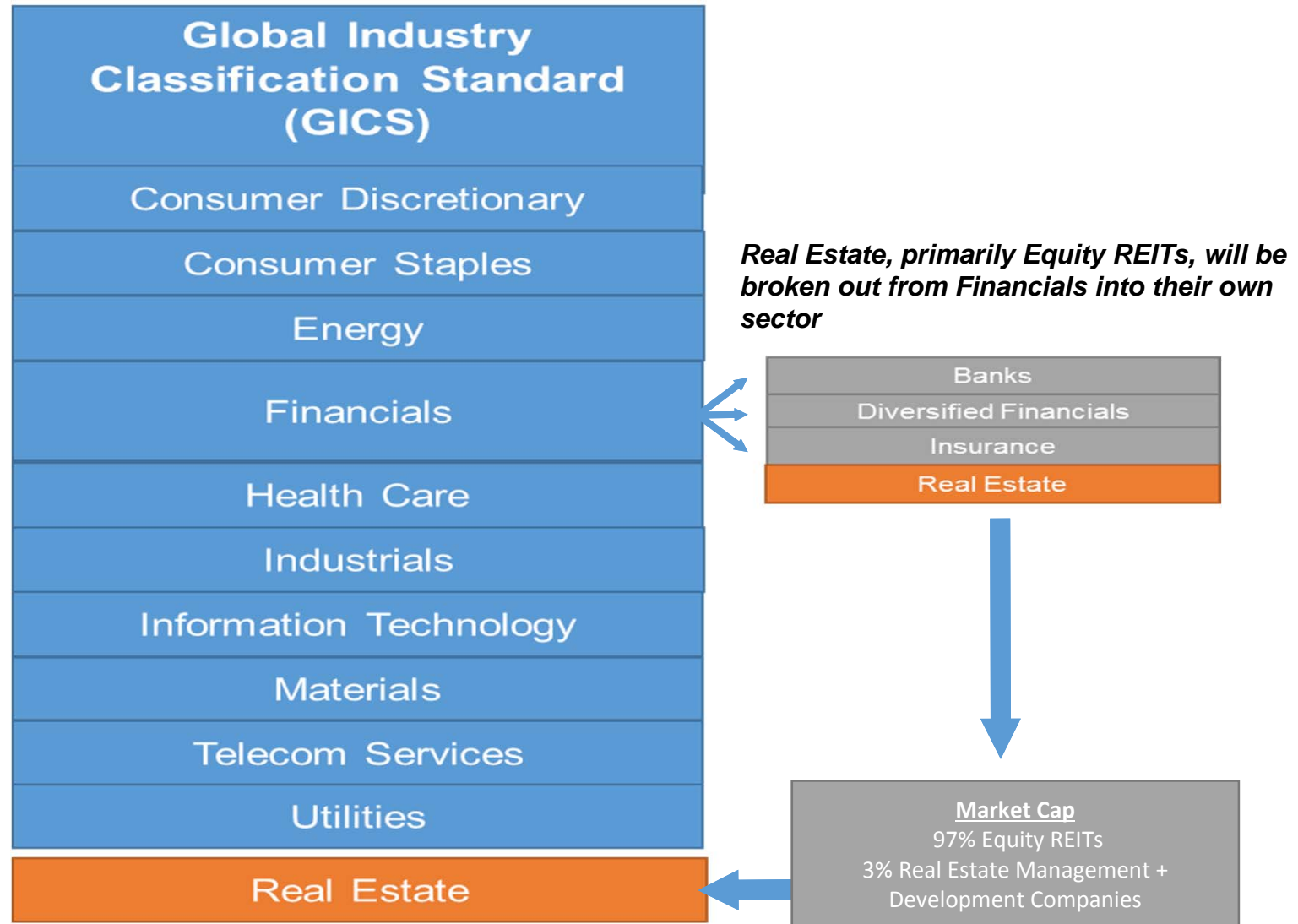
Implications

- Further affirms that:
 - real estate is a separate and distinct asset class
 - stock exchange-listed equity REITs are part of the real estate asset class
- Makes real estate a more *visible* asset class
- Will influence how listed real estate companies, including listed equity REITs are understood by investors and how they are positioned within investment products such as mutual funds and exchange-traded funds (ETFs), and could, over time, further enhance the diversification benefits provided by equity REITs
- With real estate recognized as a top-line asset class, these changes further affirm that allocations to real estate and REITs are fundamental to a well-diversified portfolio

