



Comparative Asset Allocation and Total Return

UK Foundations and Endowments

31 December 2016

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Geoffrey Bollier | Elizabeth Cheever

CAMBRIDGE



ASSOCIATES

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Data Collection

Included in this analysis for the quarter ended 31 December 2016 are 29 UK-based foundations and endowments. The average market value of participating UK foundations and endowments was £245.7 million and the median market value was £109.9 million for the quarter ended 31 December 2016.

The notation of n denotes the number of foundations and endowments included in each analysis. Returns are denominated in pounds sterling.

Asset allocation is generated using the investment manager structure for each client. Every investment product, fund, and vehicle that a client is invested in is assigned an asset class. Asset classes for a given investment product, fund, or vehicle are maintained across all clients to ensure comparability. The statistics throughout this analysis are calculated on an equal-weighted basis.

Asset Classes

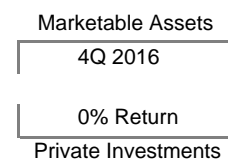
In Exhibits 1–3, global equity includes global ex UK equities (developed and emerging); hedge funds include long/short hedge funds and absolute return (ex distressed securities); venture capital and private equity include venture capital, non-venture private equity, and other private investments; real assets and inflation-linked bonds include public and private real estate, commodities, global inflation-linked bonds, private oil & gas/natural resources, timber, and public energy/natural resources; and bonds includes UK bonds, global ex UK bonds, and high-yield bonds. In Exhibit 3, global bonds includes global ex UK bonds (developed and emerging). Two institutions reported allocations to ‘other’. In both cases, these were allocations to investment managers with a global multi-asset class strategy.

Private Investment Performance Reporting Methodologies

Of the 20 foundations and endowments in this analysis with an allocation to private investments (approximately 1% of the total

investment pool or greater), all 20 report private investment performance using a flat basis methodology, described below.

Flat Basis: Total investment pool return for fourth quarter 2016 includes marketable asset performance for 1 October 2016 to 31 December 2016. Private investment portion of the investment pool is represented by a flat return (0%) for 1 October 2016 to 31 December 2016.




Calculation of the Sharpe Ratio

The Sharpe ratio is defined as the excess return, or the return over the risk-free rate, on a portfolio divided by the total volatility as measured by the standard deviation of the portfolio. The most common approach to measuring risk is by the Sharpe ratio, which shows how much return above the risk-free rate (UK three-month Libor) the investor has earned per unit of risk (defined as standard deviation of returns). The higher the Sharpe ratio, the more the investor has been compensated for each unit of risk taken. The ratio is a measure of reward relative to total volatility. The formula is:

$$\frac{R_p - R_f}{S_p} = \text{Sharpe Ratio}$$

Where:

- ◆ R_p is the arithmetic average of composite quarterly returns,
- ◆ R_f is the arithmetic average of UK three-month Libor (risk-free) quarterly returns, and
- ◆ S_p is the quarterly standard deviation of composite quarterly returns. ■

