

# The future of active management

## *How do we integrate humans and machines?*

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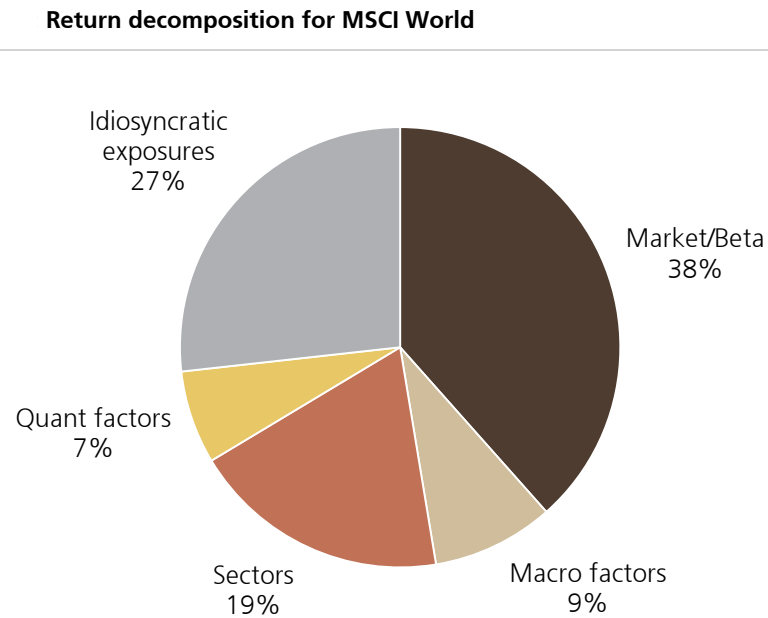
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Section 2	What do we expect from passive and active exposures?
Section 3	How do we best harvest excess returns?
Section 4	How do we integrate machines and humans?
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## Section 1

# What drives returns across the market?

# Return decomposition for MSCI World

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Source: FactSet, UBS Quant. Chart shows proportion of matched PCA factor returns described by each factor group.

## Section 2

What do we expect from passive and active exposures?