¹Implementation year

Reclassification of Real Estate in GICS

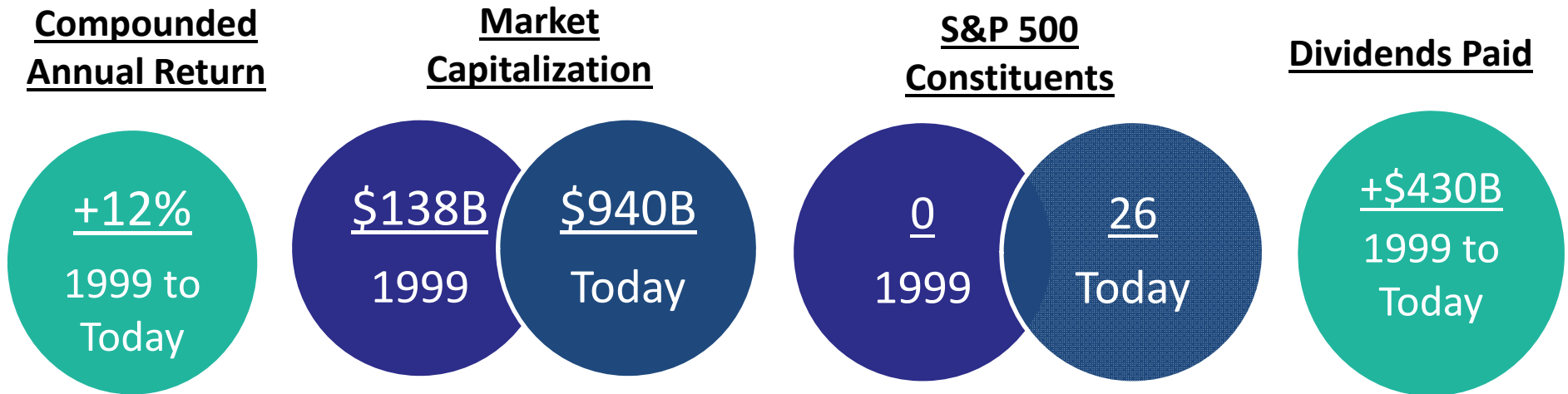
Real Estate will become a separate 11th GICS sector on August 31st



REIT
FINANCIALS

REIT Industry Expansion

The growth of REITs since GICS was created called for a headline Real Estate Sector



GICS Real Estate Sector will be Bigger than Telecom, Utilities and Materials Sectors

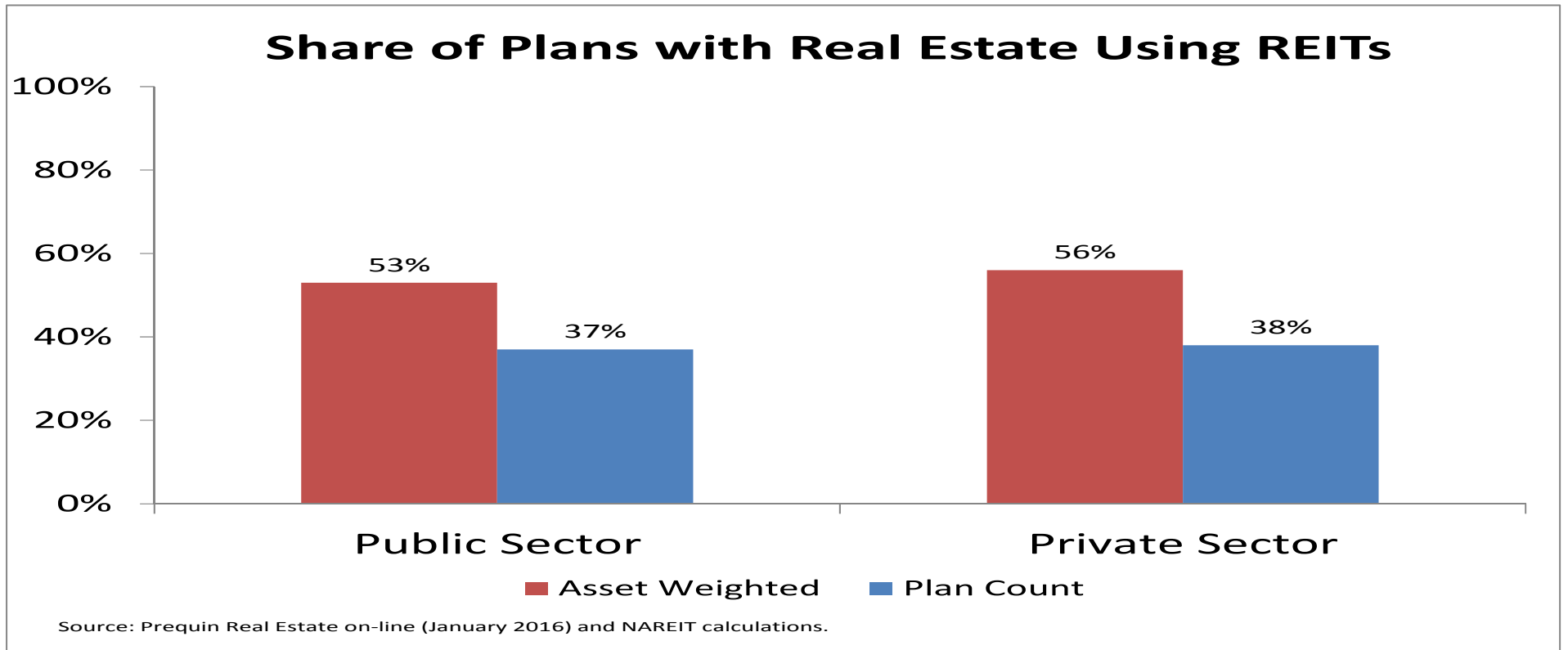
Equity REITs are Real Estate

So did investor recognition that Equity REITs are Real Estate, a separate asset class from Financials

“Feedback from the annual GICS structural review confirmed that Real Estate is now viewed as a distinct asset class and is increasingly being incorporated separately into the strategic asset allocation of asset owners.”

Remy Briand, Managing Director and Global Head Equity Research, MSCI

Real Estate and REITs are Widely Used by Institutional Investors



Commercial real estate investment typically is accessed through direct property investment, private equity real estate funds, and listed real estate investment trusts (REITs) and property companies.

