



**CAMRADATA**

Pension Conference

Managing Objectives,  
Maximising Opportunity

19<sup>th</sup> April 2018



# Welcome

Natasha Silva

Director, Client Relations



CAMRADATA



**AREF/IPD Performance Award:**  
5-year, risk-adjusted, relative return



**AEW UK Core Property Fund**  
Best risk-adjusted return over a 5-year period to Q2, 2017  
relative to the AREF/IPD UK Quarterly Property Fund Index (UK PFI)

**WINNER**

# THE CHANGING ROLE OF REAL ESTATE INCOME IN CASH FLOW MATCHING STRATEGIES

## AEW UK REAL RETURN FUND

CAMRADATA PENSION CONFERENCE 19<sup>th</sup> April 2018  
Managing Objectives, Maximising Opportunities

# WHY AEW UK?

## AEW UK TEAM HAVE SERVED PENSION FUND INVESTORS FOR MORE THAN 20 YEARS

- AEW UK - delivering innovative solutions for Pension Funds for more than 20 years
- Stable UK management team - 20 years working together, 50% equity owners\*
- Ian Mason, Portfolio Manager - 32 years' experience in growing sustainable income streams from alternative real estate
- Team launched the first ever UK Commercial Ground Lease Fund in 2006
- The Fund offers genuine financial alignment with your interests - Portfolio Manager together with key individuals invest personally via SIPPS into the Real Return Fund

### AEW UK HIGHLIGHTS

- Strong pipeline of assets - the team reviewed more than 1,500 introductions over the last 12 months totalling more than £17bn
- Large diversified pool of real return assets - £740m reviewed over the last 12 months
- The team acquired more than 33 assets during 2017
- Natixis awarded most innovative insurance product provider 2017 for a structured cash flow strategy using AEW UK Real Return Fund



# AEW UK REAL RETURN FUND

## EXECUTIVE SUMMARY

### LAUNCHED Q1 2016

- A strong alternative to traditional core property funds and long lease funds
- Target real total return - 4% p.a. (net)
  - Total real return - 6.4% p.a. for 2017
  - Nominal total return - 9.1% p.a.<sup>1</sup>
- Gross income target 5% p.a.
  - Currently 6.45%
  - Distribution yield - 5.3%<sup>1</sup>
- Weighted unexpired lease length to break (WAULT) - 17.1 years<sup>4</sup>
- Income growth linked to inflation: inflation-linked rents - 77%<sup>3</sup>
- Diversified portfolio - 35 properties with a focus on less cyclical and more demographically driven growth sectors
- Good quality real estate fundamentals delivers sustainable income
- Capital preservation in real terms by underpinning real estate fundamentals

Source:

1 MSCI, AREF/IPD UK Quarterly Property Fund Index, for 12 months ending to 31 December 2017

2 AEW calculated for 12 months ending 31 December 2017

3 AEW calculated for 12 months ending 31 December 2017

4 Knight Frank calculated for 12 months ending 31 December 2017



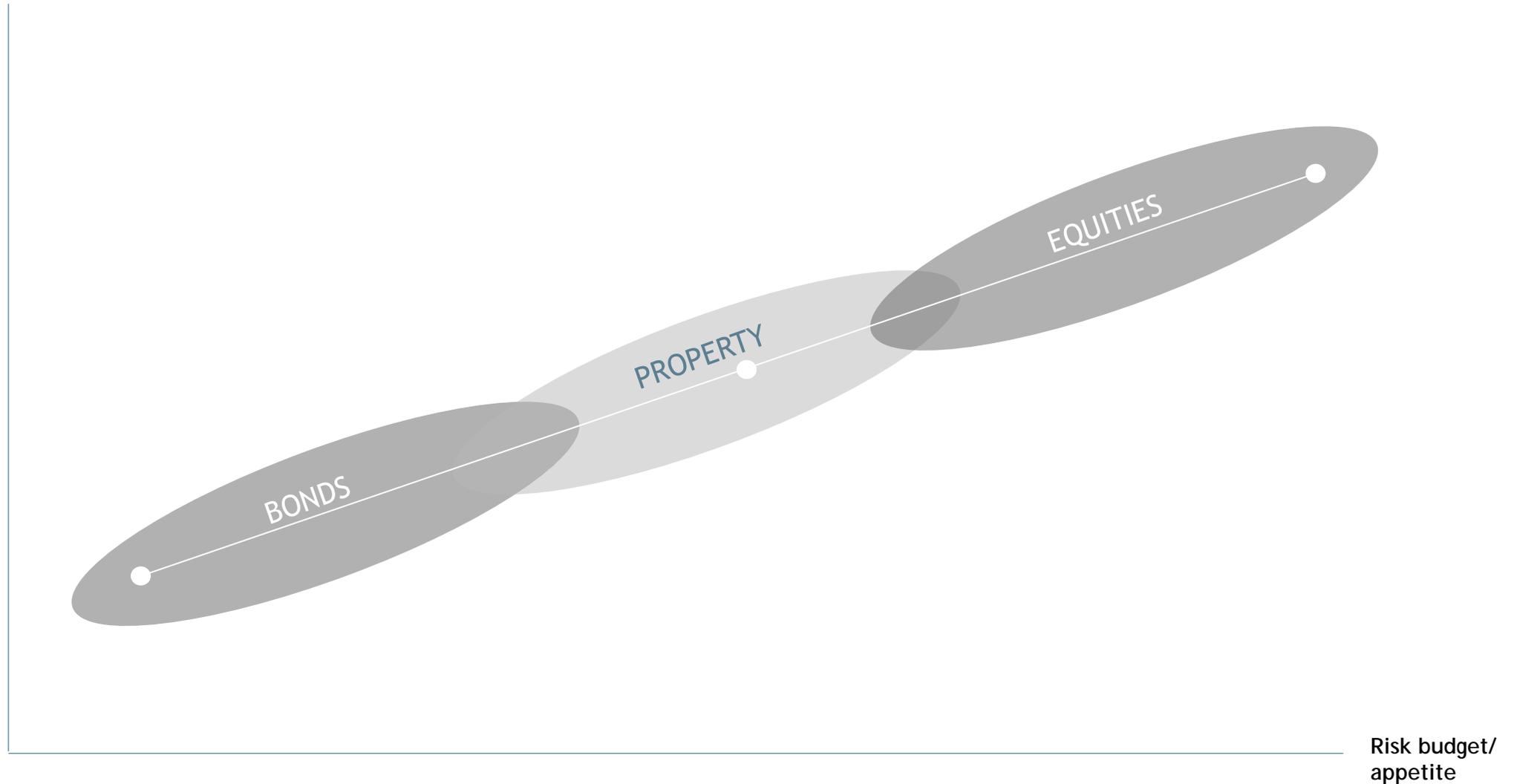


## AEW UK REAL RETURN FUND RATIONALE AND FUND STRATEGY

# THE GOOD OLD DAYS.....

TRADITIONAL ALM USED PROPERTY TO SMOOTH THE RETURNS OF A BALANCED PORTFOLIO

Return  
expectation



# TRADITIONAL PROPERTY MANAGER'S RESPONSE TO INVESTORS' NEEDS

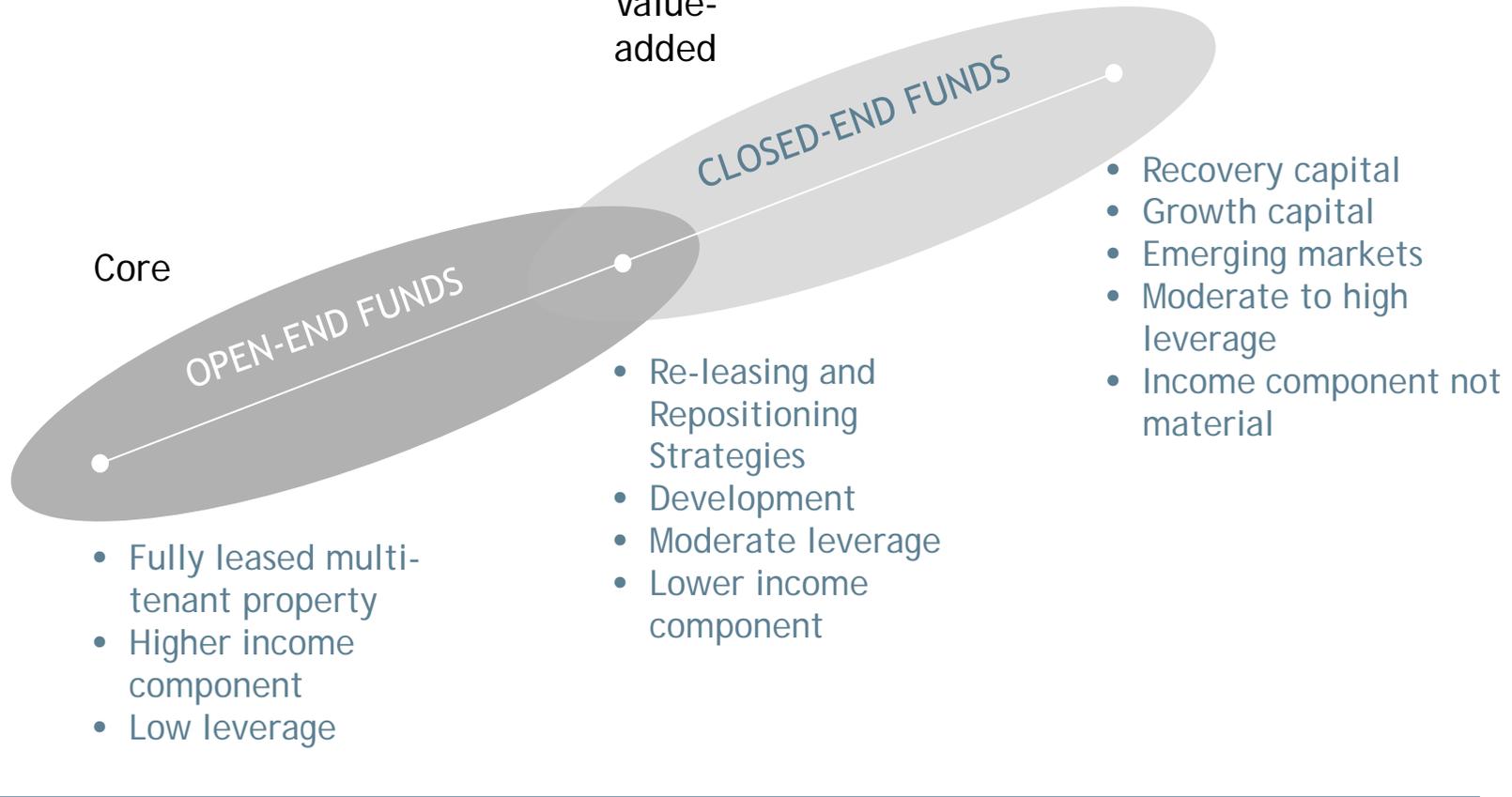
## ALL TARGETING BENCHMARK OR ABSOLUTE TOTAL RETURNS

Return expectation

Opportunistic

Value-added

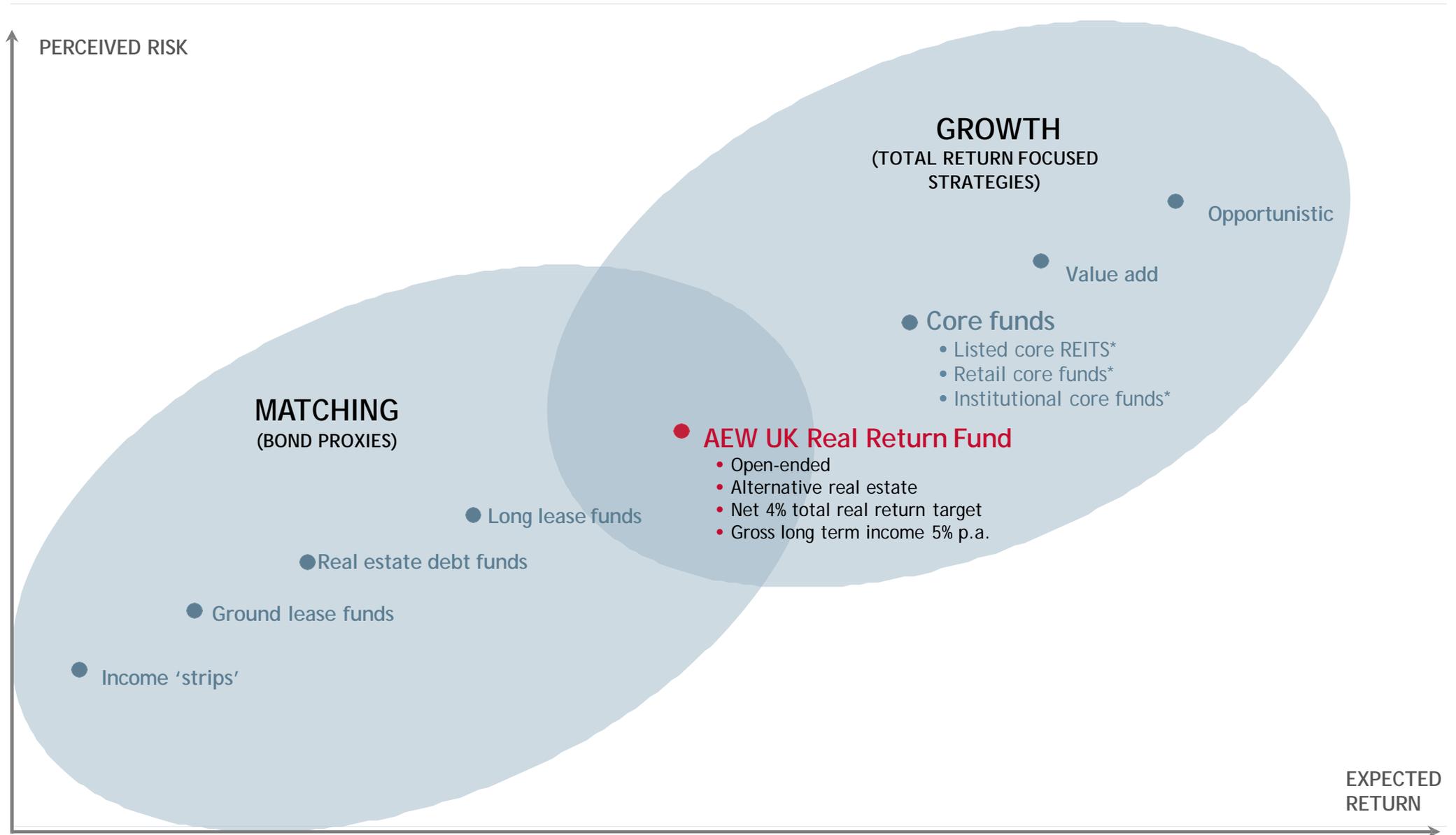
Core



Risk budget/  
appetite

# A STRONG ALTERNATIVE TO CORE BALANCED AND LONG LEASE FUNDS

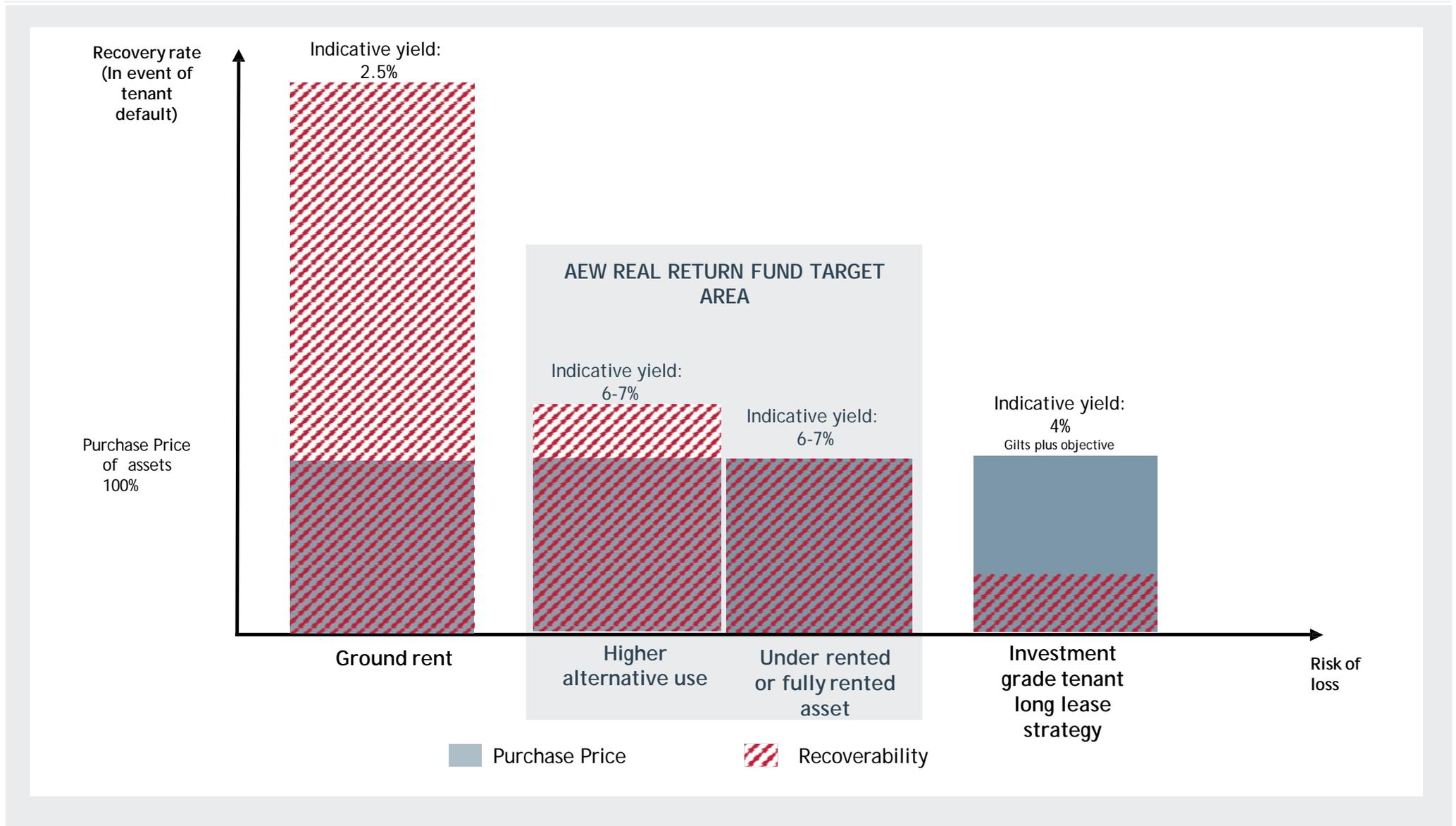
## ...A NEW LANGUAGE OF CASH FLOW MATCHING OPTIONS TO MEET INVESTORS NEEDS



Source: AEW \* All typically seeking to outperform the MSCI peer group total return benchmark

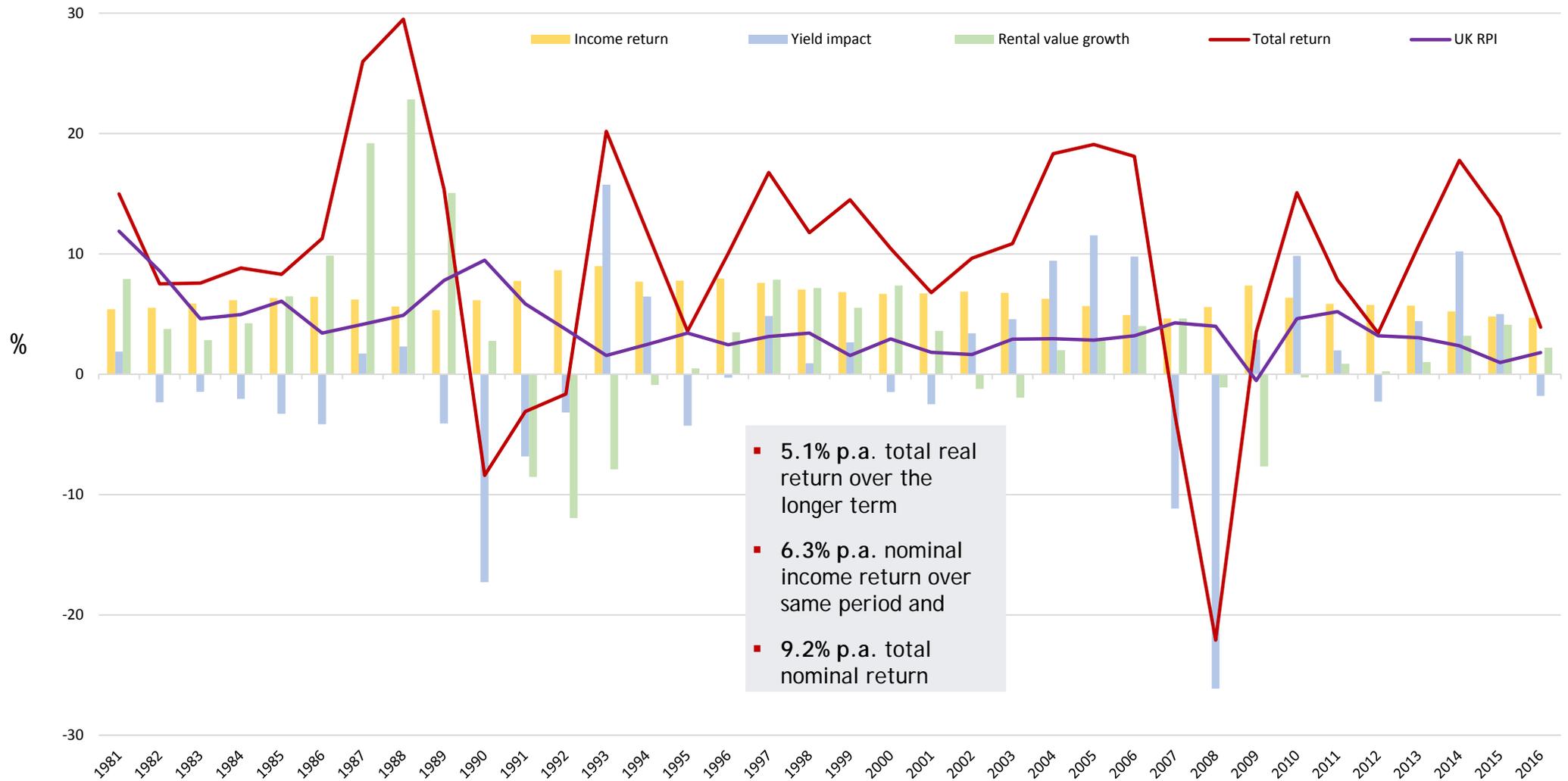
# HOW WE THINK ABOUT PROPERTY AS A SOURCE OF SECURE INCOME

PREDICTABLE: REPEATABLE: SUSTAINABLE: PERPETUAL



# TYPICAL CORE FUND IPD TOTAL RETURN BENCHMARK

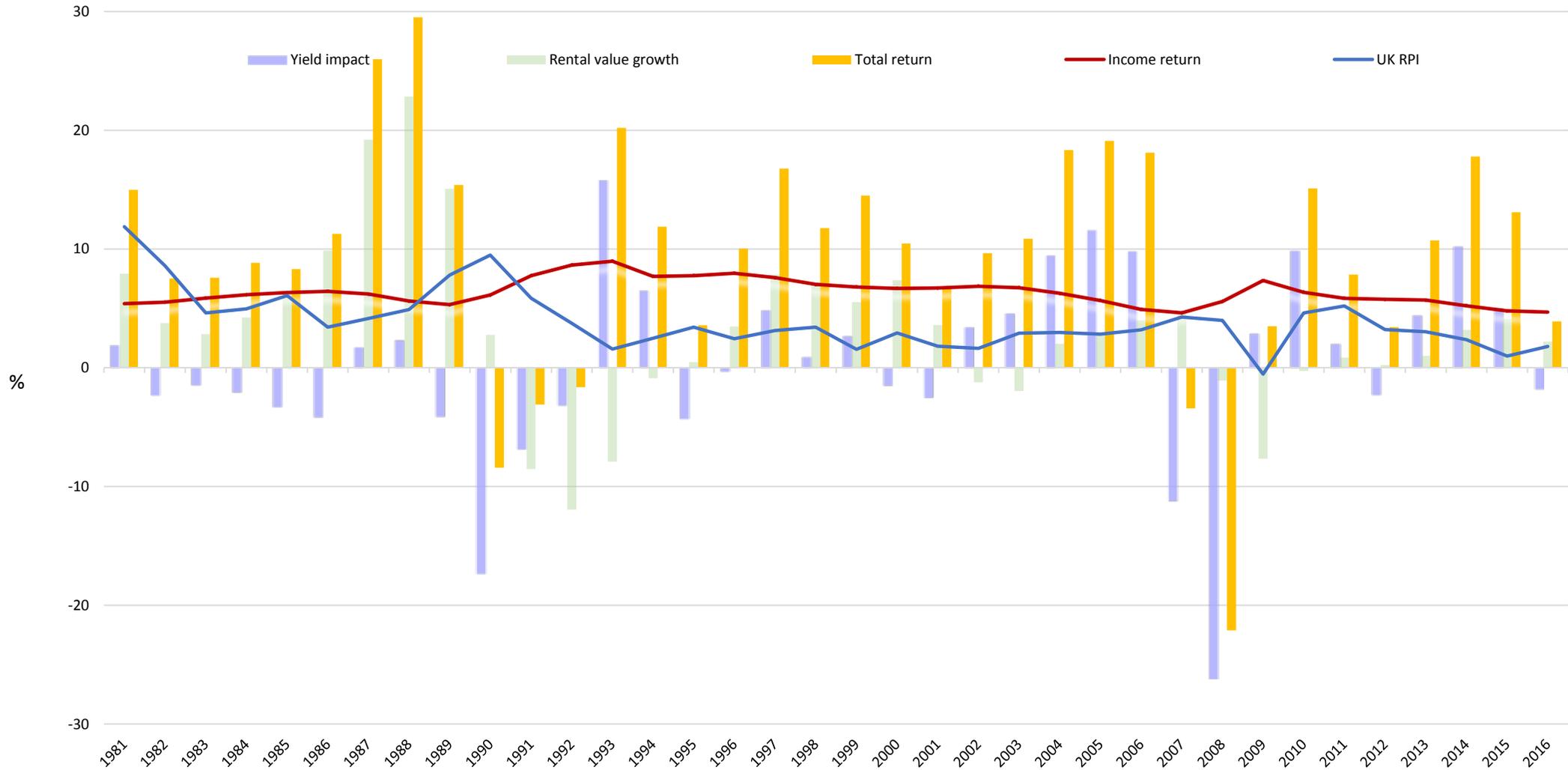
## VOLATILITY UNACCEPTABLE TO INCREASING NUMBER OF INVESTORS



Source: MSCI, AEW 31 December 1981 to 31 December 2016

# AEW UK REAL RETURN FUND

## A FOCUS ON INCOME AND INFLATION LINKED CASH FLOWS



Source: MSCI, AEW 31 December 1981 to 31 December 2016

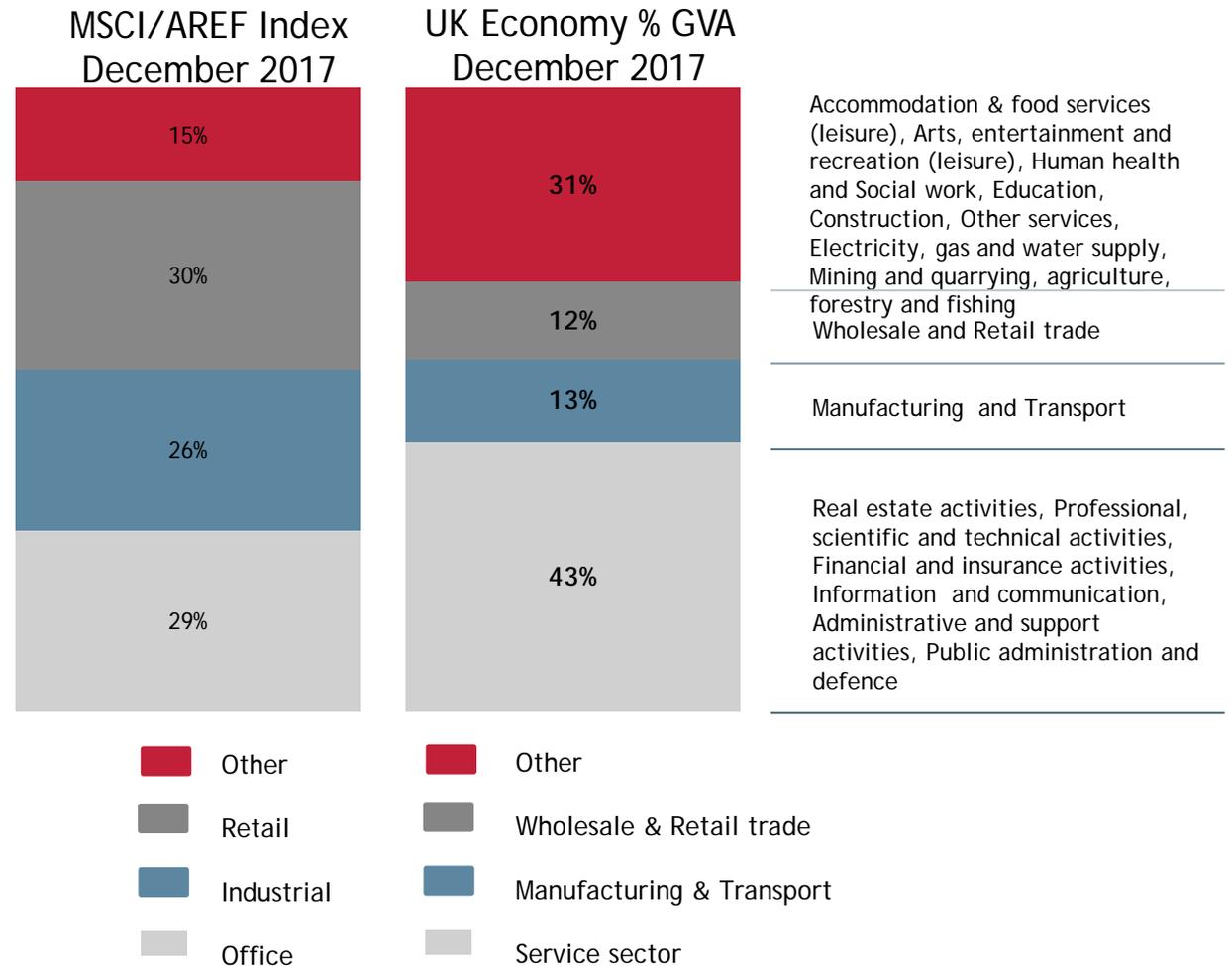
## HOW TO BUILD A PORTFOLIO WITH SUSTAINABLE INCOME

# AEW UK REAL RETURN FUND

## FOLLOWING DEMAND IN THE ECONOMY, NOT A STATIC BENCHMARK

A liability matching strategy should:

- embrace all real estate sectors that reflect economic themes and offer RPI-like attributes
- include the many “other” sectors that are a significant part of the UK economy
- Look to social demographic trends and identify attractive sectors



Source: AEW, Oxford Economics, MSCI

# INVESTING IN ACYCLICAL TRENDS ...WITH TRADITIONAL VALUE INVESTING

Building a portfolio based on long term high conviction themes:

- Demographics
- Transport
- Technology
- The Consumer
- Urbanisation

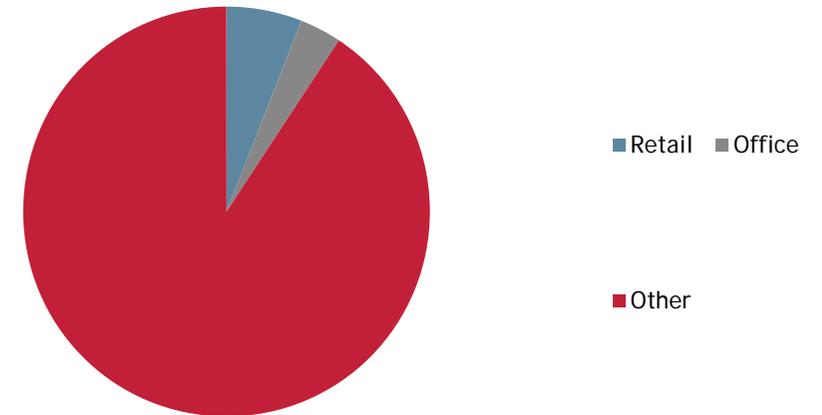
Underpinned by skilled stock selection:

- Property fundamentals
- Quality of bricks and mortar for today's occupier
- Rent affordability
- Coface credit analysis

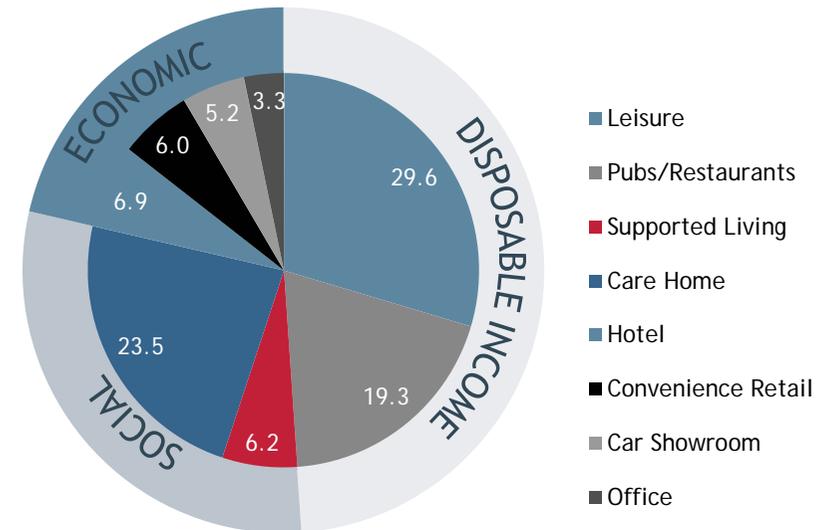
Actively asset manage for long term income growth:

- Landlord and tenant alignment
- Use sustainability as a positive driver of returns
- Strong asset management capabilities

AEW UK REAL RETURN FUND SECTOR WEIGHTINGS  
(BASED ON MSCI CATEGORISATION) AS AT 31 DECEMBER 2017



AEW UK REAL RETURN SECTOR WEIGHTINGS AS AT 31 DECEMBER 2017



# BUILDING THE OPTIMAL PORTFOLIO

## REAL RETURN FUND'S KEY DIFFERENTIATOR

- Blending the lower yielding strategic and higher yielding tactical to provide an aggregate yield targeting 5% p.a. gross over the long term
- Blending the longer leases with shorter to achieve weighted unexpired lease length (WAULT) control that exceeds the Reference Benchmark

### STRATEGIC PORTFOLIO TARGET WEIGHTING 60-75%

Targets fund performance objectives by inflation correlation mainly through:

- Long leases
- Alternatives
- Inflation linked review mechanism
- Lower yielding
- Properties with strong fundamentals

Key control on allocation to strategic portfolio is a requirement that a minimum of 50% of total Fund income must be linked to inflation

### TACTICAL PORTFOLIO TARGET WEIGHTING 25-40%

Targets fund performance objectives in nominal terms

- Shorter leases
- Traditional sectors and alternatives
- Value investing
- Higher yielding
- Properties with strong fundamentals
- Active asset management to add value through income creation
- Incubator portfolio for regeneration of inflation correlated cash flows



PROPERTY FUNDAMENTALS FOR ALL ASSETS KEY TO PRESERVING CAPITAL

Factors such as capital value per sq ft, timing and sustainable income growth

Source: AEW \* Reference Benchmark is AREF/ IPD UK PFI, All Balanced Funds Index

# PROPERTY SKILLS KEY TO PROTECTING AGAINST DOWNSIDE RISK

## PROPERTY FUNDAMENTALS CAN PROTECT AGAINST RISING BOND YIELDS

### STRATEGIC PORTFOLIO

LARKLAND HOUSE, ASCOT  
CARE HOME



### INVESTMENT SUMMARY

- Prominent edge of town centre location
- Affluent demographics/catchment
- 19 year lease to Care UK annual RPI linked reviews between 0% and 4%
- Covenant strength: D&B 5A1; Coface 4/10; Senior Secured loan LIBOR +5%
- Capital preservation - £6,100,000 vacant possession value as care home
- £6.66m purchase price, reflecting 6.14%
- **Capital value £205psf** (residential values c£400psf)

### TACTICAL PORTFOLIO

THE POINT, BOREHAMWOOD  
LEISURE



### INVESTMENT SUMMARY

- 2.23 acres in centre of London commuter town (TFL Zone 6)
- 61% Gala Bingo and Reel Cinemas: £12.50 psf & £6 psf, 7.25 years unex, open market rent reviews
- 39% Pure Gym: 20 years RPI (0-4%) 5 yearly
- Opportunities to add income from re-gear of Gala Bingo and Reel Cinema leases
- Explore long term redevelopment opportunities (potential site value considerably in excess of purchase price)
- £6.6m purchase price, reflecting 7.2%
- **Capital value £118 psf** (residential values c£450psf)

Source: AEW; Coface as at August 2016

# AEW UK REAL RETURN FUND

## HOW WE CAN DO THINGS DIFFERENTLY



CROSS POINT, COVENTRY  
ACQUIRED MARCH 2016



### INVESTMENT ATTRIBUTES

- Current valuation (12/17) £6.9m, Net initial yield 6.64%
- Prominent / established leisure destination with only bowling unit in catchment; location anchored by cinema and Tesco Metro
- 3.1 acre site; flexible 45,000 sq ft "box" with 190 car spaces
- Suitable accommodation for alternative operators
- Good trading history; affordable rents; specialist fit out costs are a significant barrier for competition
- Income is secured to strong covenants 5A1 & 4A2 (Coface score 6)  
- Now with 85% RPI linked

