

# REAL ESTATE AND INFRASTRUCTURE MARKET UPDATE

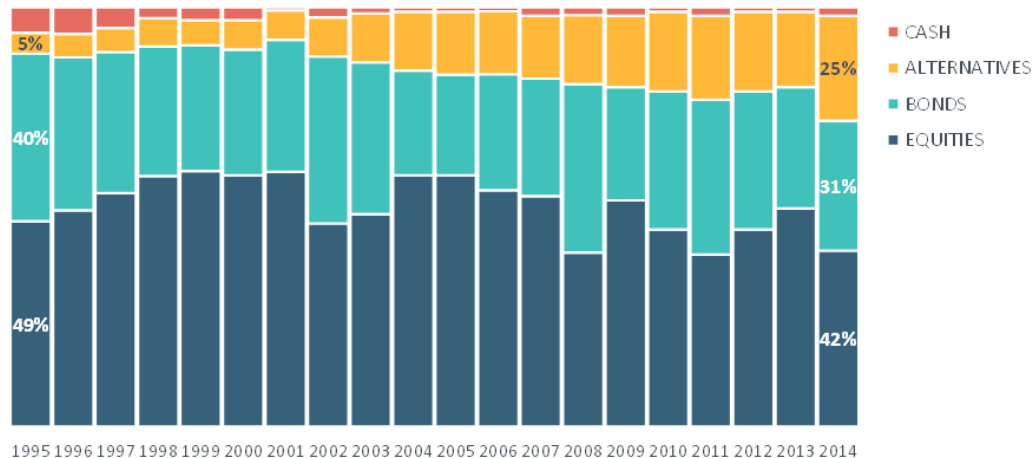
**NYU STERN Fourth Annual Fall Symposium: The Nexus  
between Real Estate and Infrastructure Investing  
September 11<sup>th</sup>, 2015**

PETER HOBBS, Managing Director, MSCI

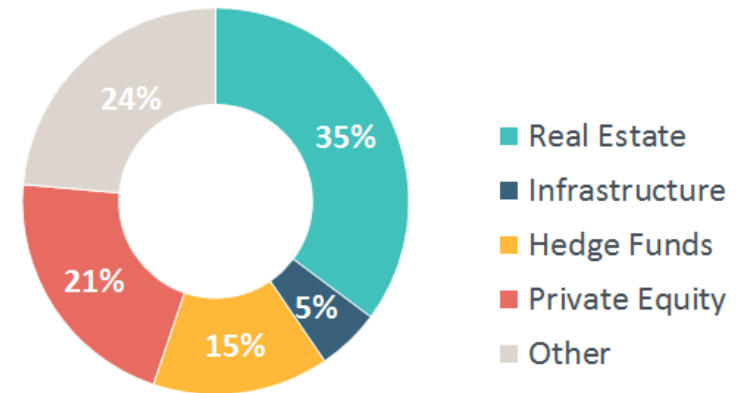
# ① THE GROWTH OF THE REAL ASSET CLASSES

# THERE HAS BEEN A STRUCTURAL SHIFT TO ALTERNATIVE ASSET CLASSES...

ALLOCATIONS ACROSS ASSET CLASSES, 1995-14



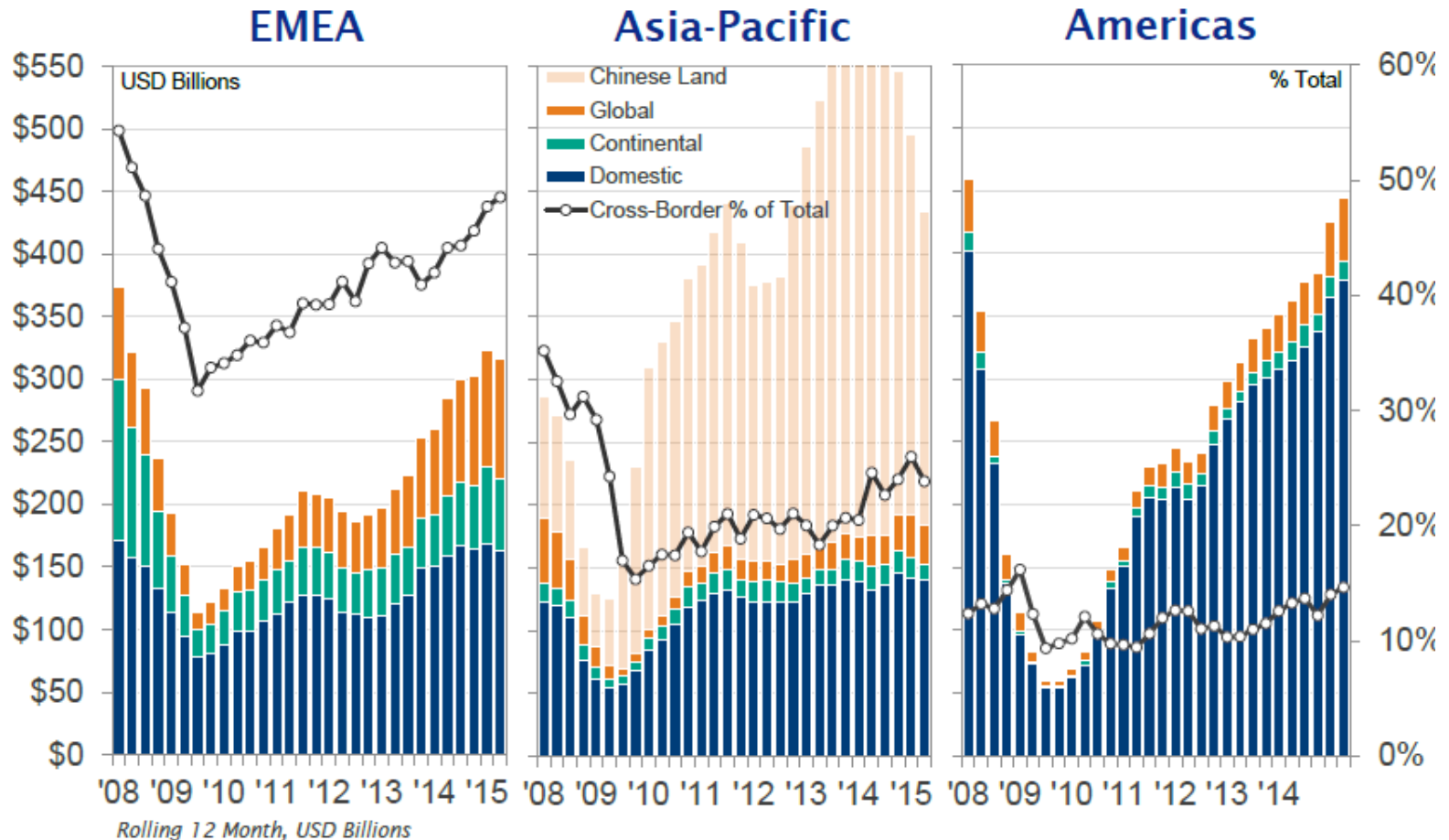
ALLOCATIONS WITHIN ALTERNATIVES, 2014



Source: MSCI (2014) Asset Owner Survey

# WITH A SIGNIFICANT RISE IN INVESTMENT ACTIVITY POST FINANCIAL CRISIS, FOR REAL ESTATE

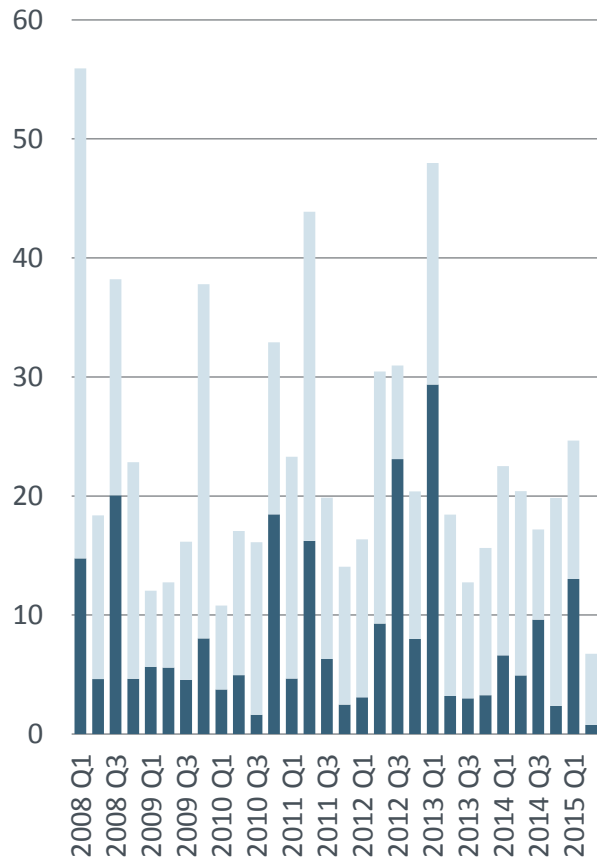
INVESTMENT ACTIVITY ACROSS GLOBAL REGIONS, 2008-15