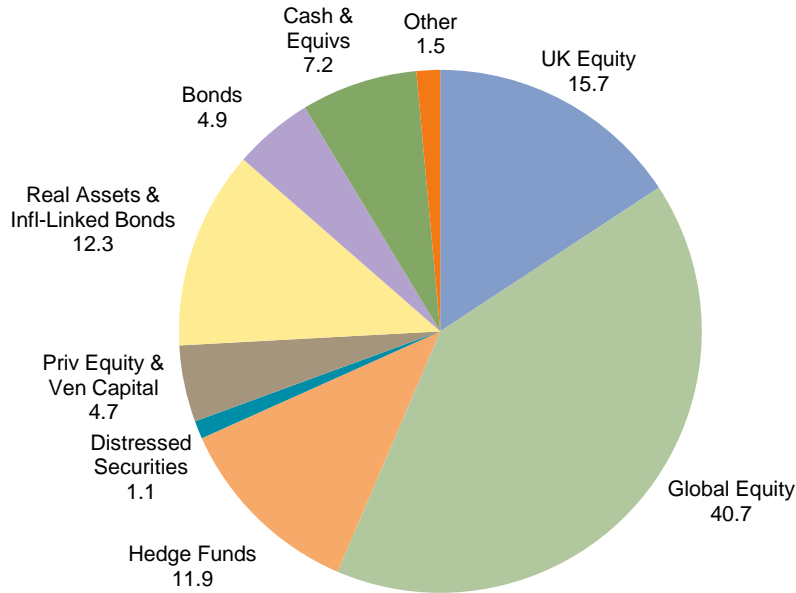


Asset Allocation

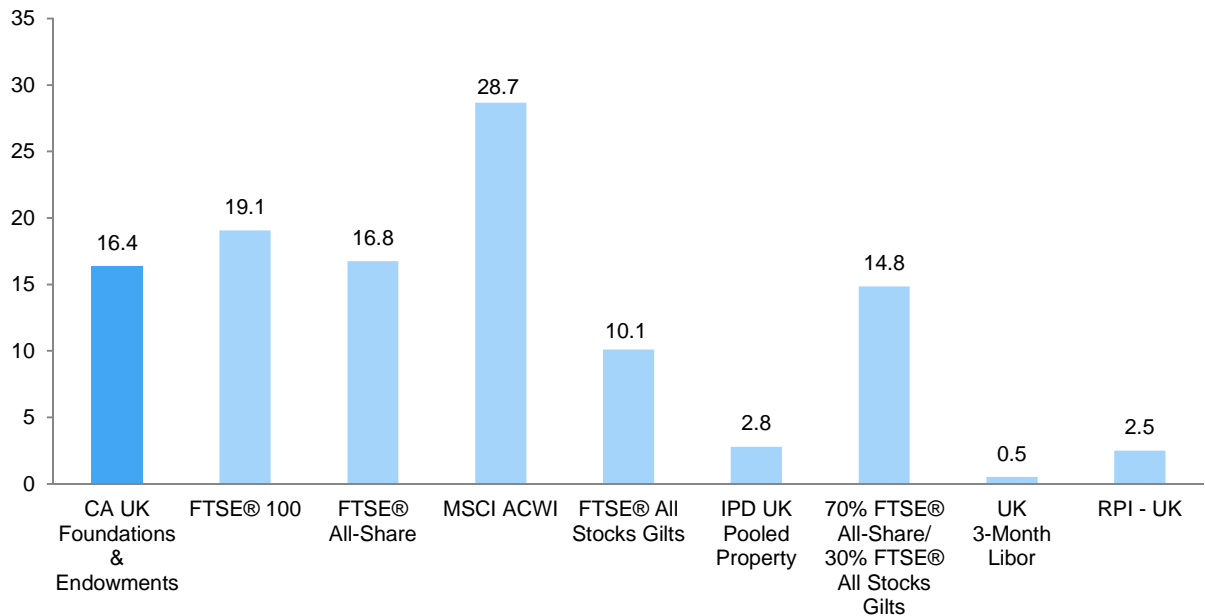


Exhibit 1
Investment Pool Mean Asset Allocation and Total Return: UK Foundations and Endowments
 Period Ended 31 December 2016 • Percent (%)

Mean Asset Allocation (n = 29)