### OPPORTUNITY TO ADD VALUE BY CREATING FUTURE INCOME

- Extend Pizza Hut lease at next rent review (2017)
- Explore opportunities to add additional food & beverage pod on inflation-linked lease

#### REAL RETURN FUND STRATEGY KEY DRIVERS OF RISK AND RETURN

- Attractive yield (target 5%p.a.)
- Lease length
- Inflation linked cash flow
- Capital preservation

#### DEAL OFFERED TO MARKET

- ✓ 8.15% (But Ten Pin Bowling over rented @£12 psf p.a.)
- ✗ Only 6.6 years
- ✗ Open market rent review linked to adjoining retail rents
- ✓ C.V £149 psf

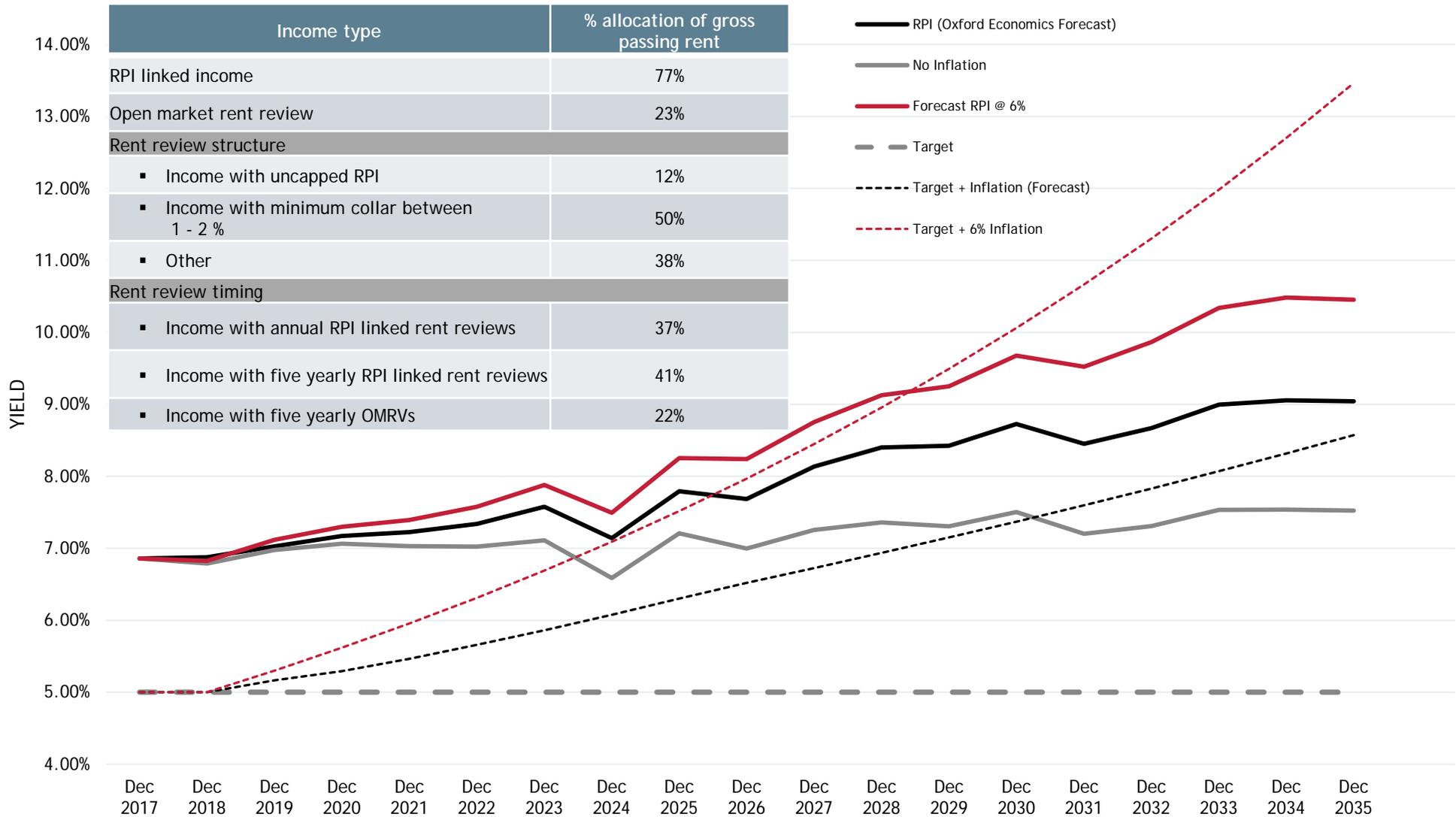
#### ACTIVE ASSET MANAGEMENT CREATES LONG INFLATION-LINKED INCOME

- ✓ 7% (Ten Pin Bowling reduced to £10 psf p.a.)
- ✓ Ten Pin Bowling now 20 years
- ✓ Ten Pin Bowling now RPI (2-4%) 5 yearly
- ✓ C.V £149 psf

Source: AEW

# UNDERSTANDING CONSISTENCY OF CASH FLOW AND RELATIONSHIP WITH INFLATION

## REAL RETURN FUND ANNUAL GROSS RUNNING YIELD ON NAV AS AT 31 DECEMBER 2017

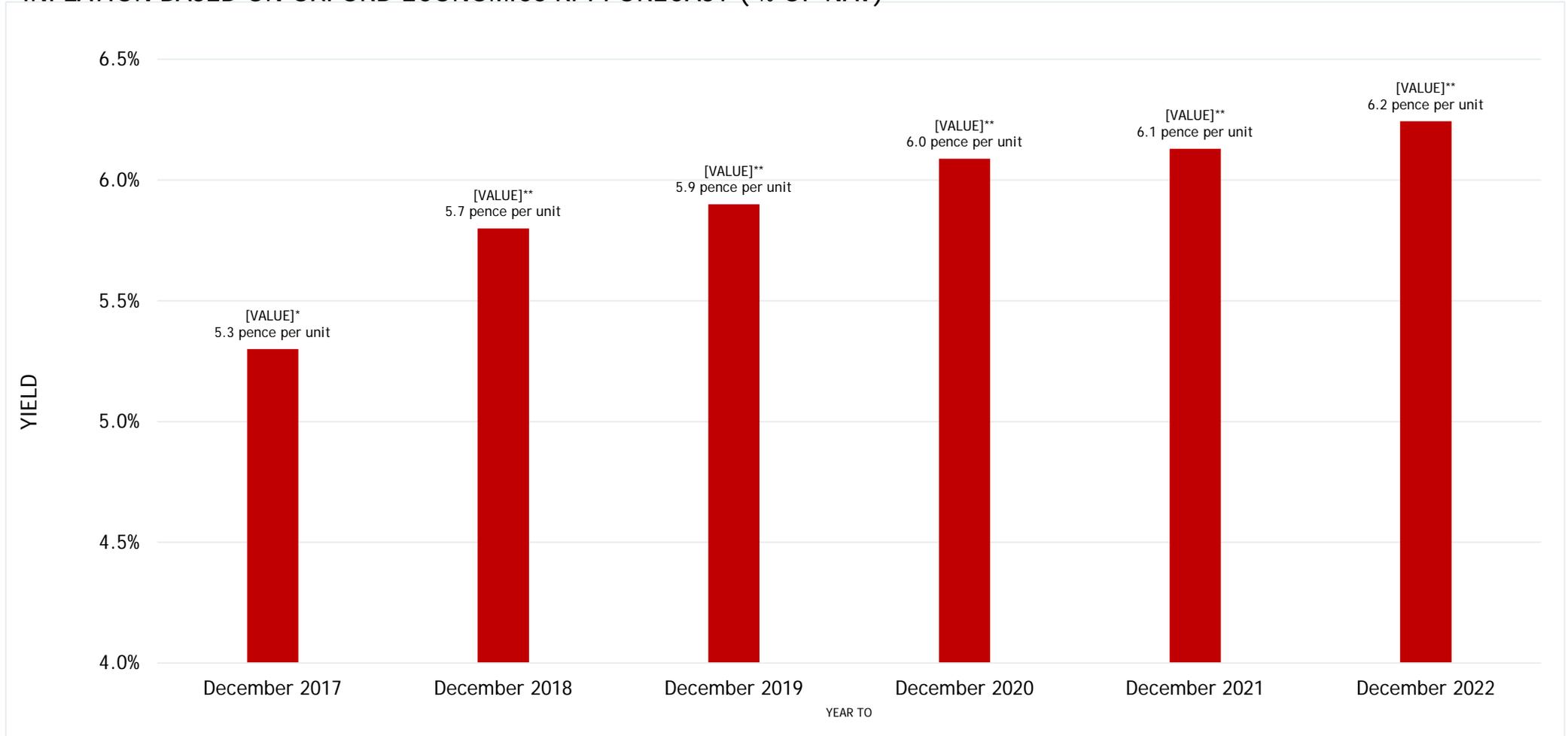


Figures calculated by AEW using Knight Frank valuation data as at 31 December 2017.

# THE IMPORTANCE OF PREDICTABLE DISTRIBUTION GROWTH FOR INVESTORS

## PROJECTED ANNUAL DISTRIBUTION (PENCE/UNIT)

INFLATION BASED ON OXFORD ECONOMICS RPI FORECAST ( % OF NAV)



Calculations do not include rental growth on open market rent reviews

Source: \*MSCI historic annual yield on NAV as at 31 December 2017.

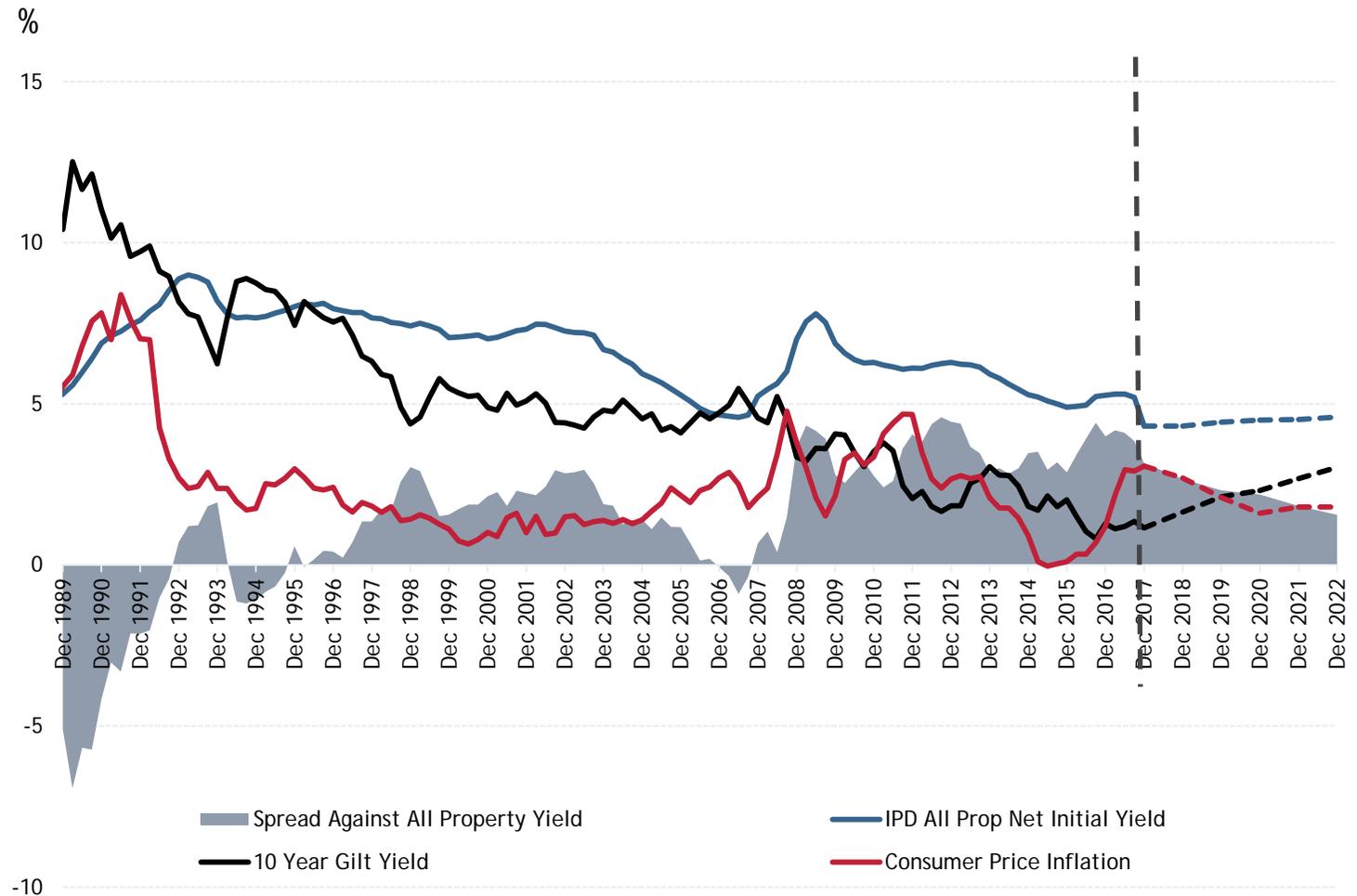
\*\*AEW: Projected annual distribution on NAV as at 31 December 2017. These projections are subject to change and there is no guarantee that forecast returns will be achieved.

## HOW THE CHANGING MARKET CAN IMPACT THE NEEDS OF INVESTORS

# UK MARKET PROSPECTS

## LOW INTEREST RATE CYCLE LONG WAY THROUGH

- Inflation peaked?
- GDP growth c1.5% in 2018 but to strengthen towards 2020
- Rising interest rates
- Rising gilt yields
- QE tightening
- Yield gap set to decline
- Limited scope for further yield compression at sector level but still value in selective sub-sectors and skilful stock selection
- In meantime property sector yield remains attractive with strong investor demand



Source: MSCI to 30 September 2017  
 Forecasts from December 2017 onwards, source data AEW, Natixis, CBRE

# UK MARKET PROSPECTS

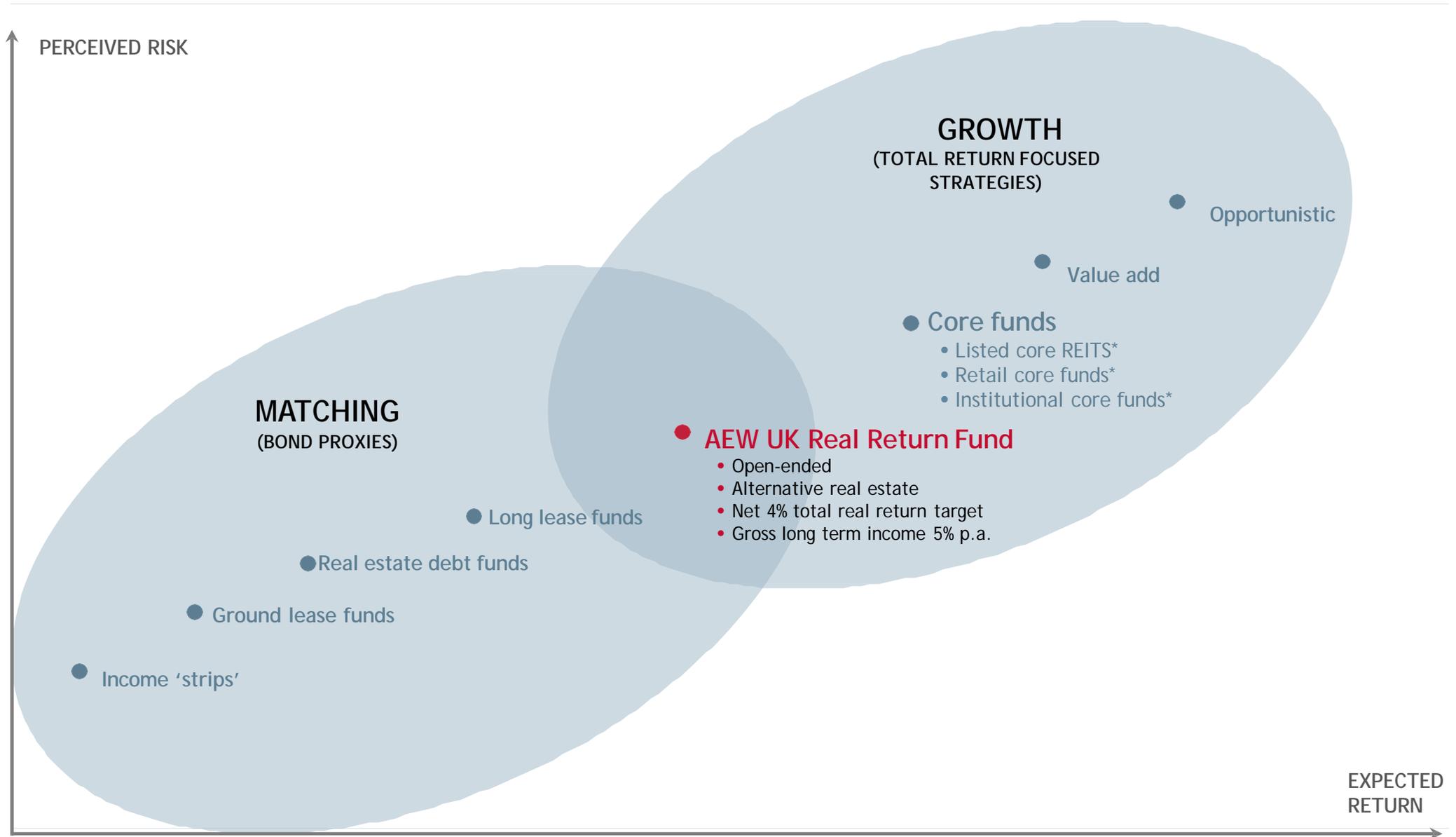
## BUT WHAT IF WE HAVE GROWTH?

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- (wage growth outstripping inflation; unemployment near 40 year low)
- Don't panic!
- Rising interest rates and higher inflation are normal and healthy
- Bonds will suffer and so should bond proxies ie long lease funds
- A lot of "matching" capital at risk
- Real assets should respond positively
- But the hunt for yield goes on
- Which strategy will serve investors best?

# A NEW LANGUAGE OF CASH FLOW MATCHING OPTIONS TO MEET INVESTORS NEEDS

BUT A STRATEGY FOCUSING ON INCOME GIVES A DIFFERENT OUTCOME THAN JUST A HIGHER YIELD



Source: AEW \* All typically seeking to outperform the MSCI peer group total return benchmark

# IF YOU NEED STRONG, STEADY INFLATION-LINKED LONG TERM INCOME

## AEW HAS A SOLUTION - AEW REAL UK RETURN FUND

|                                     |  |
|-------------------------------------|--|
| ✓ MATCHING                          | Real estate and alternative real estate assets in particular, are a strong match for cash flow and inflation   |
| ✓ RETURNS                           | The Fund offers capital preservation and inflation-linked growth plus illiquidity premium from property  |
| ✓ REAL ASSETS                       | Focus on property fundamentals that respond to the growth phase of the economy   |
| ✓ THE HUNT FOR YIELD                | Long term sustainable income with growth   |
| ✓ PEOPLE                            | A stable management team that has worked together for an average 20 years  |
| ✓ PROCESS                           | Using an investment process that has stood the test of time over 20 years  |
| ✓ PERFORMANCE                       | A track record in Core Real Estate delivering consistent income driven outperformance over 20 years. Most recently:<br>-AEW UK Core Property Fund - No 1. Fund over 1,3 and 5 years <sup>1</sup><br>-AEW UK Real Return Property Fund - 6.4% total real return (net) |
| ✓ ABILITY TO DEPLOY CAPITAL QUICKLY | Strong pipeline of c£50m - £60m<br>Track record of deploying up to £50m per quarter  |

<sup>1</sup> Source: All Balanced Property Fund Index, AREF/IPD UK Quarterly Property Fund Index results for the quarter ending 31 December 2017. The benchmark index is used for reference purposes only for the AEW UK Real Return Fund.

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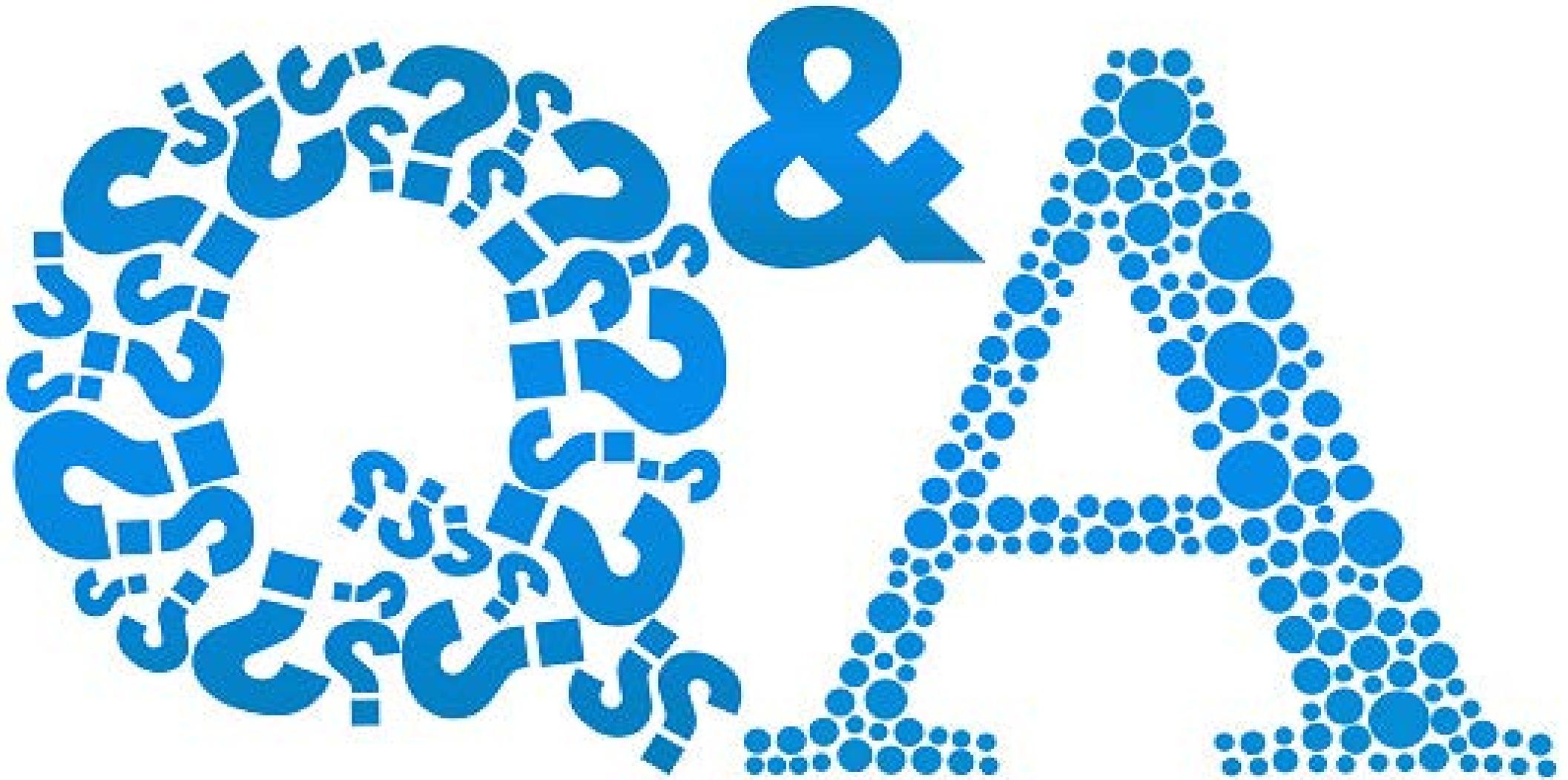
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CAMRADATA

Clear and Independent Institutional Investment Analysis



# Behavioral Finance: Background, Concepts, & Application

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# A Brief History

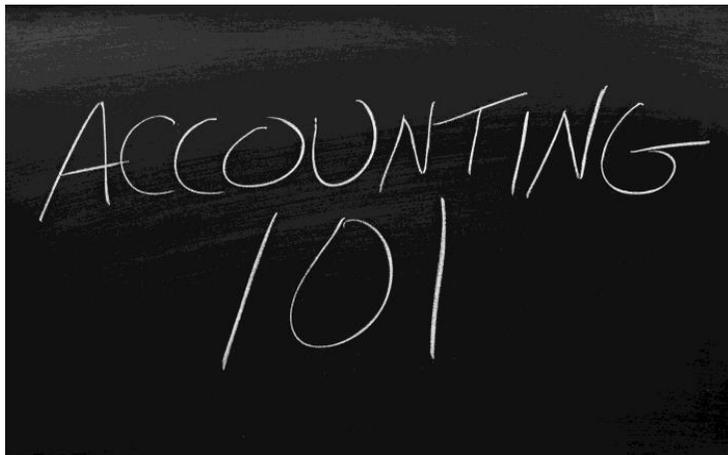
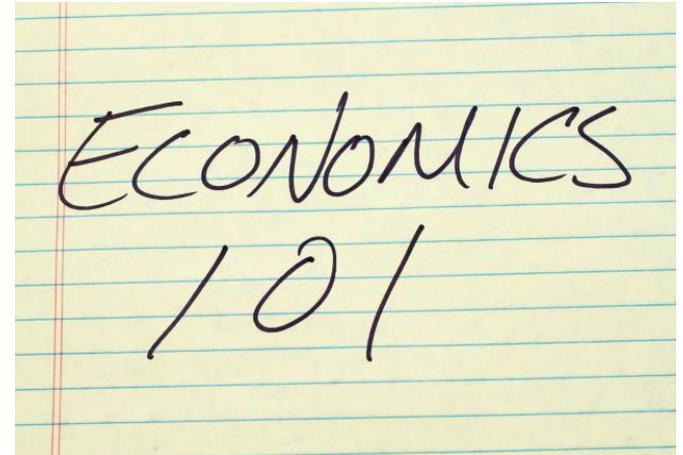
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- Academia (1990s)
  - Credit analysis (MBA)
  - Accounting (PhD)
- Research Context
  - Preparers (Auditors)
  - Users (Analysts)
- Investment Industry (2000s)