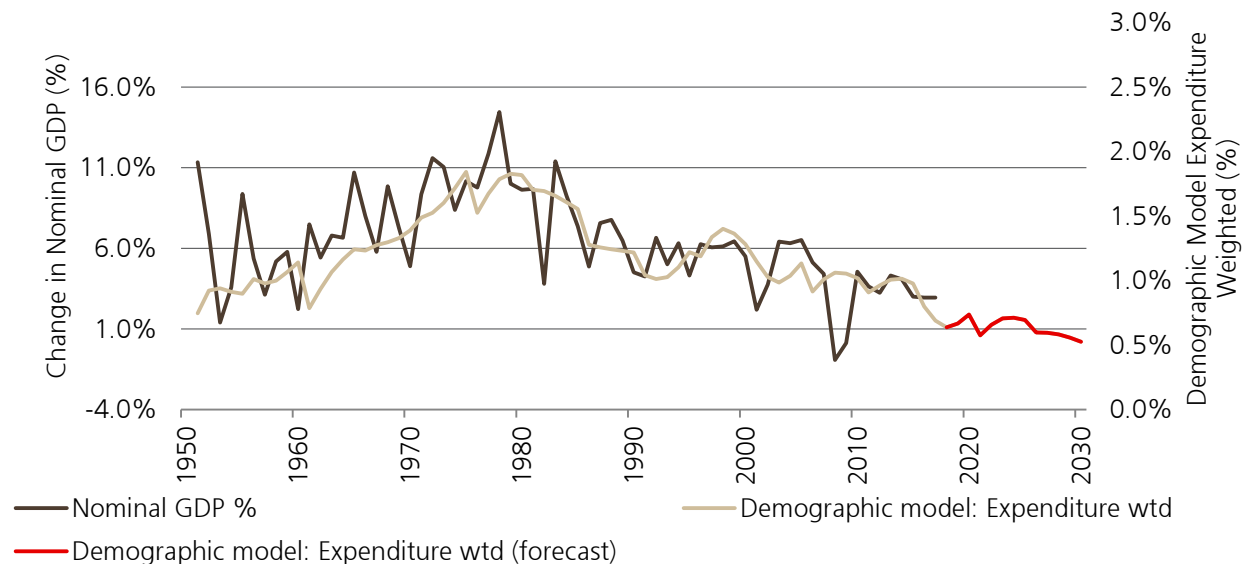
# Drivers of long term returns

1871 to 2017 7.7%

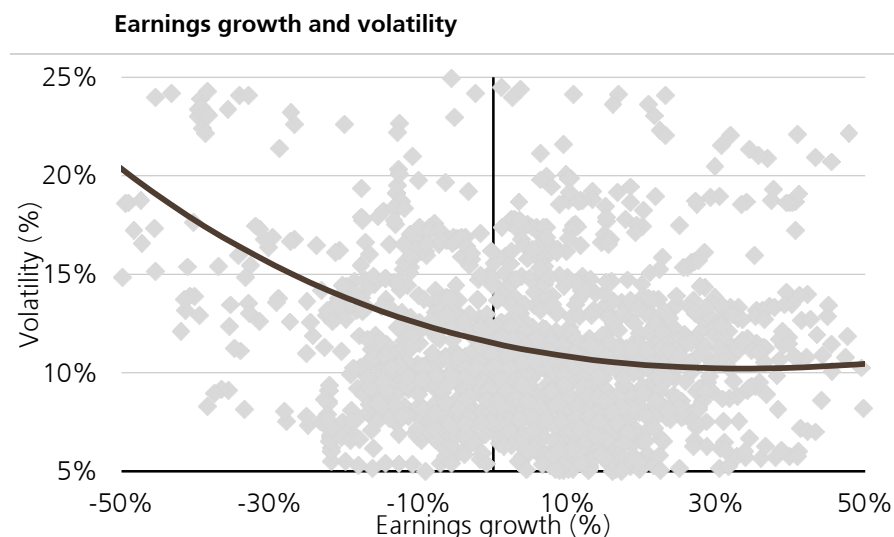
1980 to 2007 9.3%

1. Demographics
2. Productivity enhancing technology
3. Declining interest rates
4. Opening up of trade
5. Declining corporate taxes

Demographic model (expenditure weighted) and US nominal GDP



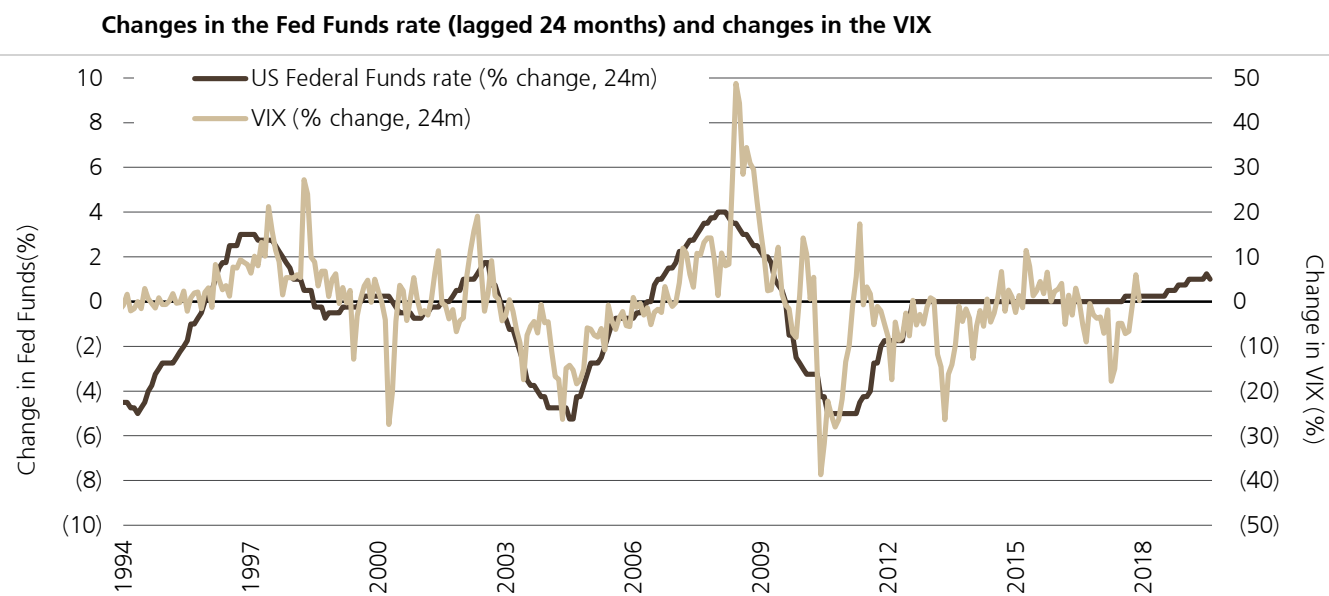
# What to expect from volatility?