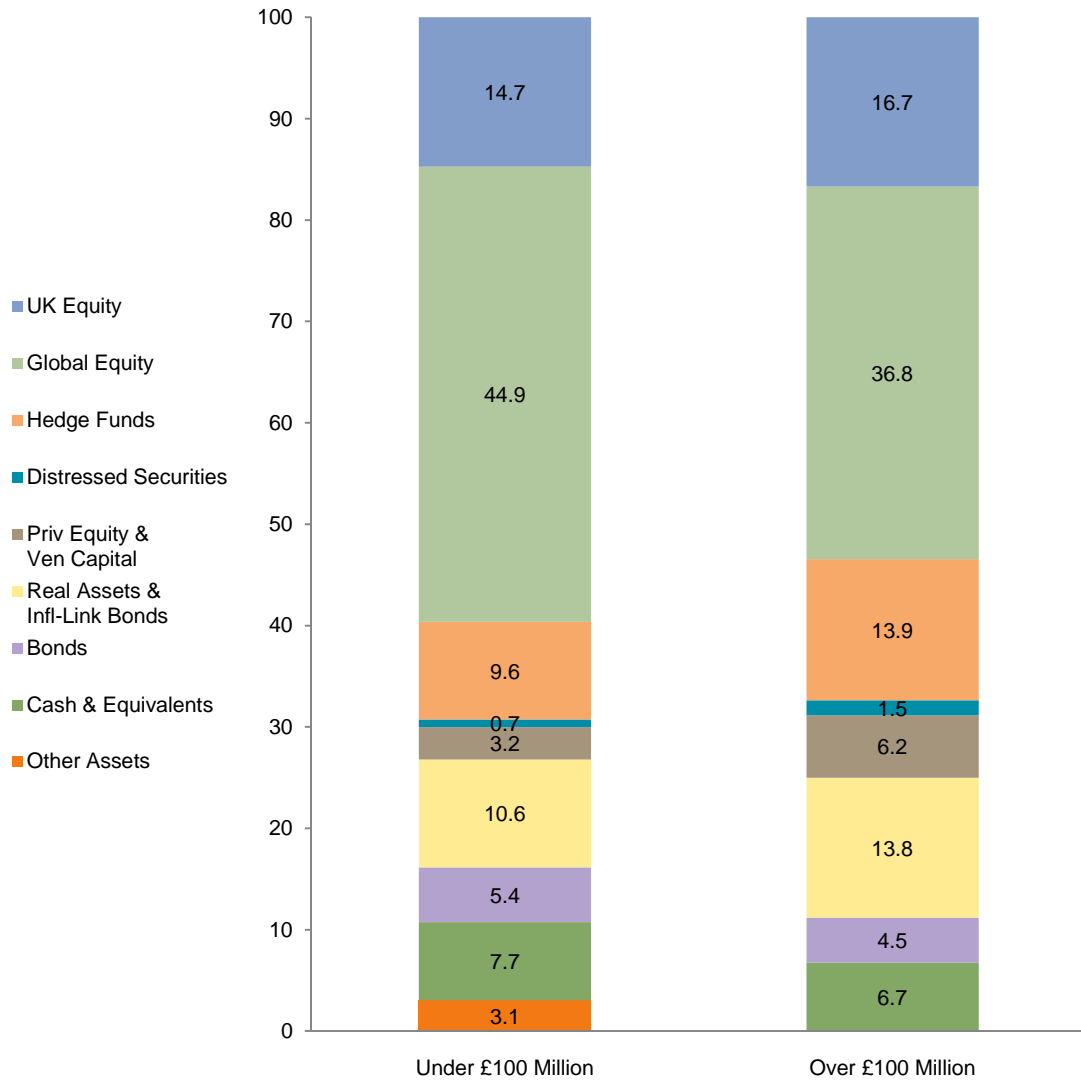


One-Year Nominal Mean Return and Relevant Benchmarks (n = 29)



Sources: UK foundation and endowment data as reported to Cambridge Associates LLC. Index data are provided by FTSE International Limited, Investment Property Databank (IPD), MSCI Inc., Thomson Reuters Datastream, and UK Office for National Statistics. MSCI data provided "as is" without any express or implied warranties.