# INFRASTRUCTURE DEAL FLOW REMAINS CONSTRAINED BY LOW SUPPLY

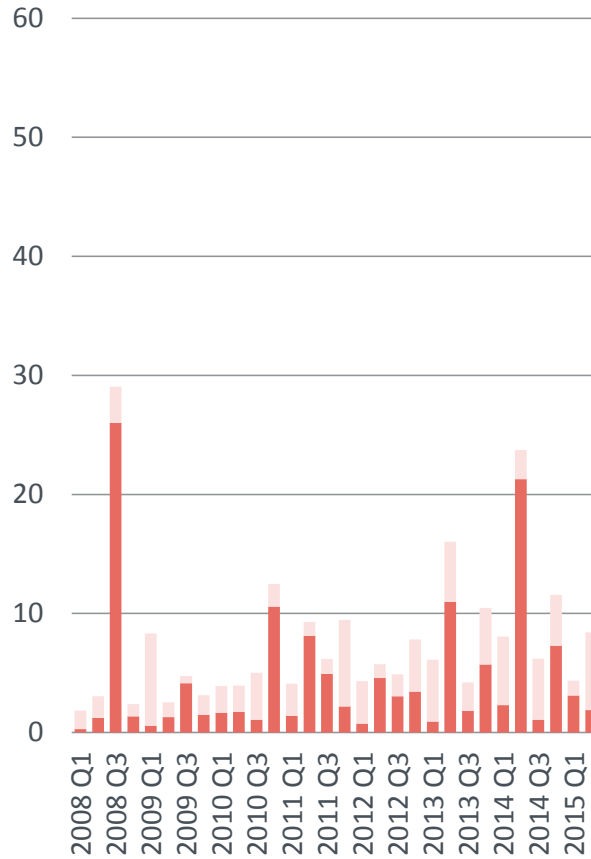
## EMEA

■ UK ■ Rest of EMEA



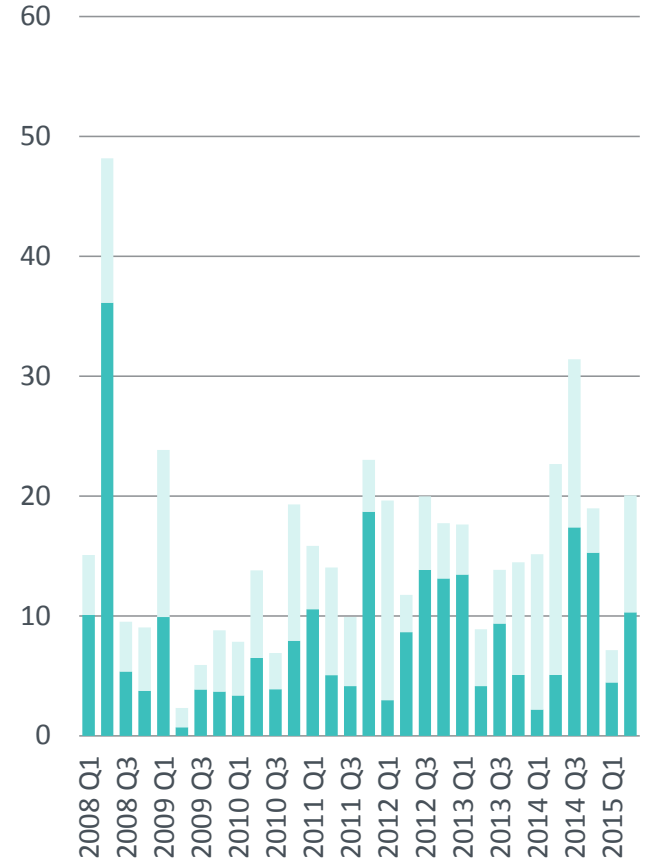
## Asia Pacific

■ Australia ■ Rest of Asia Pacific



## Americas

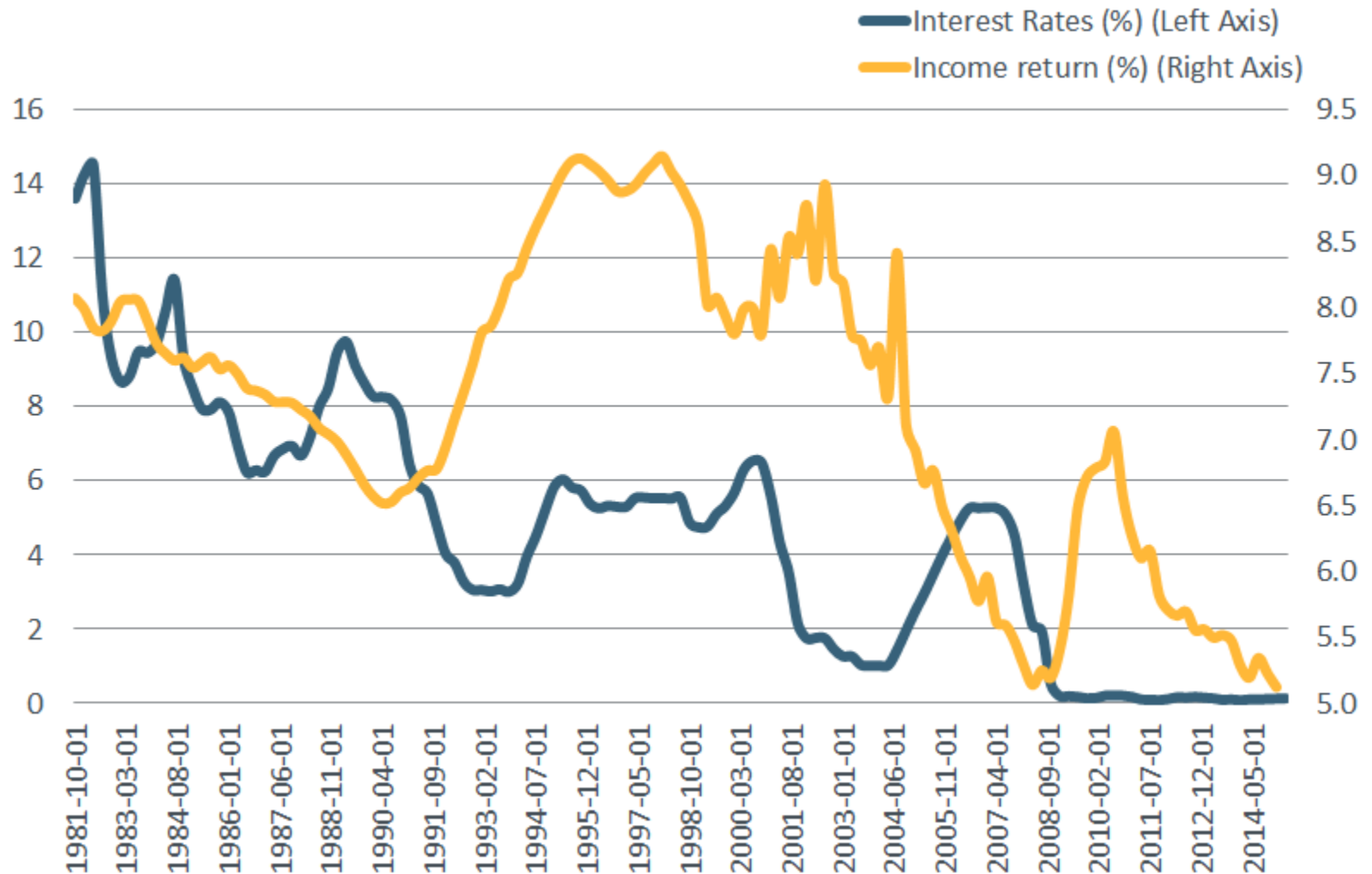
■ US ■ Rest of Americas



Source: Preqin

# STRUCTURAL CHANGES IN CAPITAL MARKETS HAVE SUPPORTED THE GROWTH OF REAL ASSET CLASSES...

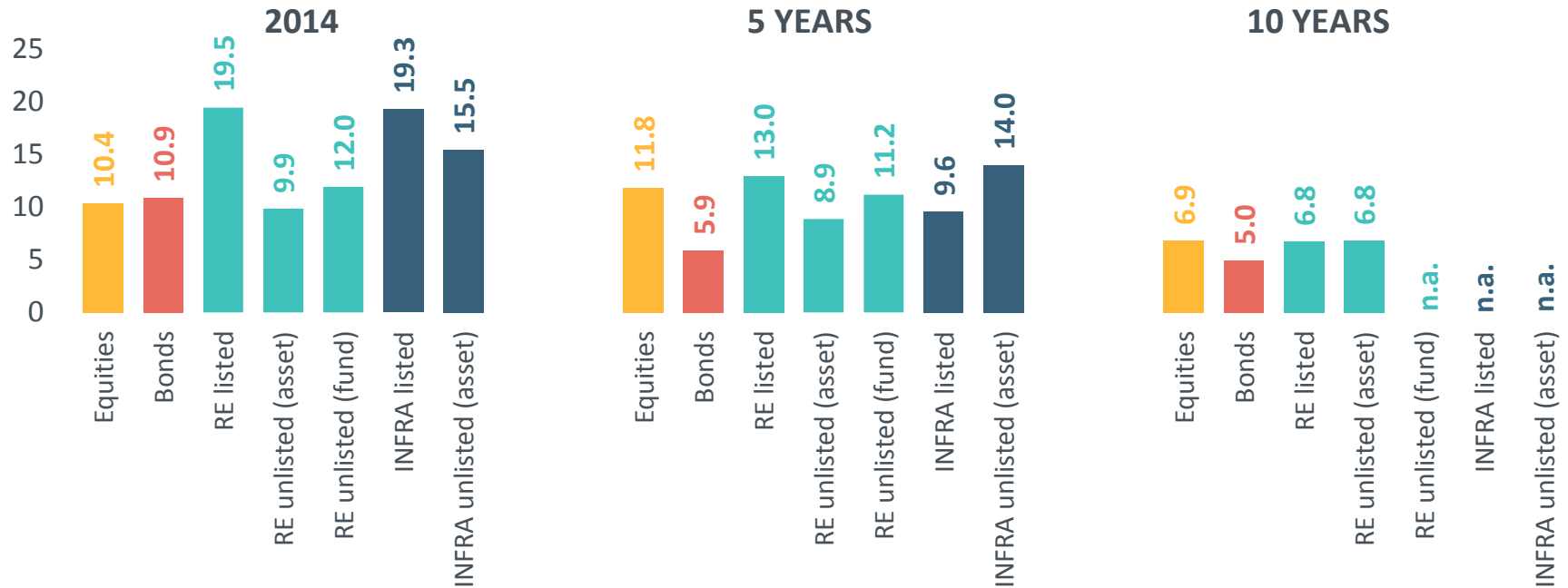
U.S. INTEREST RATES AND PRIVATE REAL ESTATE INCOME RETURNS, 1981-2015



# ... AND CONTRIBUTED TO THEIR STRONG PERFORMANCE RELATIVE TO EQUITIES AND BONDS...

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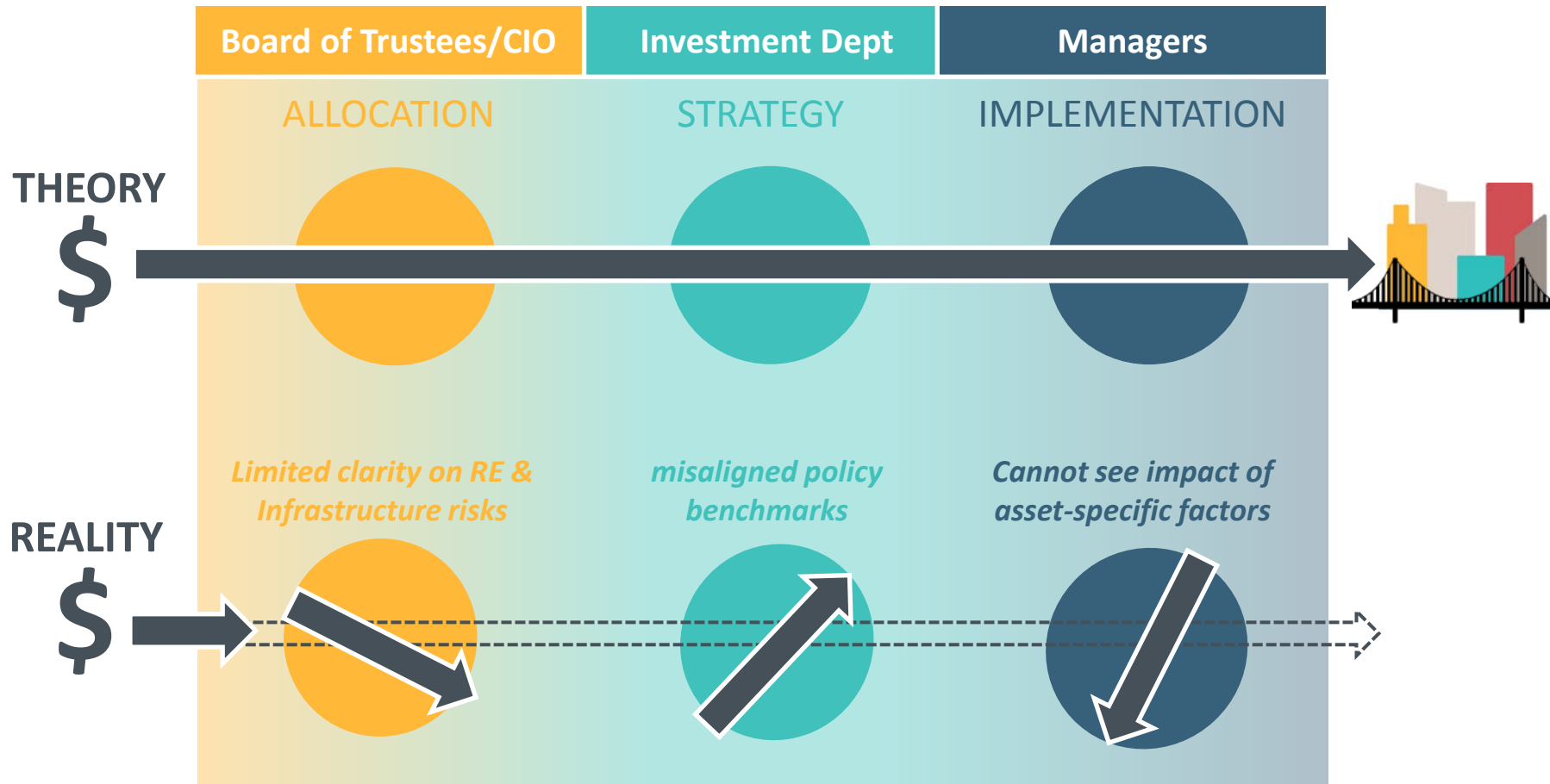
## COMPARATIVE GLOBAL PERFORMANCE ACROSS ASSET CLASSES ANNUALIZED RESULTS AT 1, 5, & 10 YEARS FOR THE PERIOD ENDING 31 DECEMBER 2014



Sources: MSCI World Equities Index, Local (EQUITIES); J.P. Morgan, GBI Global, Local (BONDS); MSCI World Real Estate index, Local (LISTED PROPERTY); IPD Global Property Index (UNLISTED PROPERTY - ASSET LEVEL); IPD Global Property Fund Index (UNLISTED PROPERTY - FUND LEVEL); MSCI World Infrastructure Index, Local (LISTED INFRA); MSCI Global Infrastructure Asset Index (UNLISTED INFRA).