Source: FactSet, UBS Quant, US data

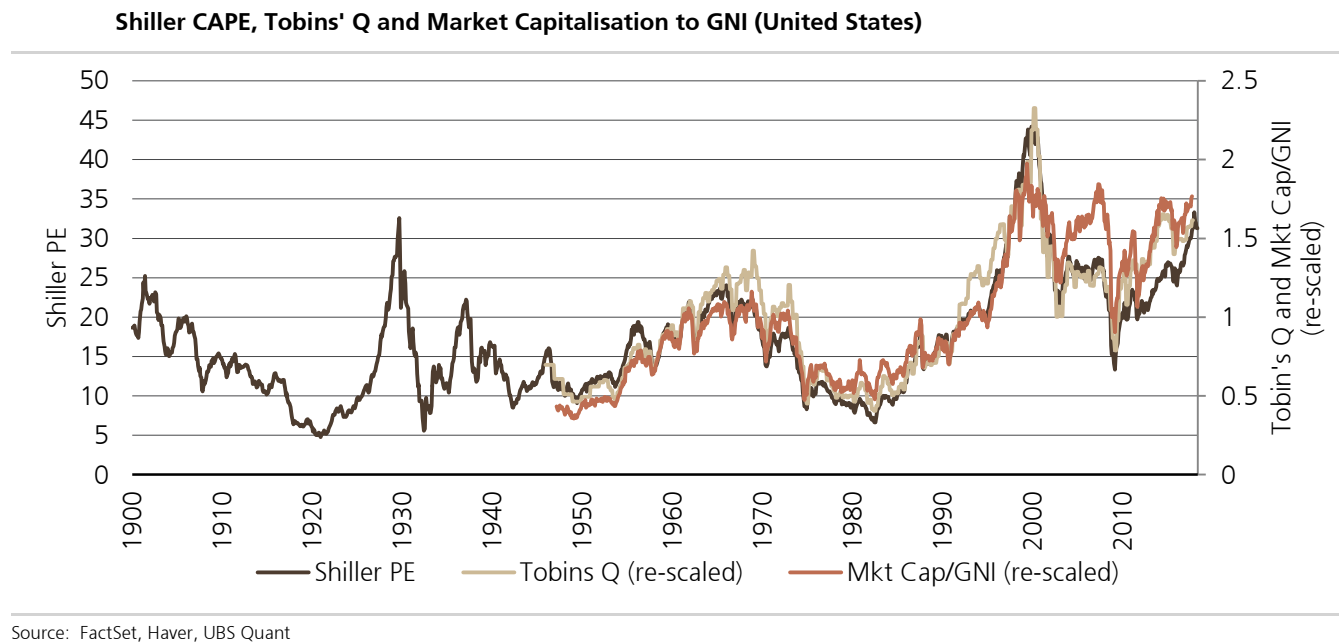
Higher volatility driven by:

1. Structurally lower growth
2. Cyclical tightening of rates



Source: FactSet, UBS Quant

# What does this mean for stock market returns?





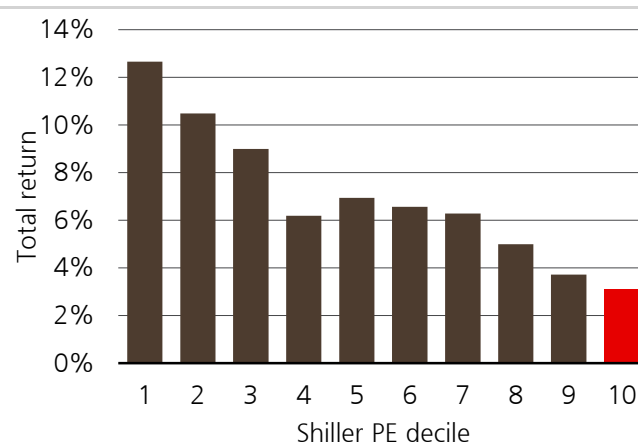
# What does this mean for stock market returns?

Returns and volatility conditioned on CAPE decile

Decile	CAPE	10y ave TR (nominal)	10y ave TR (real)	Max	Min	Std Dev	Volatility	IR
1 - cheap	7.5	14.1%	12.7%	19.5%	4.0%	3.3%	16.7%	0.76
2	10.2	13.9%	10.5%	17.9%	1.4%	3.5%	14.0%	0.75
3	11.9	12.5%	9.0%	15.3%	-2.2%	4.6%	13.0%	0.69
4	13.7	9.6%	6.2%	14.6%	-3.9%	5.3%	12.4%	0.50
5	15.4	8.6%	6.9%	15.5%	-4.0%	4.3%	12.3%	0.56
6	16.9	9.1%	6.6%	15.0%	-3.1%	4.0%	12.3%	0.54
7	18.4	8.4%	6.3%	14.5%	-2.8%	3.6%	12.6%	0.50
8	20.5	7.9%	5.0%	11.0%	-2.8%	3.4%	13.7%	0.37
9	23.2	6.5%	3.7%	8.9%	-3.2%	3.6%	14.6%	0.25
10 - expensive	31.6	5.1%	3.1%	7.3%	-5.1%	3.4%	15.3%	0.20