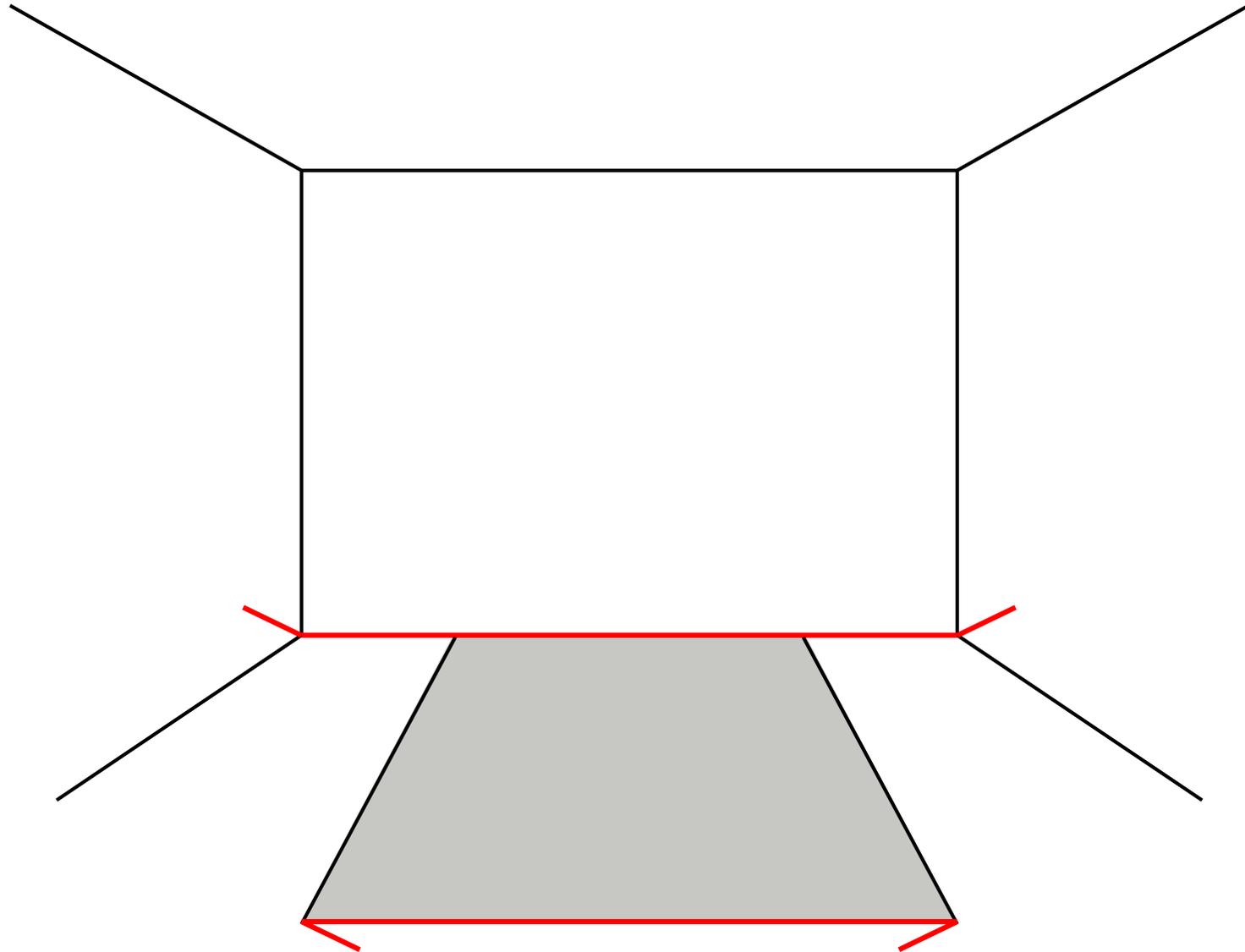
# Academic Fools Gold

- Consumers are Rational

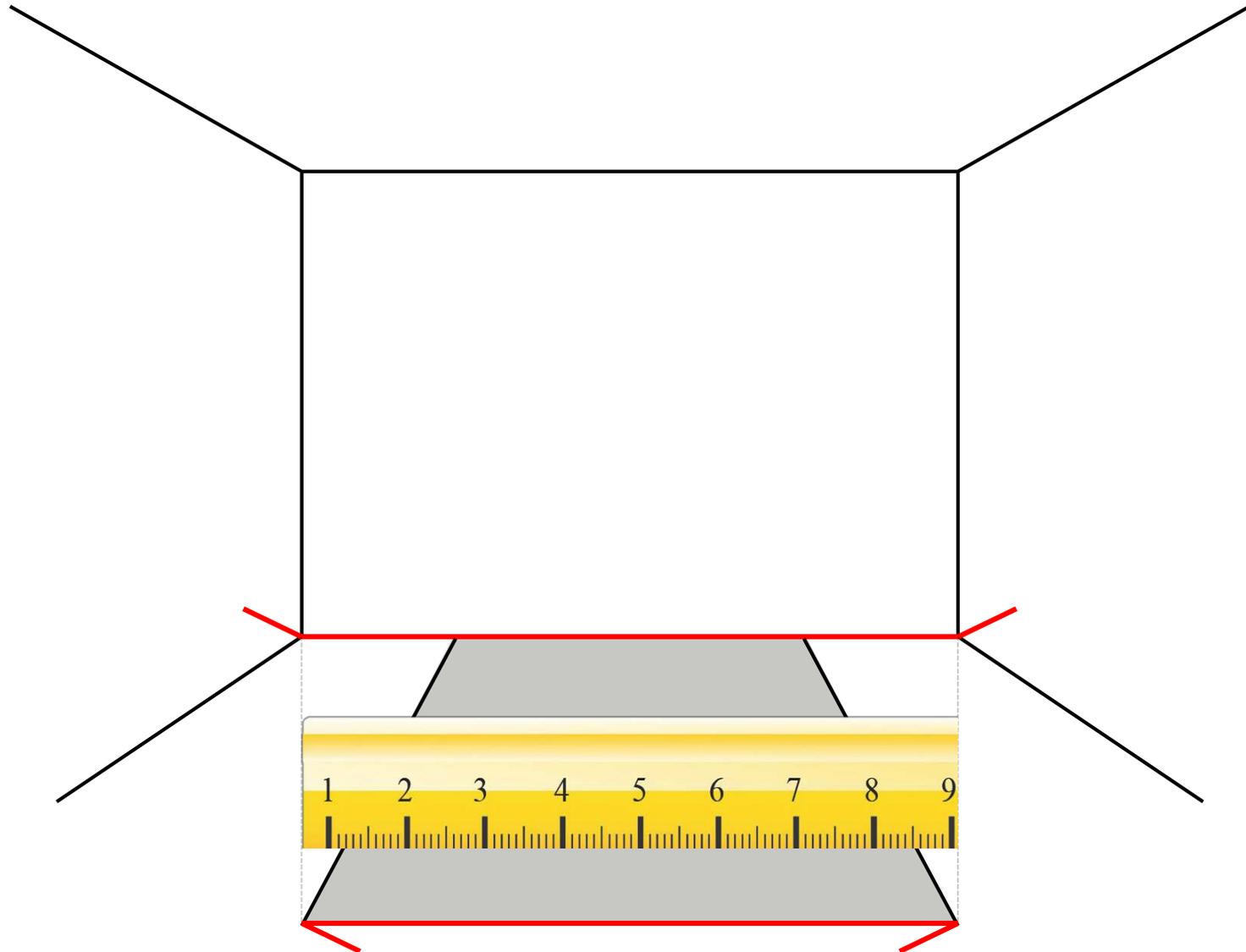


- Accountants are Objective

# Are We Visually Rational?



# A Visual Illusion



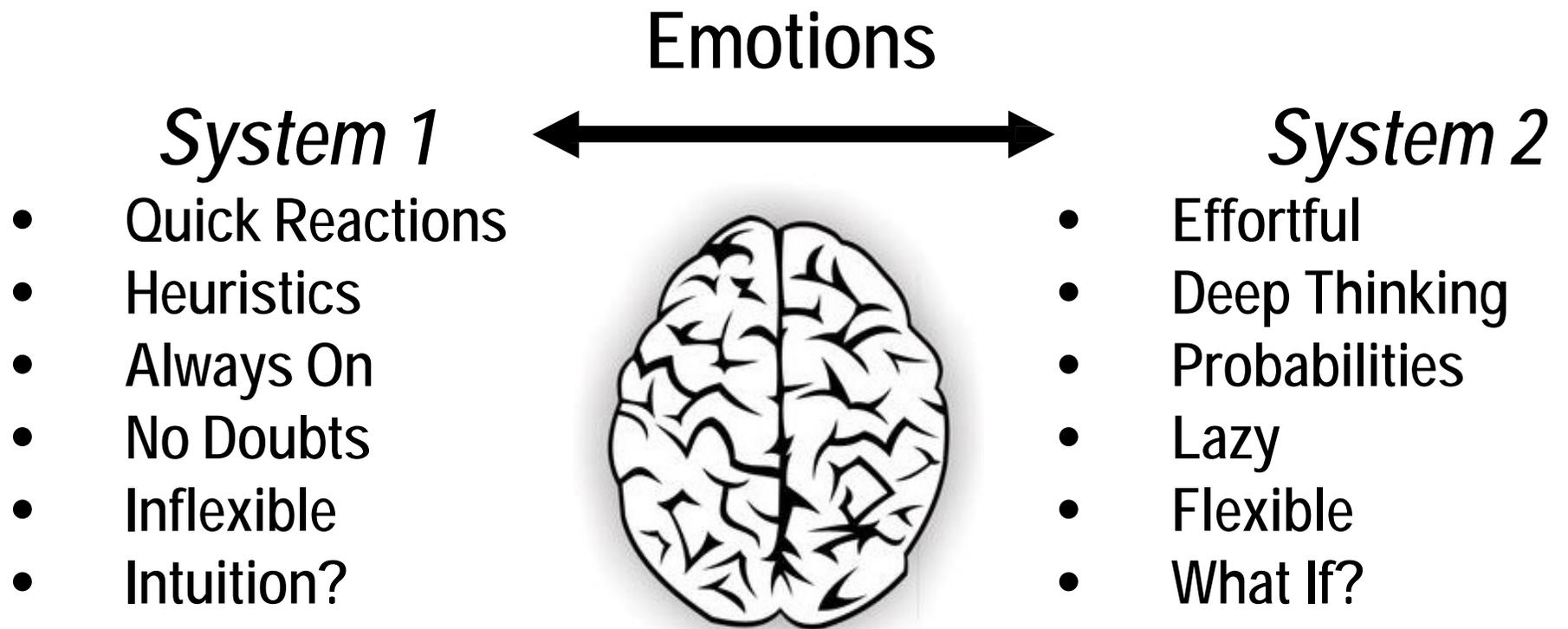
# Cognitive Illusions

- Prescriptive vs Descriptive
- Kahneman & Tversky
- Richard Thaler

## *Behavioral Economics*

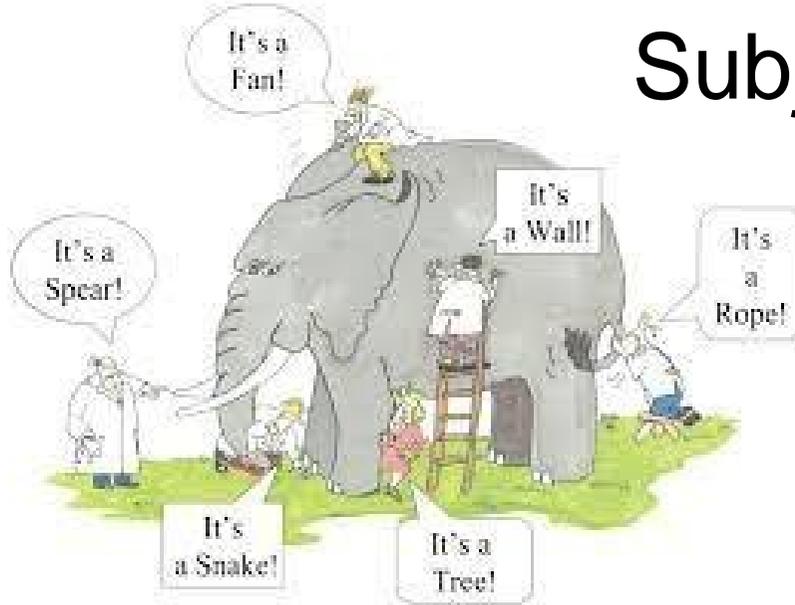


# Kahneman's Two Systems



# Our Decision Context

## Subjectivity



## Pressure



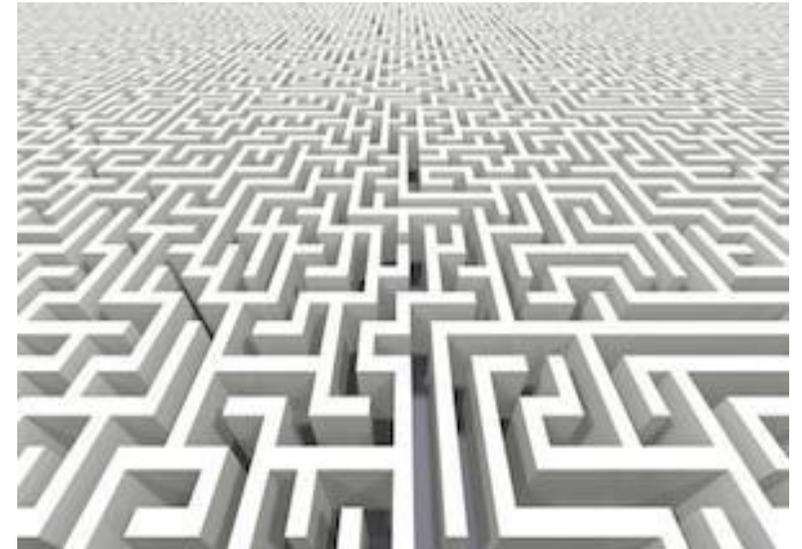
## Emotions

# Our Decision Context

## High Stakes



## Complexity



# Our Decision Context

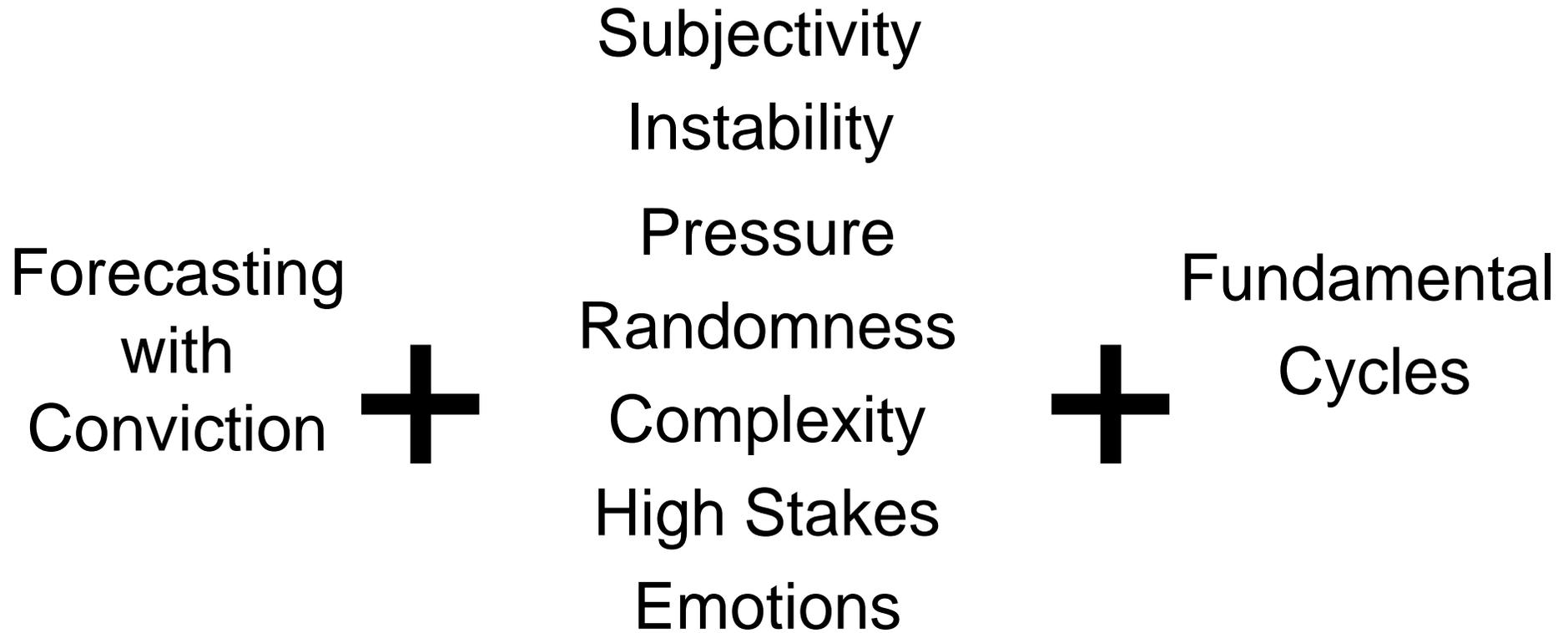


Randomness

Instability

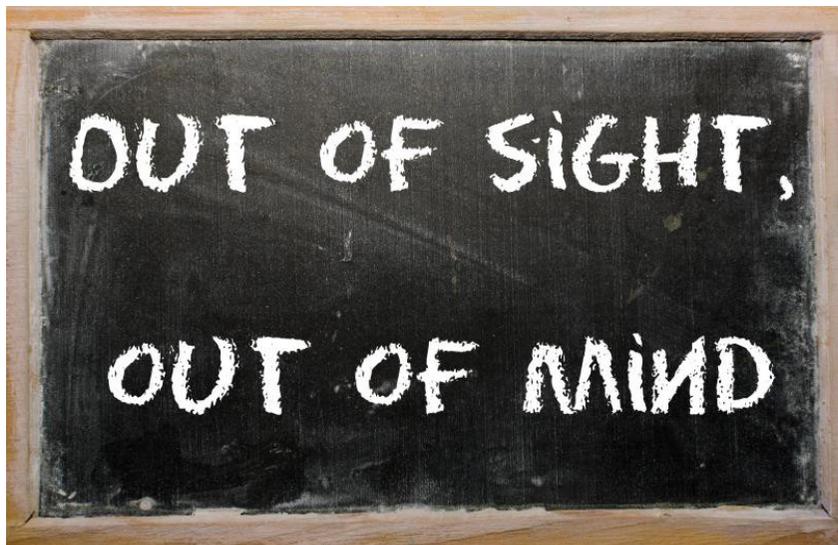


# A Formula for Bias ...



# A Host of Behavioral Effects

- Availability
- Coherency
- Confirmation
- Overconfidence
- Base Rate Neglect
- Focusing Illusion
- Substitution
- Disposition Effect
- Framing
- Halo Effect
- Endowment Effect



# WYSIATI

# Two Questions

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How to take  
advantage of  
behavioral  
effects



How to avoid  
being a victim of  
our own biases

# Focus on the Knowable

- Make Good Decisions & the Rest Will Work Out
  - Buy & Sell
  - No Holding Periods
  - No Price Targets
- Avoid Forecasting
  - Trying to “know” the unknowable
  - Coherency & Confirmation
  - Bold Forecasts (Availability) & Timid Choices (Loss Aversion)



# We Buy ~~Best~~ Ideas



*Today's  
Conservatism Events*

Are the Seeds of ...

*Tomorrow's  
Long-Term Trends*



# Emotions Follow Cycles

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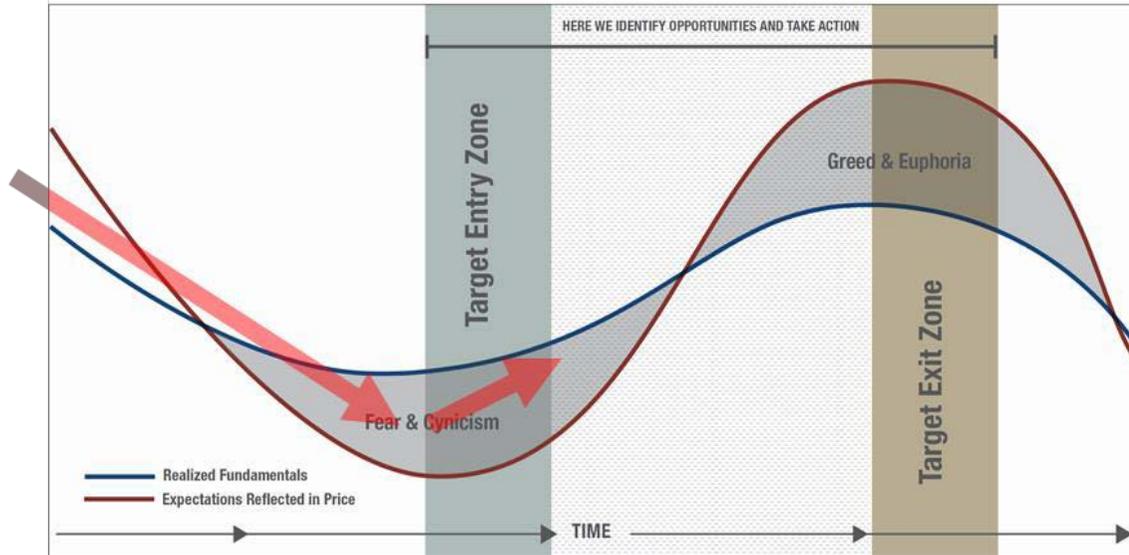


*“Bull markets are born on pessimism, grown on skepticism, mature on optimism, and die on euphoria”* – Sir John Templeton

*“The herd applies optimism at the top and pessimism at the bottom.”* – Howard Marks

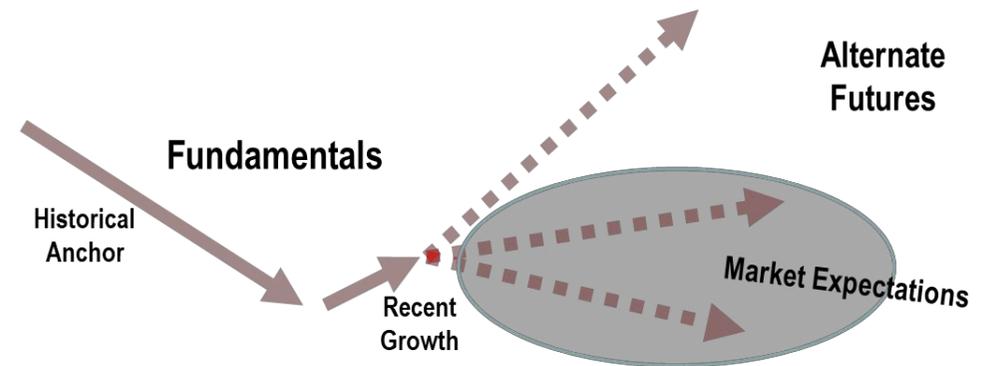
# Conservatism “Event”

INVESTOR BIASES MANIFESTED IN THE EARNINGS CYCLE



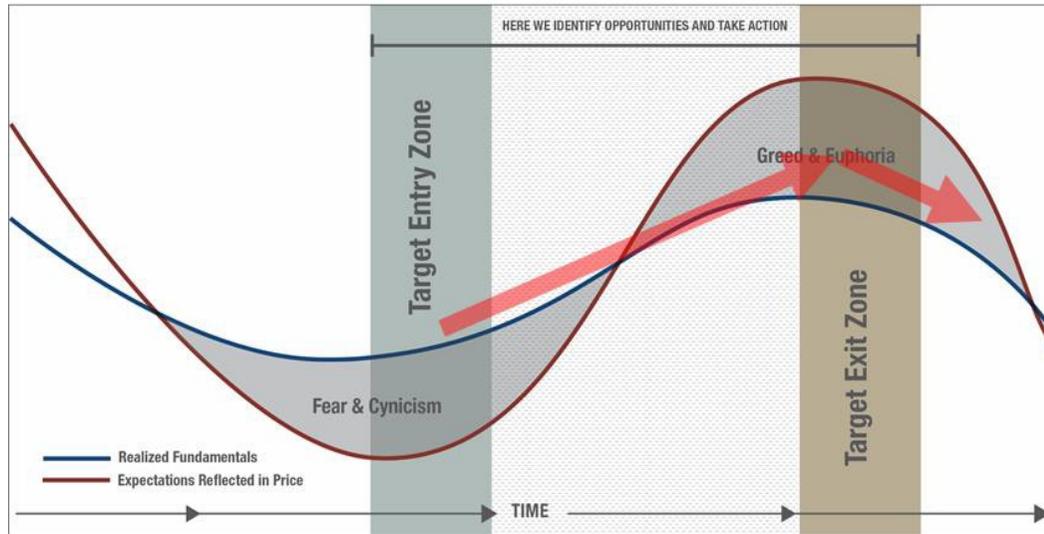
*Historical & Recent Fundamentals Collide*

*A Useful, but Simplistic Model  
(otherwise, you could do it!)*



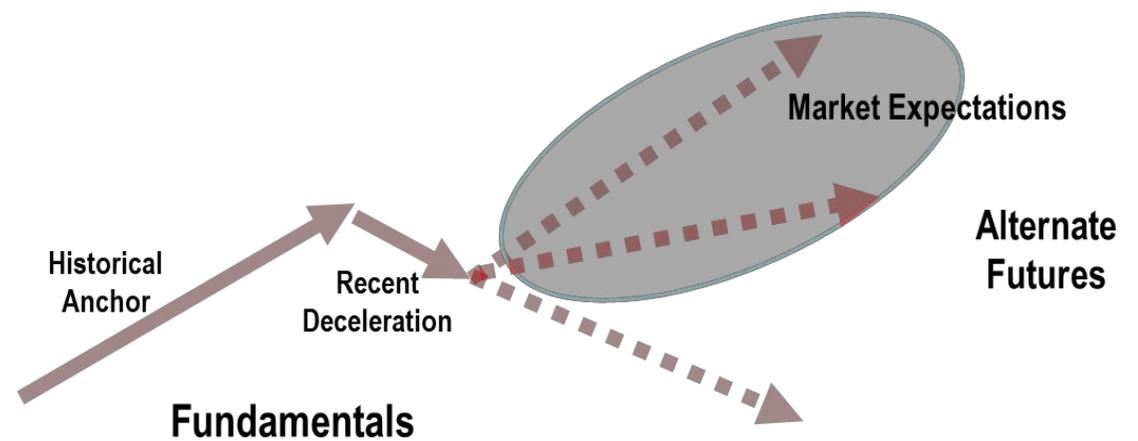
# Stubborn Optimism “Event”

INVESTOR BIASES MANIFESTED IN THE EARNINGS CYCLE



*Historical & Recent Fundamentals Collide*

*A Useful, but  
Simplistic Model  
(otherwise, you could do  
it!)*



# Our Signature ...



(as of 12/31/2017)

| Strategy            | Benchmark                | 5 Year EPS Growth |       |        | Trailing Year EPS Growth |       |              | Price to Earnings - LTM |       |              | Price to Earnings FY1 |       |              |
|---------------------|--------------------------|-------------------|-------|--------|--------------------------|-------|--------------|-------------------------|-------|--------------|-----------------------|-------|--------------|
|                     |                          | Portfolio         | Bench | Active | Portfolio                | Bench | Active       | Portfolio               | Bench | Active       | Portfolio             | Bench | Active       |
| Canada              | S&P/TSX Comp Index       | 8.05              | 8.05  | 0.00   | 12.64                    | 11.52 | 1.12         | 14.77                   | 17.15 | -2.38        | 14.41                 | 17.07 | -2.66        |
| Emerging Markets    | MSCI Emerging Market Net | 6.71              | 9.04  | -2.33  | 27.89                    | 14.53 | 13.36        | 13.05                   | 14.62 | -1.57        | 12.14                 | 13.85 | -1.71        |
| Global              | MSCI World Net           | 6.72              | 7.12  | -0.40  | 19.66                    | 11.21 | 8.45         | 14.83                   | 19.59 | -4.76        | 13.64                 | 18.25 | -4.61        |
| International Core  | MSCI EAFE Net            | 5.75              | 4.32  | 1.44   | 22.40                    | 10.03 | 12.36        | 12.82                   | 16.84 | -4.02        | 12.28                 | 16.03 | -3.75        |
| Large Cap Core      | Russell® 1000            | 9.42              | 8.34  | 1.08   | 15.93                    | 11.25 | 4.69         | 20.64                   | 22.08 | -1.44        | 18.61                 | 20.11 | -1.50        |
| Large Cap Growth    | Russell® 1000 Growth     | 10.09             | 10.09 | 0.00   | 17.10                    | 14.60 | 2.50         | 23.09                   | 26.21 | -3.12        | 20.74                 | 23.07 | -2.33        |
| Mid Cap Growth      | Russell® Midcap Growth   | 11.19             | 9.85  | 1.35   | 24.85                    | 13.07 | 11.78        | 22.76                   | 26.99 | -4.24        | 18.97                 | 23.24 | -4.27        |
| Small Cap Core      | Russell® 2000            | 6.68              | 7.15  | -0.48  | 17.07                    | 6.37  | 10.70        | 17.69                   | 20.12 | -2.43        | 16.85                 | 20.49 | -3.64        |
| Small Cap Growth    | Russell® 2000 Growth     | 10.44             | 9.95  | 0.49   | 29.15                    | 14.08 | 15.07        | 19.03                   | 24.62 | -5.60        | 17.54                 | 23.26 | -5.72        |
| Small Cap Value     | Russell® 2000 Value      | 6.05              | 5.15  | 0.90   | 19.83                    | 1.48  | 18.35        | 14.08                   | 17.09 | -3.01        | 14.15                 | 18.30 | -4.14        |
| China               | MSCI China Net           | 17.42             | 19.22 | -1.80  | 43.99                    | 27.95 | 16.04        | 15.30                   | 16.67 | -1.37        | 14.03                 | 15.28 | -1.25        |
| International Small | MSCI World X-US Sml Net  | 10.69             | 10.37 | 0.33   | 31.70                    | 10.94 | 20.77        | 12.64                   | 16.12 | -3.48        | 12.58                 | 18.13 | -5.55        |
| Large Cap Value     | Russell® 1000 Value      | 6.72              | 5.87  | 0.84   | 17.50                    | 5.95  | 11.56        | 18.62                   | 18.99 | -0.37        | 16.94                 | 17.78 | -0.83        |
| Micro Core          | Russell® Microcap Index  | 7.02              | 5.35  | 1.67   | 15.89                    | 2.25  | 13.64        | 17.79                   | 19.33 | -1.54        | 17.14                 | 18.64 | -1.50        |
| <b>Median</b>       |                          |                   |       |        |                          |       | <b>12.07</b> |                         |       | <b>-2.72</b> |                       |       | <b>-3.15</b> |

\*At the portfolio level, we expect 1 year trailing EPS growth rates to be above the index. We expect these rates to also be higher than the corresponding 5 year active historical growth rates. We expect one or both of LTM and FY1 P/E to be below index. Nevertheless, one should not take these signature characteristics as definitive of our philosophy. There are instances in which this signature may not be completely consistent across portfolios.

# Disciplined Aggression



- Hire Aggressive (bold choices)

- Develop Discipline (conservative forecasts)



# Time to Build Intuition



## *One Team, One Approach, Many Geographies*

|                         | Years of Experience | Years with Team |
|-------------------------|---------------------|-----------------|
| Stacey Nutt, PhD**      | 25                  | 18              |
| David Pavan, CFA**      | 25                  | 18              |
| Todd Wolter, CFA**      | 23                  | 18              |
| David Vaughn, CFA**     | 22                  | 15              |
| Aerus Tran**            | 22                  | 17              |
| Frank Feng, PhD**       | 20                  | 17              |
| Mike Waterman, CFA*     | 18                  | 15              |
| Ed Wagner, CFA*         | 24                  | 14              |
| Alex Turner, CFA*       | 13                  | 9               |
| Priyanshu Mutreja, CFA* | 9                   | 9               |
| Gashi Zengeni, CFA      | 11                  | 2               |
| Katherine Hartl         | 6                   | 1               |
| Amanda Shea             | 1                   | <1              |

\*Owner

\*\*Founding Partner & Owner

All experience dates as of 12/31/2017

# Structure & Intuition

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*“I learned from this finding a lesson that I have never forgotten: intuition adds value ... but only after a disciplined collection of objective information and disciplined scoring ...”*

– Kahneman (***Thinking, Fast & Slow***)

# Structure & Intuition

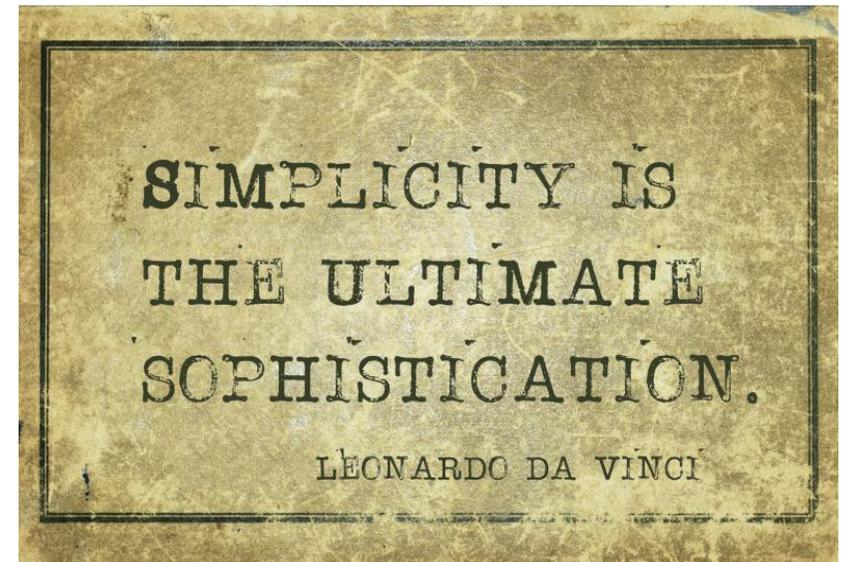
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*“an algorithm that is constructed on the back of an envelope is often good enough to compete with an optimally weighted formula, and certainly good enough to outdo expert judgment ...”*

– Kahneman (***Thinking, Fast & Slow***)

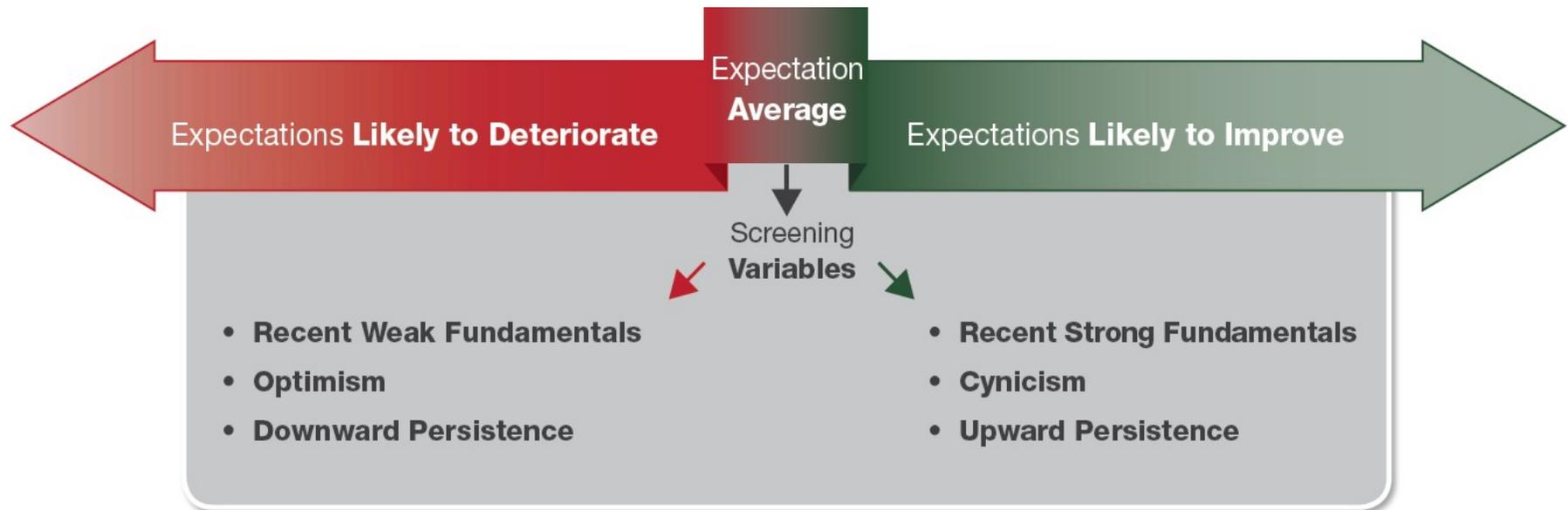
# Models Should Be Simple

- In Nature, Art, Writing, ...
- Desirable Traits:
  - Parsimonious
  - Intuitive
  - Transparent
  - Descriptive



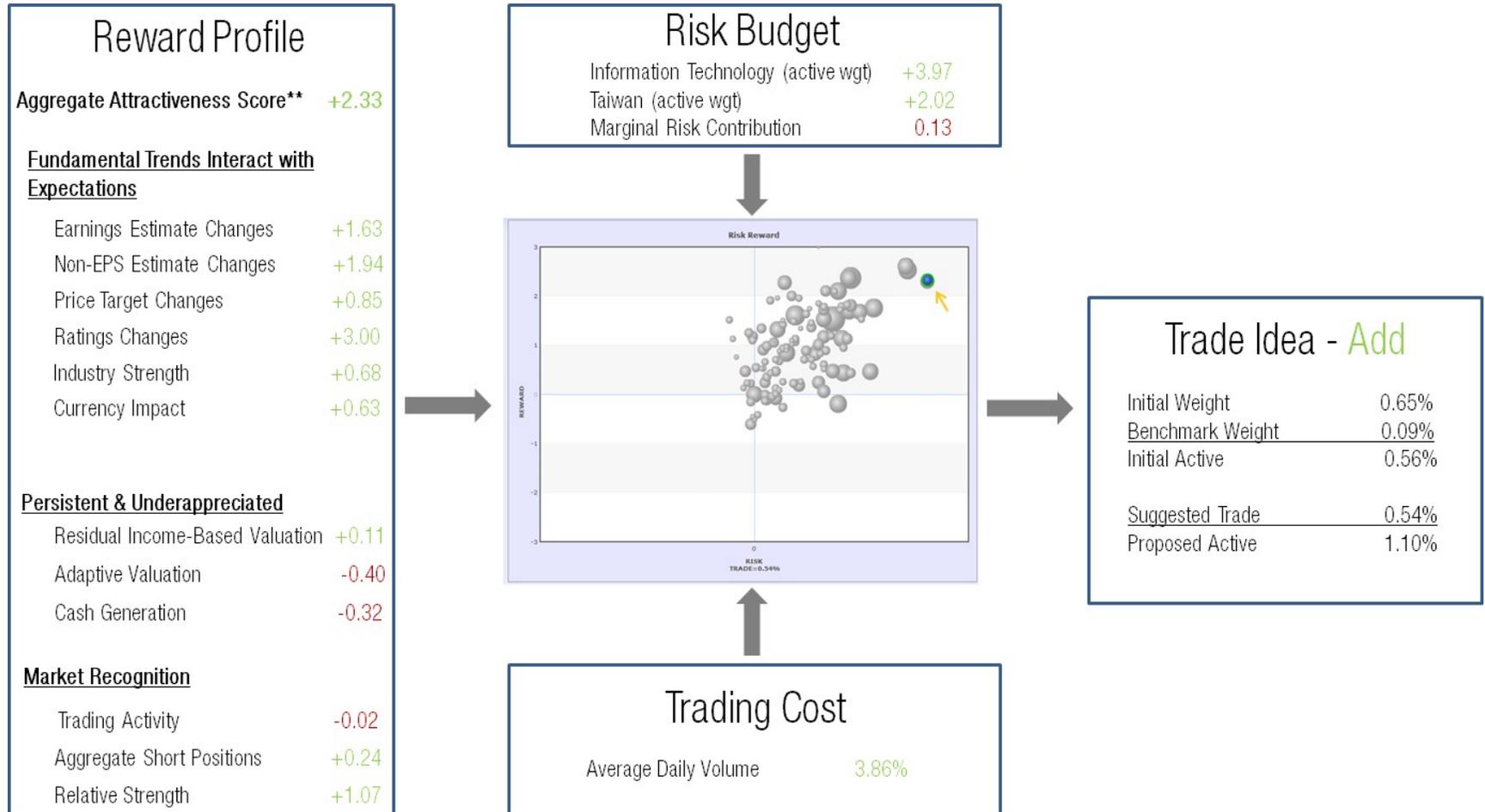
# Simply Stated ...

## *Will Expectations Improve More Than Peers?*



# Frame the Decision

This Company manufactures and markets optical lens modules and optoelectronic components. The Company offers lenses for liquid crystal display (LCD) projectors, scanners, optical mice, digital still cameras (DSCs), digital versatile discs (DVDs), light emitting diodes (LEDs), and photography mobile phones.



Source: ClariVest

\*The securities identified and described do not represent all of the securities purchased, sold or recommended for client accounts. The reader should not assume that an investment in the securities identified was or will be profitable.

\*\* Aggregate Attractiveness Score is the weighted result of proprietary factors included in the Reward Profile. Scale range is from -3.0 (least attractive) to +3.0 (most attractive).

# Familiarity Breeds Acclimation

## *Safety is Good, so ...*

- Repeated Exposure & No Harm
  - Positive Feelings
    - Less Danger
      - Acclimation



# Actively Avoid Acclimation

## Risk Models Measure Temperature

- Marginal Contribution
- Stock Specific

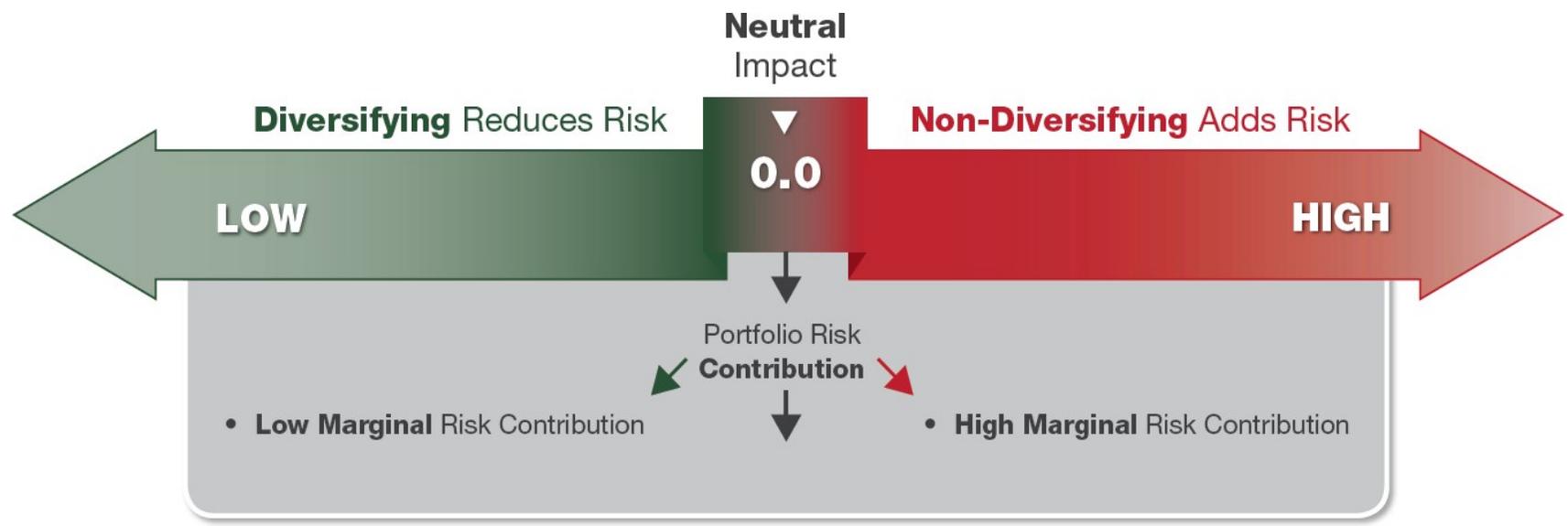


## Integrate Risk Throughout

- Before (screening)
- During (holdings)
- After (performance)

# Simply Stated ...

## *How Does It Fit Within the Existing Portfolio?*



# Inconsistent Preferences



*“We have neither the inclination nor the mental resources to enforce consistency on our preferences, and our preferences are not magically set to be coherent ...”*

– Kahneman (***Thinking, Fast & Slow***)

# Organize our Preferences

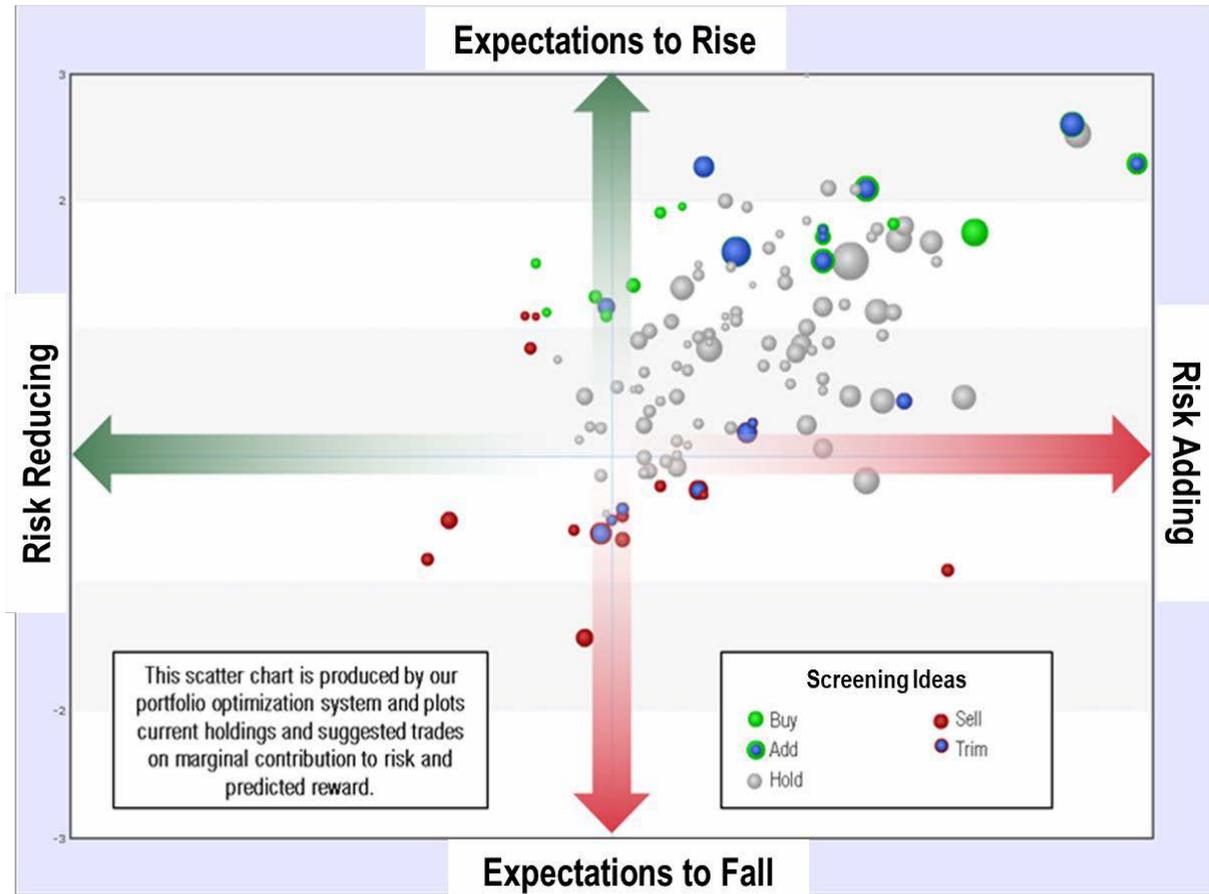
- What do we like?
- How much do we like it?
- Consistency
- Objectivity



- Avoid Availability, Recency, Halo, Framing, Disposition Effect, etc.
- Optimization

# Visualize the Tradeoffs

## Optimization Based Idea Generation



# Expertise Driven Intuition

*“the accurate intuitions of experts are better explained by the effects of prolonged practice than by heuristics ...”*

– Kahneman (***Thinking, Fast & Slow***)

*“Intuition is nothing more and nothing less than recognition.”*

– Herbert Simon

# Build Intuition Through Time

- Repetition & Validation
  - Chess Master
  - Man & Machine
- Build Intuition
  - Practice consistent, balanced, and objective decisions
  - Utilize a framework to develop an intuitive model
- But don't put away the computer



# The Nudge (Thaler)

## *Many Things Can Benefit from The Nudge*

- Increase the effort required to deviate from the desired choice (make it an error of commission)
  - Philosophy
  - ESG
  - Guidelines
  - Compliance