Exhibit 2
Investment Pool Mean Asset Allocation by Asset Size: UK Foundations and Endowments
 As at 31 December 2016 • Percent (%)



UK Equity	14.7	16.7
Global Equity	44.9	36.8
Hedge Funds	9.6	13.9
Distressed Securities	0.7	1.5
Private Equity & Venture Capital	3.2	6.2
Real Assets & Inflation-Linked Bonds	10.6	13.8
Bonds	5.4	4.5
Cash & Equivalents	7.7	6.7
Other Assets	3.1	0.0
<i>n</i>	14	15

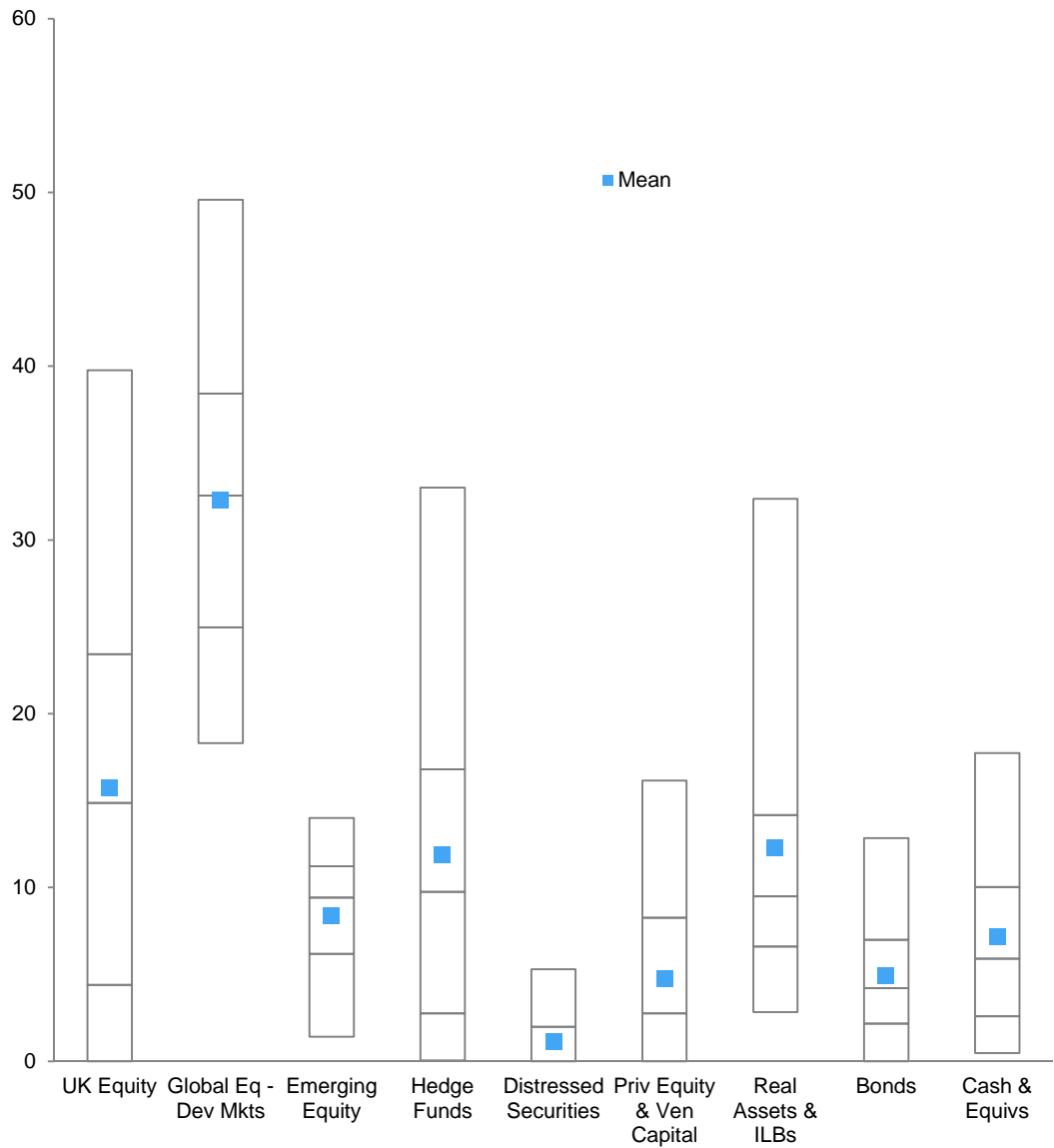
Source: UK foundation and endowment data as reported to Cambridge Associates LLC.