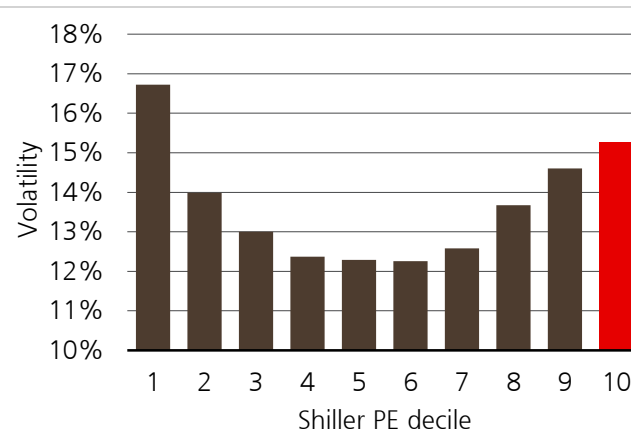
Source: FactSet, UBS Quant

CAPE and subsequent 10 year returns



Source: FactSet, UBS Quant, US data

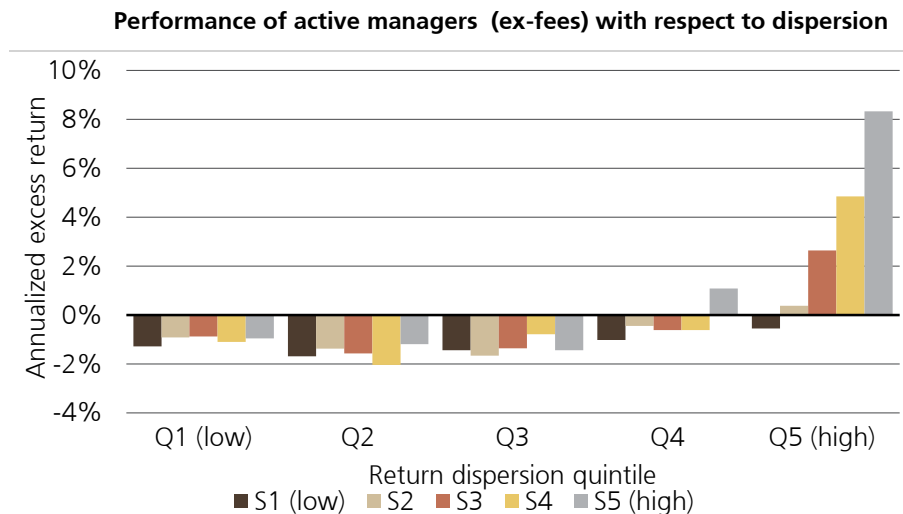
CAPE and subsequent 10 year volatility



Source: FactSet, UBS Quant, US data

# Invest in active exposures

- Greater dispersion of returns means that active exposures are likely to outperform
- We favour both factor and idiosyncratic exposures



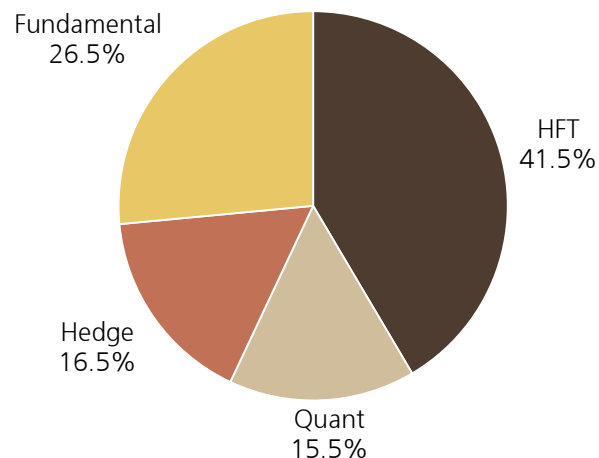
Source: von Reibnitz, Anna Helen, When Opportunity Knocks: Cross-Sectional Return Dispersion and Active Fund Performance (September 14, 2015), US mutual fund data