Historical Compound Annual Total Returns of REITs and Leading U.S. Benchmarks (%)

	FTSE NAREIT All Equity REITs	FTSE EPRA/NAREIT Developed	S&P 500	Russell 2000	Barclays Capital US Aggregate Bond Index
1-Year	4.66	1.27	1.78	-9.76	1.96
3-Year	9.85	6.25	11.82	6.84	2.50
5-Year	11.56	8.46	11.58	7.20	3.78
10-Year	6.52	4.57	7.01	5.26	4.90
15-Year	11.54	9.96	5.99	7.65	4.97
20-Year	11.07	8.48	7.98	7.68	5.59
25-Year	11.46	8.83	9.28	9.29	6.16
30-Year	10.41	N/A	9.93	8.58	6.59
35-Year	11.89	N/A	10.98	9.62	8.17
40-Year	13.37	N/A	11.00	N/A	7.65

Note: Monthly data as of March 2016

Sources: NAREIT® analysis of data from IDP accessed through FactSet.

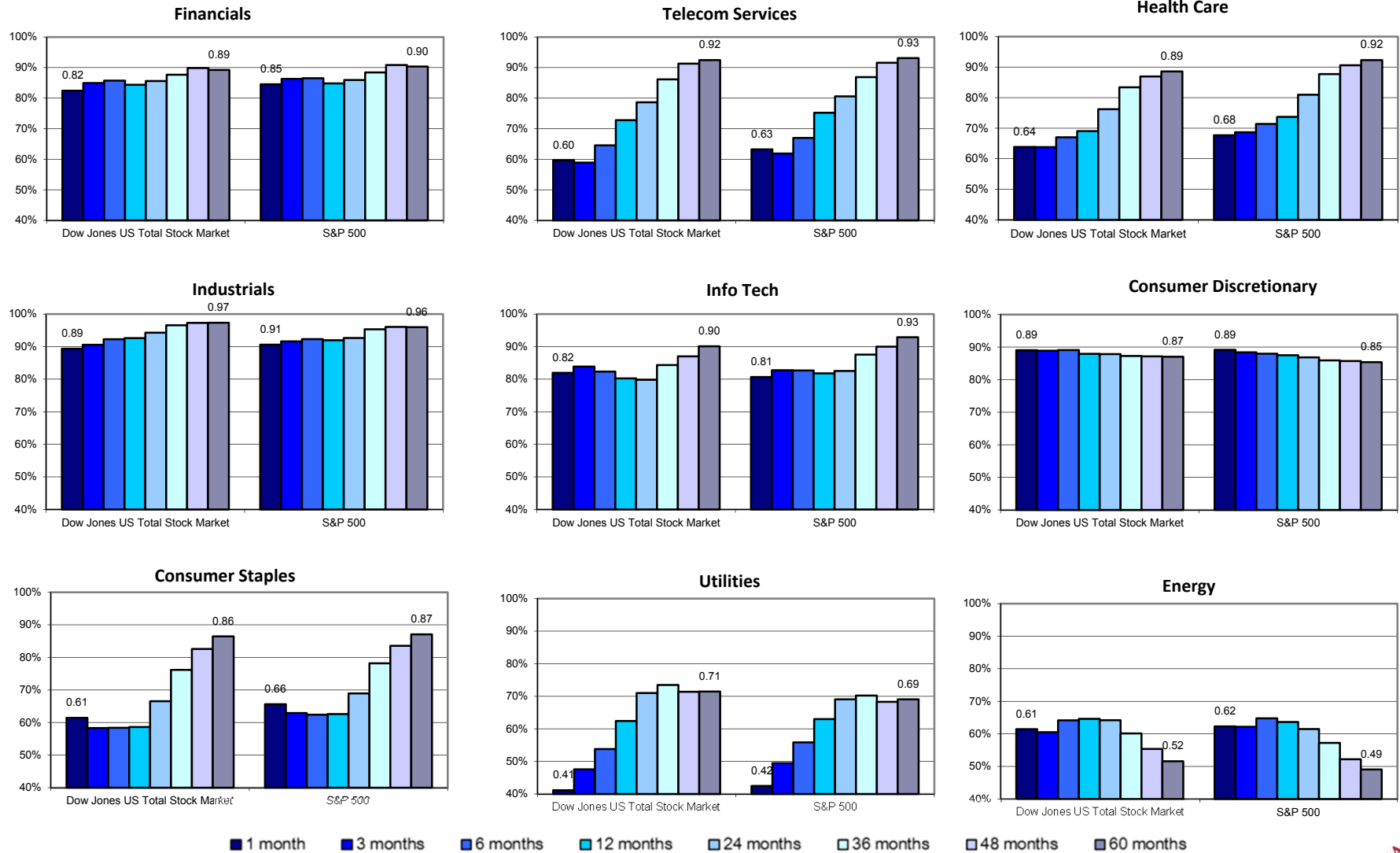
Listed REITs

A high utility asset in institutional investment portfolios

Listed REITs and real estate securities have strategic and tactical portfolio management applications.