Exhibit 3
Detailed Asset Allocation by Asset Size: UK Foundations and Endowments
 As at 31 December 2016 • Percent (%)

Asset Class	CA UK Foundations & Endowments (n = 29)		Under £100 Million (n = 14)		Over £100 Million (n = 15)	
	Mean	Median	Mean	Median	Mean	Median
UK Equity	15.7	14.9	14.7	17.0	16.7	10.2
Global Equity	40.7	42.0	44.9	44.2	36.8	37.2
Developed Markets	32.3	32.5	35.5	34.8	29.2	27.8
Emerging Markets	8.4	9.4	9.4	9.2	7.5	9.4
Hedge Funds	11.9	9.8	9.6	9.4	13.9	11.4
Long/Short Hedge Funds	3.5	0.1	2.6	0.0	4.4	2.5
Absolute Return (ex Distressed)	8.3	7.8	7.1	8.1	9.5	6.9
Distressed Securities	1.1	0.0	0.7	0.0	1.5	0.9
Hedge Fund Structure	0.8	0.0	0.7	0.0	0.9	0.0
Private Equity Structure	0.3	0.0	0.0	0.0	0.5	0.0
Private Equity & Venture Capital	4.7	2.8	3.2	0.8	6.2	3.0
Non-Venture Private Equity	2.9	0.7	2.6	0.0	3.1	1.6
Venture Capital	1.1	0.0	0.1	0.0	2.2	0.0
Other Private Investments	0.7	0.0	0.6	0.0	0.9	0.5
Real Assets & Inflation-Linked Bonds	12.3	9.5	10.6	9.6	13.8	8.5
Private Real Estate	5.6	0.2	3.6	0.1	7.4	0.2
<i>Private Partnerships</i>	0.7	0.0	0.8	0.0	0.5	0.0
<i>Direct Property Holdings</i>	4.9	0.0	2.8	0.0	6.9	0.0
Public Real Estate	2.9	0.0	2.7	0.0	3.1	0.0
Commodities	0.9	0.3	1.1	0.2	0.6	0.3
Inflation-Linked Bonds (UK)	0.1	0.0	0.0	0.0	0.1	0.0
Inflation-Linked Bonds (ex UK)	2.4	2.1	2.5	2.0	2.2	2.1
Private Oil & Gas/Natural Resources	0.0	0.0	0.0	0.0	0.0	0.0
Timber	0.1	0.0	0.2	0.0	0.1	0.0
Public Energy/Natural Resources	0.3	0.0	0.5	0.0	0.2	0.0
Bonds	4.9	4.2	5.4	5.7	4.5	3.3
UK Bonds	1.2	0.0	0.9	0.0	1.4	0.0
Global Bonds	3.3	2.8	3.9	3.4	2.8	2.5
<i>Developed Markets</i>	2.4	1.9	2.8	1.9	2.0	1.9
<i>Emerging Markets</i>	0.9	0.5	1.0	0.7	0.8	0.5
High-Yield Bonds	0.5	0.0	0.6	0.0	0.3	0.0
Cash & Equivalents	7.2	5.9	7.7	7.8	6.7	3.4
Other Assets	1.5	0.0	3.1	0.0	0.0	0.0

Source: UK foundation and endowment data as reported to Cambridge Associates LLC.

Exhibit 4
Asset Allocation Distribution: UK Foundations and Endowments
 As at 31 December 2016 • Percent (%)



CA UK Foundations & Endowments

5th Percentile	39.8	49.6	14.0	33.0	5.3	16.2	32.4	12.8	17.7
25th Percentile	23.4	38.4	11.2	16.8	2.0	8.3	14.2	7.0	10.0
Median	14.9	32.5	9.4	9.8	0.0	2.8	9.5	4.2	5.9
75th Percentile	4.4	25.0	6.2	2.7	0.0	0.0	6.6	2.2	2.6
95th Percentile	0.0	18.3	1.4	0.0	0.0	0.0	2.8	0.0	0.5
Mean	15.7	32.3	8.4	11.9	1.1	4.7	12.3	4.9	7.2
<i>n</i> = 29									

Source: UK foundation and endowment data as reported to Cambridge Associates LLC.