## Section 3

# How do we best harvest excess returns?

# Who (mis)prices assets?

Share of volume by market participant, United States



HFT's

high share of volume, short horizon

Quant

high turnover, short horizon

Hedge

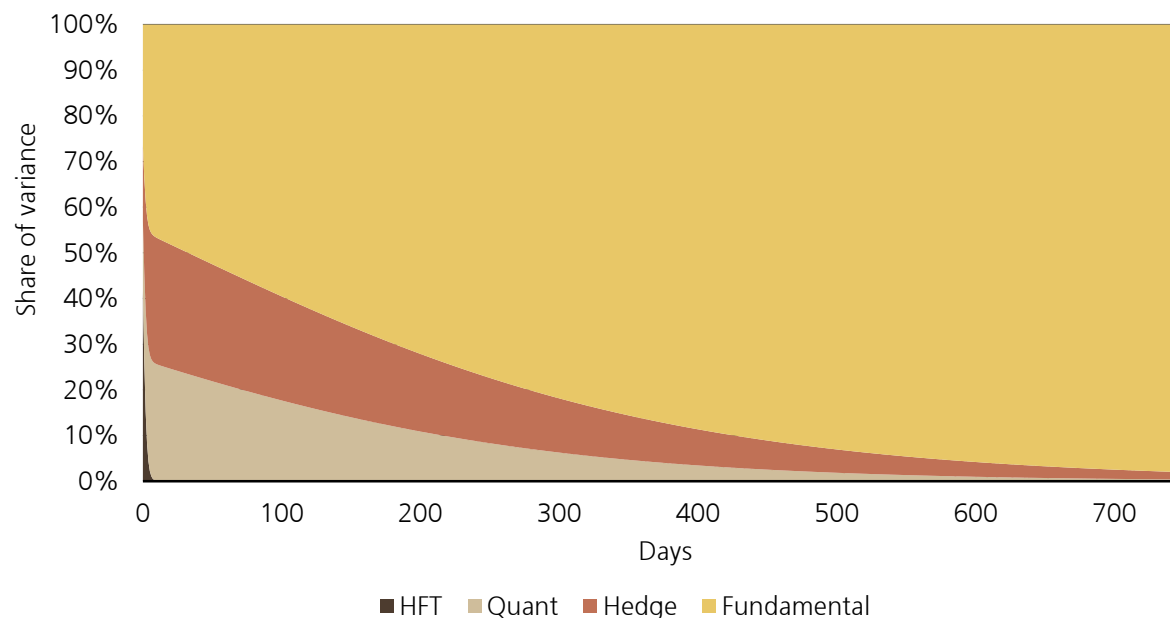
lower turnover, short horizon

Fundamental

low turnover, long horizon

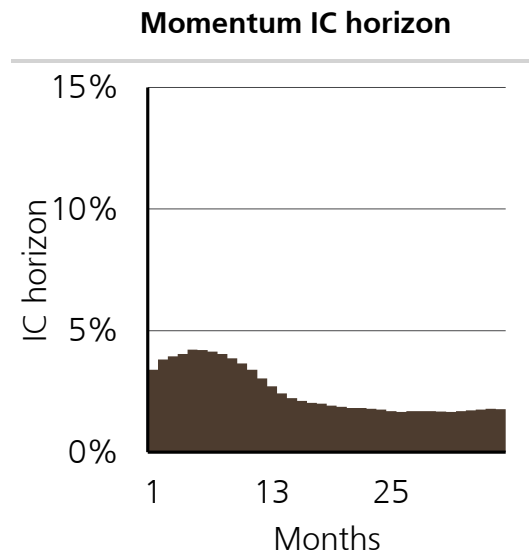
Source: TABB Group estimate

Market participants impact on price given horizon (days), United States

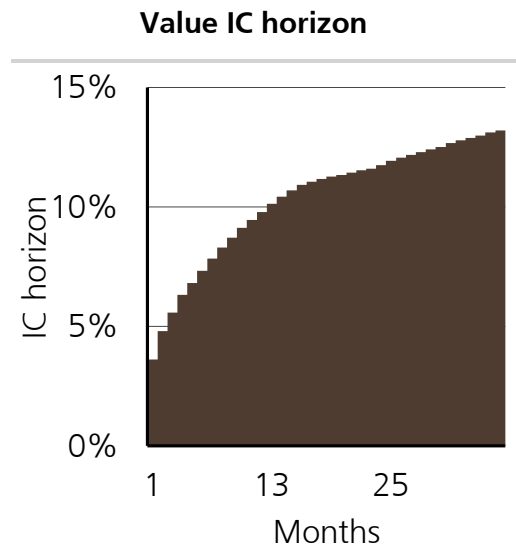


# What works on different horizons?

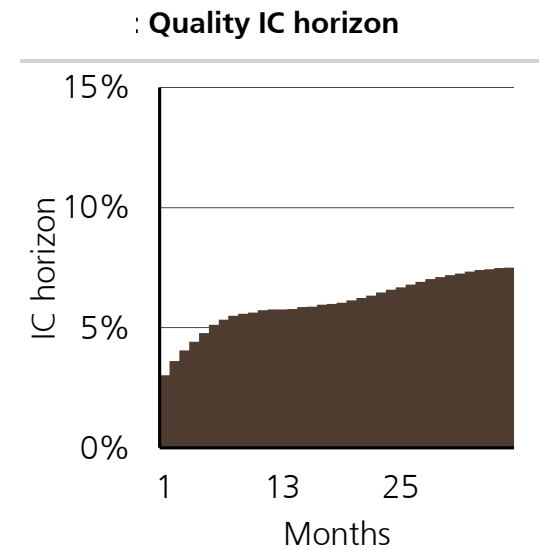
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Source: FactSet, UBS Quant



Source: FactSet, UBS Quant



Source: FactSet, UBS Quant

Section 4

How do we integrate machines and humans?

# Why does horizon matter?

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Integrating machine and human

= quant and fundamental

= integrating factor and idiosyncratic exposures

Which factors to load on? Depends on horizon...