# The Potential ...

(as of 12/31/17)

| Product Name         | Universe                          | Peer Ranks from July 2010 (or ITD*) through December 2017 |                   |
|----------------------|-----------------------------------|---|-------------------|
|                      |                                   | Active Return   | Information Ratio |
| Canada               | Canadian Large Cap Core Equity    | 26  | 1                 |
| Emerging Markets     | Emerging Mkts All Cap Core Equity | 19  | 14                |
| Global               | Global All Cap Core Equity        | 18  | 8                 |
| International Core   | EAFE Large Cap Core Equity        | 1   | 5                 |
| Large Cap Core       | US Large Cap Core Equity          | 11  | 8                 |
| Large Cap Growth     | US Large Cap Growth Equity        | 5   | 1                 |
| Mid Cap Growth       | US Mid Cap Growth Equity          | 2   | 1                 |
| Small Cap Core       | US Small Cap Core Equity          | 37  | 32                |
| Small Cap Growth     | US Small Cap Growth Equity        | 29  | 15                |
| Small Cap Value      | US Small Cap Value Equity         | 8   | 9                 |
| China*               | Overseas China Equity             | 30  | 5                 |
| International Small* | EAFE Small Cap Core Equity        | 37  | 21                |
| Large Cap Value*     | US Large Cap Value Equity         | 9   | 9                 |
| Micro Core*          | US Micro Cap Core Equity          | 5   | 14                |

\*Represents the post Global Financial Crisis era and dates from a major enhancement to the ClariVest investment process in the form of improved risk management. 2010 was the year of implementation, thus we started the period in July of that year. For the period Q3 2010 through Q4 2017 or ITD through Q4 2017 as follows:

China - 12/31/2013  
International Small - 12/31/2011  
Large Cap Value - 12/31/2011  
Micro Core - 7/31/2014

Source: eVestment  
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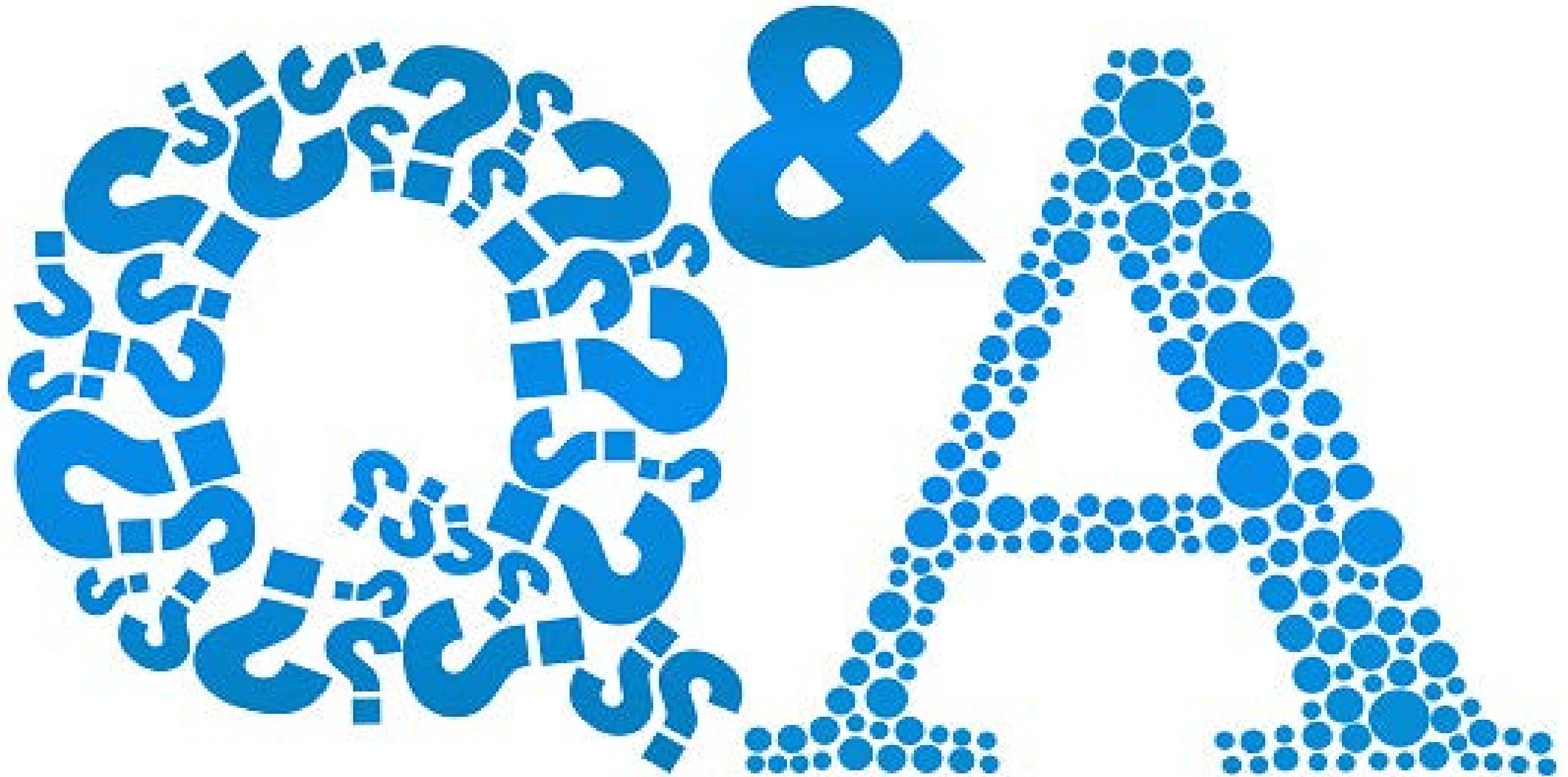
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**CAMRADATA**

Clear and Independent Institutional Investment Analysis



# Mirae Asset Global Investments

## The Multi-Decade Asian Consumer

# **Corporate Profile**

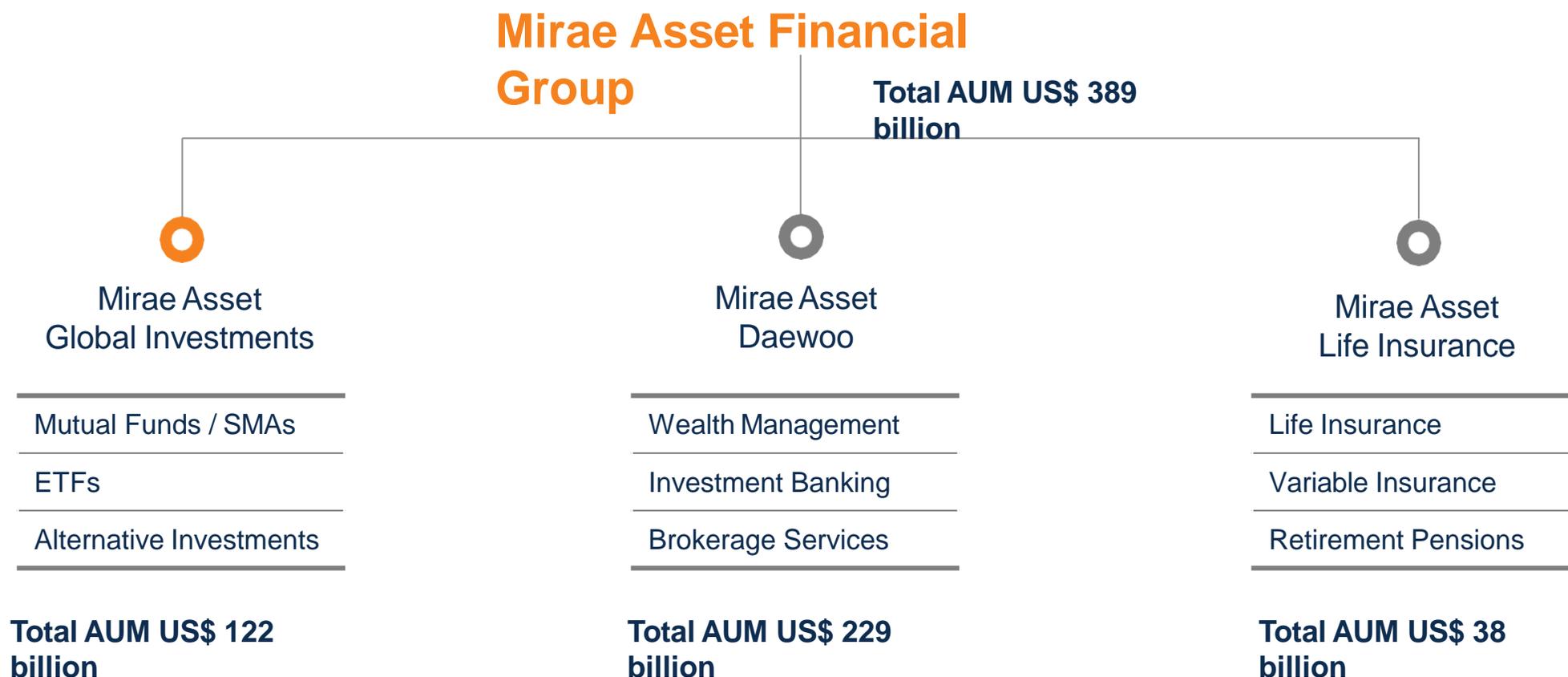
## **Mirae Asset Global Investments**



# Mirae Asset Financial Group Overview

Founded in 1997, Mirae Asset Global Investments is the asset management arm and core business of the Mirae Asset Financial

Group, one of Asia's leading independent financial services companies



Other notable affiliates include Mirae Asset Fund Services and Mirae Asset Venture Capital

Mirae Asset Financial Group acquired Korea's leading brokerage firm KDB Daewoo Securities and its asset management arm in April 2016, rebranded as Mirae Asset Daewoo.

# The Investment Team

- With over 160 investment professionals globally, of whom 143 are based in seven countries throughout Asia.
- The Mirae Asset investment team is living the consumer experience. This unique insight gives us a distinctive edge in managing our investments.

## Over 140 Investment Professionals in Asia

**Collaborative team approach** of each dedicated investment professional

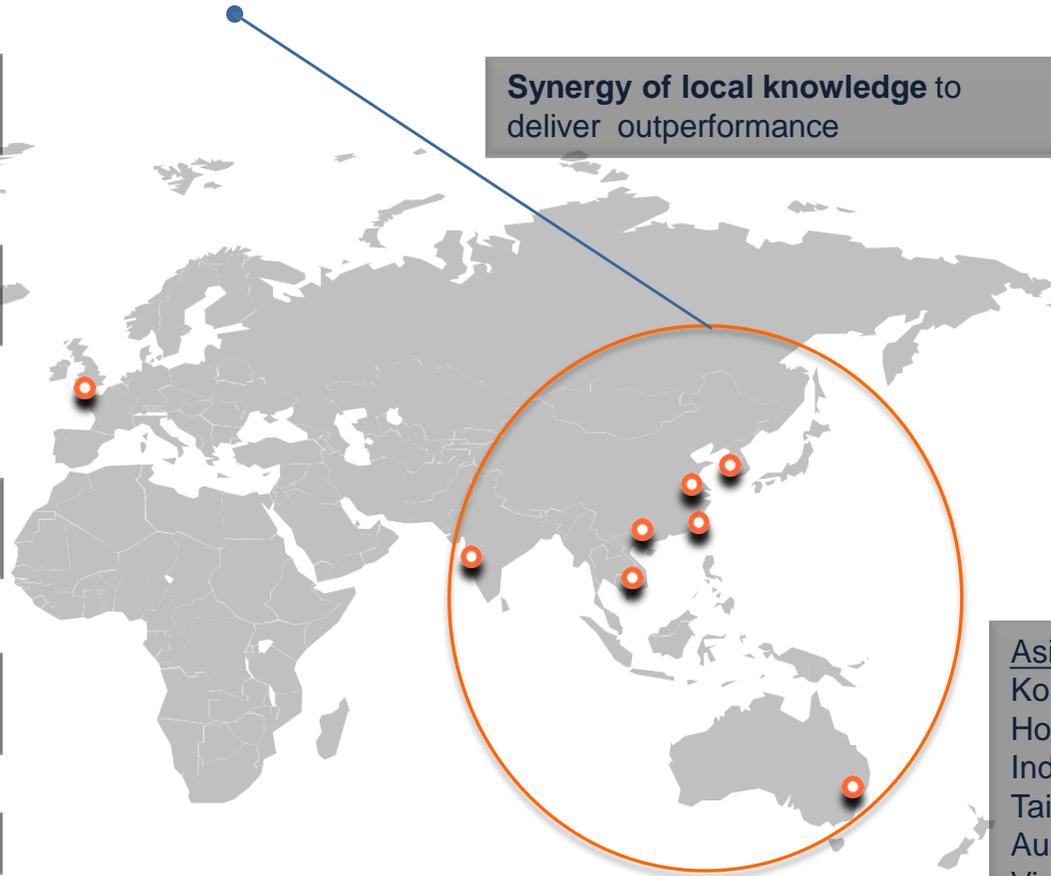
**On-the-ground research** supported by country research teams

**Bottom-up approach** to identify companies with sustainable competitiveness

HK research team with **average 10 years of experience, 5 nationalities**

**1,500+ company visits** per year

**Synergy of local knowledge** to deliver outperformance



Asia  
Korea  
Hong Kong  
India  
Taiwan  
Australia  
Vietnam

# Market Outlook



# 2018 More Volatile but Positive for Equities

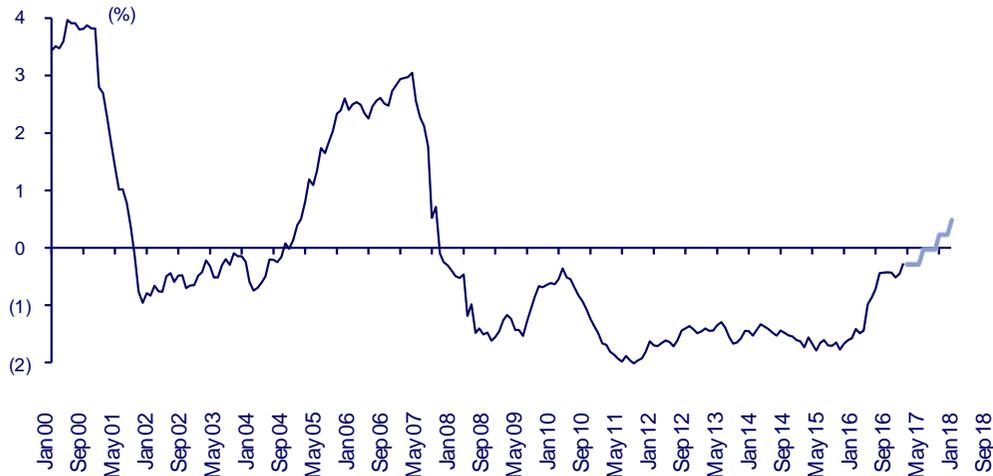
- Global equities have seen more volatility this year after a strong 2017
- Strongtrade, ISM data point to robust earnings growth in 2018
- US tax cuts will ensure investment cycle recovery
- US 10 year spike more of a positioning issue than an inflation scare
- Real Fed rate of 3% + normally impacts growth
- US protectionism has impacted sentiment. Negotiations likely to take place

Leading Indicators of EPS Growth



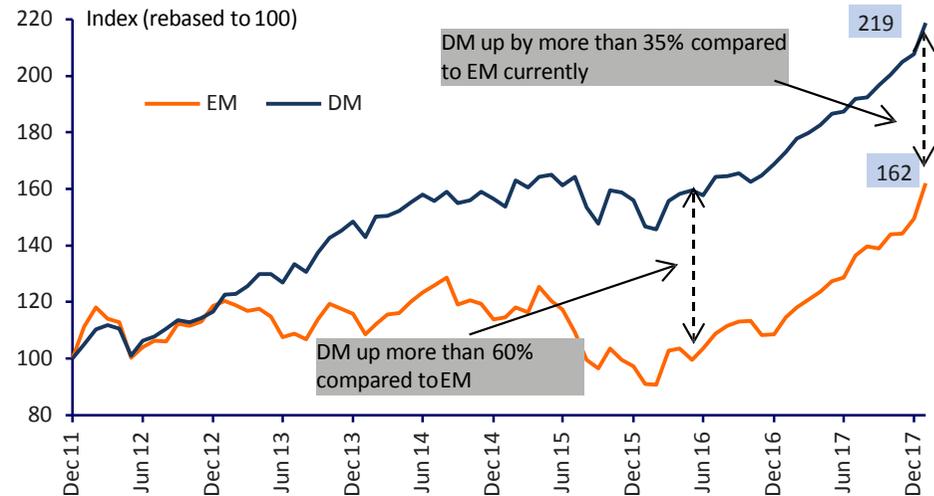
Source: BofA Merrill Lynch, Bloomberg, FactSet, January 2018

Real Fed Funds Rate Still Supportive of Growth



Source: Bloomberg, Federal Reserve

MSCI EM vs DM US\$ Returns: Underperformance Reversing

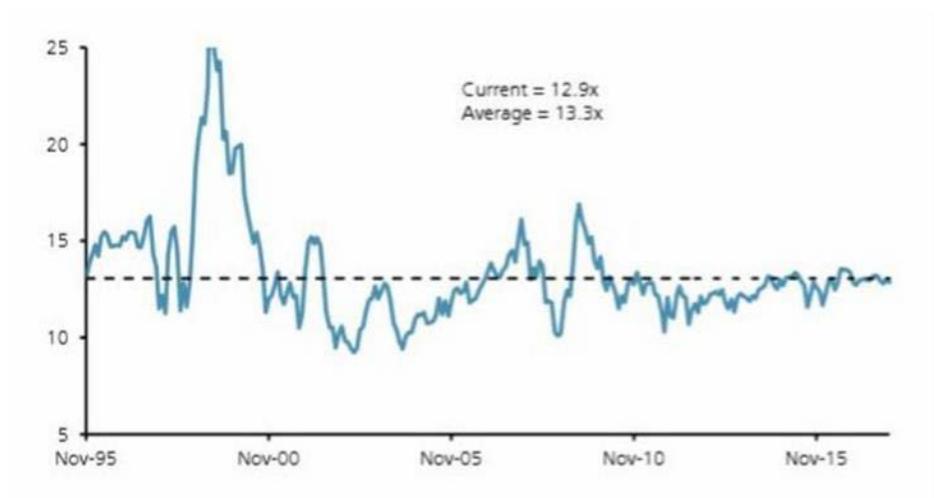


Source: Bloomberg, Factset, Datastream, January 2018

# Asia ex Japan

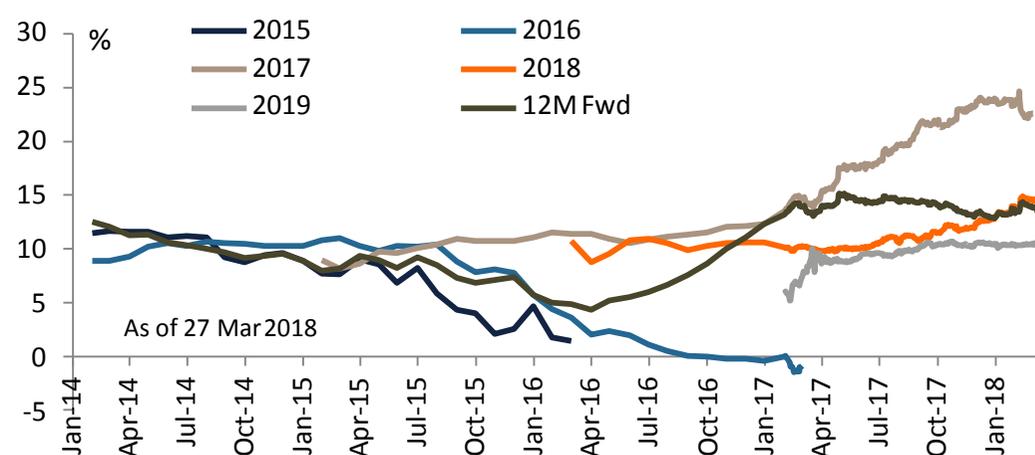
- In 2017, Asia ex Japan markets have marked the best return since the recovery from the global financial crisis in 2009
- Earnings estimates have rose through the year, for the first time in 7 years, on the back of strengthening external environment and positive spillovers to domestic demand
- Market consensus of 2018 earnings estimates is about 11.5% for Asia ex Japan
  - Global growth to sustain in 2018, but not likely to accelerate considering base effects and policy tightening
  - Export-led expansion in 2017 -> Domestic sources of growth in 2018
- Valuations are not stretched yet, staying close to historical average
- US has proposed further protectionist measures including increased tariffs on steel and aluminium whilst the latest proposed tariffs are targeted at China. Our base case scenario is this will not escalate to a trade war, China will likely negotiate with the US

Asia ex Japan Forward P/E



Source: Datastream, January 2018

MSCI Asia ex Japan Consensus EPS Growth Estimates

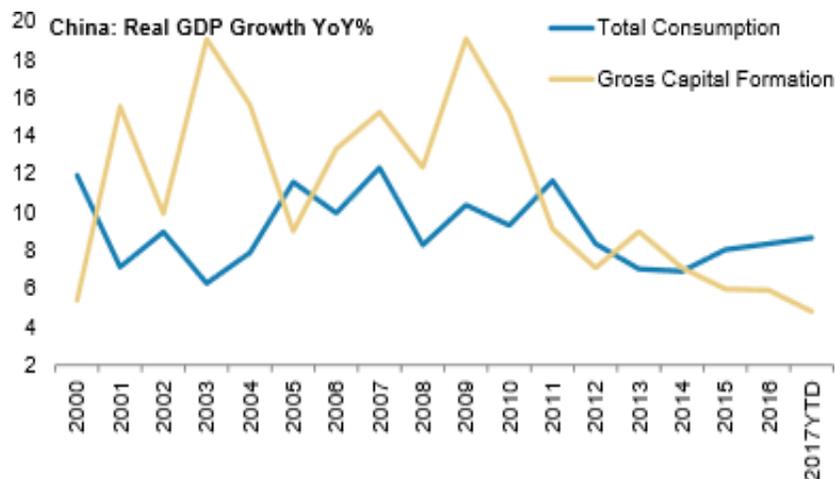


Source: IBES, Datastream, March 2018

# China

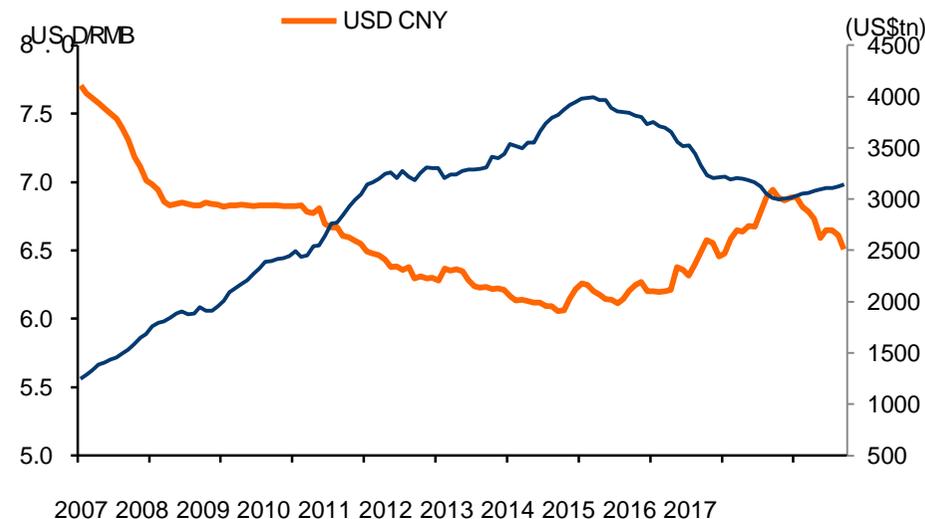
- China's economy grew 6.8% in the fourth quarter and 6.9% in 2017, ahead of the official target of 6.5%
- 2018 NPC: policy agenda remains focused on the upgrade of economic structure, corporate deleveraging, SOE & supply side reform, sustainable development
  - Corporate debt declining from ~169% of GDP at the 1Q16 peak to ~165% at the end of 1H17
  - China's economy is transitioning to more consumption-led growth, with household debt to GDP rising
- China created more than 13million new jobs in 2017, above the official target of 11million, in urban areas
- Foreign exchange reserves increased in 2017; helped by declining capital outflows from China
- Economic momentum could slowdown from 2018, government will be focused on quality of growth instead of quantitative growth

## Accelerating Consumption Growth, Decelerating Investment Growth



Source: NBS, CEIC, Morgan Stanley. November 2017

## China Foreign Exchange Reserves Stabilized

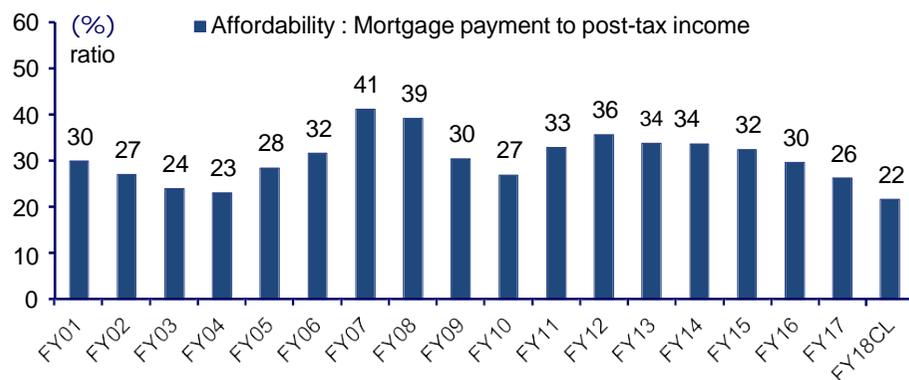


Source: PBOC, Mirae Asset, December 2017

# India – Broad-Based Recovery

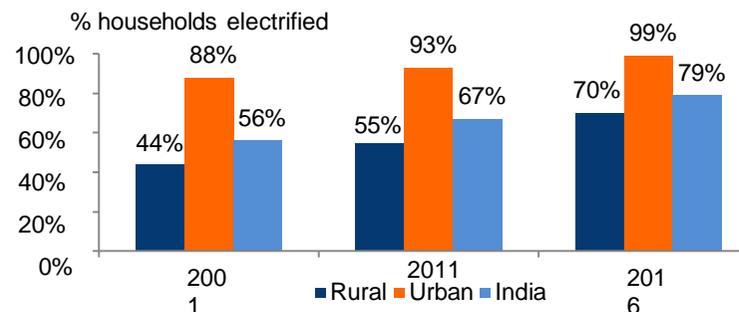
- Macro strength from lower inflation and current account deficit
- Rising global growth is positive for exports
- GST should provide medium-term productivity improvement through simplifying tax structure and creating “One India” marketplace
- Market share gains for organized sector post demonetization & GST
- Housing is now at the most affordable level. Housing sector should see greater demand and drive capex
- Government to expedite infrastructure spends ahead of 2019 elections

## Housing is More Affordable



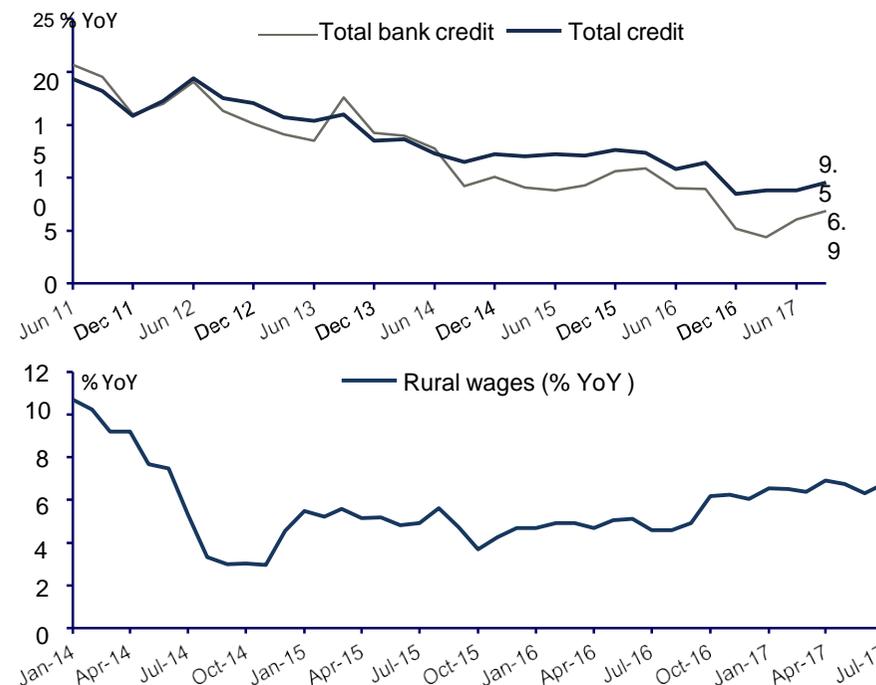
Source: SBI, Cushman & Wakefield, CLSA, November 2017

## Electrification – Remarkable Progress



Source: Census 2011, State Budget Speeches, Credit Suisse research, June 2016

## Economic Data Indicates Recovery Underway Post-GST

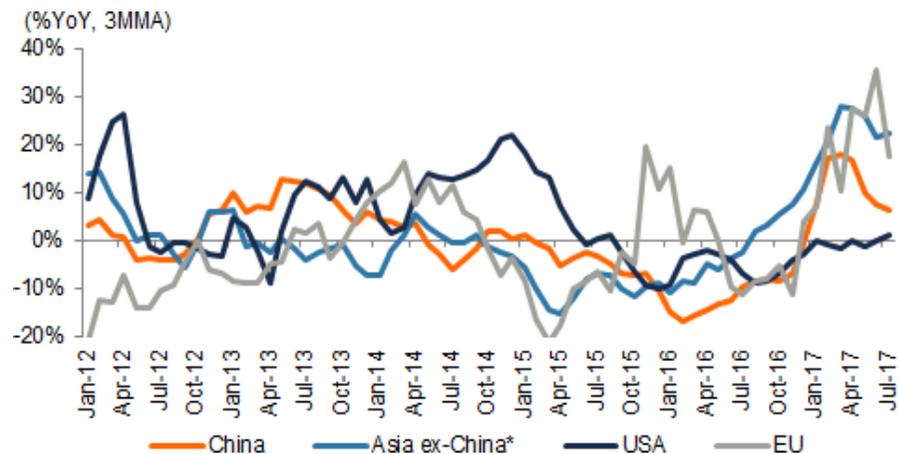


Source: CMIE, RBI, SEBI, CLSA, November 2017

# South Korea and Taiwan

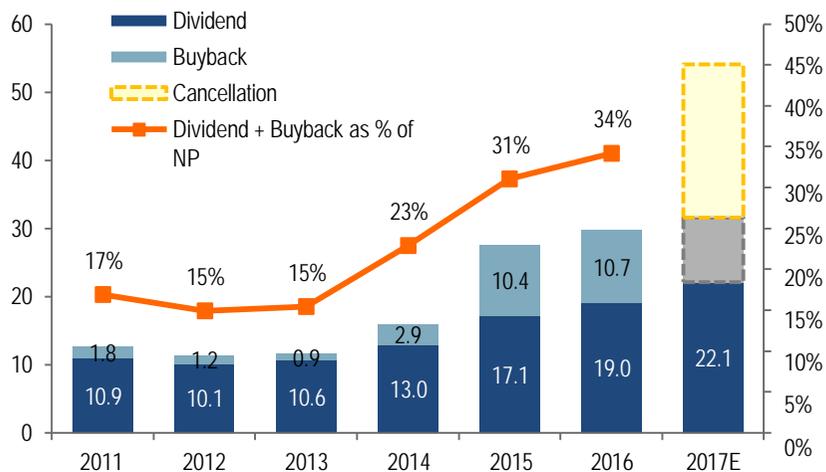
- Improving global growth positive for exports
- China and Korean relations showing signs of improvement. However, meaningful earnings recovery for impacted companies may take more time
- North Korean rhetoric, missile tests near term dampener, however, situation likely to remain status quo
- Improved dividend payout & corporate buybacks are positive catalysts
- Taiwan – relatively expensive valuations and flattish earnings revisions are main reasons for underweight exposure

## Korea Exports Broad-based Recovery



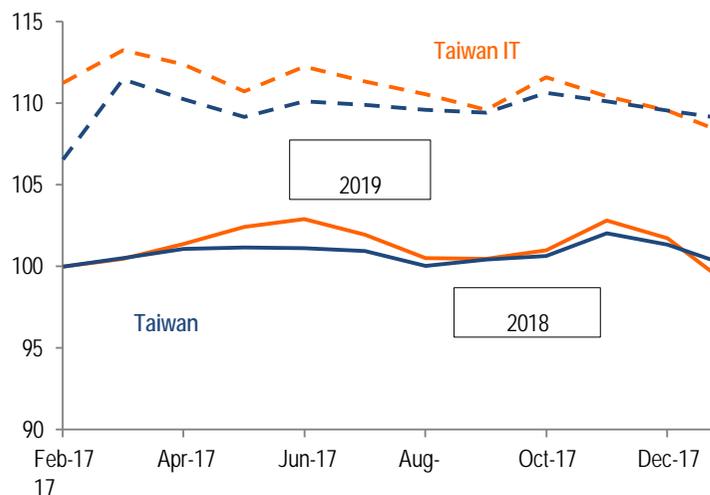
Source: CEIC, Haver, Bloomberg, August 2017

## MSCI Korea Total Shareholder Return Trend



Source: Company data, Bloomberg, MSCI, July 2017

## Taiwan Revisions to EPS Forecasts

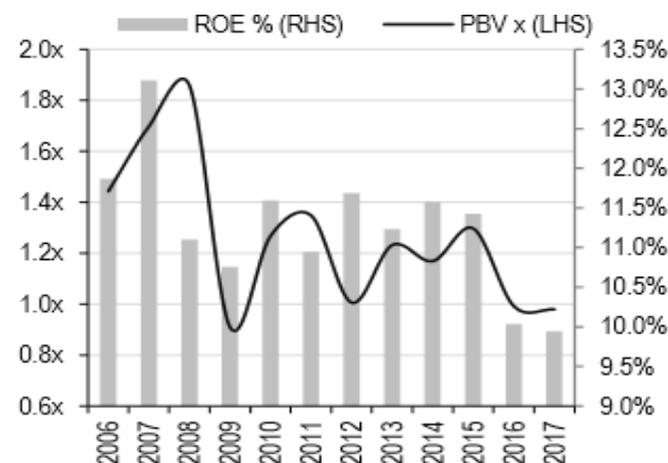


Source: MSCI, IBES, Datastream, January 2018

# ASEAN

- ASEAN markets bottoming after underperforming in recent years
- Singapore
  - Higher NIMs, stronger credit growth and lower credit cost for banks reflecting the improving macro environment
- Indonesia
  - Domestic demand momentum has been fairly muted leading to monetary easing
- Thailand
  - Pick-up in public investment; robust tourism growth

## Singapore bank sector: ROE vs PB



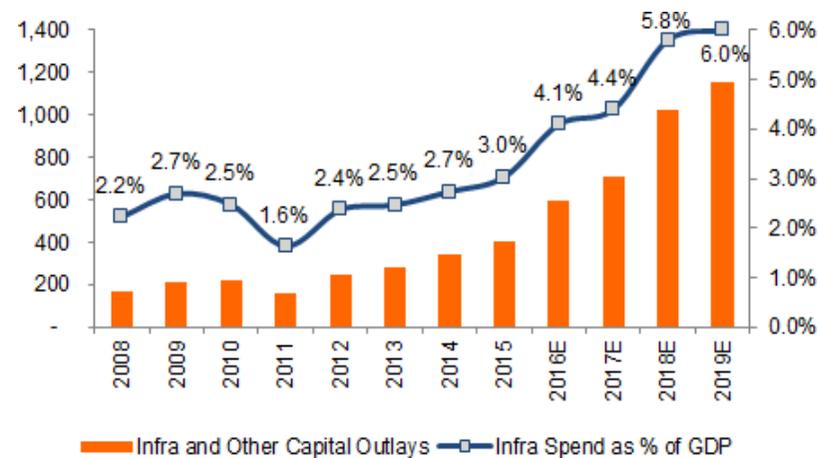
Source: Bloomberg, Company data, HSBC, February 2018

## Commodity recovery ensures higher capital spends



Source: CEIC, Company data, Morgan Stanley Research, March 2017

## Philippines government infrastructure key growth driver



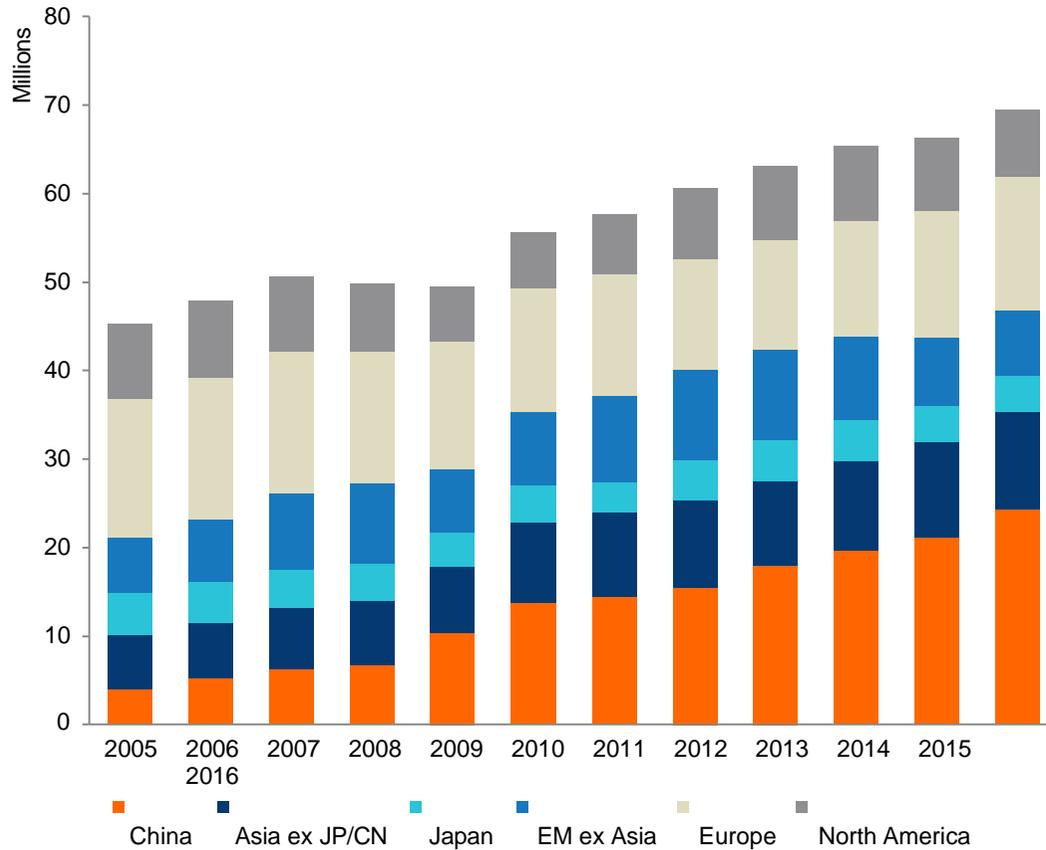
Source: Department of Budget and Management, CEIC, April 2017