Total Return



Exhibit 5

Summary of Investment Pool Returns: UK Foundations and Endowments

Periods Ended 31 December 2016 • Percent (%)

Nominal Total Returns

	Latest Quarter	Average Annual Compound Nominal Return			
		One Year	Three Years	Five Years	Ten Years
CA UK Foundations & Endowments					
Mean	3.1	16.4	8.9	9.9	6.3
Median	3.0	17.4	8.7	9.8	6.1
High	5.2	20.9	12.6	14.2	9.5
5th Percentile	4.9	19.5	11.3	10.8	7.8
25th Percentile	3.9	18.7	9.8	10.3	6.9
75th Percentile	2.3	14.9	7.8	9.4	5.6
95th Percentile	1.2	11.6	6.9	8.2	5.0
Low	0.9	6.8	6.6	8.1	4.8
<i>n</i>	29	29	28	24	17
Benchmarks					
FTSE® 100	4.3	19.1	5.8	9.1	5.2
FTSE® All-Share	3.9	16.8	6.1	10.1	5.6
MSCI ACWI	6.4	28.7	13.7	14.5	8.4
FTSE® All Stocks Gilts	-3.4	10.1	8.0	4.5	6.1
IPD UK Pooled Property	2.3	2.8	10.7	8.2	2.2
UK 3-Month Libor	0.1	0.5	0.6	0.6	1.8
RPI - UK	0.8	2.5	1.8	2.2	2.8