Machines have an advantage in speed and breadth

Humans have an advantage in accuracy and idiosyncratic exposures

The final frontier: once we have successfully integrated machines and humans, the next step is to better utilise data to enhance analyst decision making.

Section 5

Where to focus your attention?

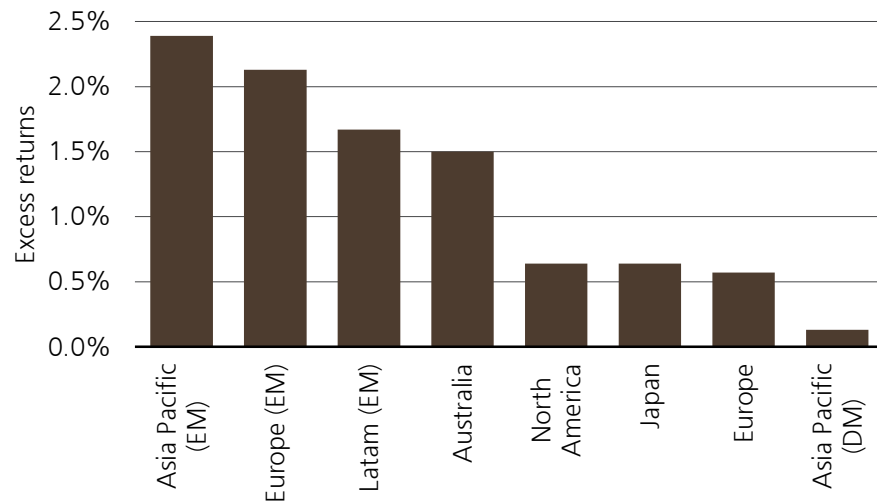


# Which markets are most fertile?

Historically, the emerging markets have generated the best excess returns

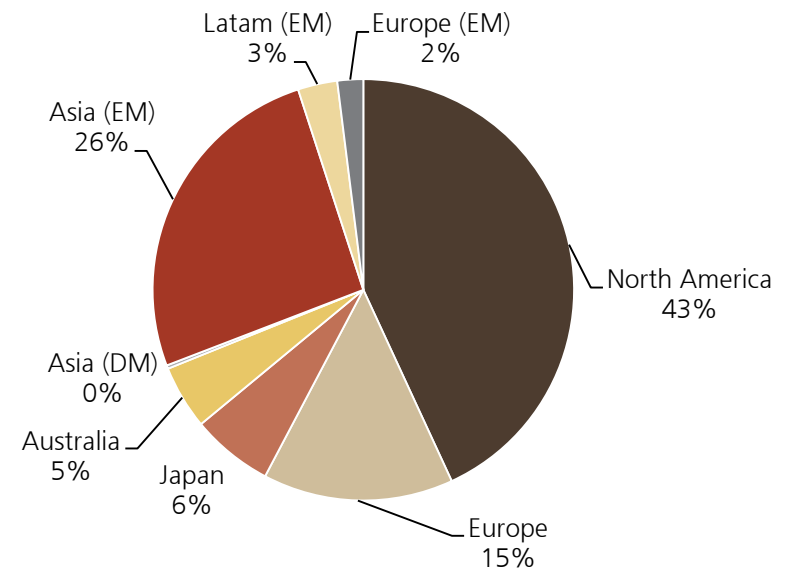
Across the developed markets Australia is most attractive

Excess returns to active strategies by region



Source: Gallagher et al "Global Equity Fund Performance: An Attribution Approach"

Active opportunities by region (share of \$ value)



Source: Gallagher et al "Global Equity Fund Performance: An Attribution Approach", UBS Quant

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<b>Buy</b>	FSR is > 6% above the MRA.	46%	25%
<b>Neutral</b>	FSR is between -6% and 6% of the MRA.	39%	23%
<b>Sell</b>	FSR is > 6% below the MRA.	15%	12%
Short-Term Rating	Definition	Coverage <sup>3</sup>	IB Services <sup>4</sup>
<b>Buy</b>	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%
<b>Sell</b>	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%

Source: UBS. Rating allocations are as of 31 March 2018.

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