# Investment Themes

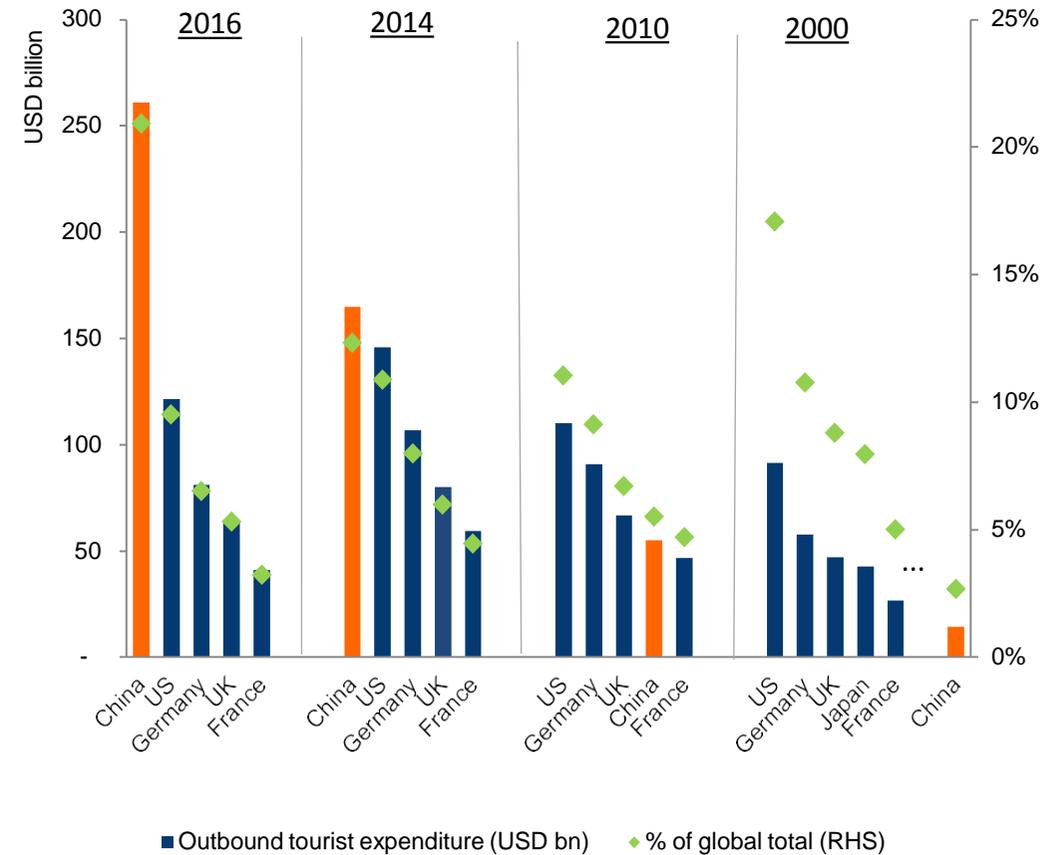


# Asia – Emerging as the Biggest Consumer in the World

Annual Passenger Car Sales (million units)



Outbound Tourist Expenditure (USD billion), Top 5 Countries

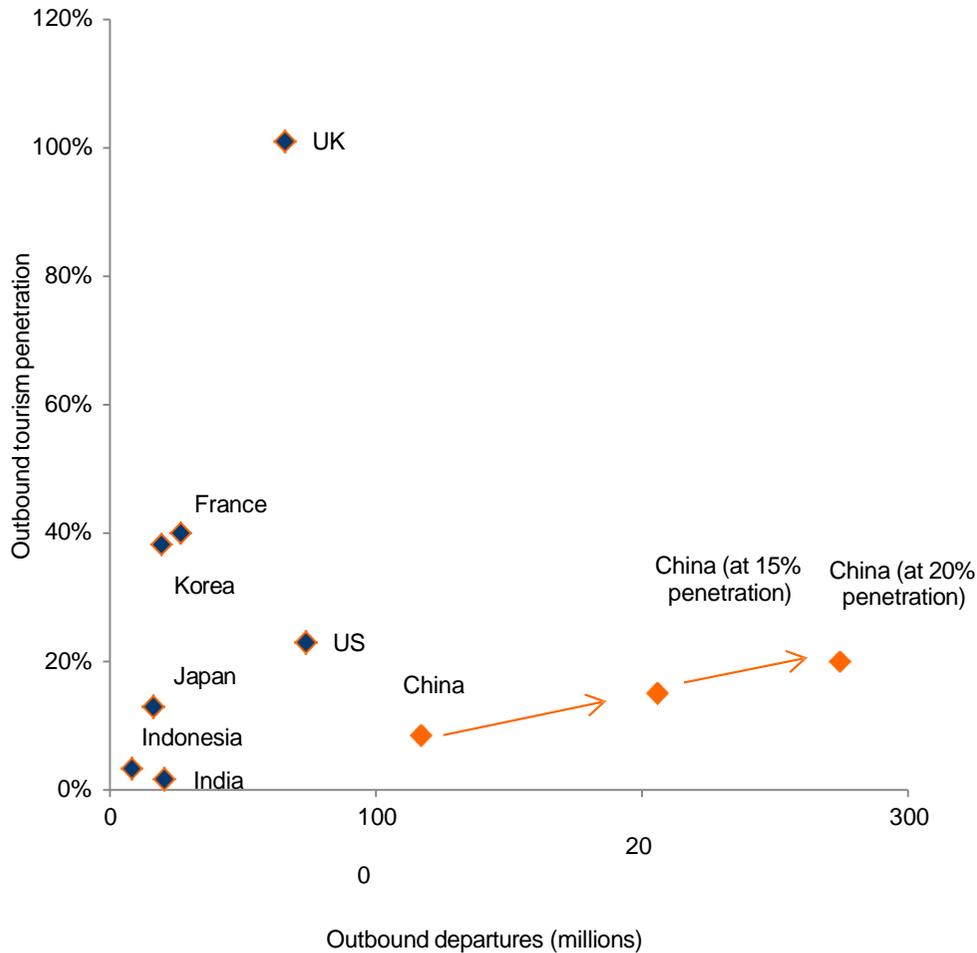


Source: Organisation Internationale des Constructeurs d'Automobiles, Mirae Asset, accessed July 2017

Source: World Tourism Organization, World Bank, Mirae Asset, accessed July 2017

# Living in a World of Experiences

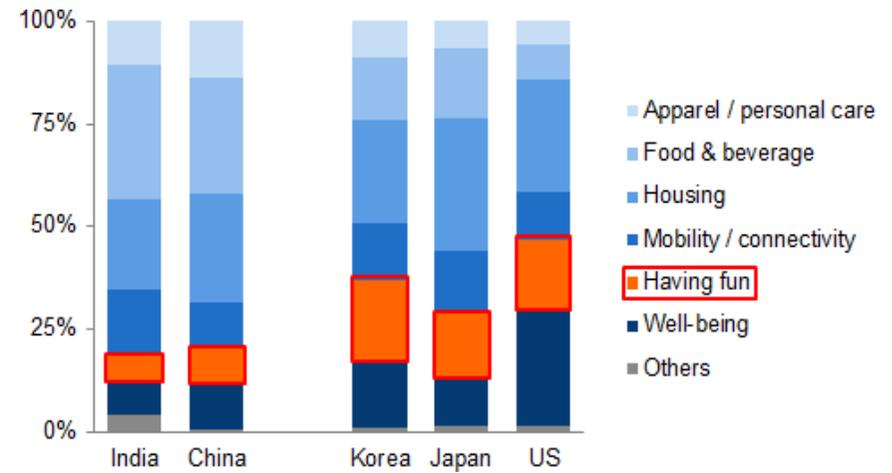
Outbound Tourist Penetration\* 2015



Source: World Tourism Organization, United Nations, World Bank, Mirae Asset, accessed July 2017

Note: outbound tourist penetration defined as outbound tourist departures divided by total population

Personal Consumption Expenditure by Category (2015)



Source: Euromonitor, CEIC, Goldman Sachs, Mirae Asset, November 2016

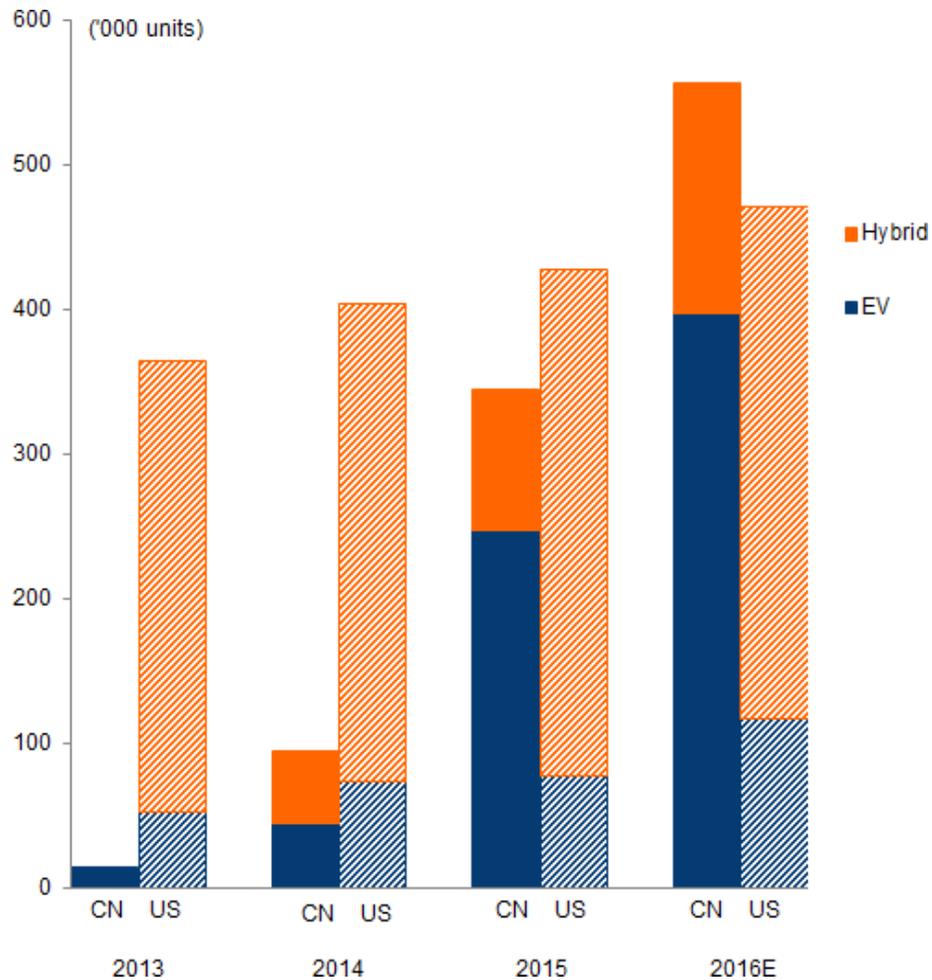
Parisian Macau



Source: Parisian Macau, November 2016

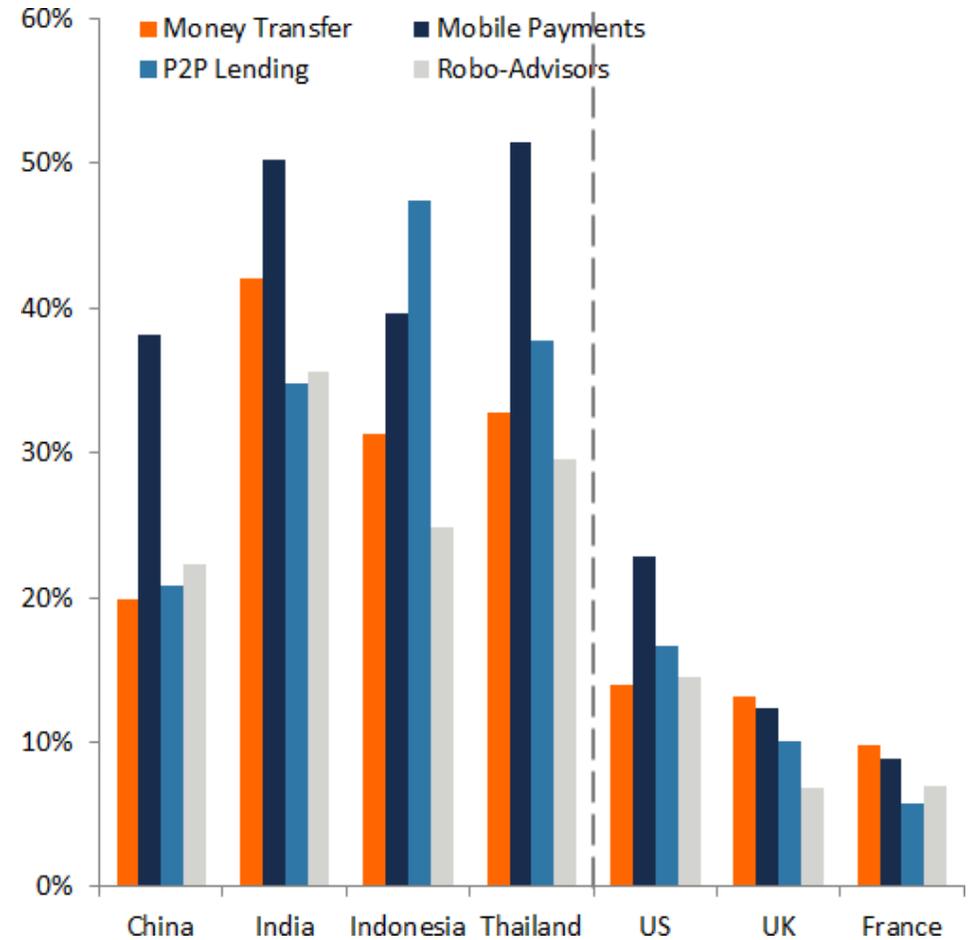
# Asia's Consumers More Receptive to New Technologies

Electric Vehicle (EV) Sales: China vs. US



Source: CEIC, JP Morgan estimates, Mirae Asset, July 2016

Consumer Survey: % Respondents likely to use Non-Bank Financial Services over Next 12 Months

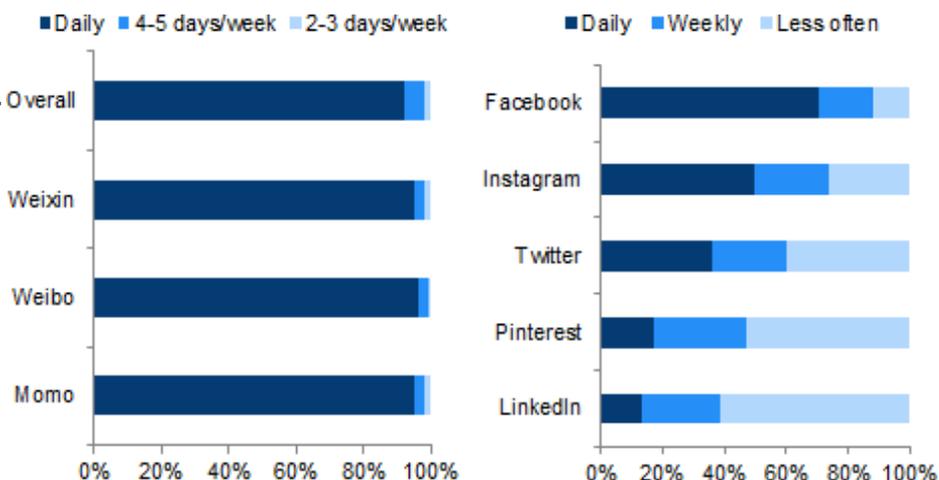


Source: UBS Evidence Lab survey, July 2016

# Technology – Social-Networking, E-commerce

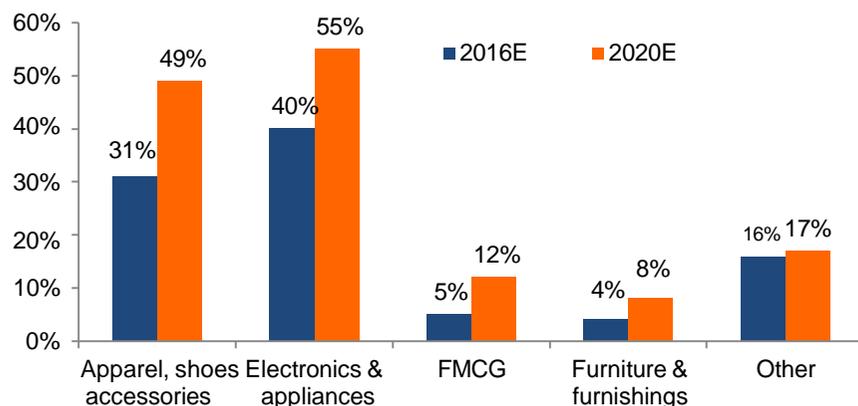
- Social networking sites have seen huge rates of growth in terms of usage.
- E-commerce has developed from being a novelty to a must-have business strategy for companies.
- Home-grown Asian companies are taking share from global competitors.
- Natural entry barrier through large and loyal user base for platforms with integrated offerings across different online / mobile business.

Number of Times per Day that WeChat Users Open WeChat



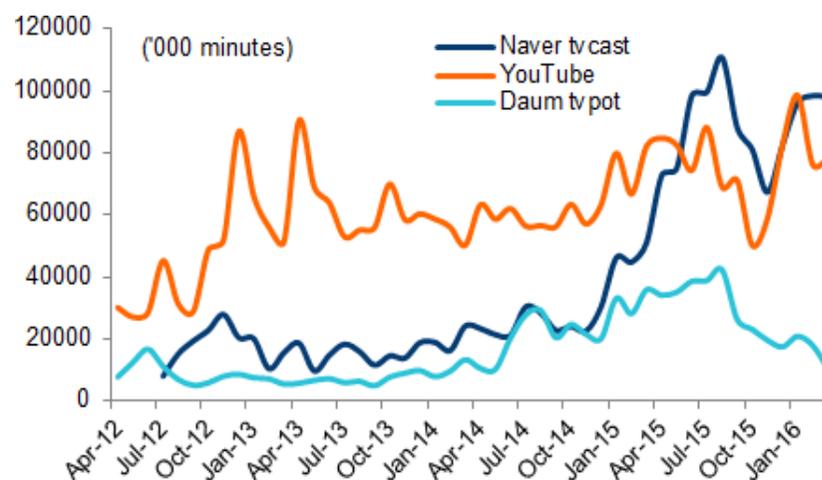
Source: Nielsen, Pew Research, CLSA, April 2016

China online penetration of goods



Source: Euromonitor, iResearch, Kantar, eMarketer, Company data, GS Research, Mirae Asset, February 2017. Penetration by categories are adjusted for returns and unfulfilled orders.

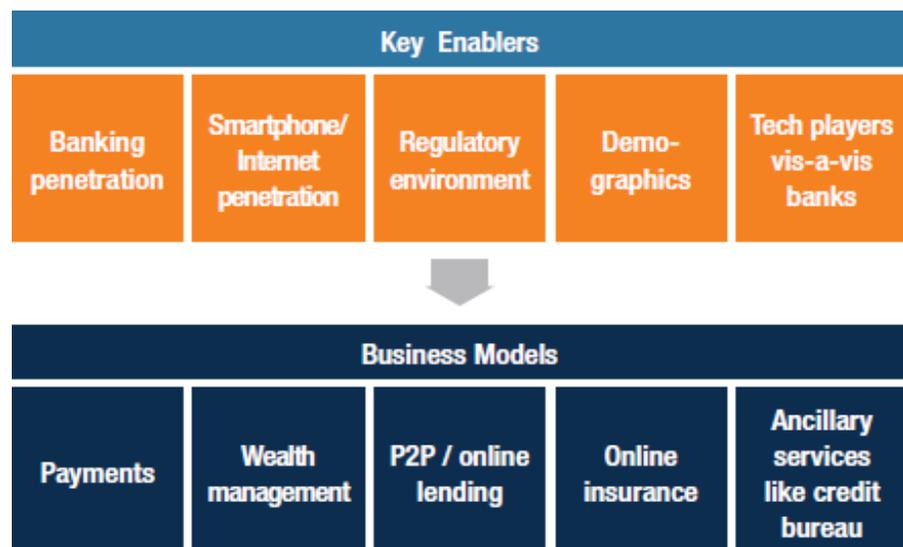
Total Time Spent on Video Services on Mobile Web



Source: Korean Click, CLSA, March 2016

# FinTech: Reshaping Finance in Asia

- India / China symbolize divergent paths of fintech in Asia: Tech companies are taking the lead in China while private sector banks are taking the lead in India
- Customer life-cycle starts with transactions (payments), then savings (wealth mgmt), then borrowing and insurance
- China is most advanced on digital disruption front as banks don't focus on consumer banking, whilst technology players are well resourced and regulations are supportive



|                              |    | China | India | Indonesia | Philippines | Rest of Asia |
|------------------------------|----|-------|-------|-----------|-------------|--------------|
| Population                   | mn | 1,368 | 1,251 | 253       | 99.9        | 184          |
| Millennial population        | mn | 328   | 340   | 63        | 28          | 39.9         |
| % share                      | %  | 24%   | 27%   | 25%       | 28%         | 22%          |
| Smart phones                 | mn | 670   | 163   | 68        | 30          | 110.5        |
| % penetration                | %  | 49%   | 13%   | 27%       | 30%         | 60%          |
| Internet users               | mn | 668   | 220   | 43        | 38.5        | 113.7        |
| % penetration                | %  | 49%   | 18%   | 17%       | 39%         | 62%          |
| Unbanked                     | mn | 236   | 422   | 116       | 48.7        | 20.9         |
| % of adult population        | %  | 17%   | 34%   | 46%       | 49%         | 11%          |
| Saved at a Fin'l Inst'n      | mn | 462   | 128   | 48        | 10          | 65.7         |
| % of adult population        | %  | 34%   | 10%   | 19%       | 10%         | 36%          |
| Borrowed from a fin'l inst'n | mn | 107   | 57    | 24        | 8           | 24.7         |
| % of adult population        | %  | 8%    | 5%    | 9%        | 8%          | 13%          |
| # of branches/100k adults    |    | 18    | 13    | 14        | 14          | 15           |
| Credit card penetration      |    | 13.0% | 3.0%  | 1.1%      | 2.2%        | 26.3%        |
| Debit card penetration       |    | 39.8% | 15.8% | 18.6%     | 13.9%       | 49.3%        |
| Online shopping pent'n       |    | 37.0% | 14.0% | 16.0%     | 21.0%       | 37.6%        |
| Mobile shopping pent'n       |    | 27.0% | 9.0%  | 9.0%      | 11.0%       | 18.9%        |

Source: Citi, Goldman Sachs, Mirae Asset Global Investments

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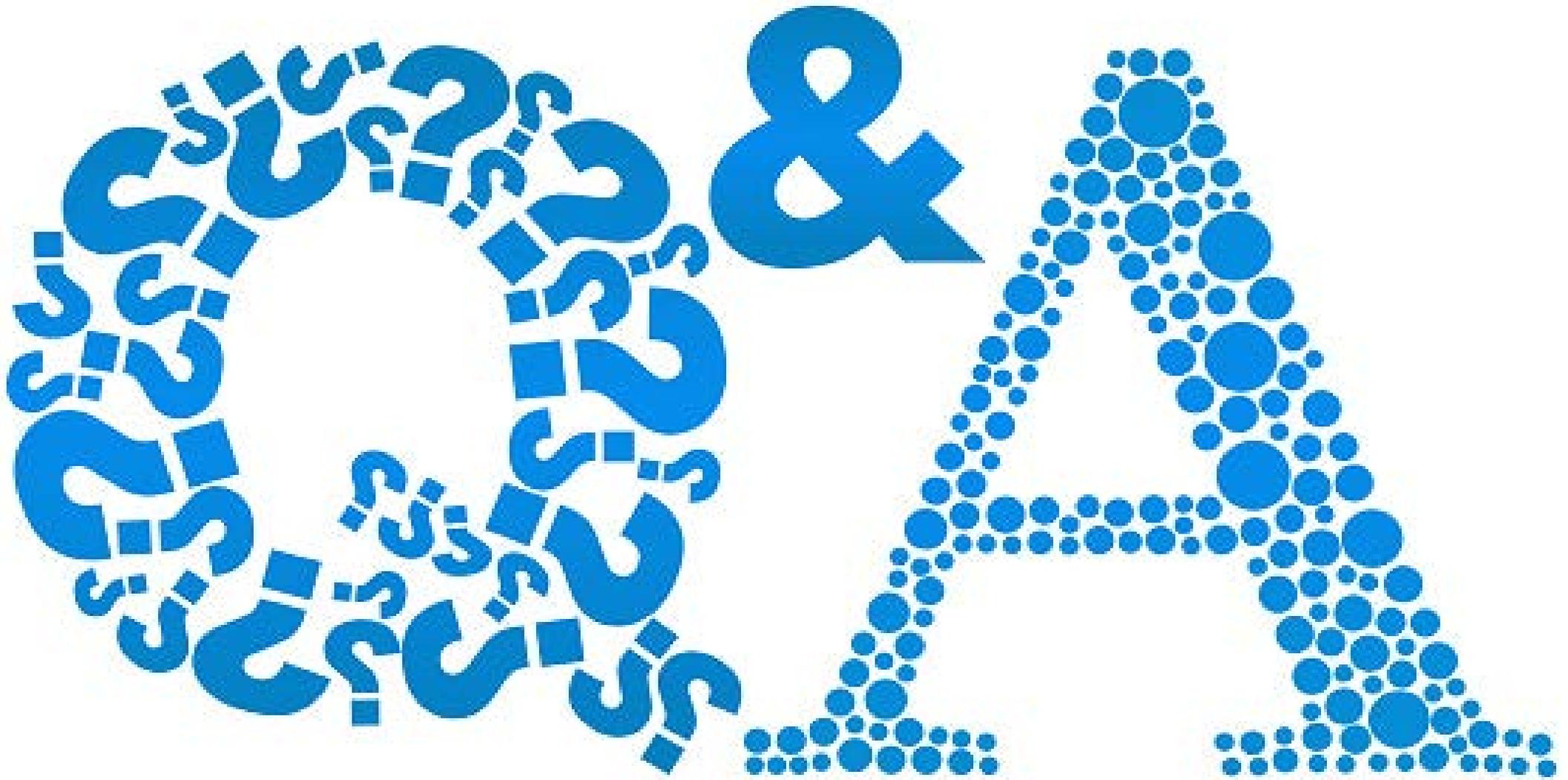


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Clear and Independent Institutional Investment Analysis



# LATE CYCLE OPPORTUNITIES

APRIL 19, 2018

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## Representing MacKay Shields

---

### **DAN C. ROBERTS, PhD**

Executive Managing Director  
Head of Global Fixed  
Income

### **STEPHEN R. CIANCI, CFA**

Senior Managing Director, Global Fixed  
Income Senior Portfolio Manager

## WE BELIEVE

Central bank rate activity is a reliable indicator of economic cycle turns

We are in the later stages of this cycle but opportunities still remain

Future risks have changed: technological disruptions and market structure

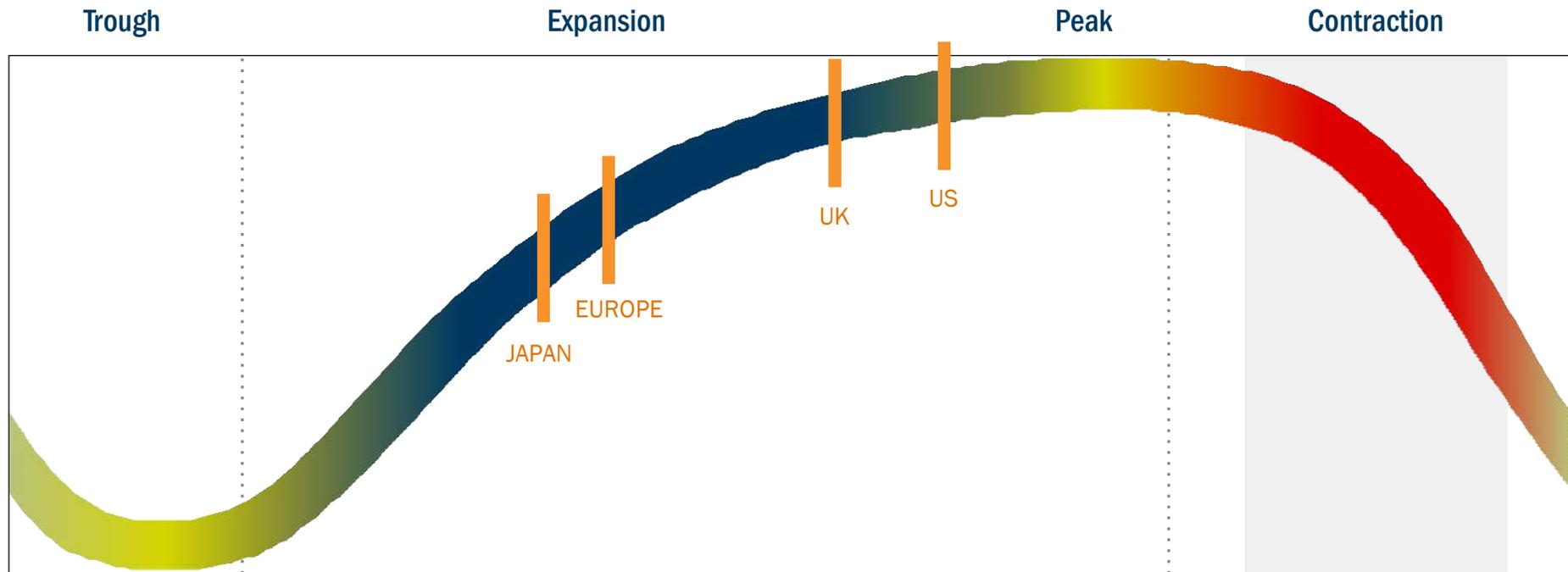
Specific relative value ideas

**Part I** ● — | The World Moves in Cycles

**Part II** ● — | Opportunities in a Changing Market



# The World Economy Moves in Cycles



Average US Expansion<sup>1</sup>

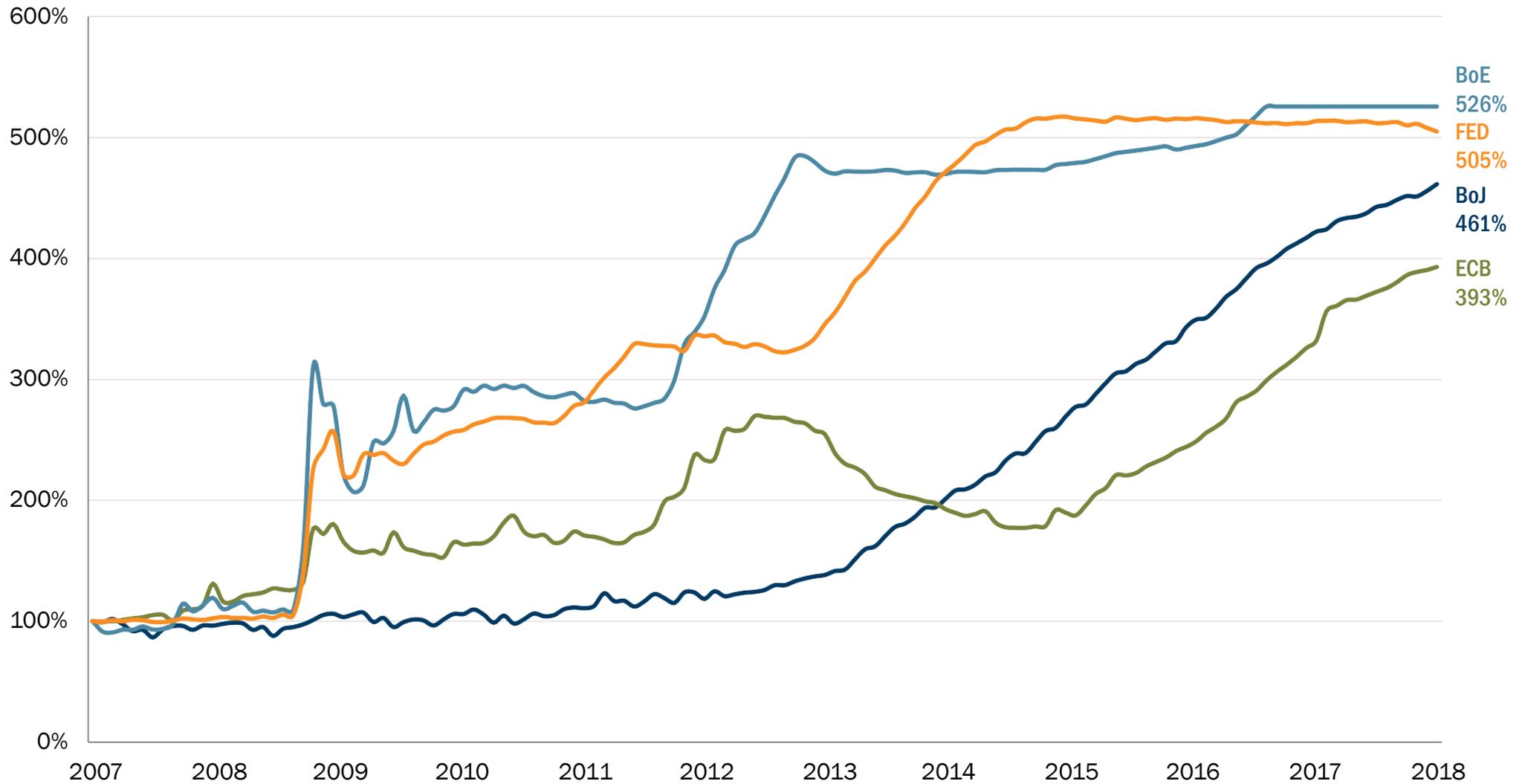
**34 Months**

Recent US Expansion

**104 Months**  
(3rd Longest on Record)

1. In peacetime  
As of 1Q 2018. Provided for illustrative and informational purposes only. Source: National Bureau of Economic Research