# THESE ARE FAVORED ASSET CLASSES, BUT ARE THEY PROPERLY UNDERSTOOD?

OBJECTIVES AND EXECUTION OPTIONS CAN CREATE A DISJOINT INVESTMENT PROCESS

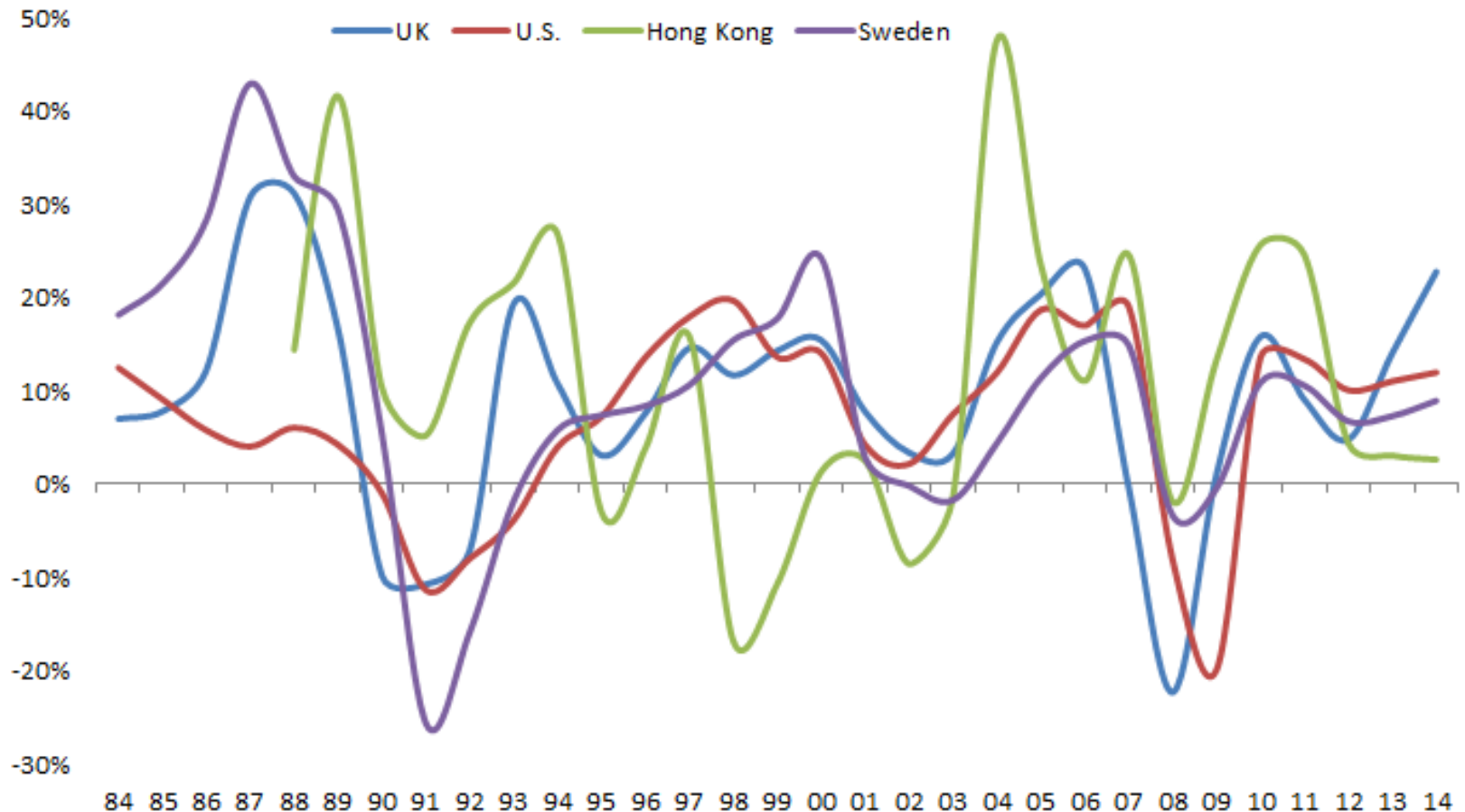


Source: MSCI



# REAL ASSET CLASSES TEND TO BE HIGHLY CYCLICAL, CREATING VINTAGE RISK CHALLENGES

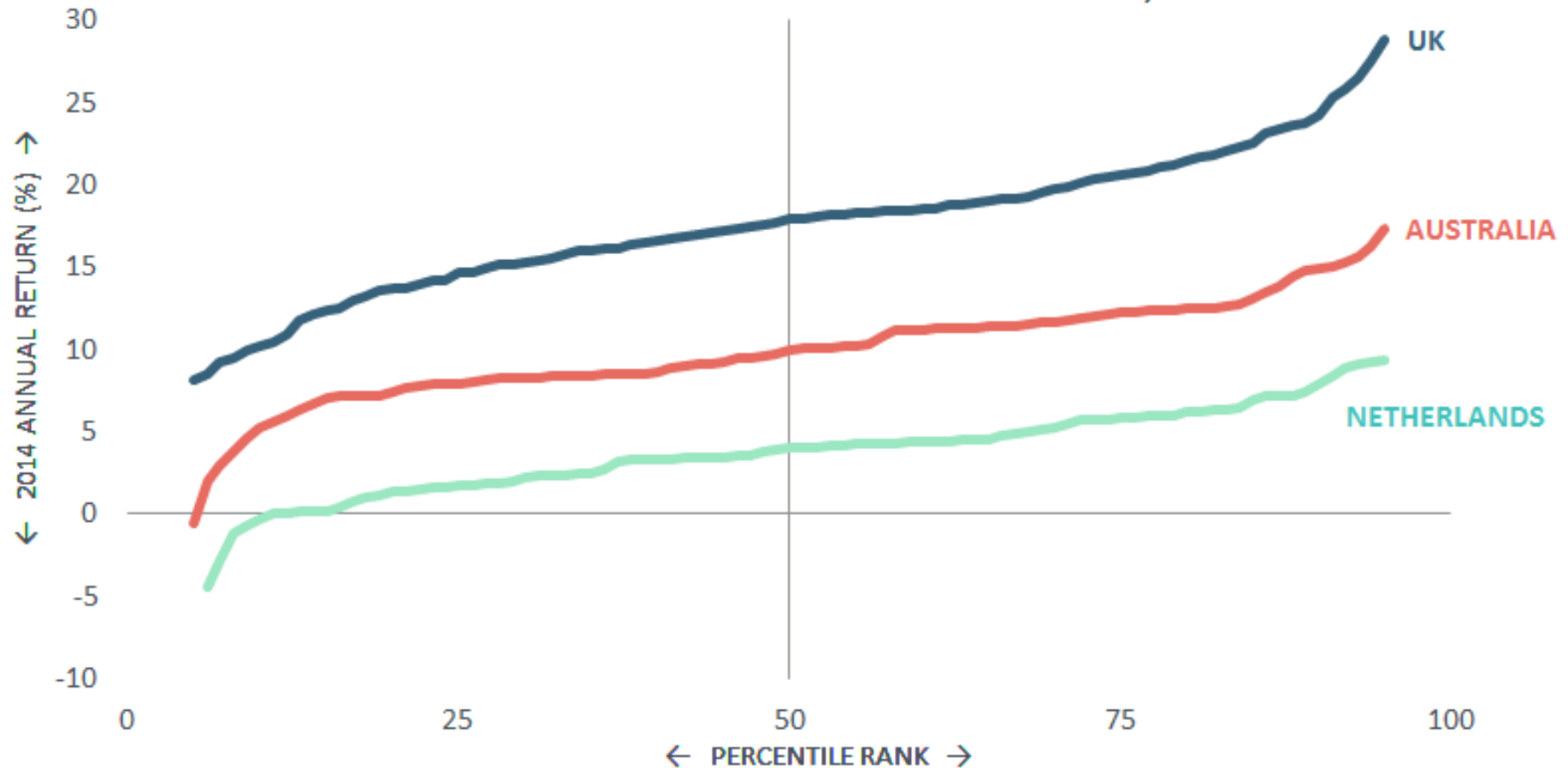
UNLEVERED REAL ESTATE TOTAL RETURNS FOR UK, USA, HONG KONG AND SWEDEN, 1984-14



Source: UK and Sweden from MSCI; US 1999-14 from MSCI; 1988-97 from NCREIF; Hong Kong 2007-14 from MSCI; 1988-2006 derived with smoothing adjustment from Hong Kong Valuation and Rating Department data

# OPAQUENESS OF THE ASSET CLASS MEANS PORTFOLIO-SPECIFIC VARIATIONS ARE OFTEN POORLY UNDERSTOOD

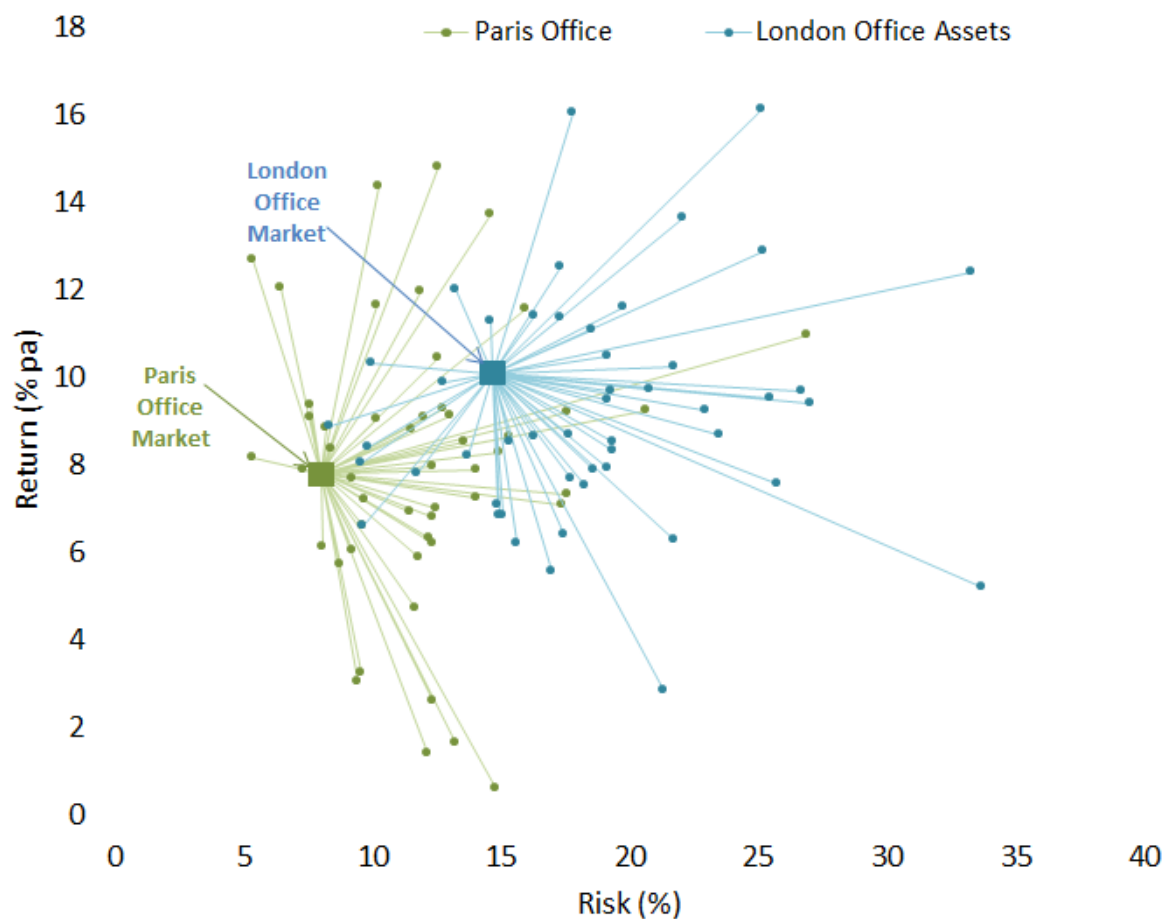
DISTRIBUTION OF PORTFOLIO ANNUAL RETURNS, 2014



Source: MSCI Note: Based on 'annual universe' in local currency. Number of portfolios varies by country

# EVEN LESS TRANSPARENCY ON ASSET-SPECIFIC VARIATIONS AND RISKS

RISK AND RETURN FOR PARIS & LONDON OFFICE MARKETS AND CONSTITUENT ASSETS, 2005-14



# WILL INVESTORS AVOID THE MISTAKES OF THE PAST?

1970s



Aggressive pricing of domestic market and strong capital inflows led to surge of activity in US and continental Europe, followed by failures

1980s

1990s



Deregulation of domestic market enabling foreign investment led to a wave of foreign activity at the top of the real estate investment cycle. Significant value declines followed in the early 1990s