- An investment in the real estate asset class
- An efficient way to gain global real estate exposure
- A complement to direct property investment and unlisted property funds

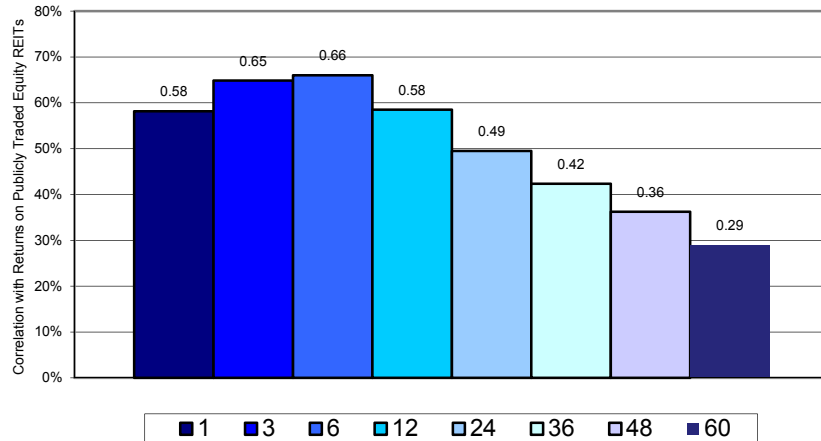
Term Structure of Correlations for Most Stock Market Sectors with Broad Stock Market Returns is Consistently Upward-Sloping



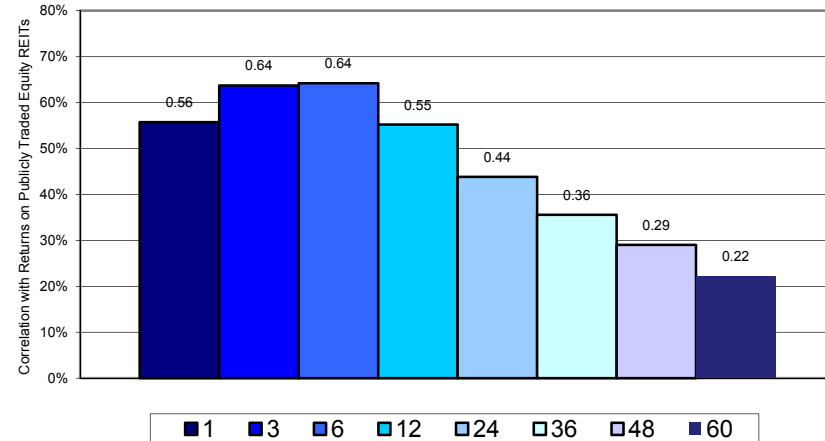
Source: NAREIT® analysis of monthly returns data for January 1990 through March 2016 from Interactive Data Pricing and Reference Data accessed through FactSet.

REIT-Stock Correlations *Decline* as Investment Horizon Lengthens

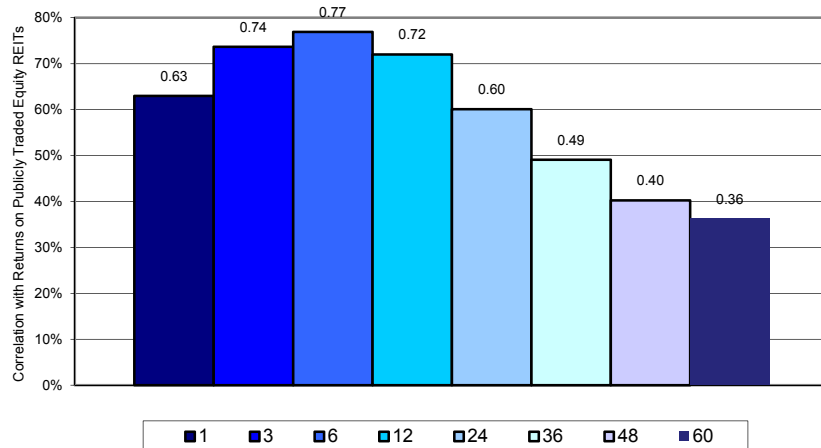
Correlations Between REITs and Dow Jones US Total Market Index