# Major Central Banks Balance Sheet Growth

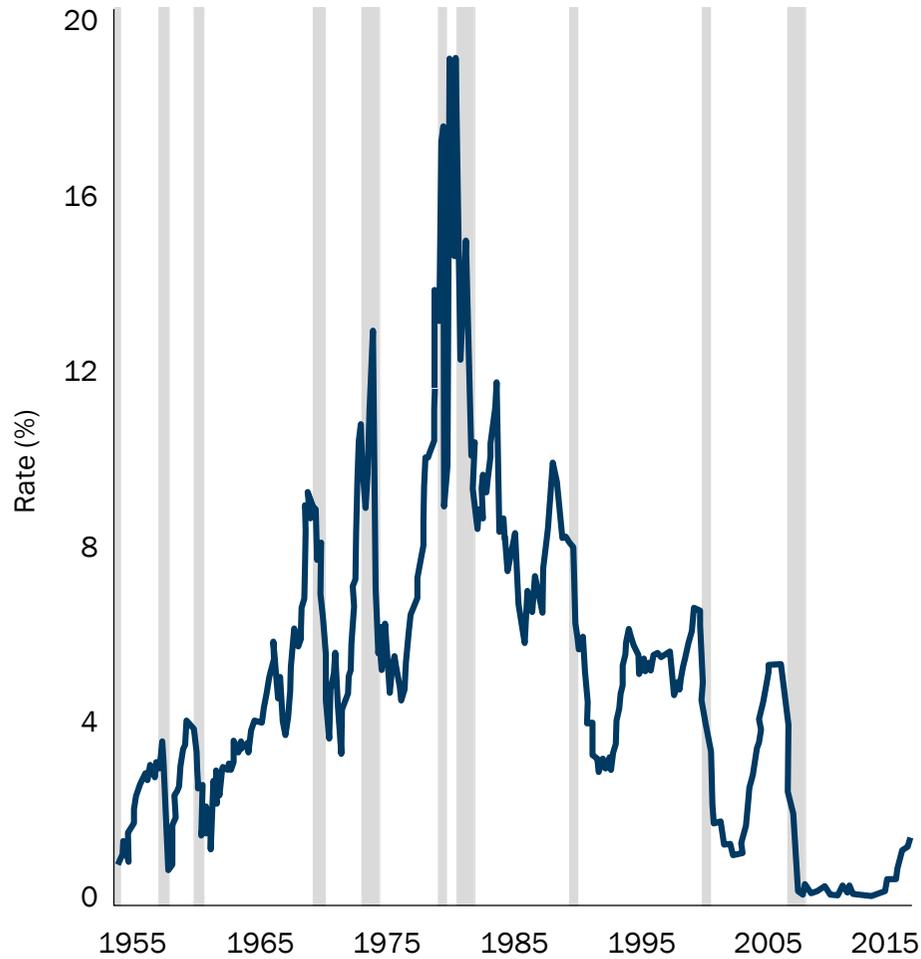


February 28, 2018

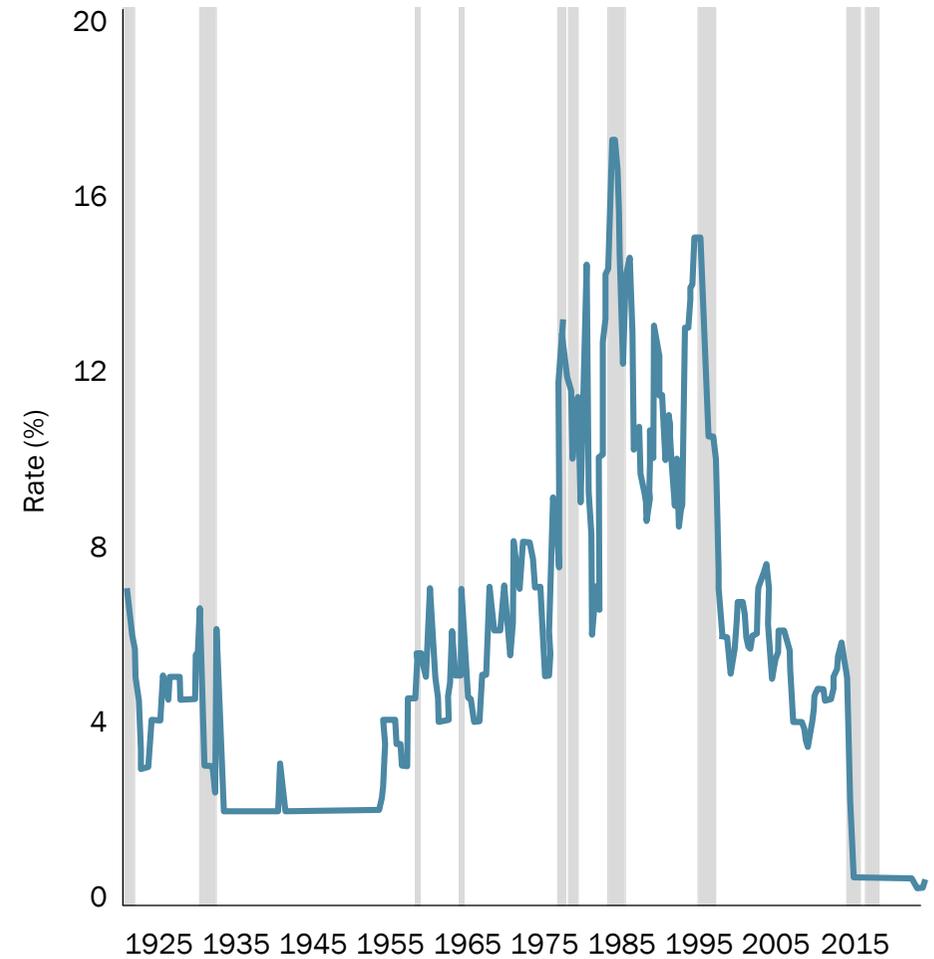
Source: Haver Analytics, MacKay Shields

# Central Bank Tightening Occurs Before Every Recession

Federal Funds Effective Rate



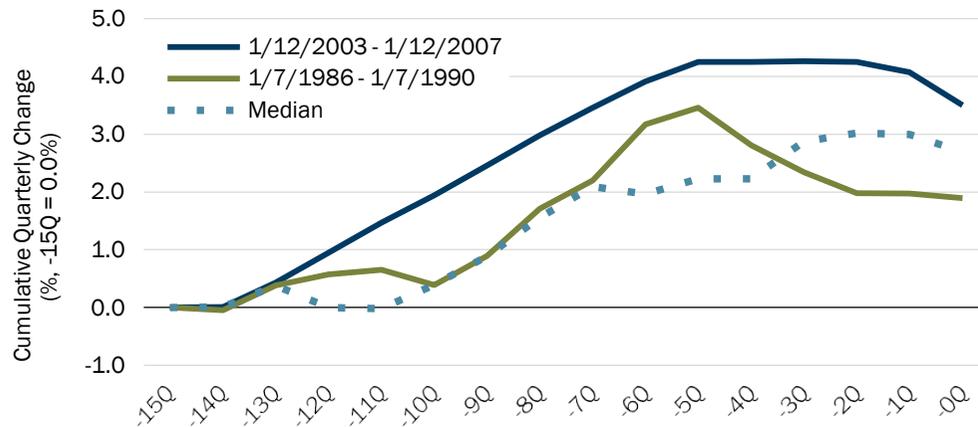
Bank of England Official Bank Rate



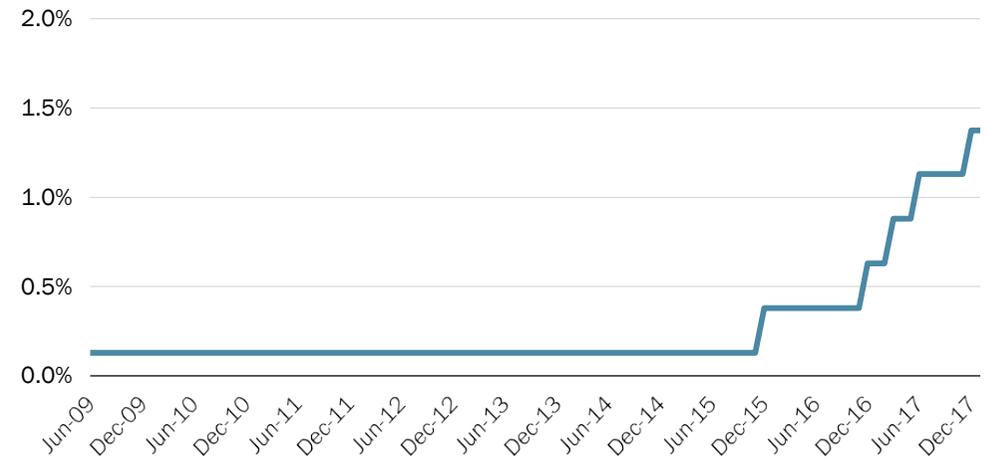
# Factors Leading Up to the Peak of an Economic Cycle

## Central Bank Policy

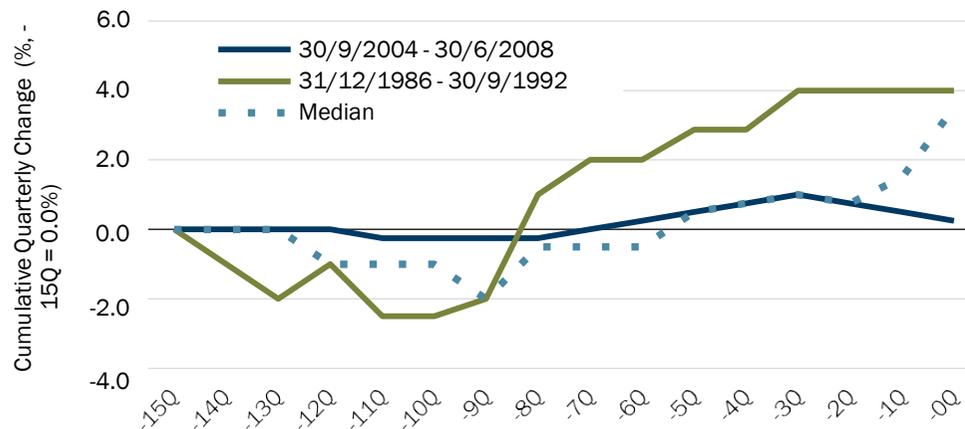
Cumulative Quarterly Change in the Fed Funds Effective Rate



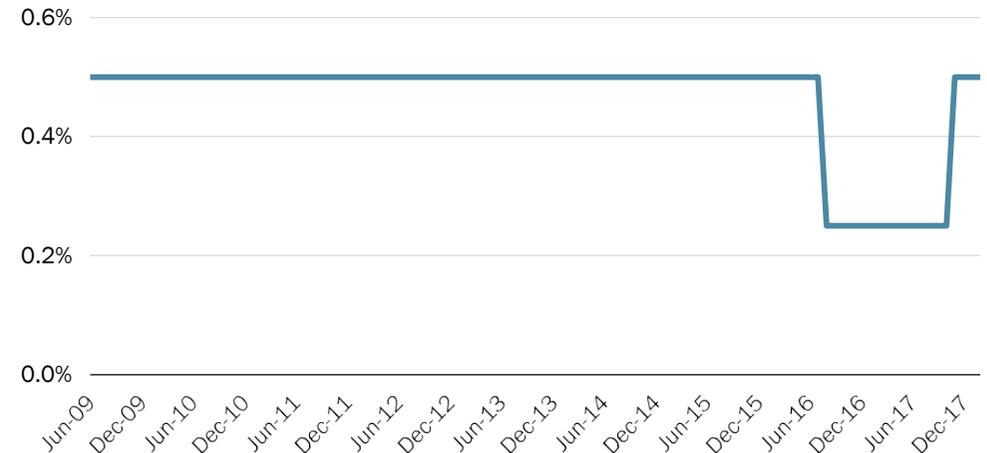
Fed Funds Target Rate | 30 June 2009 – 31 January 2018



Cumulative Quarterly Change in the Bank of England's Official Bank Rate



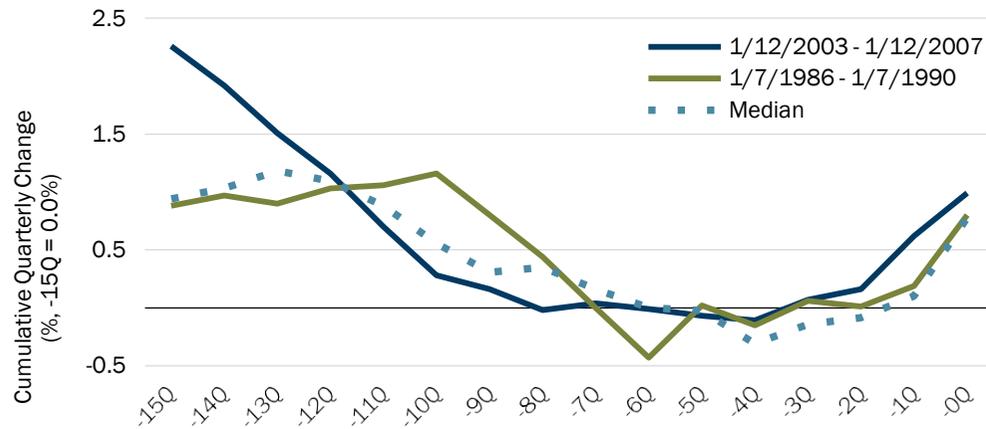
Bank of England Official Bank Rate | 30 June 2009 – 31 January 2018



# Factors Leading Up to the Peak of an Economic Cycle

## Yield Curves

**Spread Between US 10- and 2-Year Treasury Yield**

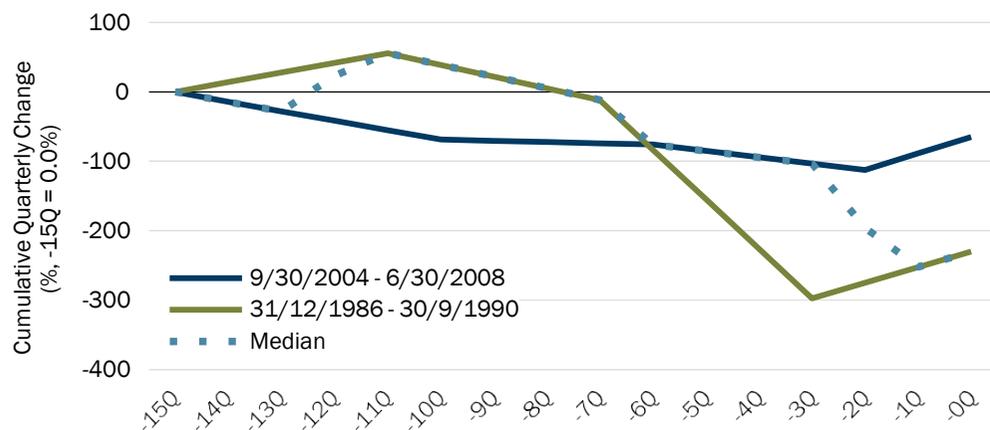


**Spread between US 10- and 2-Year Treasury Yield**

30 June 2009 – 31 January 2018



**Cumulative Quarterly Change in the Spread between the UK 10 and 1 Year Government Bond Yield**



**Spread between UK 10- and 1-Year Treasury Yield**

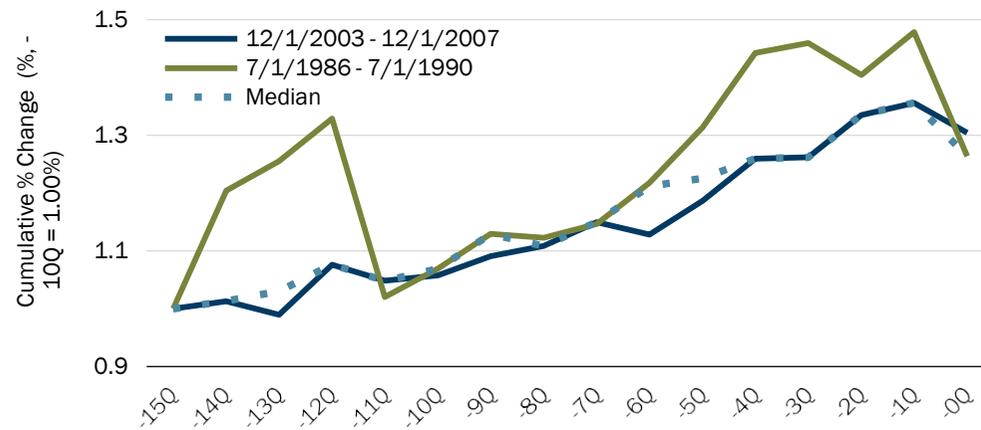
30 June 2009 – 31 January 2018



# Factors Leading Up to the Peak of an Economic Cycle

## Equity Markets

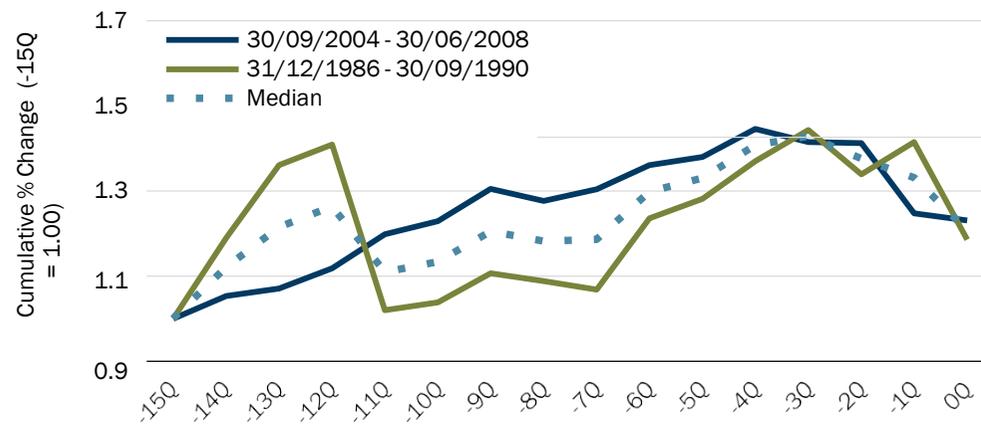
**Cumulative Quarterly % Change in the Price of the S&P 500 Index**



**Cumulative % Change in the Price of the S&P 500 Index**  
30 June 2009 – 31 January 2018



**Cumulative Quarterly % Change in the Price of FTSE 100 Index**



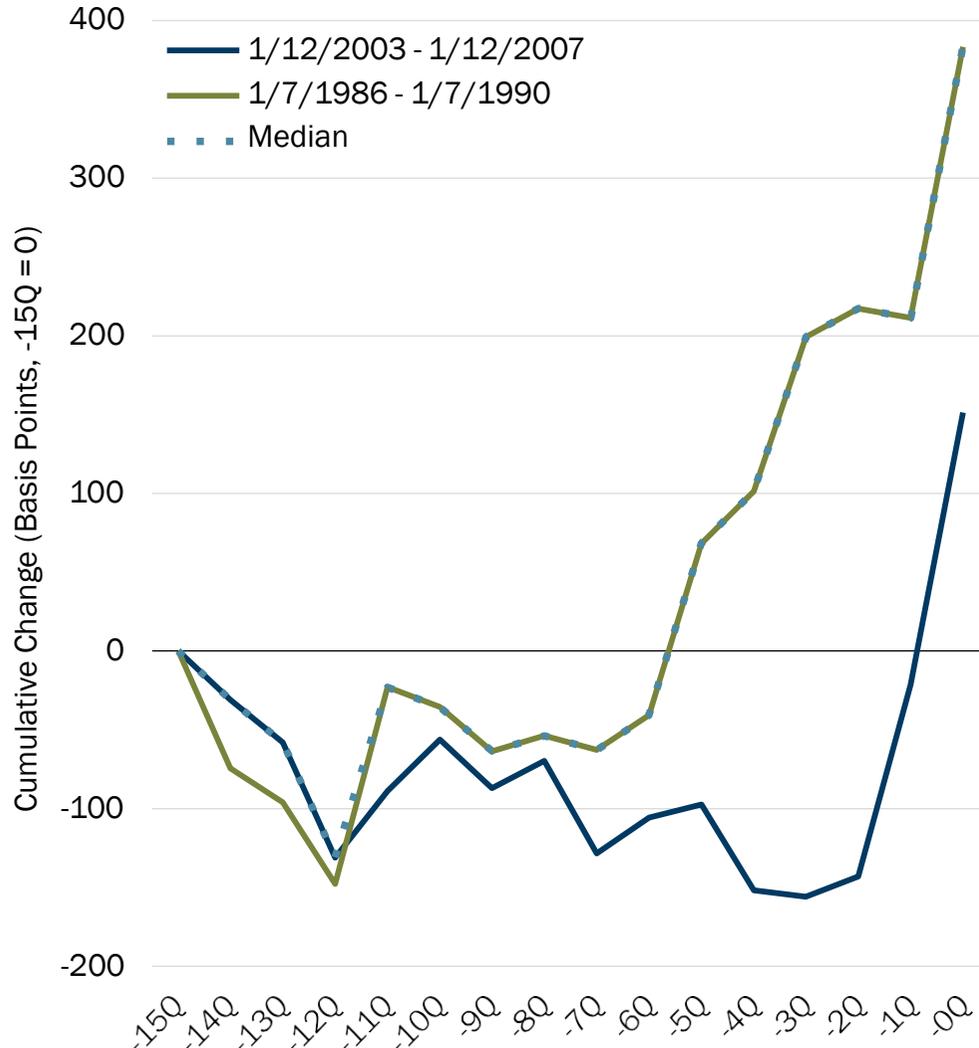
**Cumulative % Change in the Price of the FTSE 100 Index**  
30 June 30, 2009 – 31 January 2018



# Factors Leading Up to the Peak of an Economic Cycle

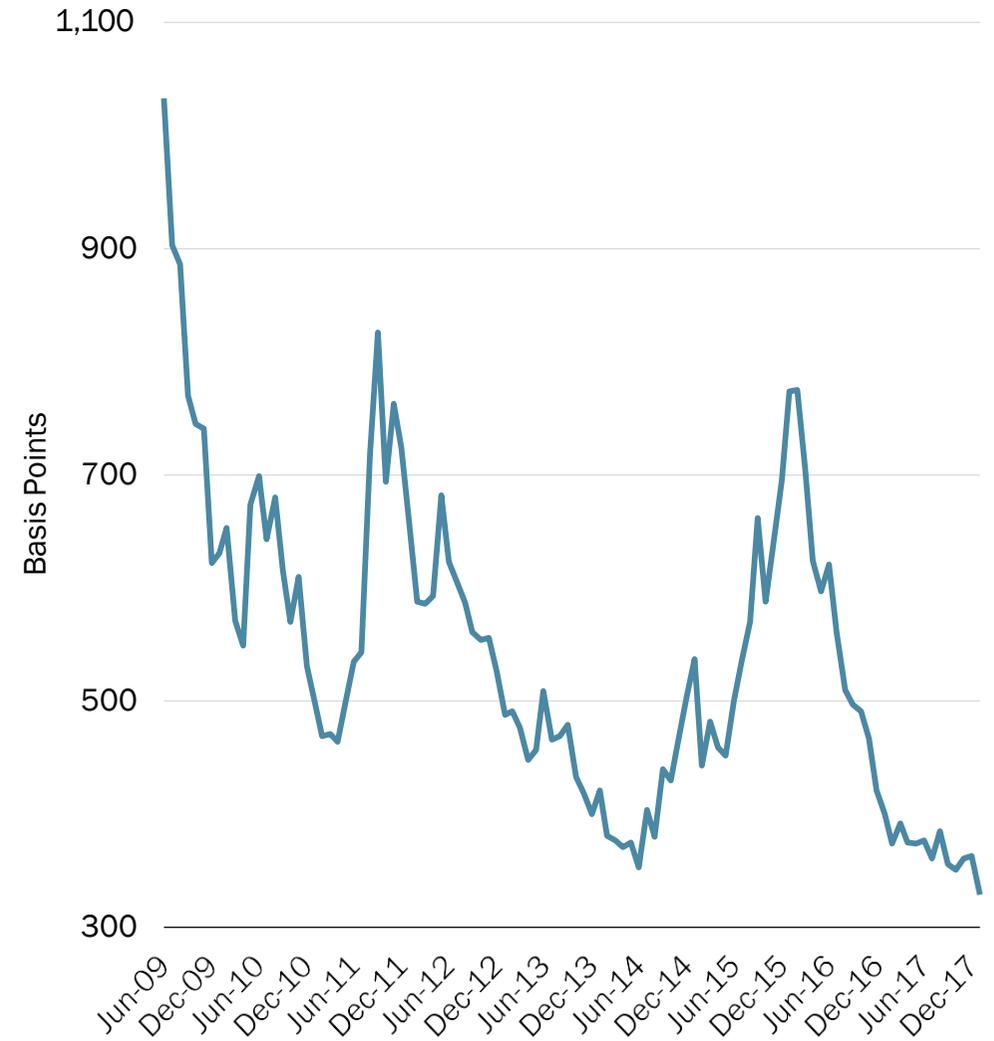
## Credit Spreads

Cumulative Quarterly Change in the US High Yield Spread



US High Yield Option Adjusted Spread

30 June 2009 - 31 January 2018



# What Is Different This Time?

1

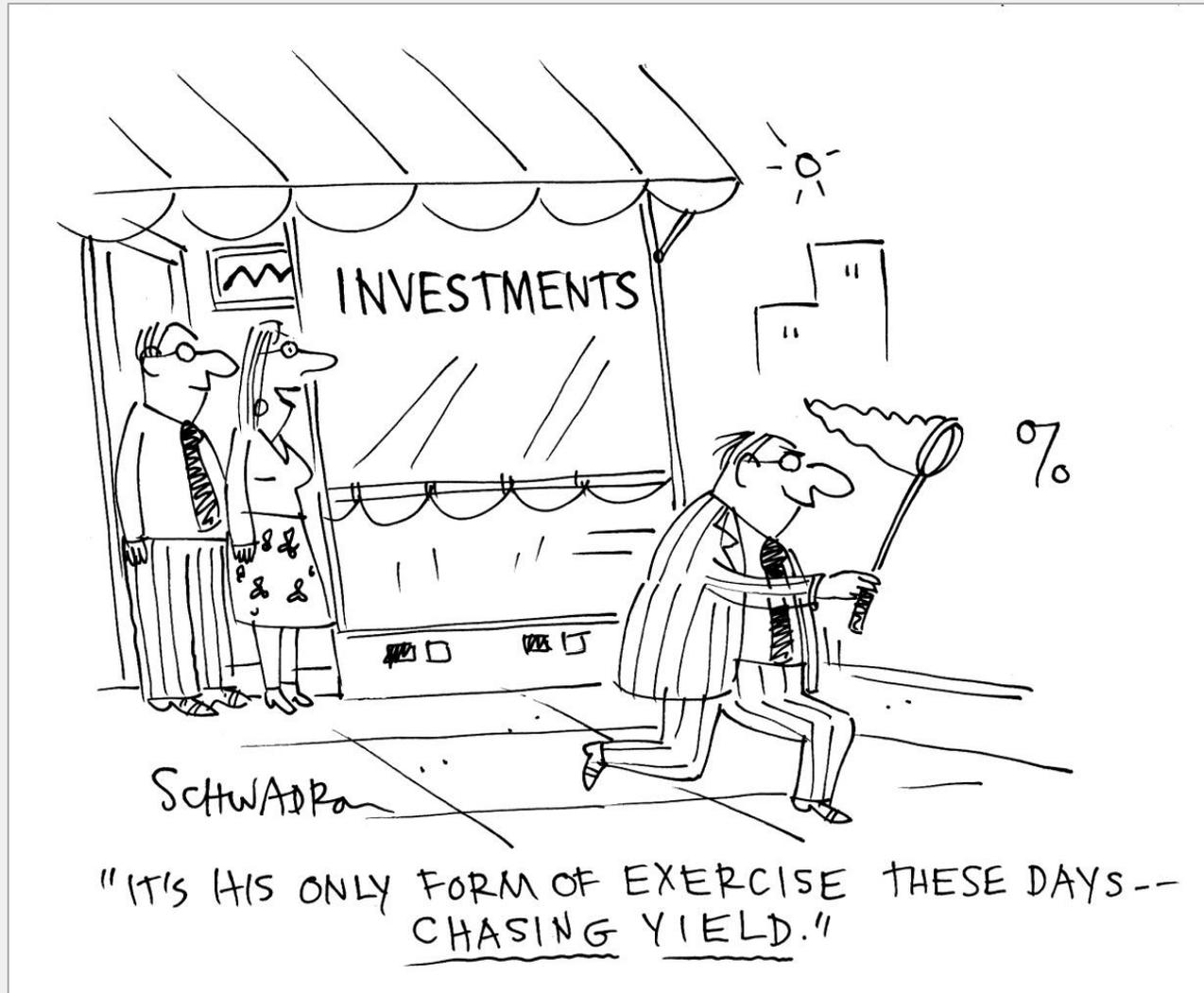
Wage Inflation

2

The Extent of  
Central Bank Easing



# The Bond Manager's Workout



**“High Yield market a ‘keg of dynamite’”**

—Carl Icahn

**“We recently took our remaining high yield position to zero”**

—Morgan Stanley Wealth Management

**“Junk bonds not worth their yield”**

—Barron’s

# Valuations Are Stretched

## Distribution of Option Adjusted Spreads by Fixed Income Asset Class | December 31, 1996 – March 31, 2018

|                                     | Current Spread | Standard Deviation | Minimum |                     | Maximum |
|-------------------------------------|----------------|--------------------|---------|---------------------|---------|
|                                     |                |                    |         | ● Current ▲ Average |         |
| US Investment Grade Corporate Index | 117            | 85                 | 54      | 117 155             | 608     |
| US High Yield Corporate Index       | 372            | 269                | 246     | 372 566             | 1,978   |
| EM High Yield Corporate Index       | 356            | 385                | 249     | 356 723             | 2,634   |
| EM Sovereign Debt Index             | 357            | 211                | 161     | 357 508             | 1,341   |
| Euro High Yield Corporate Index     | 315            | 363                | 186     | 315 621             | 2,169   |
| US Fixed Rate ABS Index             | 73             | 139                | 34      | 73 126              | 967     |

1

Seek to avoid  
“uncompensated”

**risk** as prices for risk  
assets continue to rise  
and economic risks  
continue to increase

2

Identifying  
key risks

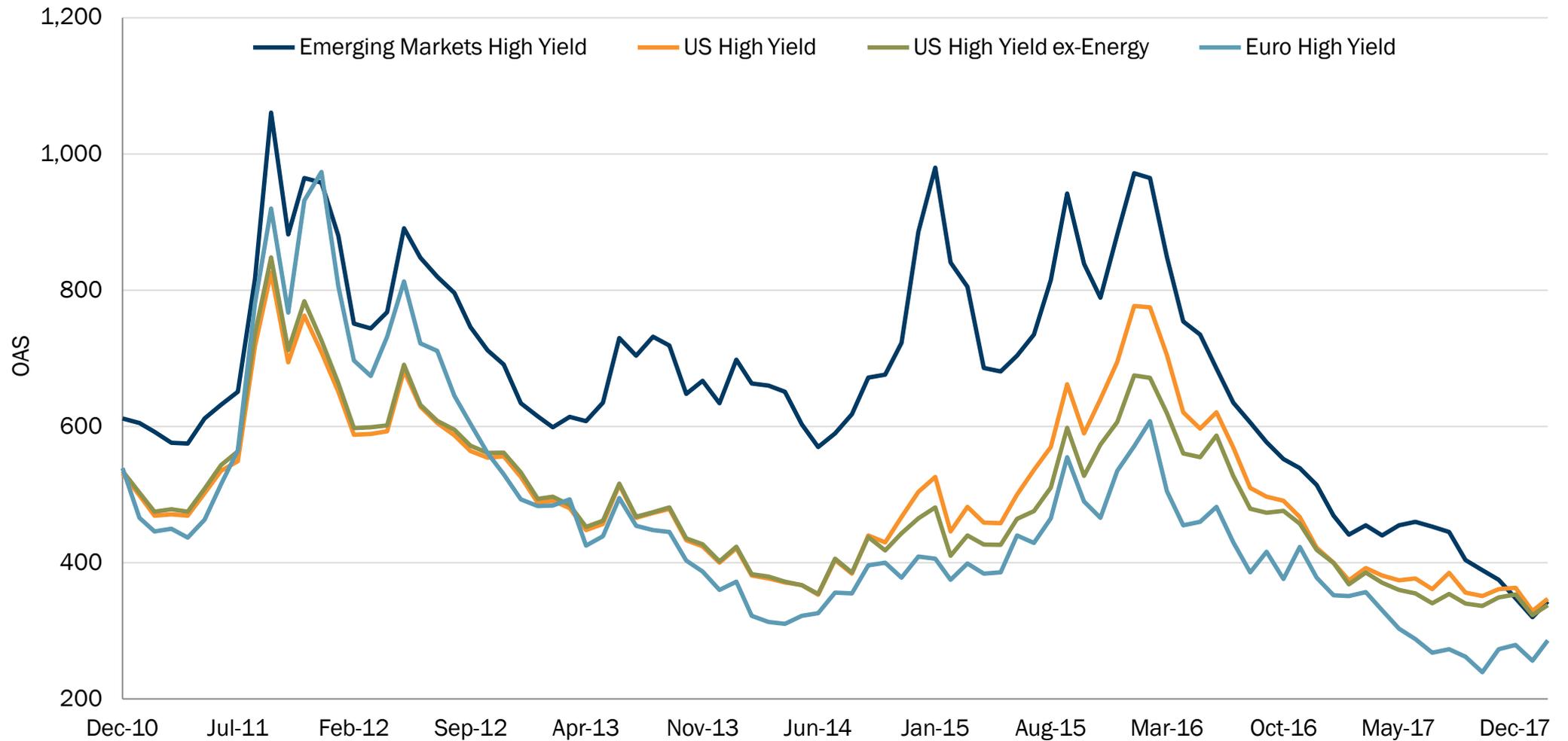
- Technological Disruption
- Idiosyncratic Risk
- Excessive Valuations

3

Increase  
high-conviction **ideas**,  
and **focus on**  
**issuers** benefitting  
from change

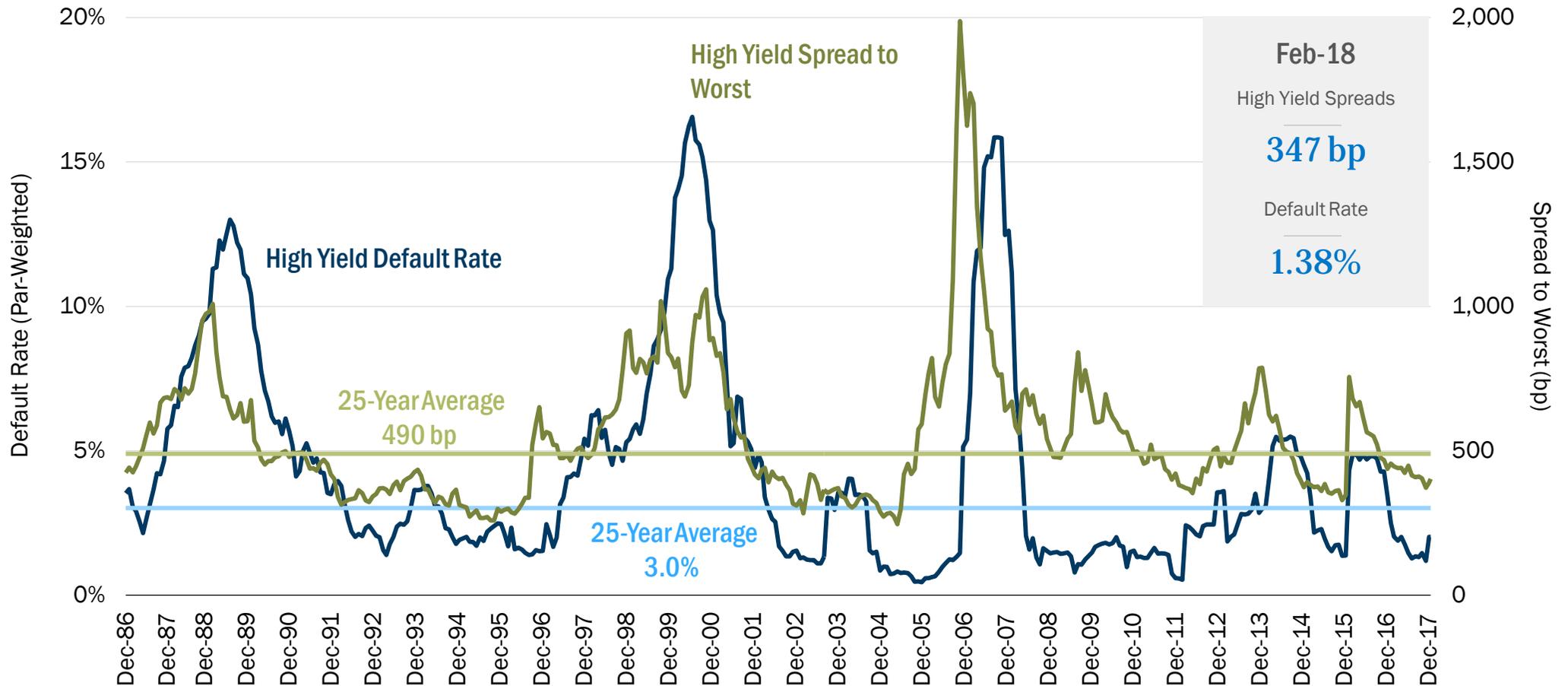
# Relative Value Points to US High Yield

From December 31, 2010 – December 31, 2017



# Credit Spreads Tell an Incomplete Story

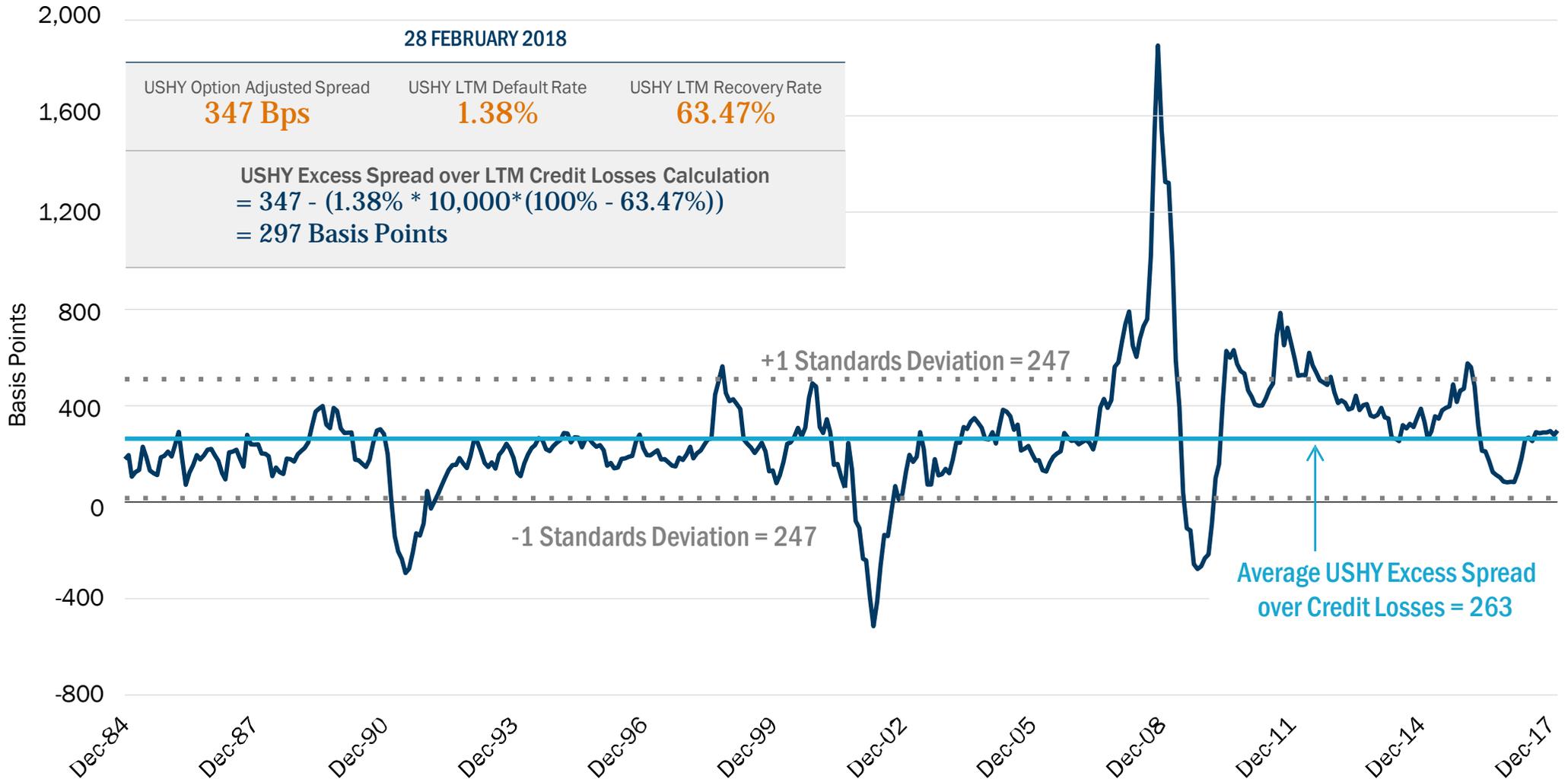
HY Bond Spreads Versus Defaults | 31 December 1986 – 28 February 2018