North American investors driven by strength of domestic market engaged in development at home and abroad at top of the cycle leading to bankruptcies

2000s



Overleverage and aggressive pricing followed by massive credit-crisis leading to questions over role of real estate and tightening regulatory regimes













2010s



Source: MSCI

## ② THE REAL ESTATE AND INFRASTRUCTURE ASSET CLASSES

# COMMON REASONS FOR INVESTING IN REAL ESTATE AND INFRASTRUCTURE

FEATURE		PERCEIVED BENEFITS
 RETURN		Historically attractive return characteristics driven by income return and scope for capital appreciation
 DIVERSIFICATION		Potential diversification benefits relative to other asset classes and within the specific asset class
 INCOME/CASHFLOW		Real estate tends to generate relatively high cashflows supported by lease structure, and Infrastructure payments have the potential to be regulated or contracted.
 INFLATION LINKAGES		Infrastructure assets often have explicit or implicit infrastructure linkages and both asset classes are perceived to be potential hedges against inflation
 DURATION		Both asset classes tend to have relatively long duration cashflows
 RISKS		Both asset classes perceived to be relatively low risks given their characteristics but, in reality, the range of Asset Class, Market, Portfolio and Asset-specific risks remain poorly understood

Source: MSCI, Towers Watson, Preqin, OECD

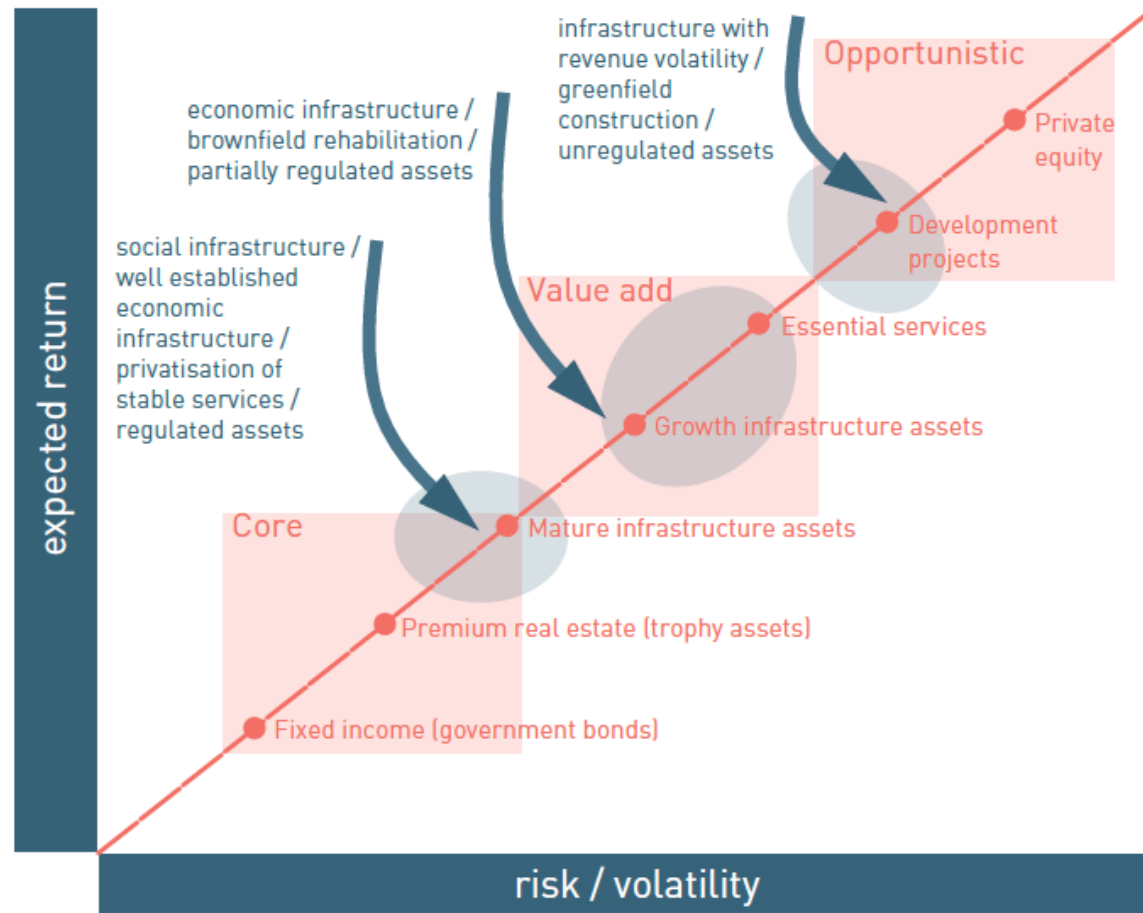
# BUT THERE ARE SIGNIFICANT RISK/RETURN OPTIONS, WITHIN REAL ESTATE...

## SCHEMATIC REPRESENTATION OF ROLE OF REAL ESTATE FOR MAJOR ASSET OWNERS



# AND INFRASTRUCTURE...

## RISK/RETURN OPTIONS FOR INFRASTRUCTURE INVESTING





# FOR INFRASTRUCTURE THE “EQUITY” OR “BOND”-LIKE NATURE OF THE CONTRACT IS CRITICAL TO ITS RISK

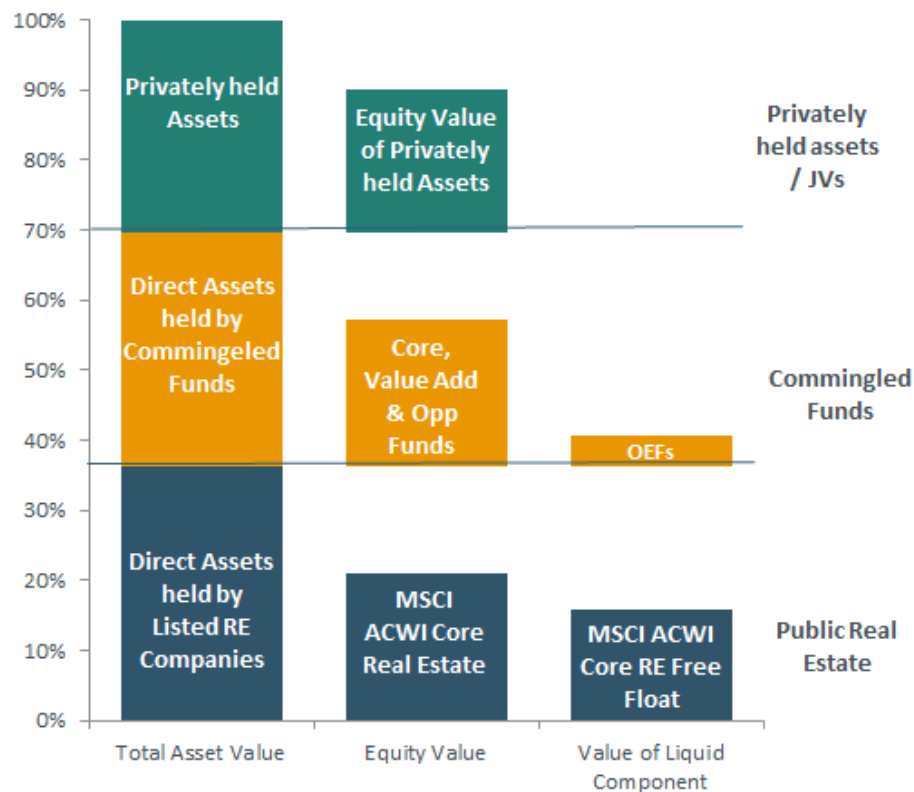
## MODELLING THE RISK OF INFRASTRUCTURE INVESTING

Unlisted structure		Relevant questions/steps	Best option
Capital stake or very long-term lease	Equity-like	Does the infrastructure have public debt? If so, does that debt duration match the length of the lease?	Use the <b>Merton model</b> to relate the equity to listed debt
		Are there comparable listed companies in the same market?	Use <b>listed company</b> as proxy, and scale by leverage ratio
		What are the investment's size, liabilities, operating sector, and country of location?	Model <b>custom exposures</b> , and scale by leverage ratio
Concession with a mix of capital stake and fee structure	Blend	Look at the contract to determine equity-to-bond ratio	Model as <b>weighted blend</b> of equity and bond.
Concession with fixed or inflation-linked fees	Bond-like	Determine sector and real/nominal cash flows, then estimate the credit grade	Model with <b>sector-by-rating</b> factor exposure or <b>discounted cash flows</b> .

Source: MSCI

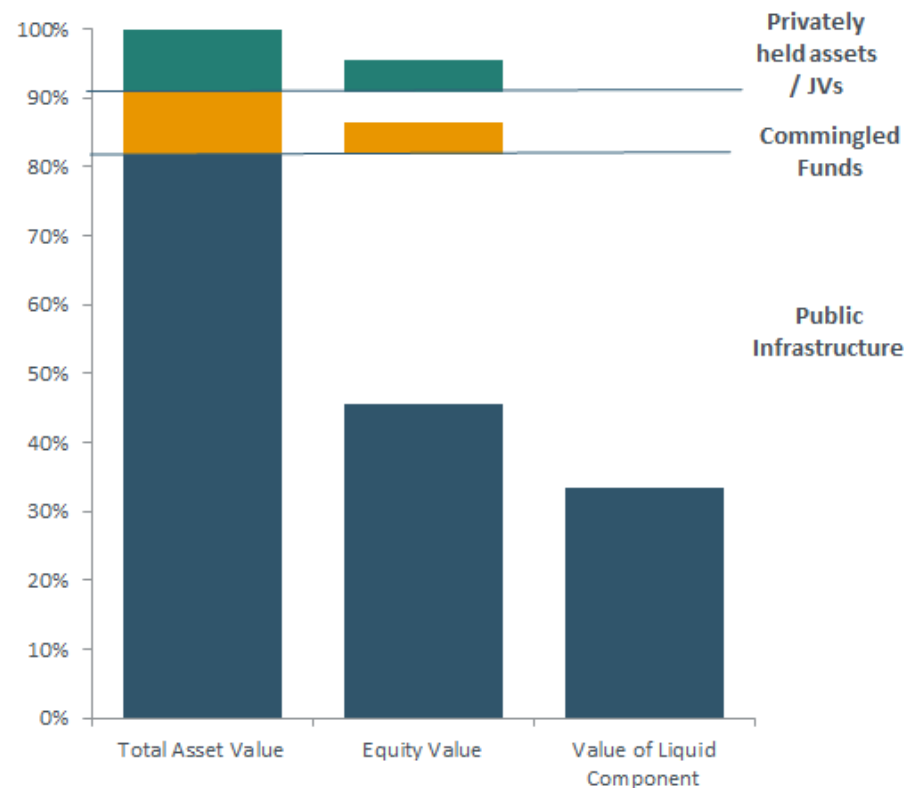
# THESE OPTIONS ARE BASED ON IMPORTANT DIFFERENCES IN ASSET CLASS STRUCTURE...