Correlations Between REITs and S&P 500 Index



Correlations Between REITs and S&P Financial Sector Index

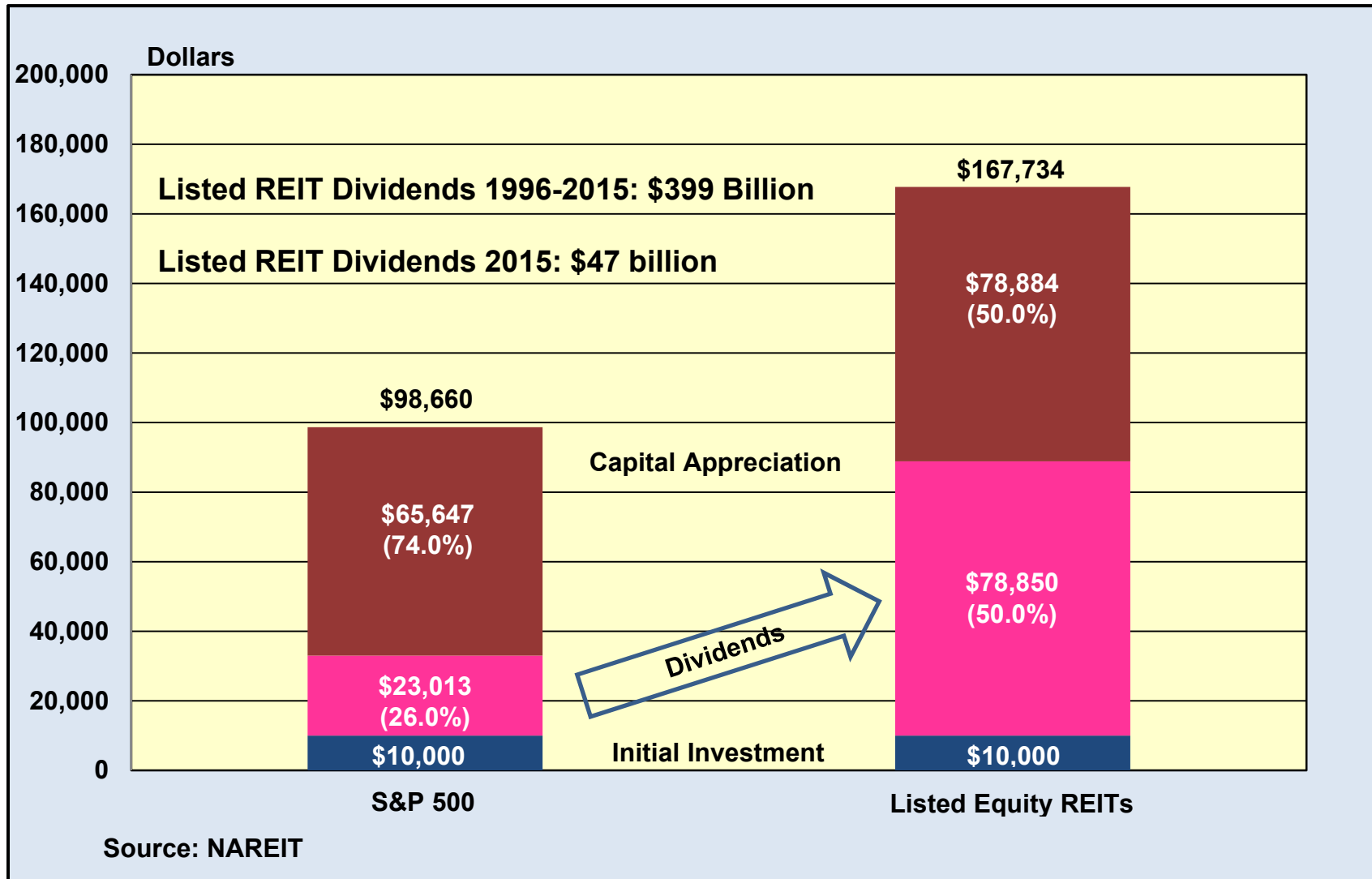


- Declining REIT-stock correlation over increasing investment horizons indicates that asset returns increasingly *differ* as spillover (mispricing) effects are corrected
- Declining correlation as errors are corrected is a sign that underlying return drivers are fundamentally different—that is, REITs and non-REIT stocks represent different asset classes

Source: NAREIT® analysis of monthly returns data for January 1990 through March 2016 from Interactive Data Pricing and Reference Data accessed through FactSet.

Listed REITs Have Paid Reliable Dividends

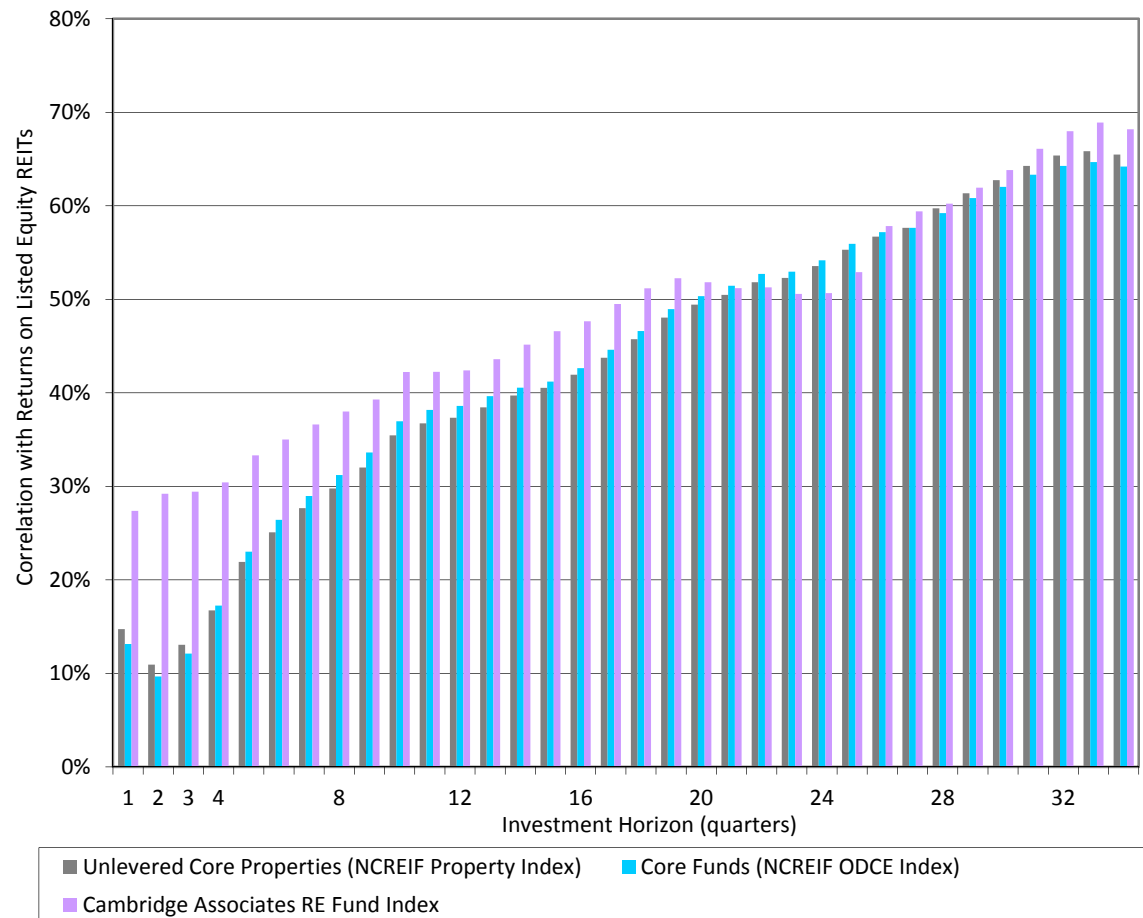
\$10,000 invested Dec 1990 through Feb 2016 (dividends reinvested)