Note: Default rates are par-weighted. High-yield bond spreads use the JPMorgan Domestic HY index.  
Source: : ICE Bank of America Merrill Lynch, MacKay Shields

# Valuations Are Fair in a Low Default Environment

## Excess Spread Over Credit Losses | 31 December 1984 – 28 February 2018

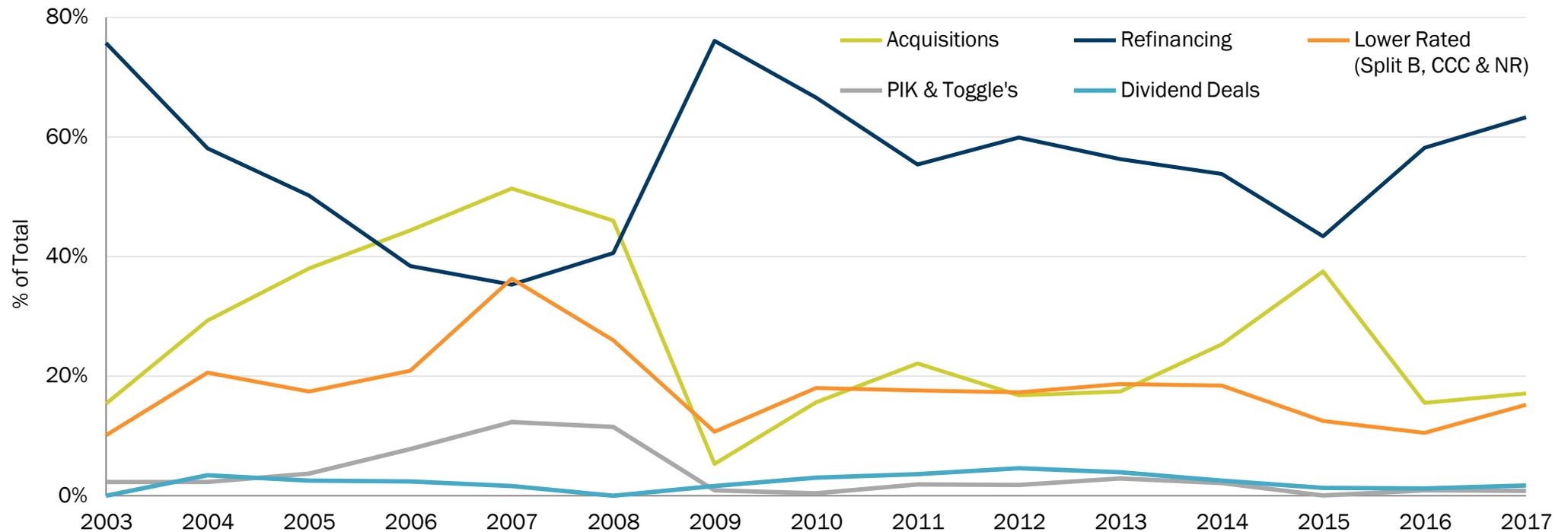


# High Yield New Issuance Proceeds (% of Total)

| Category                        | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ACQUISITIONS                    | 15.4 | 29.3 | 38.0 | 44.4 | 51.4 | 46.0 | 5.3  | 15.6 | 22.1 | 16.8 | 17.4 | 25.3 | 37.5 | 15.5 | 17.1 |
| REFINANCING                     | 75.7 | 58.1 | 50.2 | 38.4 | 35.3 | 40.6 | 76.1 | 66.6 | 55.4 | 59.9 | 56.3 | 53.8 | 43.4 | 58.2 | 63.3 |
| LOWER RATED (SPLIT B, CCC & NR) | 10.1 | 20.6 | 17.4 | 20.9 | 36.3 | 26.0 | 10.7 | 18.0 | 17.6 | 17.3 | 18.7 | 18.4 | 12.5 | 10.5 | 15.2 |
| PIK & TOGGLE'S                  | 2.3  | 2.3  | 3.7  | 7.8  | 12.3 | 11.5 | 0.9  | 0.4  | 1.9  | 1.8  | 2.9  | 2.1  | 0.2  | 0.9  | 0.8  |
| DIVIDEND DEALS                  | 0.0  | 3.4  | 2.5  | 2.4  | 1.6  | 0.0  | 1.6  | 3.0  | 3.6  | 4.6  | 3.9  | 2.5  | 1.3  | 1.2  | 1.7  |

2007 and end columns in gray to highlight comparison

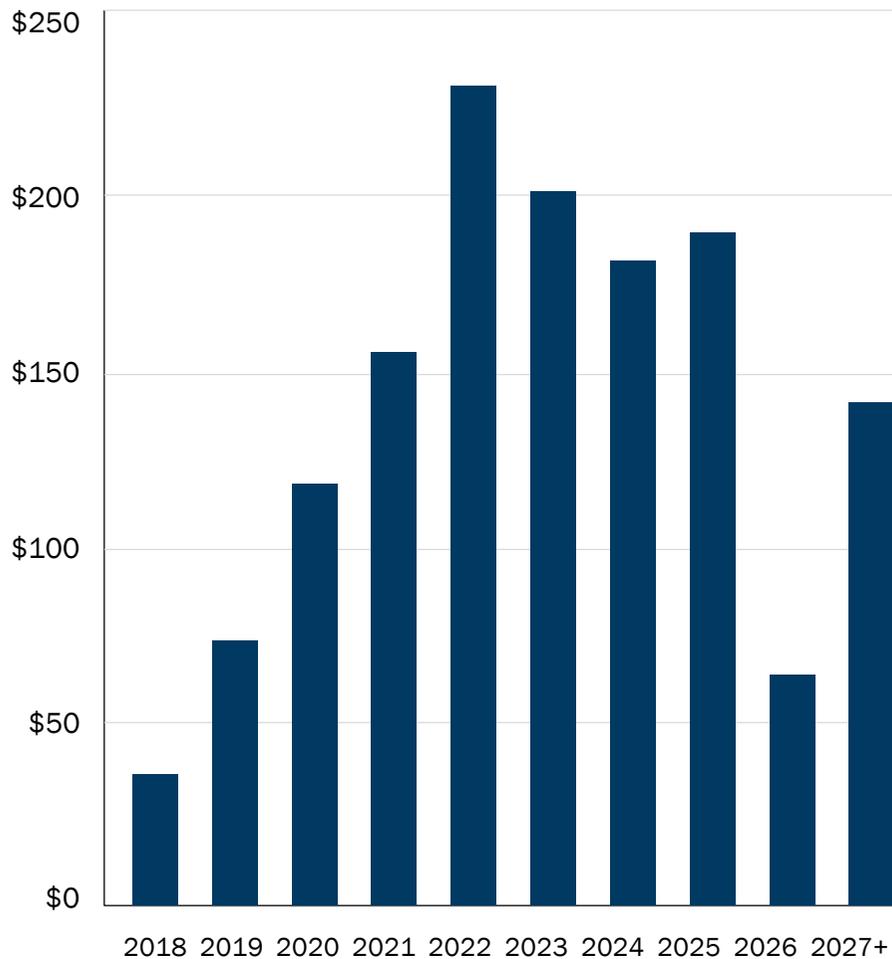
## Use of Proceeds



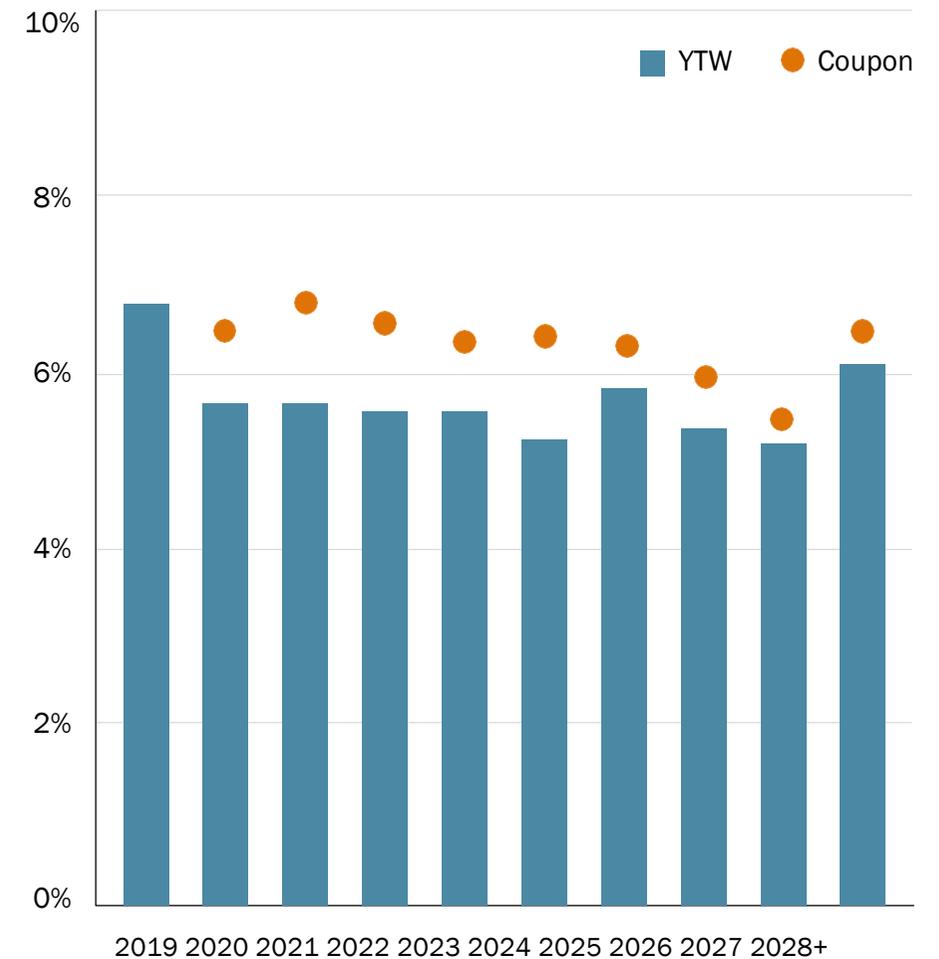
# No Near Term Negative Catalyst

## Yield by Maturity Year Reflects Generally Supportive Refinancing Conditions

HY MATURITY SCHEDULE | \$BN



HY AVERAGE COUPON AND YTW BY MATURITY YEAR

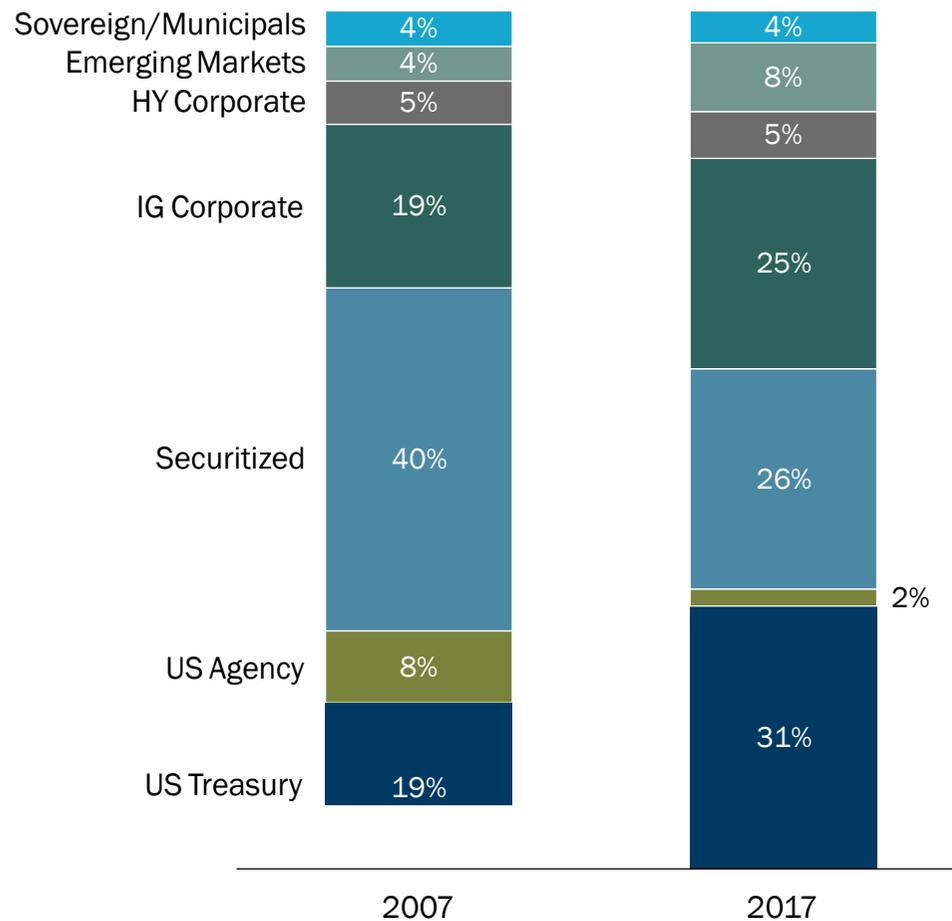


Source: Wells Fargo Securities, Bloomberg, L.P.

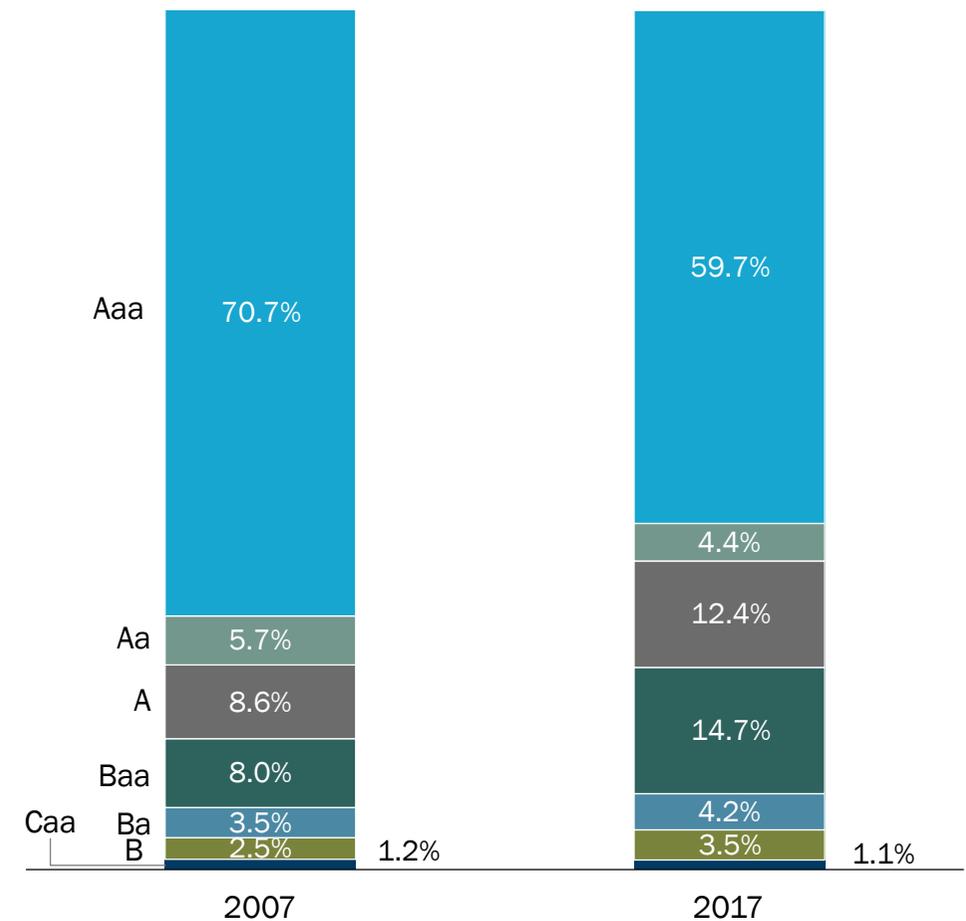
# Market Structure Has Changed

## US UNIVERSAL INDEX

### Sector Distribution

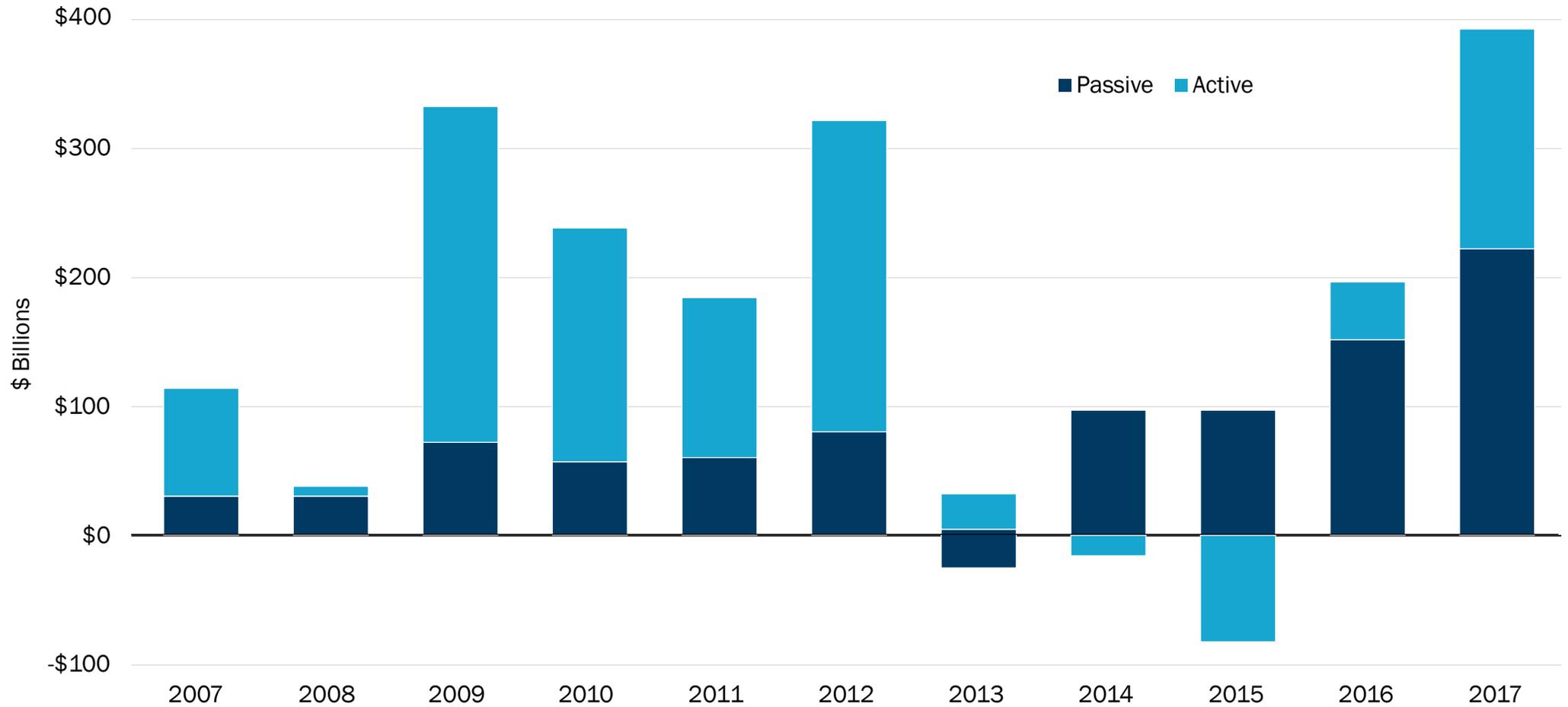


### Quality Distribution



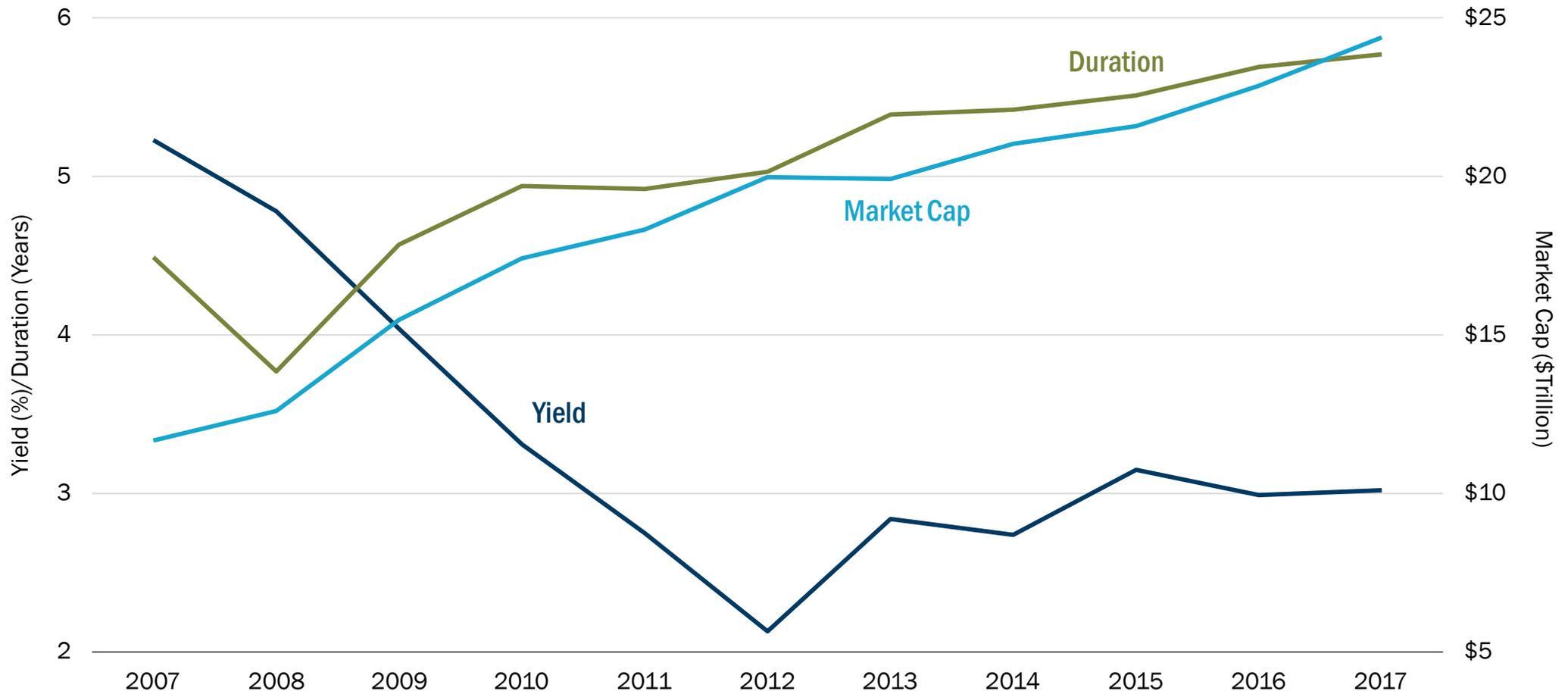
# Market Participants Have Changed

## Active versus Passive Fixed Income Asset Flow



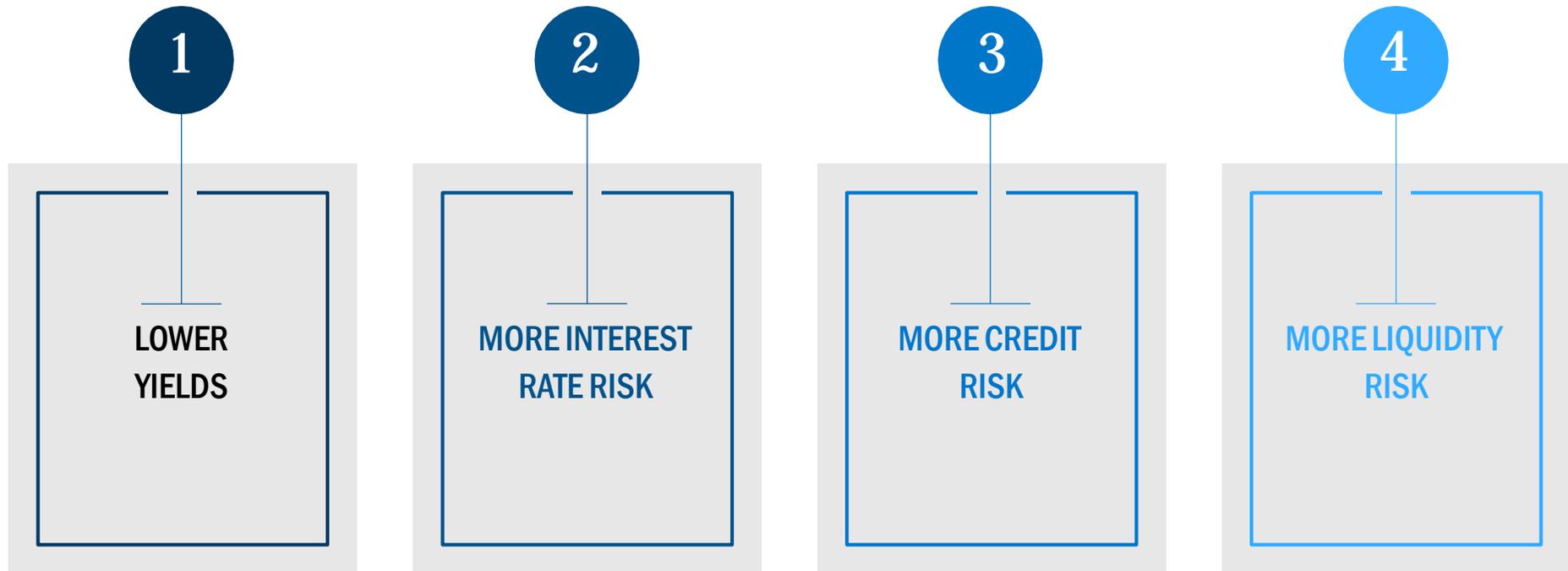
# Less Compensation for Risk

## US Universal Index | Yield, Duration and Market Capitalization



Source: Bloomberg Barclays U.S. Universal as of 12/31/17.

# Future Risks Are Different



# Opportunities



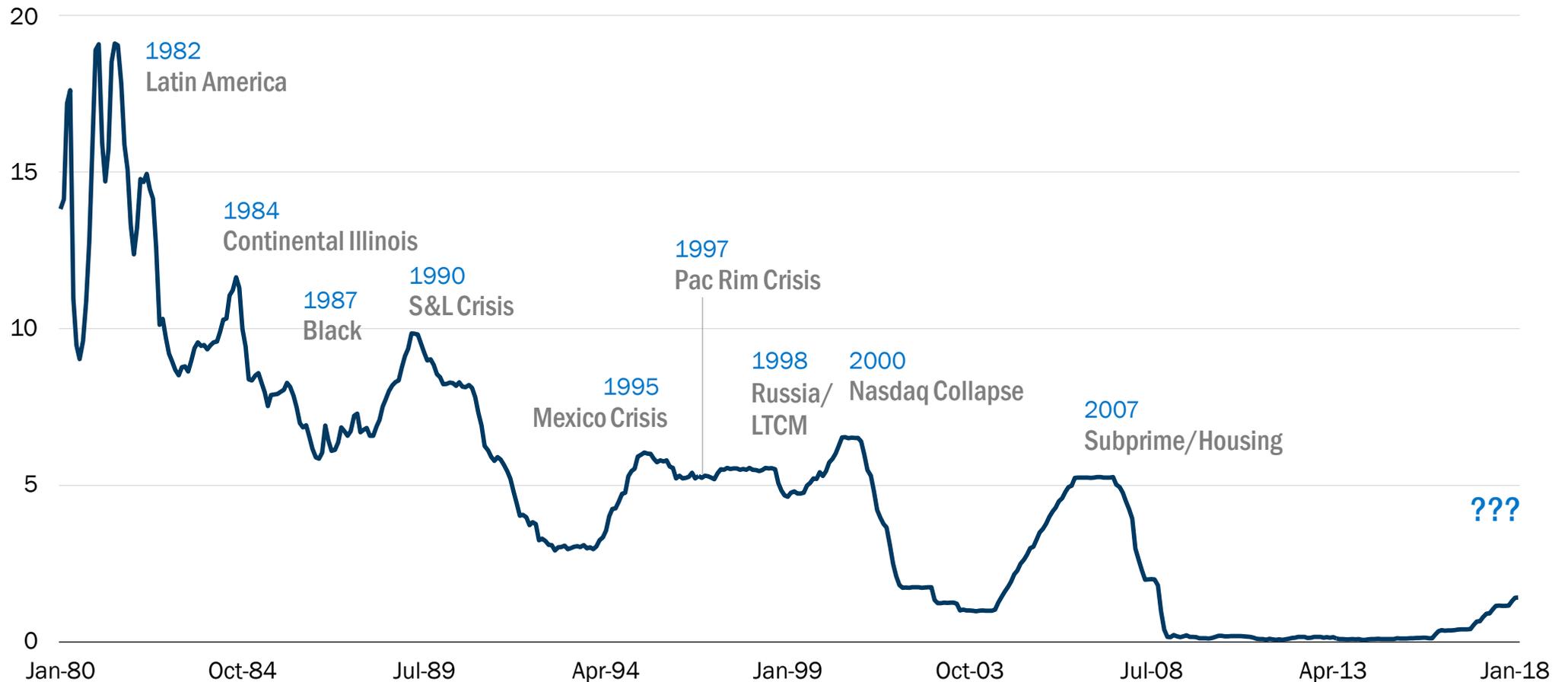
As of February 28, 2018

**Past performance is not indicative of future results.**

Source: Bank Loans: CS Leveraged Loan Index; Preferred Securities: ICE BofAML Perpetual Preferred Securities Index; EMD Credit: ICE BofAML High Grade Emerging Markets Corporate Plus Index; Agency MBS: ICE BofAML US Mortgage Backed Securities Index; Retail Credit: ICE BofAML US Retail Index; Treasury Bill: ICE BofAML US 3-Month Treasury Bill Index; 5 Year Treasury: ICE BofAML Current 5-Year US Treasury Index; 10 Year Treasury: ICE BofAML Current 10-Year US Treasury Index; 30 Year Treasury: ICE BofAML Current 30-Year US Treasury Index

# Most Importantly, Avoid Uncompensated Risk

## US Federal Funds Effective Rate



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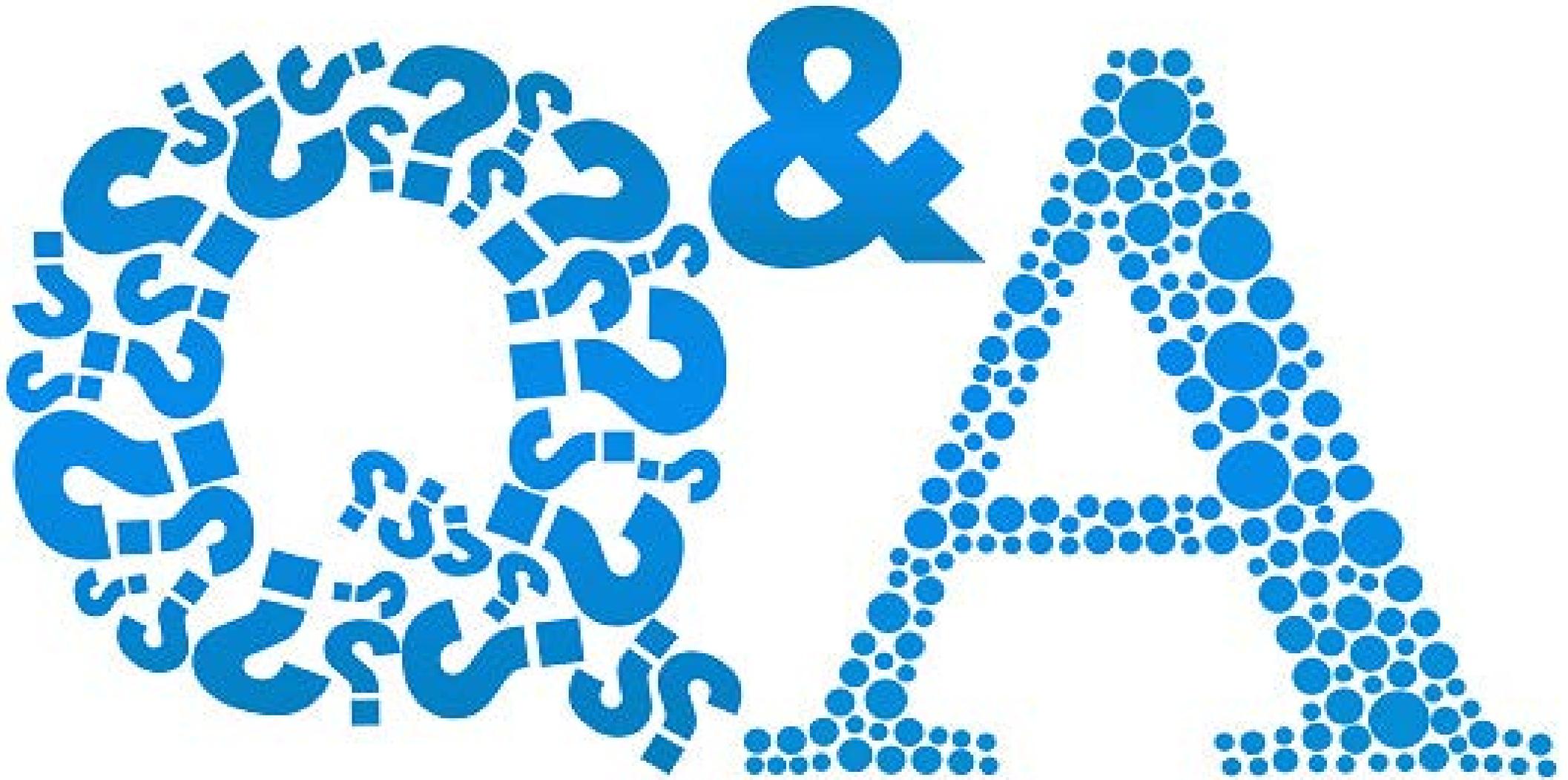
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Clear and Independent Institutional Investment Analysis



April 19, 2018

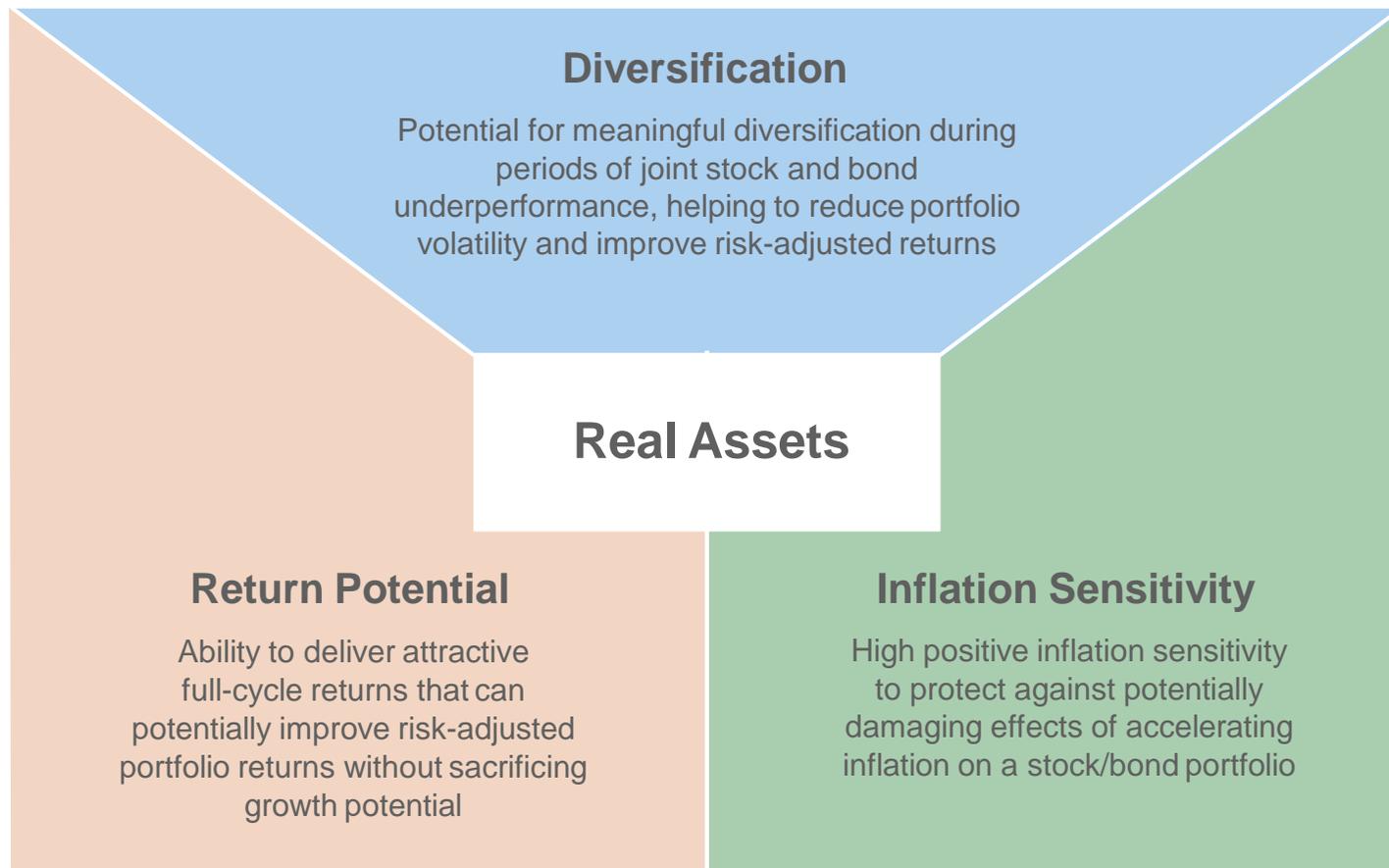
COHEN & STEERS

# Approaching Real Assets as an Asset Class

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Not an inducement to buy or sell commodity interests.