## COMPOSITION OF GLOBAL REAL ESTATE MARKET



Notes: Total Asset Value from MSCI Direct market size estimates; Equity Value based on deduction of leverage appropriate for the different categories; Liquid – Public based on Free Float Value; Funds based on Open Ended Funds eligible to IPD Global Fund Index

## COMPOSITION OF GLOBAL INFRASTRUCTURE MARKET



Notes: Based on RARE (2013) "Guide to listed vs. unlisted infrastructure"; MSCI

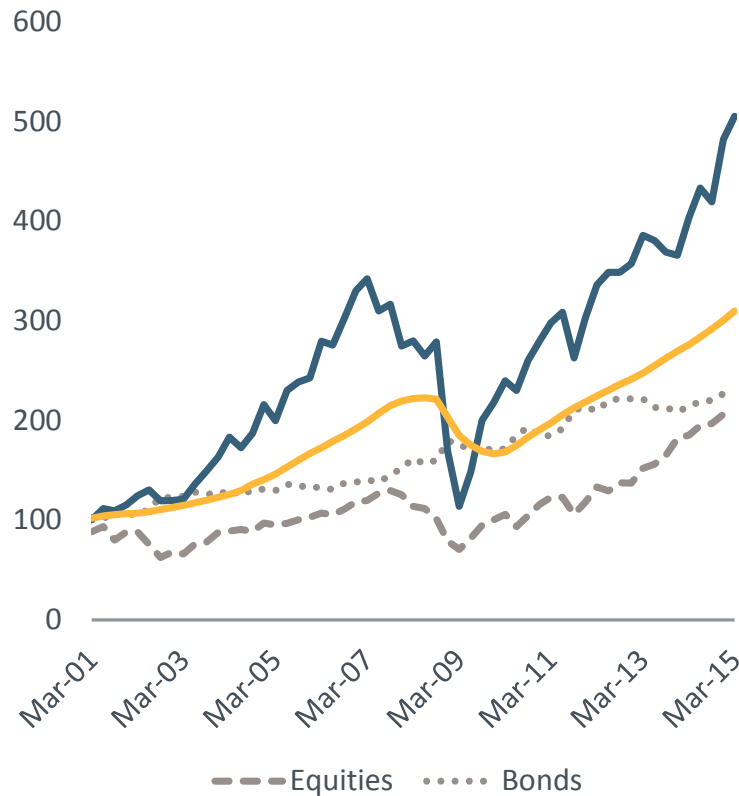
## ... AND CHARACTERISTICS

INVESTMENT CHARACTERISTICS	DIRECT REAL ESTATE	PRIVATE REAL ESTATE FUNDS		LISTED REAL ESTATE
VALUATION	APPRAISAL	APPRAISAL		TRANSACTION
LIQUIDITY	LOW	CORE:MED	OPP: LOW	HIGH
LEVERAGE	LOW	CORE:LOW	OPP: HIGH	MEDIUM
VOLATILITY	LOW	MEDIUM		HIGH
ACCESS TO DIRECT REAL ESTATE	HIGH	MEDIUM		LOW
DIVERSIFICATION V. EQUITIES	HIGH	HIGH		LOW
GEOGRAPHIC DIVERSIFICATION	LOW	MEDIUM		HIGH
ASSET SPECIFIC DIVERSIFICATION	LOW	HIGH		HIGH

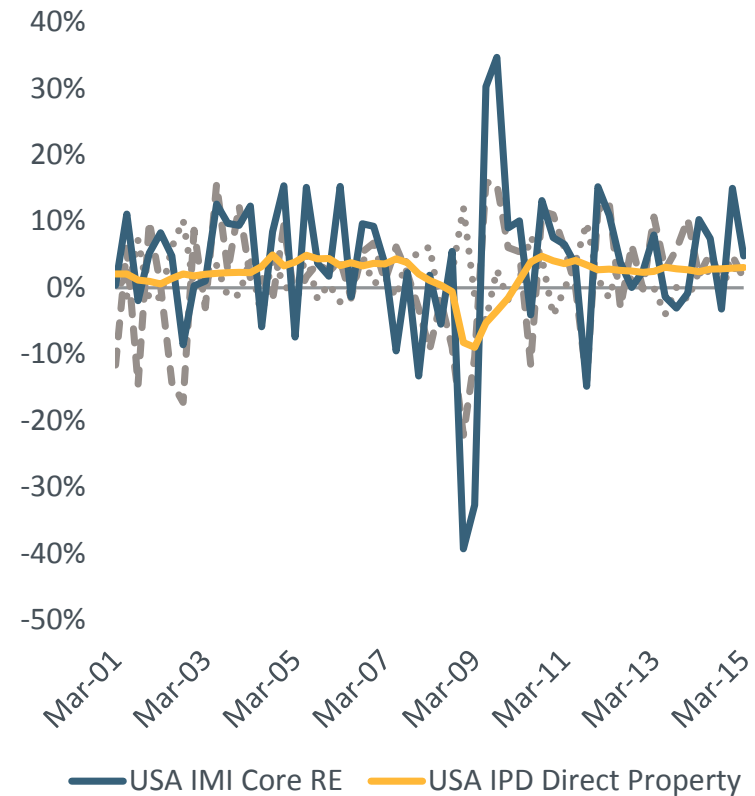
Note: Ratings based on typical medium sized institutional investor  
Source: MSCI, Towers Watson, Preqin, OECD

# APPRAISALS AND LEVERAGE HELP EXPLAIN THE RELATIONSHIP BETWEEN PUBLIC & PRIVATE REAL ESTATE

US ASSET INDEXES

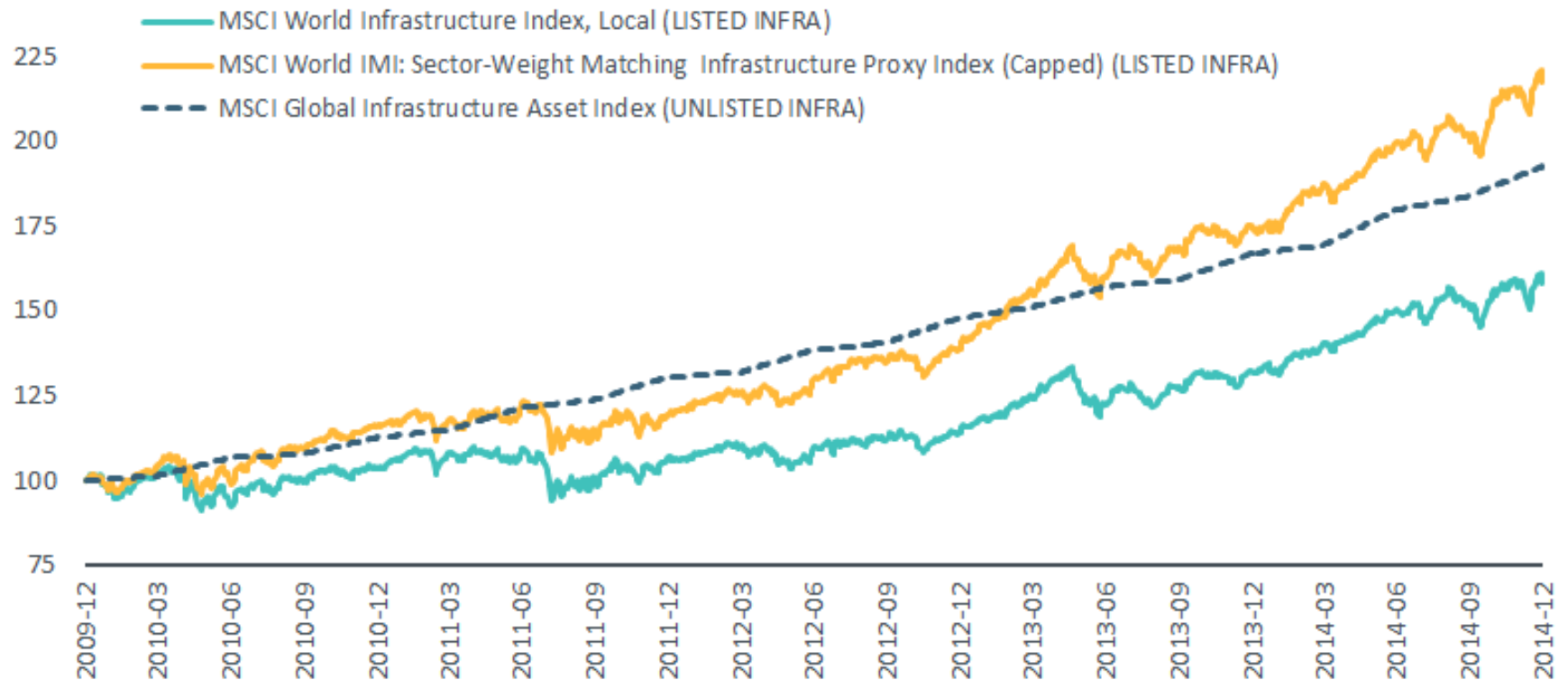


US ASSET RETURNS



# SECTOR EXPOSURE ALSO CREATES DIFFERENCES BETWEEN PUBLIC AND PRIVATE: THE CASE OF INFRASTRUCTURE

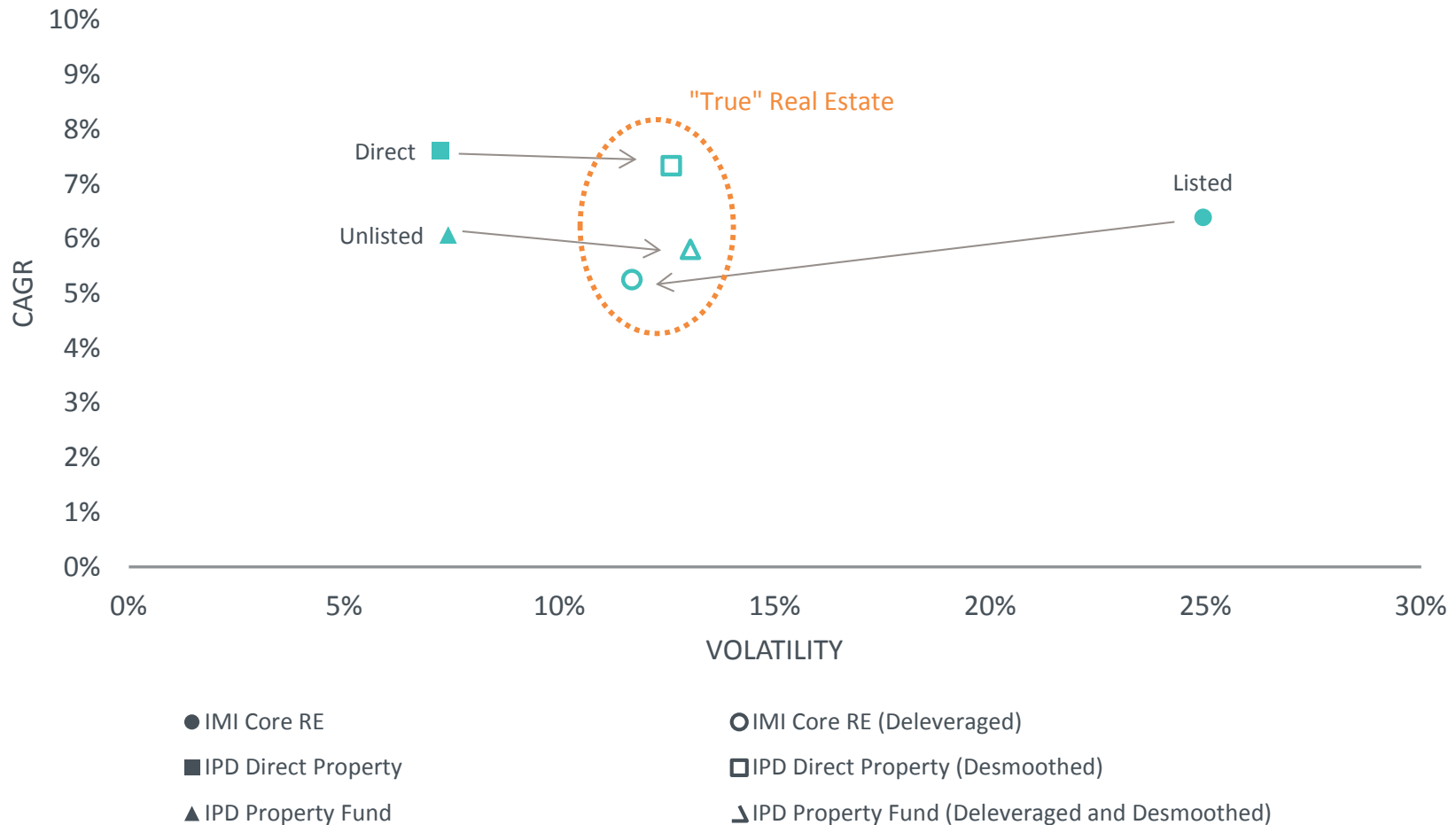
5-YEAR COMPARATIVE PERFORMANCE INDEX FROM DECEMBER 2009