Term Structure of Correlations for REITs with Private Real Estate is Strongly *Upward-Sloping*, Indicating Common Return Drivers

- Correlations increase as the investment horizon lengthens as REIT mispricing and appraisal errors are corrected
- This correlation pattern, called “upward-sloping term structure of correlations,” is characteristic of indexes in the same asset class that are measured with “error”
- Contemporaneous correlations do not correct for 4-5 quarter lag in measuring returns of private real estate

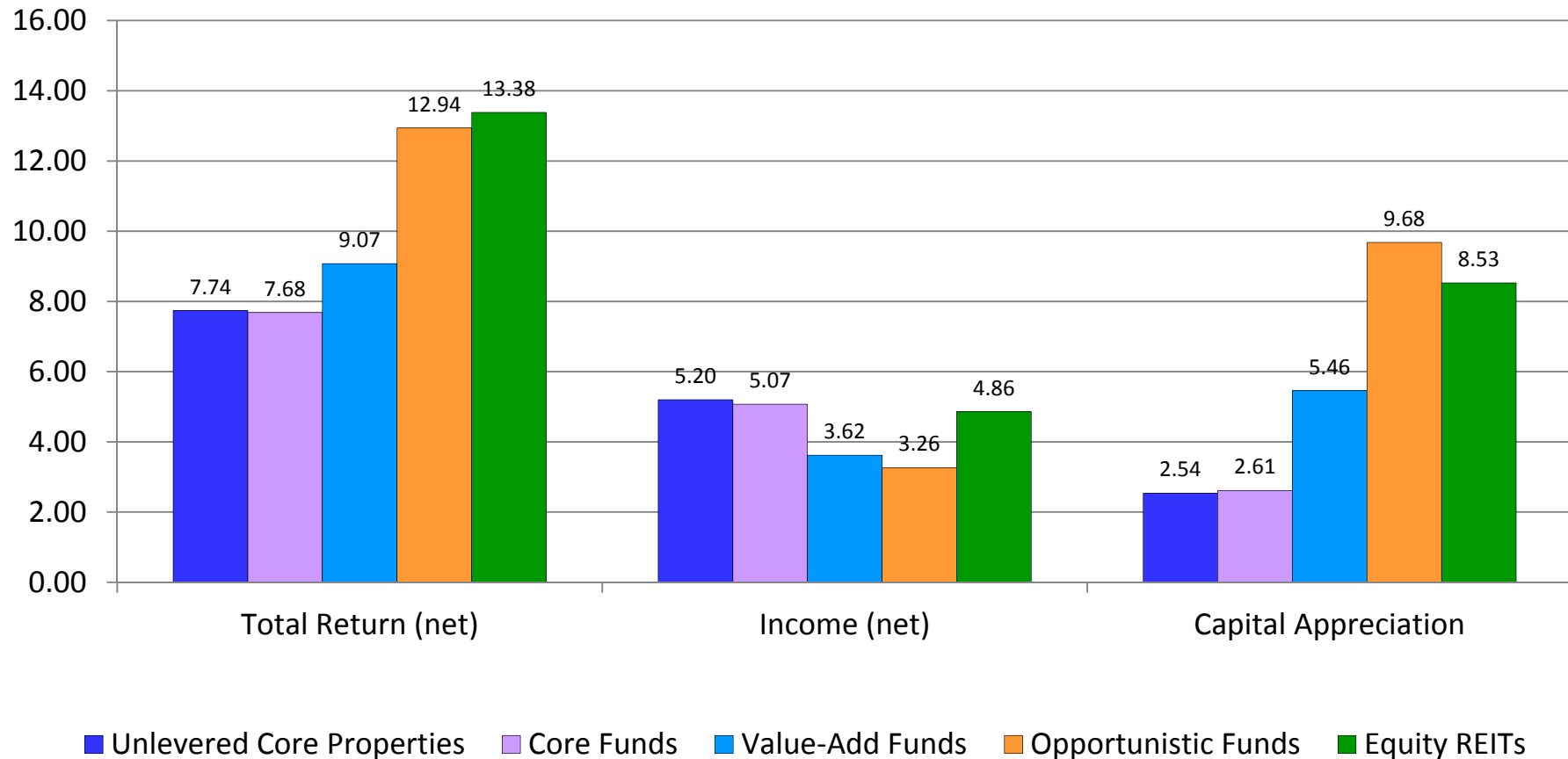
Correlations Between Public and Private Real Estate Returns Increase with the Investment Horizon



Source: NAREIT® analysis of data from FTSE NAREIT All Equity REITs Index, NCREIF Property Index, and NCREIF Open-End Diversified Core Equity (ODCE) Fund Index, 1978Q1-2015Q4; and from Cambridge Associates Real Estate Fund Index, 1986Q1-2015Q2.