# Real Assets Investment Characteristics

A Foundational Asset Class



At December 31, 2017.

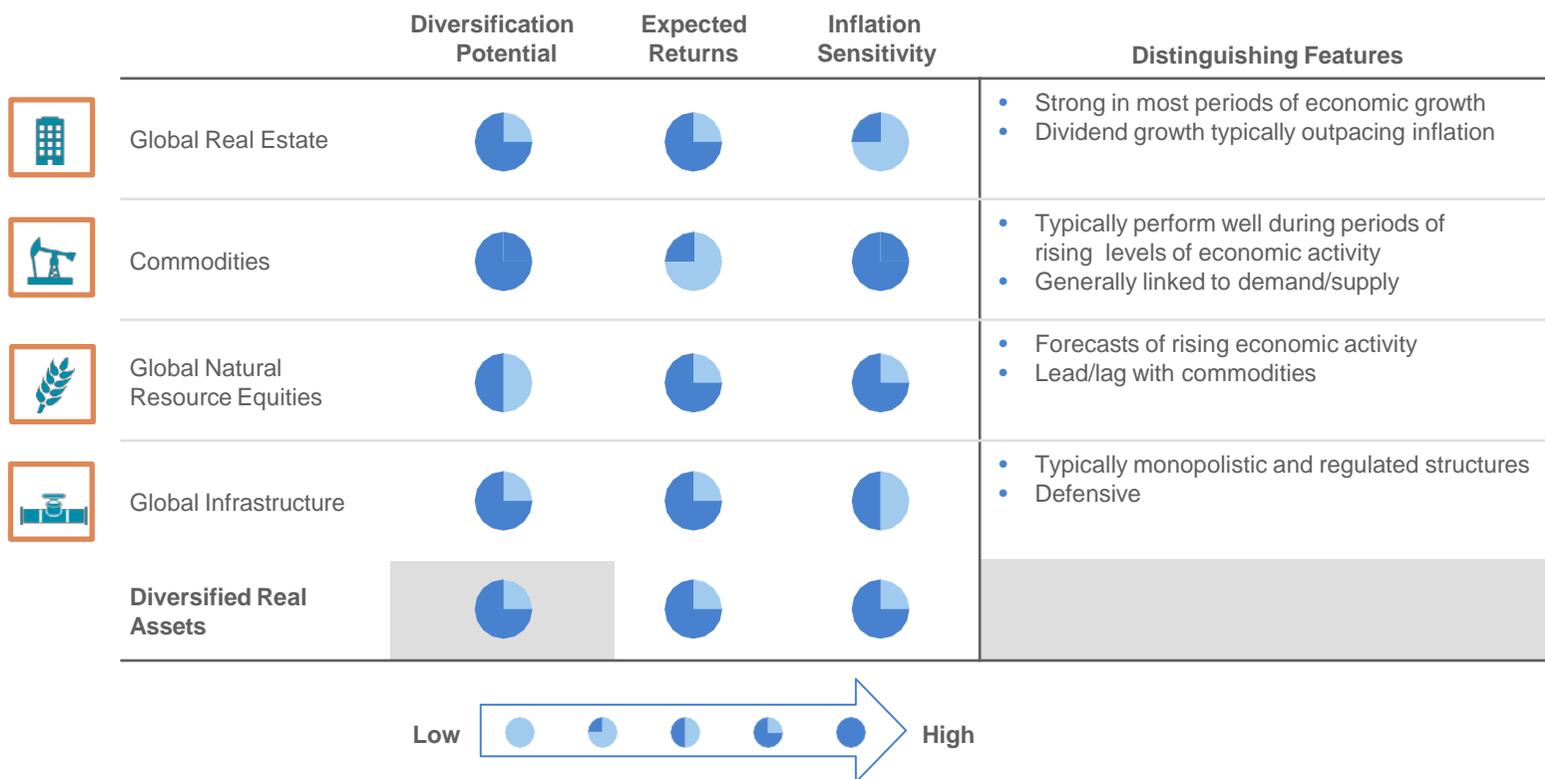
There is no guarantee that any historical trend illustrated above will be repeated in the future, and there is no way to predict precisely when such a trend will begin. There is no guarantee that any market forecast set forth in this presentation will be realized. The views and opinions are as of the date of publication and are subject to change without notice.

Based on Cohen & Steers expectations.

Opinions are subject to change without notice.

# Approaching Real Assets as an Asset Class

A Diversified Framework Can Manage the Tradeoffs of Single-Category Approaches



At December 31, 2017.

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The qualitative criteria in the above chart represent relative strengths across the real asset categories discussed in this presentation. These criteria reflect the research-based views of Cohen & Steers. Support for these conclusions can

be found in Cohen & Steers' white paper entitled, "Exploring the Real Benefits of Real Assets" available at [cohenandsteers.com](http://cohenandsteers.com).

Based on Cohen & Steers analysis and expectations.

# Diversified Real Assets Fund Benchmark Performance

Annualized Nominal Returns and Standard Deviation, January 1973–December 2017



|                             | Global Equity (%) | Real Estate Securities (%) | Commodities (%) | Natural Resource Equities (%) | Listed Infrastructure (%) | Diversified Real Assets (Equal Weights) (%) | Diversified Real Assets Fund Benchmark (%) |
|-----------------------------|-------------------|----------------------------|-----------------|-------------------------------|---------------------------|---|--|
| Annualized Nominal Return   | 10.0              | 11.3                       | 8.4             | 11.4                          | 11.8                      | 11.4  | 10.9                                       |
| Risk (% standard deviation) | 15.1              | 17.4                       | 18.0            | 16.9                          | 15.4                      | 13.2  | 12.1                                       |
| Sharpe Ratio                | 0.26              | 0.31                       | 0.16            | 0.32                          | 0.36                      | 0.37  | 0.35                                       |

December 31, 2017.

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Source: Bloomberg, Dow Jones, FTSE, S&P, St. Louis Fed, Thomson Reuters Datastream and Cohen & Steers. All Returns reflected in GBP, unhedged.

Global Equity represented by MSCI World. Diversified Real Assets (Equal Weights) represented by equally-weighted blend of Real Estate, Commodities, Natural Resource Equities, and Infrastructure. Diversified Real Assets Fund benchmark for comprised of 25% Real Estate, 20% Commodities, 20% S&P Natural Resource Equities, 20% Infrastructure, 10% Short Duration Fixed Income, and 5% Gold. Real Estate represented by FTSE NAREIT Equity REIT Index through December 1989 and FTSE EPRA/NAREIT Developed Index thereafter. Commodities represented by S&P GSCI through December 1990 and Dow Jones-UBS Commodity Index thereafter. Effective July 1, 2014, the Dow Jones-UBS Commodity Index was renamed the Bloomberg Commodity Index. Natural Resource Equities represented by 50/50 Blend of Datastream World Oil & Gas and Datastream World Basic Materials through December 2002; S&P Global Natural Resources Index thereafter. Infrastructure represented by 50/50 Blend of Datastream World Pipelines and Datastream World Gas, Water, & Multi-Utilities through December 2002; Dow Jones Brookfield Global Infrastructure Index thereafter. An investor cannot invest directly in an index and index performance does not reflect the deduction of any fees, expenses or taxes. Sharpe Ratio is a measure of risk-adjusted return, calculated by subtracting the risk-free rate from a return and dividing that result by the standard deviation. The higher the Sharpe Ratio, the higher the risk-adjusted return. Volatility is a measure for variation of price of a financial instrument over time. Standard Deviation is a measure of the dispersion of a set of data from its mean, also known as historical volatility and is used by investors as a gauge for the amount of expected volatility.

# Historically a Smoother Ride With Diversified Real Assets

## Calendar Year Total Returns (GBP)

|       |      |      |       |       |      |      |      |       |      |       |      |      |       |      |       |       |       |      |      | 20-Years 1998-2017      |                                   |                             |
|-------|------|------|-------|-------|------|------|------|-------|------|-------|------|------|-------|------|-------|-------|-------|------|------|-------------------------|-----------------------------------|-----------------------------|
|       |      |      |       |       |      |      |      |       |      |       |      |      |       |      |       |       |       |      |      | Annualized Total Return | Standard Deviation <sup>(1)</sup> | Sharpe Ratio <sup>(1)</sup> |
| 1998  | 1999 | 2000 | 2001  | 2002  | 2003 | 2004 | 2005 | 2006  | 2007 | 2008  | 2009 | 2010 | 2011  | 2012 | 2013  | 2014  | 2015  | 2016 | 2017 | %                       | %                                 |                             |
| 23.0  | 30.8 | 54.4 | 4.3   | 13.8  | 27.7 | 28.4 | 41.2 | 25.2  | 39.9 | 45.1  | 24.8 | 24.7 | 14.3  | 23.0 | 25.0  | 23.7  | 5.8   | 58.0 | 12.4 | 9.4                     | 17.9                              | 0.45                        |
| 12.0  | 29.4 | 42.9 | -1.3  | 5.3   | 26.8 | 23.7 | 35.1 | 20.2  | 14.7 | -12.5 | 22.9 | 21.0 | 6.4   | 11.4 | 13.8  | 23.2  | 5.5   | 37.9 | 12.0 | 8.9                     | 17.0                              | 0.44                        |
| 6.6   | 27.6 | 31.0 | -3.5  | -7.1  | 20.9 | 17.4 | 32.5 | 14.2  | 14.7 | -13.4 | 21.1 | 19.5 | -4.3  | 10.9 | 2.5   | 12.1  | 2.5   | 34.4 | 5.7  | 8.8                     | 15.0                              | 0.43                        |
| -2.8  | 16.7 | 23.4 | -10.1 | -10.2 | 20.3 | 15.8 | 28.4 | 11.9  | 14.5 | -16.1 | 19.6 | 16.5 | -4.9  | 7.5  | 1.1   | 6.9   | -9.5  | 33.5 | 3.0  | 7.7                     | 14.7                              | 0.41                        |
| -8.7  | 11.7 | 11.3 | -14.3 | -12.4 | 16.3 | 7.5  | 23.6 | 5.8   | 7.7  | -16.8 | 16.4 | 15.9 | -5.4  | 2.5  | -0.3  | 6.8   | -11.0 | 29.0 | 1.7  | 7.1                     | 14.6                              | 0.40                        |
| -9.0  | -1.8 | 5.3  | -17.4 | -27.3 | 11.7 | 1.9  | 23.1 | -6.5  | 7.6  | -17.4 | 7.3  | 14.9 | -12.9 | -0.3 | -4.4  | -4.0  | -19.7 | 25.4 | -1.9 | 5.6                     | 12.9                              | 0.34                        |
| -27.7 | -2.4 | -6.0 | -18.2 | -40.1 | 1.2  | 1.6  | 6.8  | -10.2 | -8.2 | -28.9 | -4.8 | 8.9  | -14.5 | -5.4 | -11.2 | -11.8 | -20.4 | 21.8 | -7.1 | 1.8                     | 8.1                               | -0.01                       |

At December 31, 2017.

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Standard Deviation reflects annualized volatility of monthly returns. An investor cannot invest directly in an index and index performance does not reflect the deduction of any fees, expenses or taxes.

Global Stocks represented by MSCI World Index. Global Bonds represented by the Barclays Global Aggregate Bond Index. Diversified Real Assets represented by equally-weighted blend of Real Estate, Commodities, Natural Resource Equities, and Infrastructure. Real Estate represented by FTSE NAREIT Equity REIT Index through February 2005 and FTSE EPRA/NAREIT Developed Index thereafter. Commodities represented by S&P GSCI through July 1998 and Bloomberg Commodity Index Total Return thereafter. Natural Resource Equities represented by 50/50 Blend of Datastream World Oil & Gas and Datastream World Basic Materials through May 2008; S&P Global Natural Resources Index thereafter. Infrastructure represented by 50/50 Blend of Datastream World Pipelines and Datastream World Gas, Water, & Multi-Utilities through July 2008; Dow Jones Brookfield Global Infrastructure Index thereafter. An investor cannot invest directly in an index and index performance does not reflect the deduction of any fees, expenses or taxes.

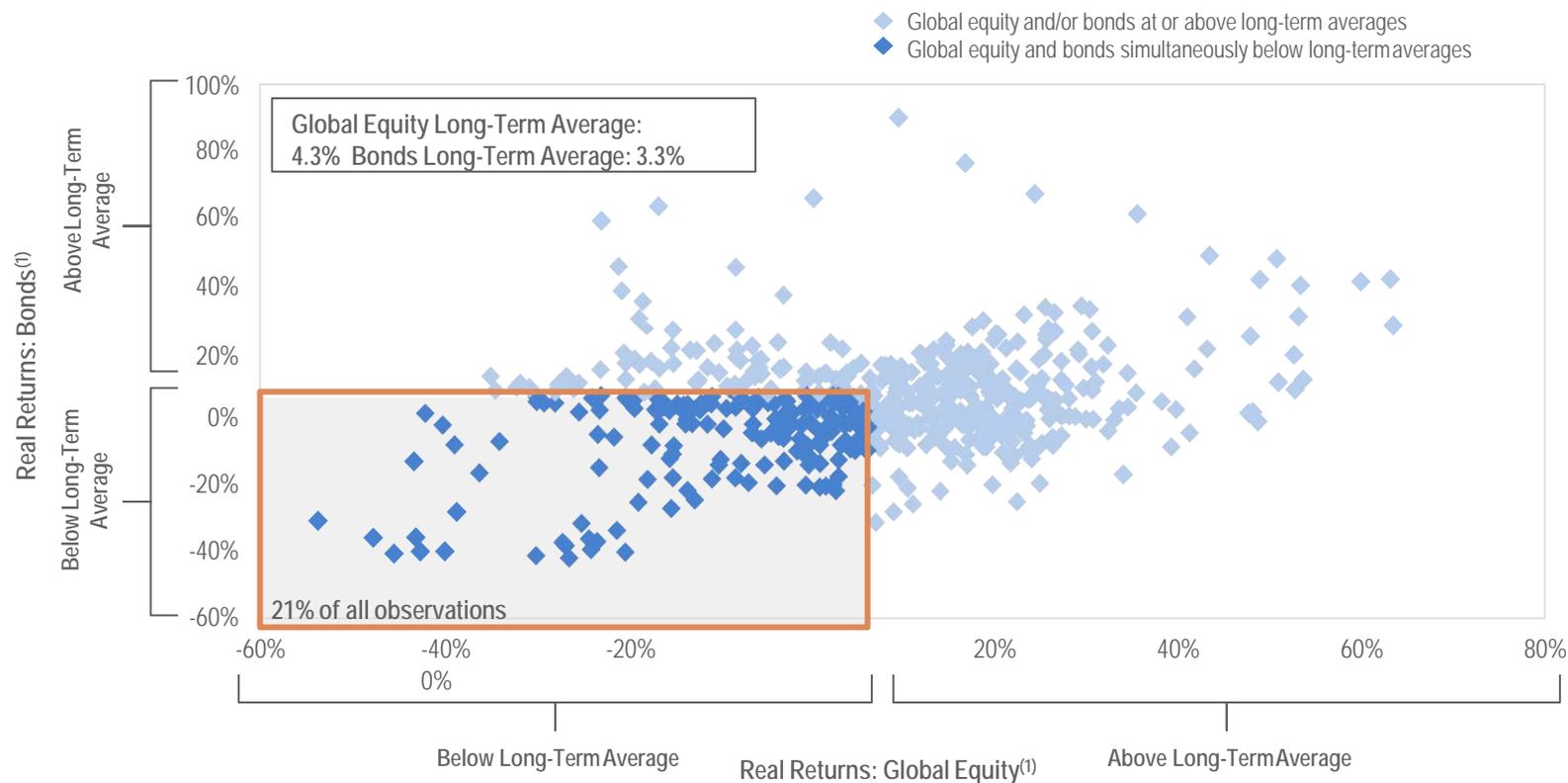
Source: Bloomberg, Dow Jones, FTSE, S&P, Thomson Reuters Datastream and Cohen & Steers. All Returns reflected in GBP, unhedged.

(1) Standard Deviation is a measure of efficiency utilizing the relationship between annualized risk-free return and standard deviation. The ratio is computed by subtracting the return of the risk-free index from the return of the manager to determine the risk-adjusted excess return, which is then divided by the standard deviation. Sharpe Ratio is a measure of risk-adjusted return, calculated by subtracting the risk-free rate from a return and dividing that result by the standard deviation. The higher the Sharpe Ratio, the higher the risk-adjusted return.

# A “Real” Risk to Equity-Bond Allocations

## Annualized Real Returns for Global Equity and Bonds

Global Equity and Bonds From January 1973–December 2017



December 31, 2017.

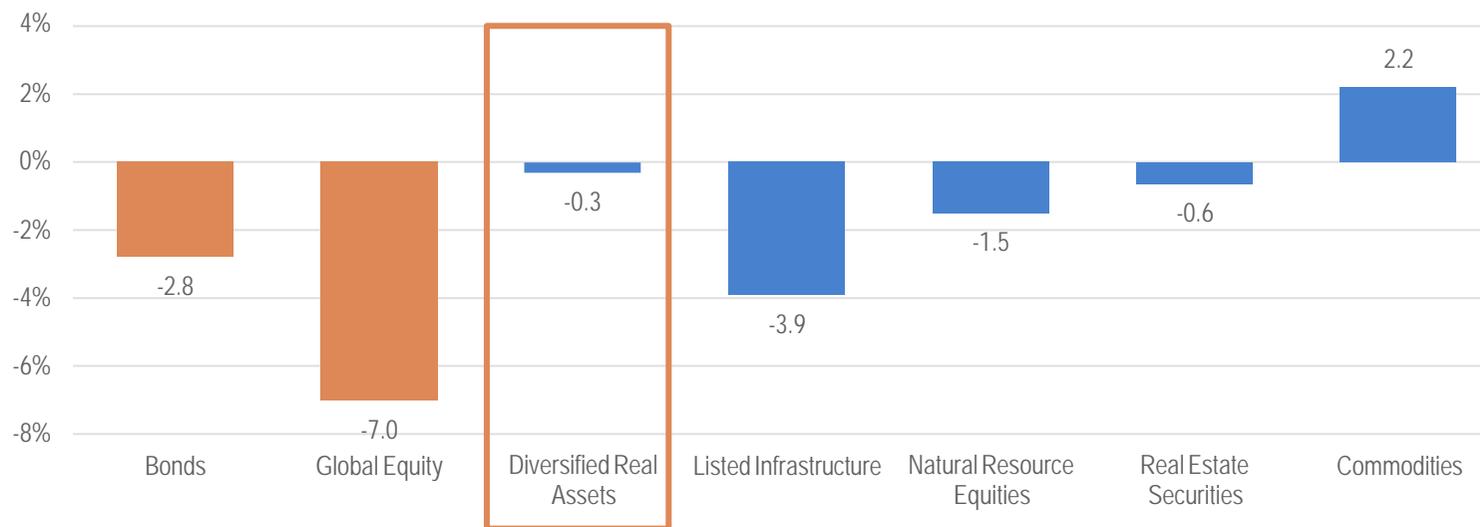
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(1) Global Equity and Bonds long term average is calculated as the compound average return over the period shown. Global Equity represented by MSCI World. Bonds represented by total return to Constant Maturity 10-year UK Gilts. Inflation is measured using the UK Retail Price Index (All items).

Source: Bloomberg, Dow Jones, FTSE, S&P, St. Louis Fed, Thomson Reuters Datastream and Cohen & Steers. All Returns reflected in GBP, unhedged.

# Real Assets Have Historically Outperformed When Both Stocks and Bonds Underperformed

**Average Annualized Real Returns for Periods in Which Global Equity and Bonds Were Simultaneously Below Their Long-Term Average<sup>(1)</sup>**  
January 1973–December 2017



December 31, 2017.

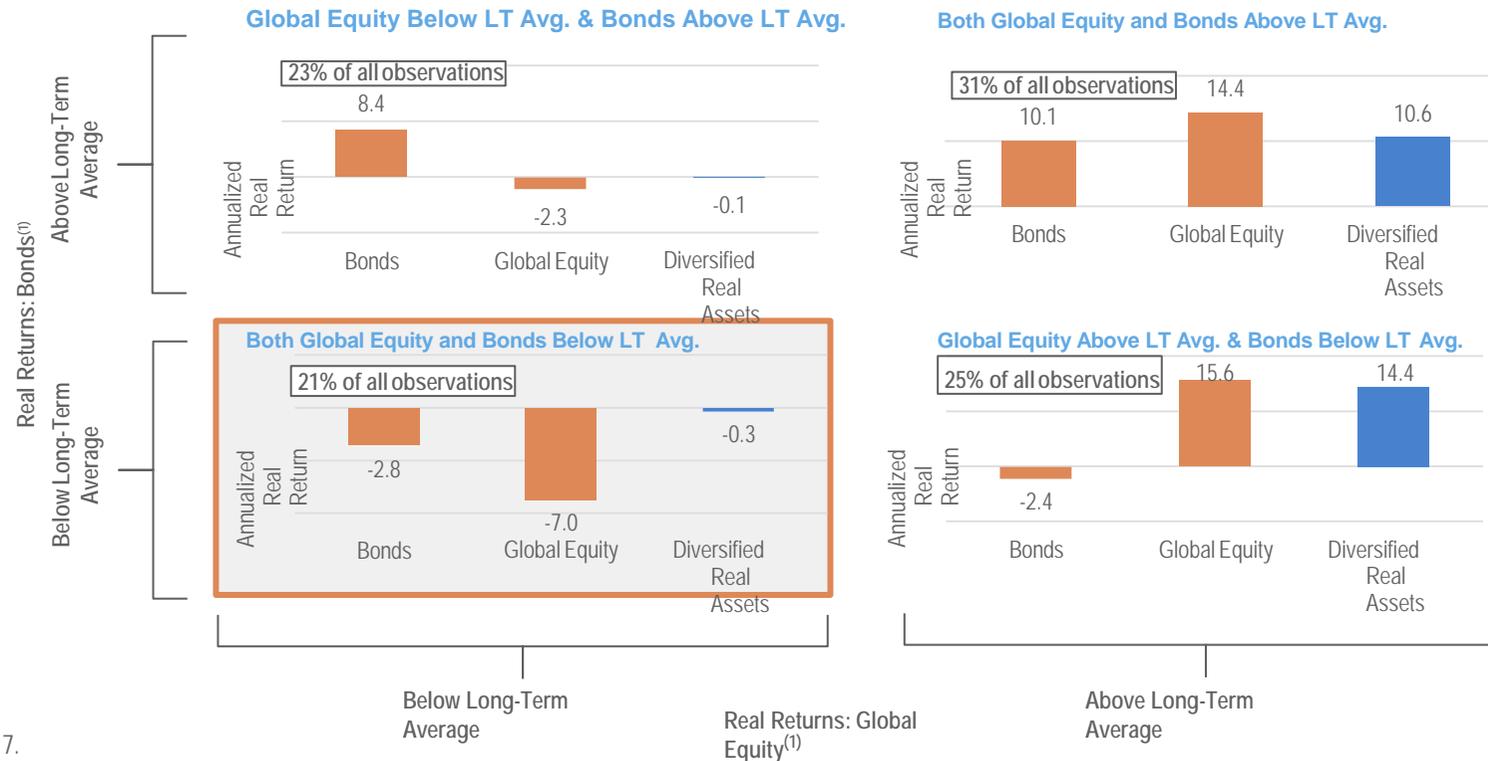
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Source: Bloomberg, Dow Jones, FTSE, S&P, St. Louis Fed, Thomson Reuters Datastream and Cohen & Steers. All Returns reflected in GBP, unhedged

(1) Average long-term real returns for Global Equity and bonds were 4.3% and 3.3%, respectively, from the 12/31/72 inception of index data through the date shown. Returns over the study period are compound annual returns. Global Equity represented by MSCI World. Bonds represented by total return to Constant Maturity 10-year UK Gilts. Diversified Real Assets represented by equally-weighted blend of Real Estate, Commodities, Natural Resource Equities, and Infrastructure. Real Estate represented by FTSE NAREIT Equity REIT Index through December 1989 and FTSE EPRA/NAREIT Developed Index thereafter. Commodities represented by S&P GSCI through December 1990 and Dow Jones-UBS Commodity Index thereafter. Effective July 1, 2014, the Dow Jones-UBS Commodity Index was renamed the Bloomberg Commodity Index. Natural Resource Equities represented by 50/50 Blend of Datastream World Oil & Gas and Datastream World Basic Materials through December 2002; S&P Global Natural Resources Index thereafter. Infrastructure represented by 50/50 Blend of Datastream World Pipelines and Multi-Utilities through December 2002; Dow Jones Brookfield Global Infrastructure Index thereafter.

# Real Assets Have Potential to Deliver Attractive Returns Over a Market Cycle

**Annualized Real Returns for Global Equity, Bonds, and Diversified Real Assets**  
Global Equity and Bonds From January 1973–December 2017



At December 31, 2017.

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Source: Bloomberg, Dow Jones, FTSE, S&P, St. Louis Fed, Thomson Reuters Datastream and Cohen & Steers. All Returns reflected in GBP, unhedged.

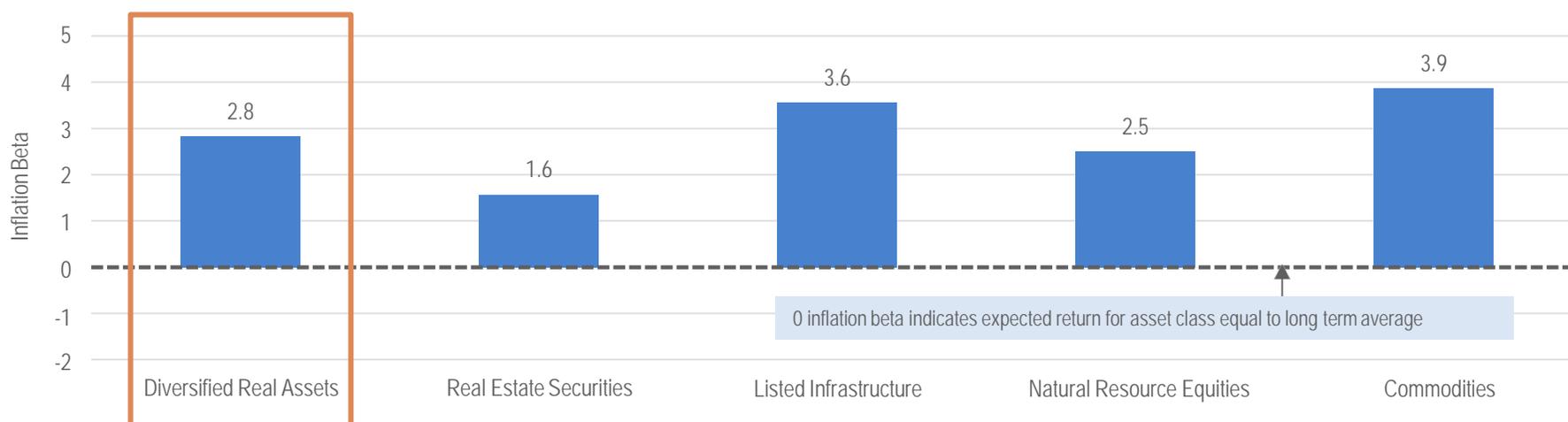
(1) Global Equity represented by MSCI World. Bonds represented by total return to Constant Maturity 10-year UK Gilts. Diversified Real Assets represented by equally-weighted blend of Real Estate, Commodities, Natural Resource Equities, and Infrastructure. Real Estate represented by FTSE NAREIT Equity REIT Index through December 1989 and FTSE EPRA/NAREIT Developed Index thereafter. Commodities represented by S&P GSCI through December 1990 and Dow Jones-UBS Commodity Index thereafter. Effective July 1, 2014, the Dow Jones-UBS Commodity Index was renamed the Bloomberg Commodity Index. Natural Resource Equities represented by 50/50 Blend of Datastream World Oil & Gas and Datastream World Basic Materials through December 2002; S&P Global Natural Resources Index thereafter. Infrastructure represented by 50/50 Blend of Datastream World Pipelines and Datastream World Gas, Water, & Multi-Utilities through December 2002; Dow Jones Brookfield Global Infrastructure Index thereafter.

# Real Assets Are Typically Sensitive to Unexpected Inflation

- Returns for core real assets have shown attractive levels of sensitivity to unexpected changes in UK inflation (i.e., “inflation beta”)
- The difference between the current year-over-year realized inflation rate (actual inflation) and the prior year’s consensus inflation expectation measures unexpected inflation<sup>(1)</sup>

## Sensitivity of Returns to Unexpected Inflation

% Outperformance vs Long-Term Average for Every 1% Y/Y Inflation Surprise, January 2000–December 2017



At December 31, 2017.

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Source: Bank of England, Bloomberg, Dow Jones, FTSE, S&P, St. Louis Fed, Thomson Reuters Datastream and Cohen & Steers. All Returns reflected in GBP, unhedged.

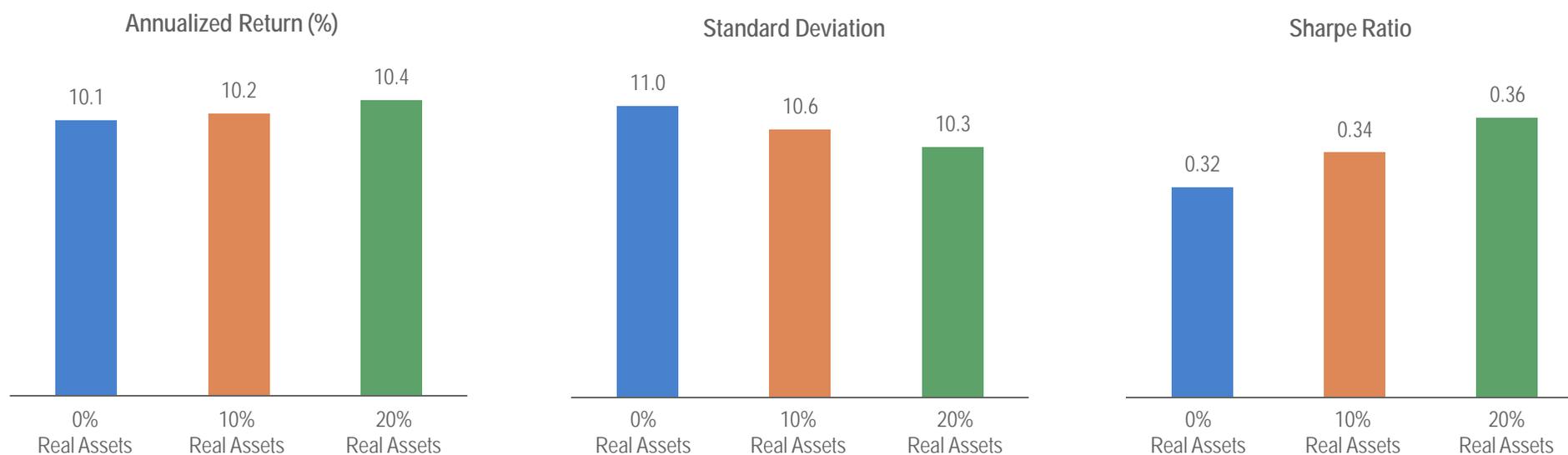
(1) Inflation beta was determined by calculating the multivariate regression beta of 1-year real returns to the difference between the year-over-year realized inflation rate and lagged 1-year ahead expected inflation, including the level of the lagged expected inflation rate. Expected inflation as measured reflects median inflation expectation from BOE/TNS Inflation Expectation Survey.

Diversified Real Assets represented by equally-weighted blend of Real Estate, Commodities, Natural Resource Equities, and Infrastructure. Real Estate represented by FTSE NAREIT Equity REIT Index through December 1989 and FTSE EPRA/NAREIT Developed Index thereafter. Commodities represented by S&P GSCI through December 1990 and Dow Jones-UBS Commodity Index thereafter. Effective July 1, 2014, the Dow Jones-UBS Commodity Index was renamed the Bloomberg Commodity Index. Natural Resource Equities represented by 50/50 Blend of Datastream World Oil & Gas and Datastream World Basic Materials through December 2002; S&P Global Natural Resources Index thereafter. Infrastructure represented by 50/50 Blend of Datastream World Pipelines and Datastream World Gas, Water, & Multi-Utilities through December 2002; Dow Jones Brookfield Global Infrastructure Index thereafter.

# Real Assets Can Improve Risk Adjusted Return

1973–Q4 2017

- 0% Real Assets (60% Global Equities/40% UK Gilts)
- 10% Real Assets (50% Global Equities/40% UK Gilts)
- 20% Real Assets (40% Global Equities/40% UK Gilts)



At December 31, 2017.

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Source: Bloomberg, Cohen & Steers. Returns shown are calculated using monthly returns from January 1973 through December 2017.

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**Risks of Investing in Real Assets.** A real assets strategy is subject to the risk that its asset allocations may not achieve the desired risk-return characteristic, underperform other similar investment strategies or cause an investor to lose money. The risks of investing in REITs are similar to those associated with direct investments in real estate securities. Property values may fall due to increasing vacancies, declining rents resulting from economic, legal, tax, political or technological developments, lack of liquidity, limited diversification and sensitivity to certain economic factors such as interest-rate changes and market recessions. An investment in commodity-linked derivative instruments may be subject to greater volatility than investments in traditional securities, particularly if the instruments involve leverage.

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Amy Richardson – Director, Client Relations



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***The consolidated peer group reports in particular, are an efficient one-stop shop for information gathering and enable us to critique the market or ‘house’ view of any prospective, or currently held mandate.”***

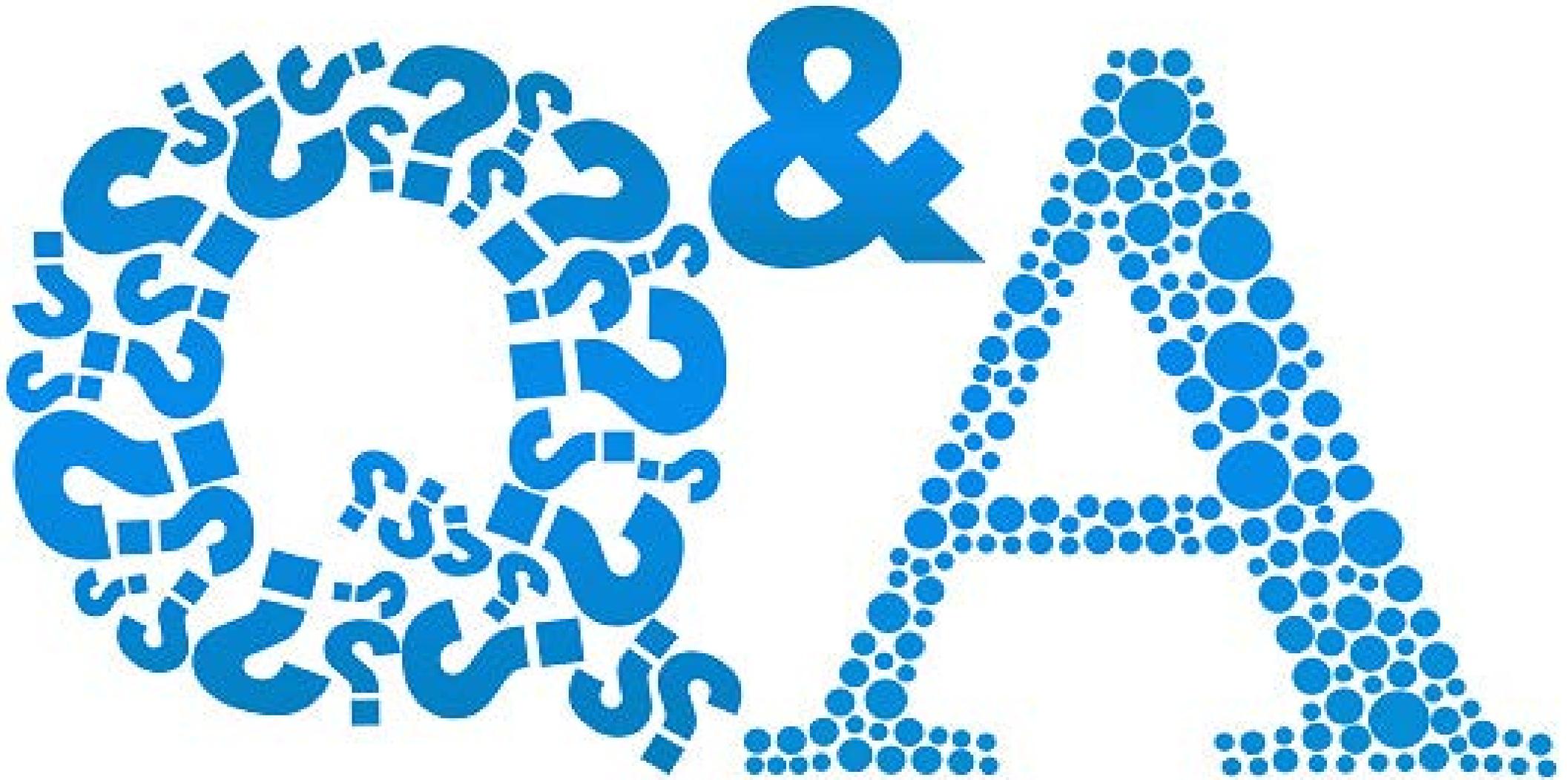
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19<sup>th</sup> April 2018

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