Source: MSCI

# ADJUSTMENTS NEED TO BE MADE TO ARRIVE AT 'TRUE' ASSET CLASS BEHAVIOR

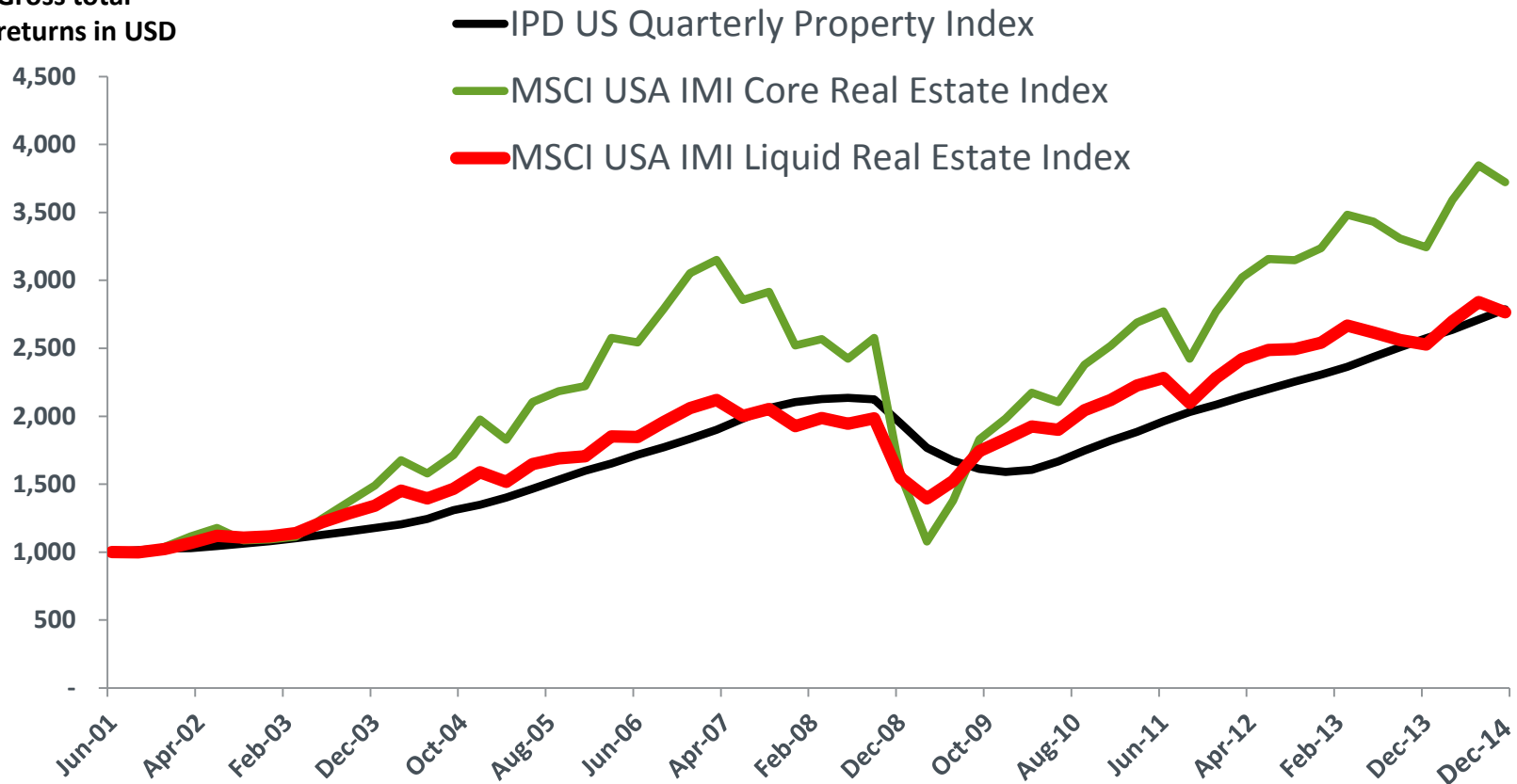
## UK REAL ESTATE PERFORMANCE OVER 14 YEARS TO MARCH 2015



# THIS UNDERSTANDING IS HELPING CREATE NEW WAYS OF ACCESSING PRIVATE ASSET CLASSES

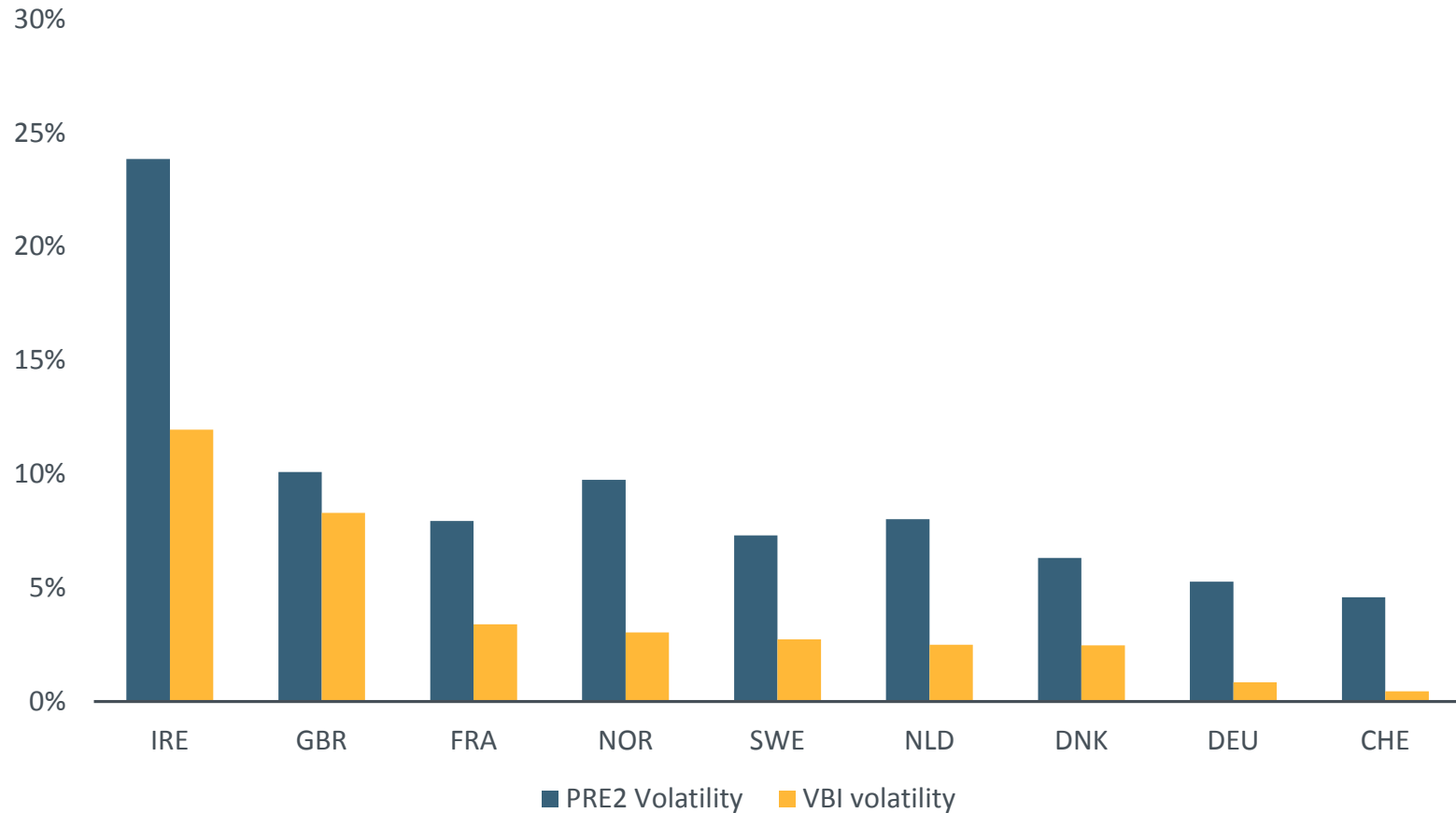
## MSCI USA IMI LIQUID INDEX COMPARED WITH USA CORE REIT AND USA IPD PROPERTY INDEX