Net Income from REITs has been Comparable to Net Income from Unlisted Core Institutional Real Estate Investments

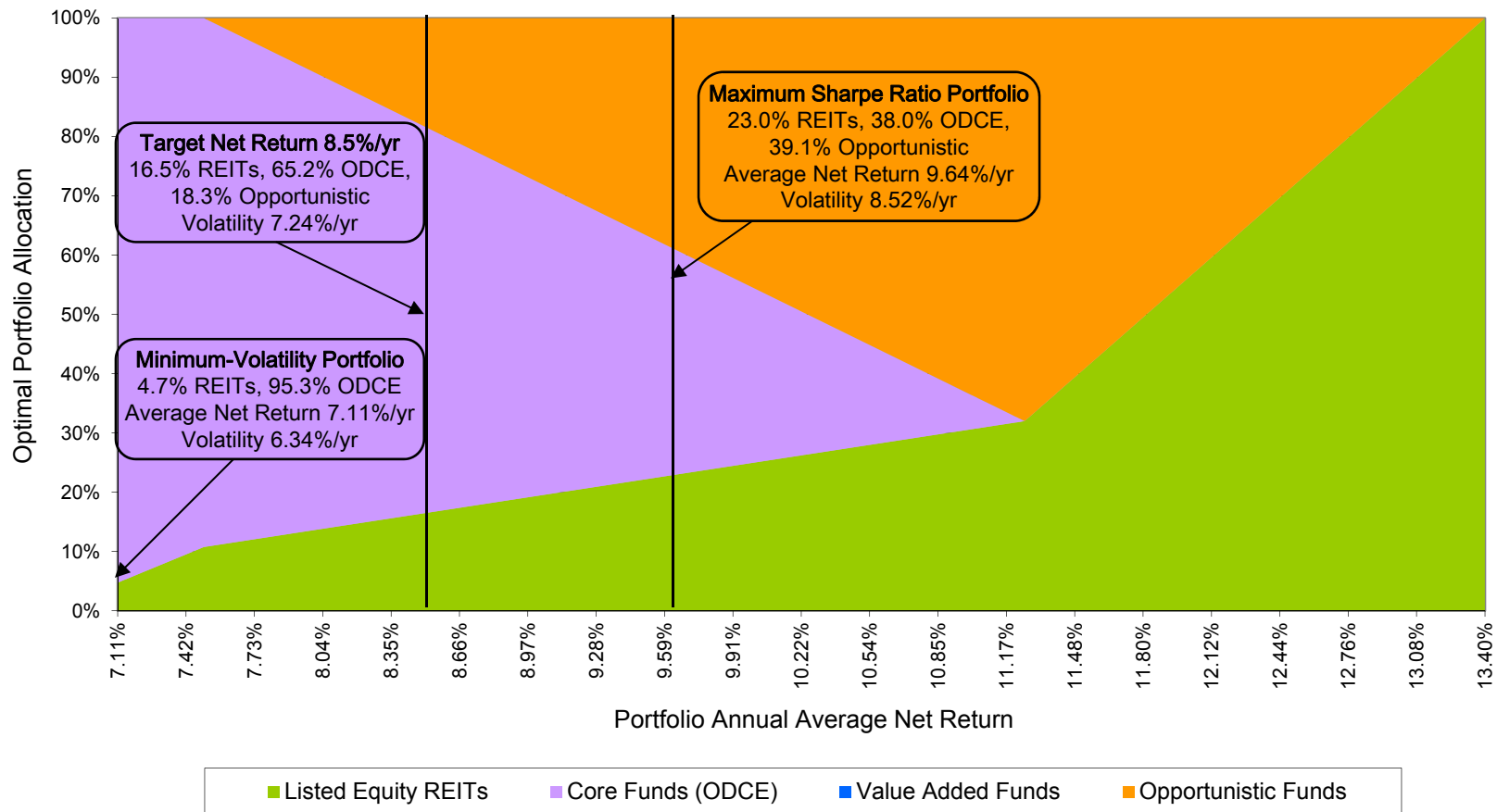
**Income and Capital Appreciation Components of Net Total Return
Through the Real Estate Market Cycle, 1989/90 – 2007/08**



Sources: 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 full reinvestment of net income.