Gross total  
returns in USD



# AND BRINGING A BETTER UNDERSTANDING OF THEIR TRUE RISKS

## HISTORIC VOLATILITY FOR PRIVATE REAL ESTATE: VALUATION AND MODEL-BASED ESTIMATES

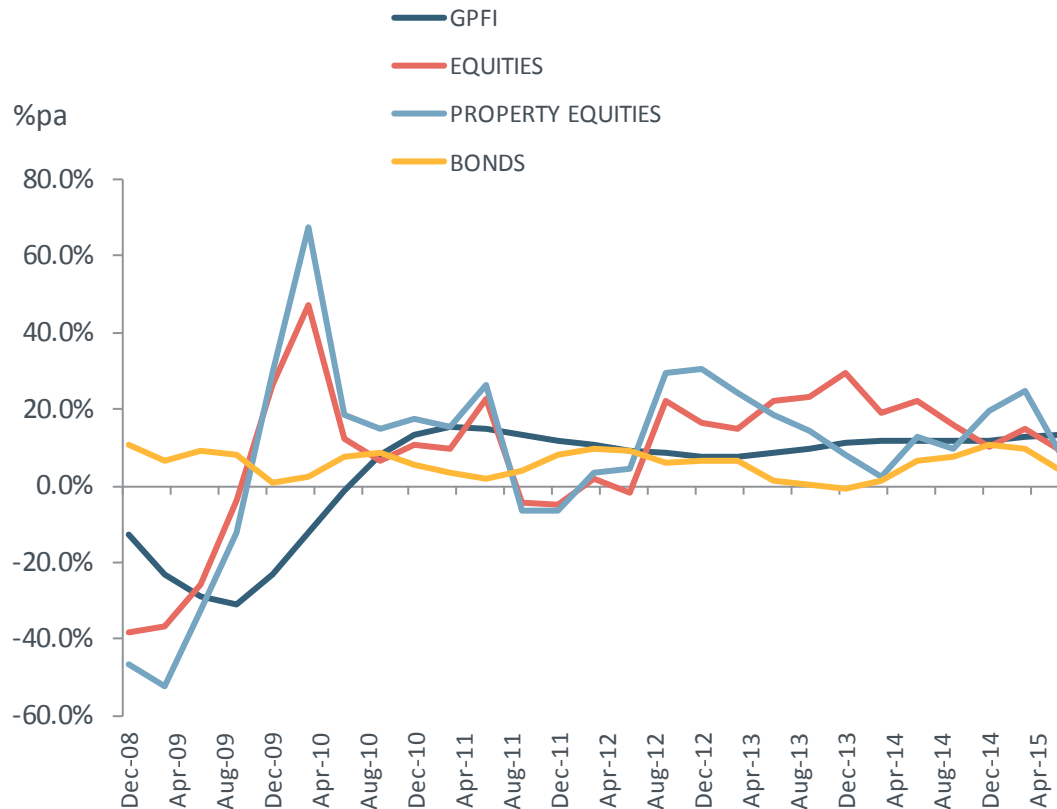




# ③ MOVING THROUGH THE CYCLE

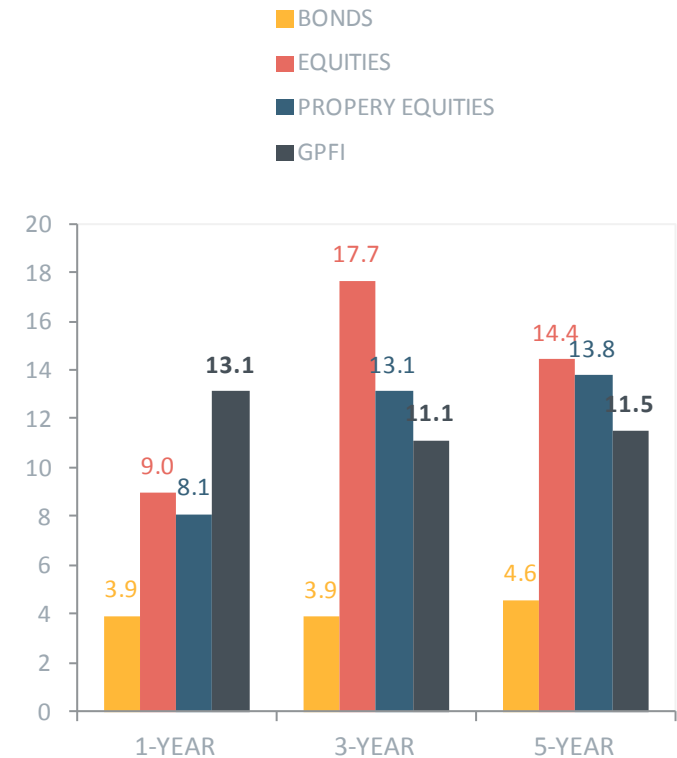
# REAL ESTATE HAS PERFORMED PARTICULARLY WELL SINCE THE FINANCIAL CRISIS

## MULTI-ASSET CLASS OVER TIME



Source: MSCI

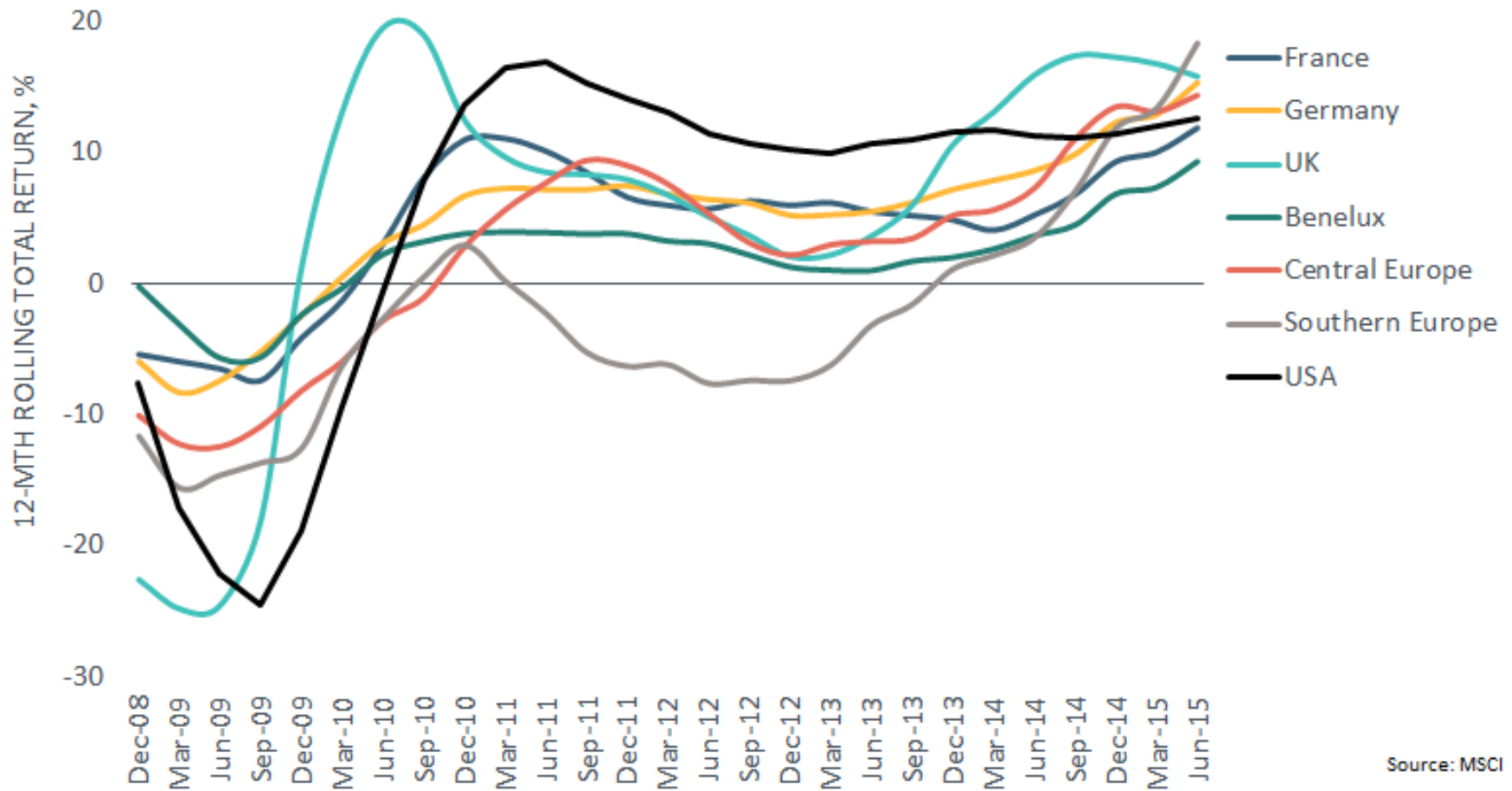
## MULTI-ASSET CLASS RETURNS TO JUNE 2015



Source: MSCI

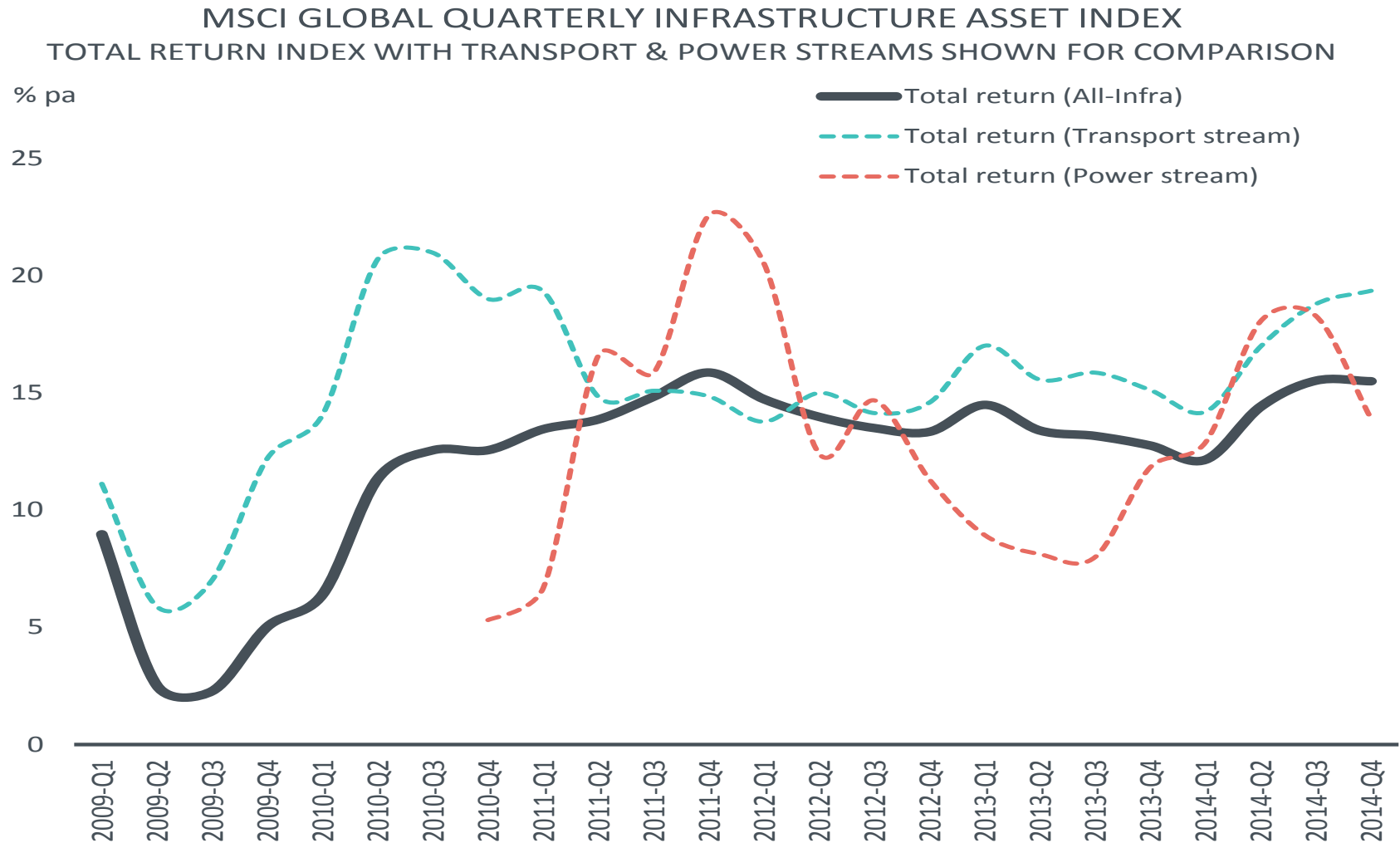
# STRONG REAL ESTATE PERFORMANCE, EVEN, MORE RECENTLY, IN CONTINENTAL EUROPE

ASSET LEVEL RETURNS USA AND EUROPE, LOCAL CURRENCY



Source: MSCI

# INFRASTRUCTURE HAS ALSO GENERATED STRONG RETURNS SINCE THE FINANCIAL CRISIS

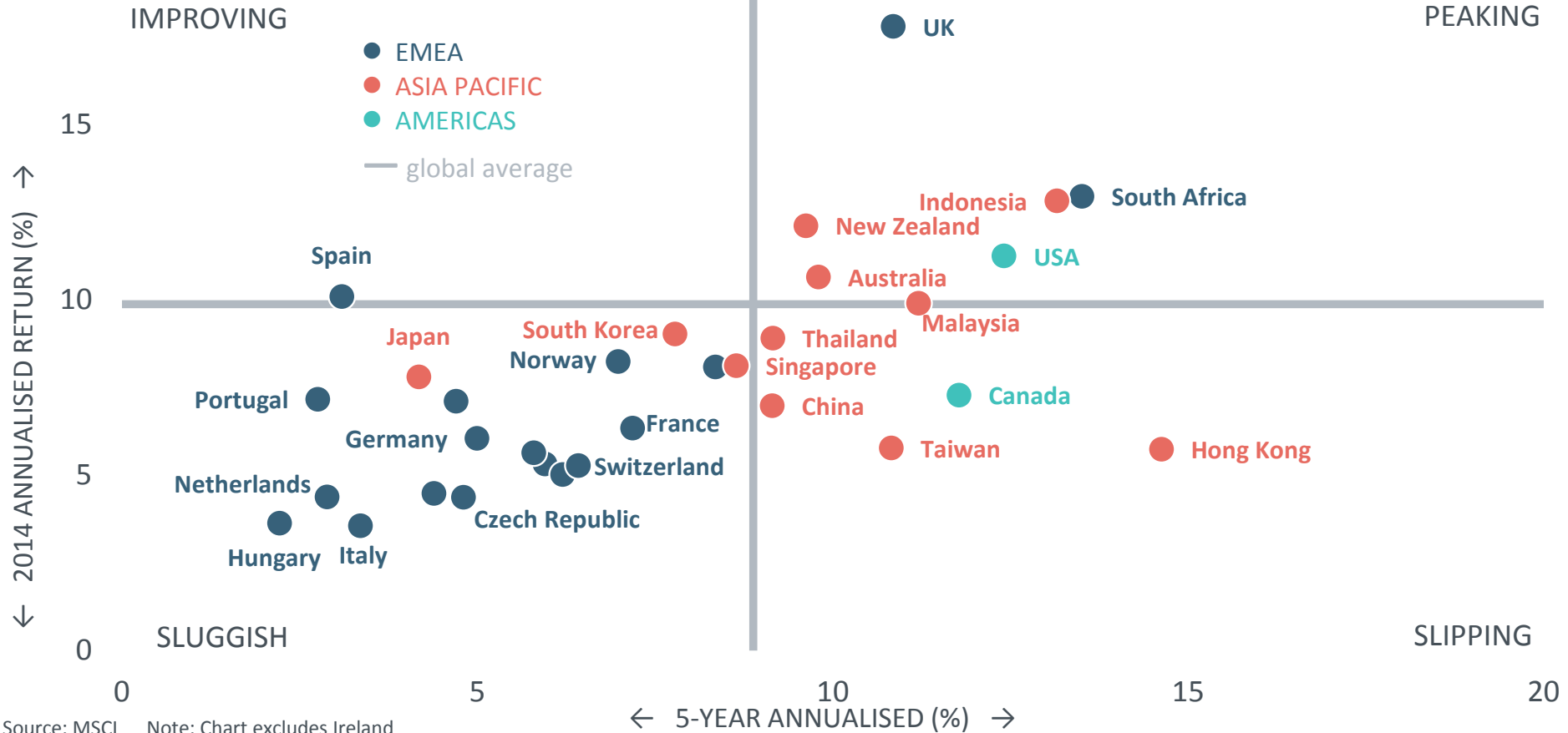


Source: MSCI Global Infrastructure Asset Index (UNLISTED INFRA)

# NATIONAL MARKETS ARE AT DIFFERENT STAGES OF THEIR REAL ESTATE CYCLES

## TOTAL ALL PROPERTY RETURNS BY COUNTRY

2014 PERFORMANCE vs 5-YEAR ANNUALISED



# PRICING HAS STARTED TO BECOME AGGRESSIVE, FOR PRIVATE REAL ESTATE

## YIELD SPREAD vs INCOME RETURN AT A GLOBAL LEVEL

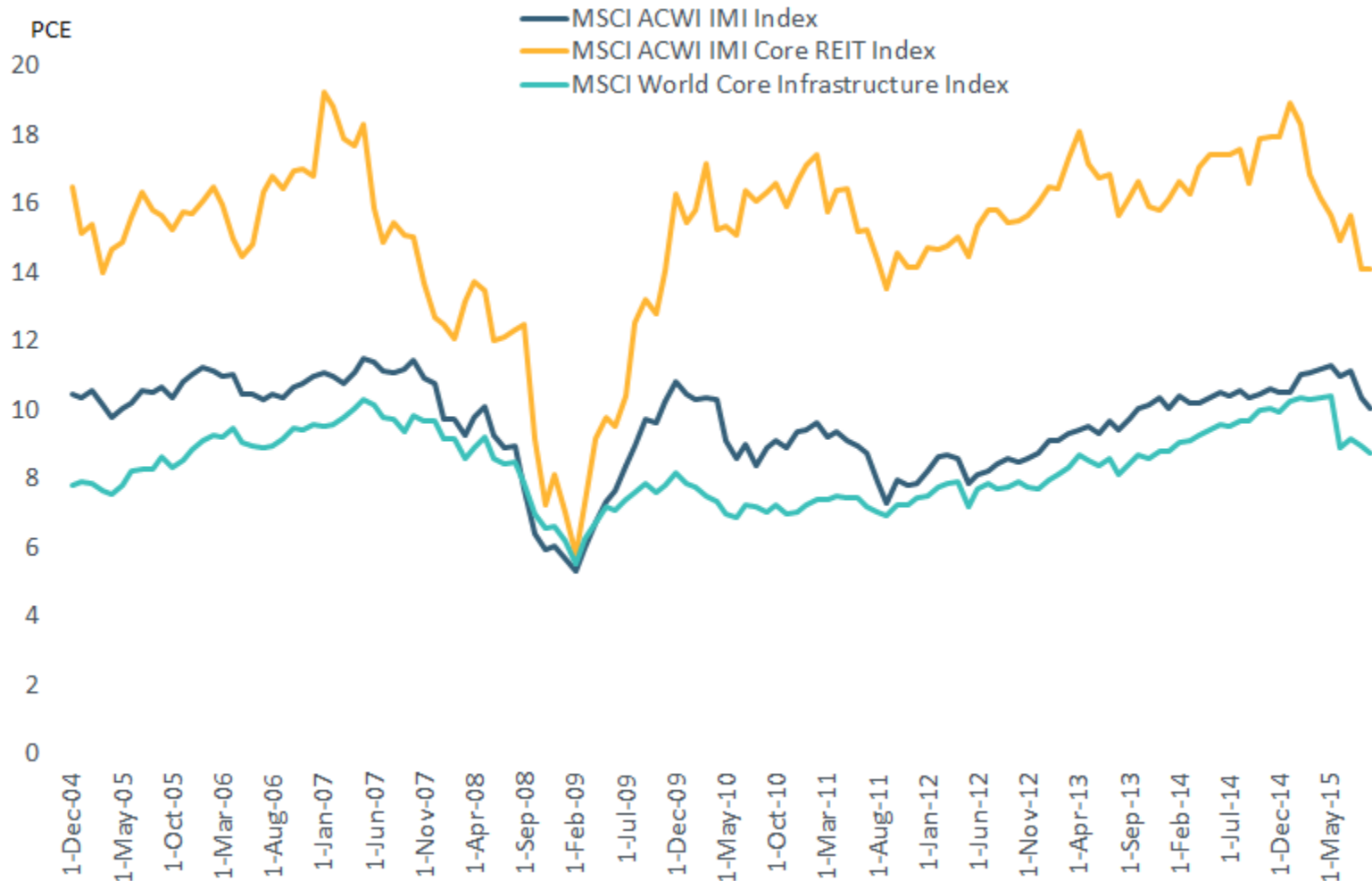


Note: Spreads based on difference between income return and average annual USD LIBOR, 12-month maturity.

Sources: MSCI; ICE Benchmark Administration (IBA)

# AND, PRIOR TO Q1 2015, FOR PUBLIC REAL ESTATE AND INFRASTRUCTURE

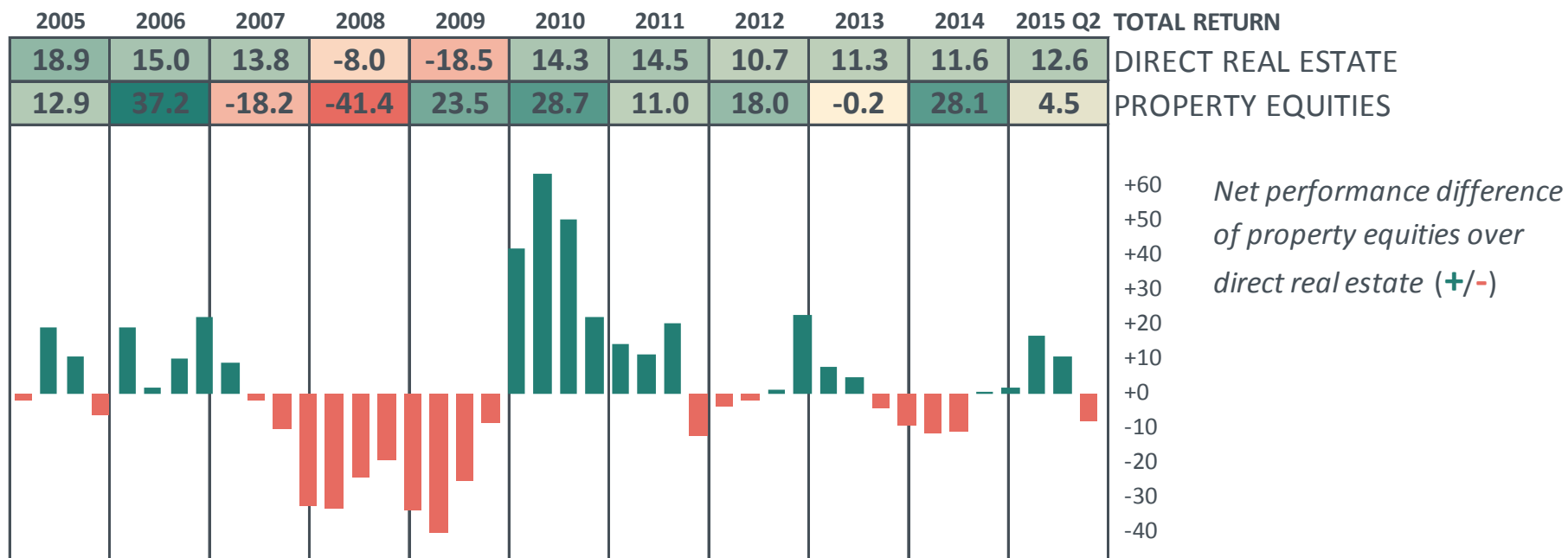
## PRICE CASH EARNINGS PER SHARE FOR ALL EQUITIES, AND PUBLIC REAL ESTATE AND INFRASTRUCTURE



# PUBLIC MARKETS MIGHT HELP US ANTICIPATE PRIVATE MARKET MOVEMENTS

## U.S. PRIVATE (IPD) AND PUBLIC (MSCI) REAL ESTATE, 2005-15

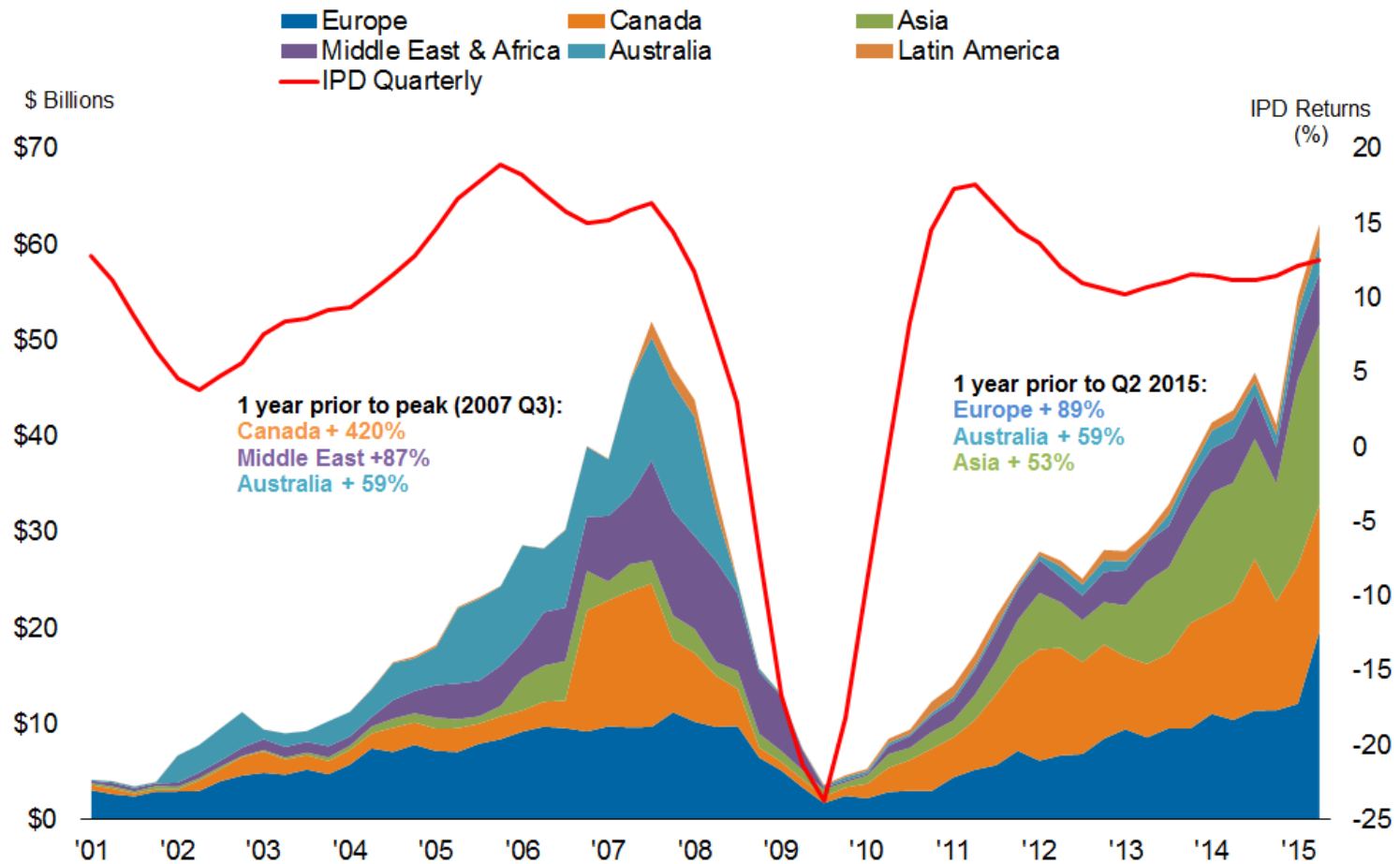
### CYCLICAL INDICATORS





# WHO IS GOING TO BE CAUGHT OUT THIS TIME ROUND?

FOREIGN INVESTMENT IN THE USA REAL ESTATE MARKET, AND REAL ESTATE PERFORMANCE, 2001-2015h2



# ④ CONCLUSIONS

# SIGNIFICANT POTENTIAL AND INCREASING SCRUTINY OF THE REAL ASSET CLASSES

## 1. REAL ASSETS AS FAVORED ASSET CLASSES

- ✓ **ATTRACTIVE CHARACTERISTICS.** DIVERSIFICATION, INCOME, DURATION
- ✓ **CAPITAL HAS FLOWED.** ALLOCATIONS INCREASED AND
- ✓ **OPTIONS TO ACCESS ARE INCREASING.**

## 2. MOVING RAPIDLY THROUGH THEIR CURRENT CYCLE

- ✓ **LOW INTEREST RATES.** HAVE DRIVEN RECENT STRONG PERFORMANCE
- ✓ **AGGRESSIVE PRICING.** COMPARED WITH HISTORIC LEVELS
- ✓ **SIGNIFICANT VARIATIONS.** BY GEOGRAPHY, PORTFOLIO AND ASSET

## 3. DESPERATE NEED FOR BETTER UNDERSTANDING

- ✓ **CAPTURING THEIR TRUE RISKS.** TO COMPARE ACROSS MARKETS & WITH OTHER ASSET CLASSES
- ✓ **APPROPRIATE BENCHMARKS** TO STRENGTHEN GOVERNANCE
- ✓ **ALIGNMENT.** ALIGNING STRATEGIC & ASSET-SPECIFIC STRATEGIES & RISKS

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