REITs and Private Real Estate Funds in a Blended Portfolio

Optimal Allocations



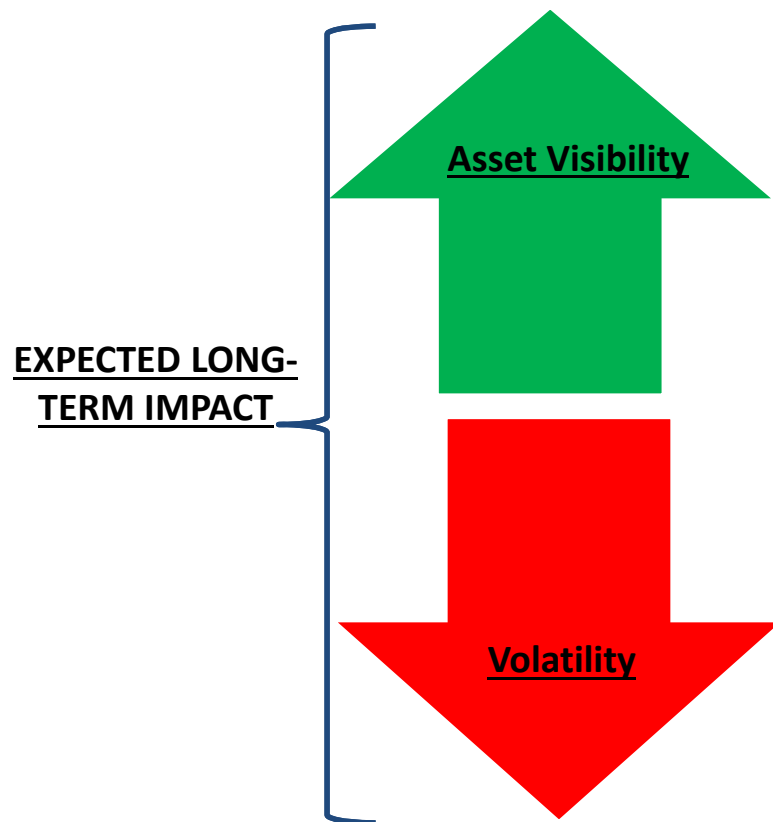
- Optimally blended portfolios of both REITs and private equity real estate funds take full advantage of the diversification between the public and private sides of the real estate market
- Optimized portfolios have produced better risk-adjusted returns than either REITs or private equity real estate funds alone

Note: Based on quarterly net total returns for NCREIF/Townsend Fund Indices (ODCE, Value Added, and Opportunistic) and FTSE NAREIT Equity REITs Index for 1992q1–2013q3. Fees and expenses are assumed to be 50 bps per year for publicly traded equity REITs; fees and expenses for core, value added, and opportunistic funds are as reported by NCREIF. Source: NAREIT® analysis of data from NCREIF and FTSE NAREIT Equity REITs Index

Implications of GICS Real Estate Sector :

Broader recognition of REITs as a core portfolio investment

Increase awareness of REITs, improve their trading environment, promote investment



- **Visibility and understanding:** Makes real estate a more *visible* asset class and will increase understanding of the asset class. Over time this should result in increased demand.
- **Increased demand:** U.S. equity funds have been underweight real estate. Analysts estimate that funds would need to buy more than \$100 billion in REITs to achieve a market-neutral position in the new real estate sector.*
- **Reduce volatility, improve diversification benefits:** The GICs change will separate REITs from the financial sector and increase liquidity, promote better understanding of the sector, and ultimately reduce volatility.

* Thomas Bohjalian, Cohen & Steers.

Disclaimer

NAREIT is the worldwide representative voice for REITs and listed real estate companies with an interest in U.S. real estate and capital markets. Members are REITs and other businesses that own, operate and manage income-producing real estate, as well as those firms and individuals who advise, study and service those businesses. NAREIT is the exclusive registered trademark of the National Association of Real Estate Investment Trusts, Inc.®, 1875 I St., NW, Suite 600, Washington, DC 20006-5413. Follow us on REIT.com.

Copyright© 2016 by the National Association of Real Estate Investment Trusts, Inc.® All rights reserved.

This information is solely educational in nature and is not intended by NAREIT to serve as the primary basis for any investment decision. NAREIT is not acting as an investment adviser, investment fiduciary, broker, dealer or other market participant, and no offer or solicitation to buy or sell any security or real estate investment is being made. Investments and solicitations for investment must be made directly through an agent, employee or representative of a particular investment or fund and cannot be made through NAREIT. NAREIT does not allow any agent, employee or representative to personally solicit any investment or accept any monies to be invested in a particular security or real estate investment.

All REIT data are derived from, and apply only to, publicly traded securities. While such data are believed to be reliable when prepared or provided, such data are subject to change or restatement. NAREIT does not warrant or guarantee such data for accuracy or completeness, and shall not be liable under any legal theory for such data or any errors or omissions therein. See <http://reit.com/TermsOfUse.aspx> for important information regarding this data, the underlying assumptions and the limitations of NAREIT's liability therefore, all of which are incorporated by reference herein.

Performance results are provided only as a barometer or measure of past performance, and future values will fluctuate from those used in the underlying data. Any investment returns or performance data (past, hypothetical or otherwise) shown herein or in such data are not necessarily indicative of future returns or performance.

Before an investment is made in any security, fund or investment, investors are strongly advised to request a copy of the prospectus or other disclosure or investment documentation and read it carefully. Such prospectus or other information contains important information about a security's, fund's or other investment's objectives and strategies, risks and expenses. Investors should read all such information carefully before making an investment decision or investing any funds. Investors should consult with their investment fiduciary or other market professional before making any investment in any security, fund or other investment.

For more information please visit: www.reit.com