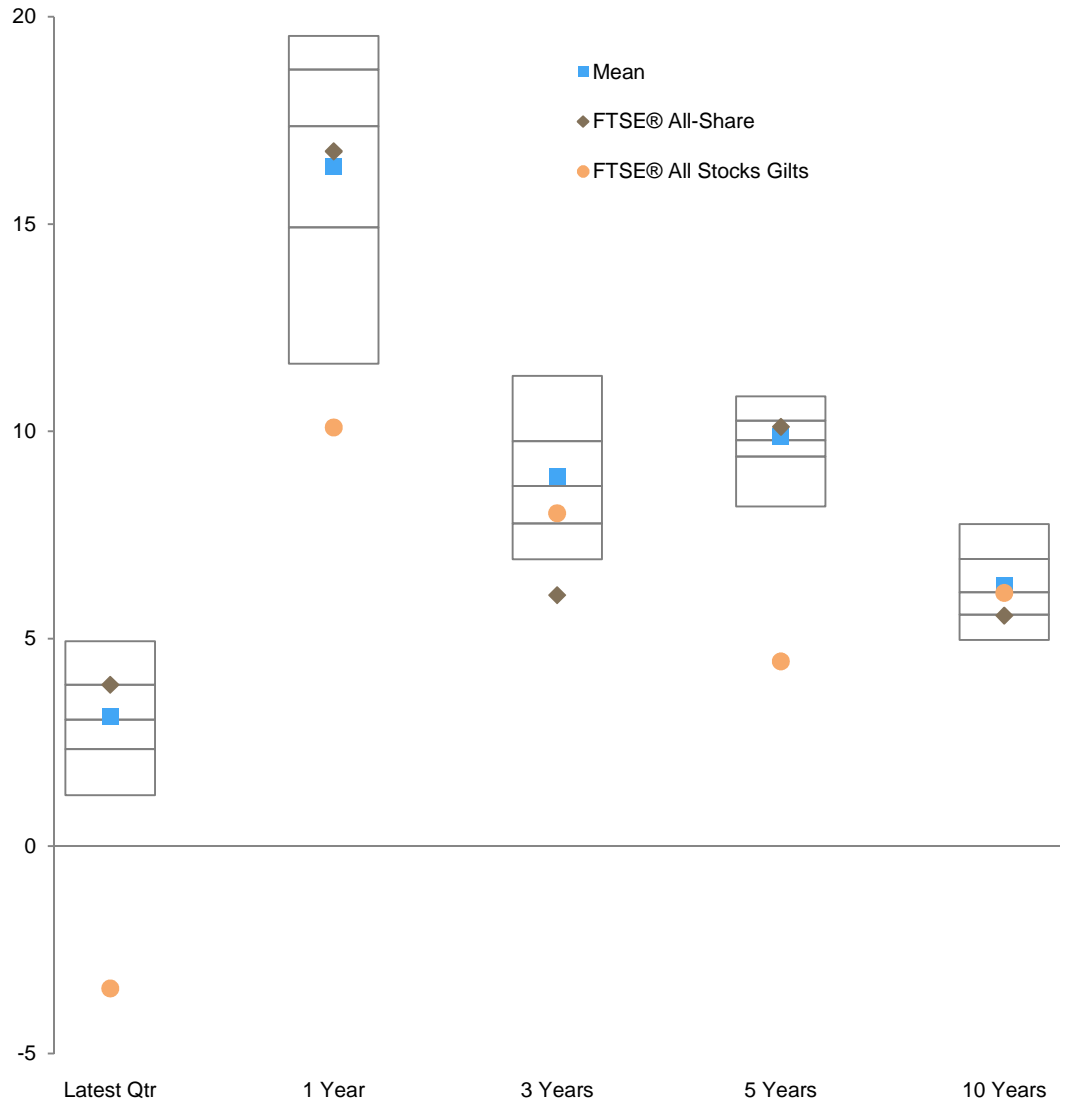
Real Total Returns

	Latest Quarter	Average Annual Compound Real Return			
		One Year	Three Years	Five Years	Ten Years
CA UK Foundations & Endowments					
Mean	2.3	13.5	7.0	7.5	3.4
Median	2.2	14.5	6.8	7.4	3.2
High	4.3	17.9	10.7	11.8	6.6
5th Percentile	4.1	16.6	9.4	8.4	4.8
25th Percentile	3.0	15.8	7.9	7.9	4.0
75th Percentile	1.5	12.1	5.9	7.0	2.7
95th Percentile	0.4	8.9	5.1	5.8	2.1
Low	0.0	4.2	4.8	5.8	2.0
<i>n</i>	29	29	28	24	17
Benchmarks					
FTSE® 100	3.5	16.2	3.9	6.7	2.4
FTSE® All-Share	3.0	13.9	4.2	7.7	2.7
MSCI ACWI	5.5	25.5	11.7	12.0	5.5
FTSE® All Stocks Gilts	-4.2	7.4	6.1	2.2	3.2
IPD UK Pooled Property	1.4	0.3	8.7	5.8	-0.6
UK 3-Month Libor	-0.7	-1.9	-1.2	-1.6	-1.0

Sources: UK foundation and endowment data as reported to Cambridge Associates LLC. Index data are provided by FTSE International Limited, Investment Property Databank (IPD), MSCI Inc., Thomson Reuters Datastream, and UK Office for National Statistics. MSCI data provided "as is" without any express or implied warranties.

Note: Real returns are adjusted for inflation as measured by the UK Retail Price Index.

Exhibit 6
Investment Pool Nominal Return Percentiles: UK Foundations and Endowments
 Periods Ended 31 December 2016 • Percent (%)



	Latest Qtr	1 Year	3 Years	5 Years	10 Years
5th Percentile	4.9	19.5	11.3	10.8	7.8
25th Percentile	3.9	18.7	9.8	10.3	6.9
Median	3.0	17.4	8.7	9.8	6.1
75th Percentile	2.3	14.9	7.8	9.4	5.6
95th Percentile	1.2	11.6	6.9	8.2	5.0
Mean	3.1	16.4	8.9	9.9	6.3
<i>n</i>	29	29	28	24	17
FTSE® All-Share	3.9	16.8	6.1	10.1	5.6
FTSE® All Stocks Gilts	-3.4	10.1	8.0	4.5	6.1

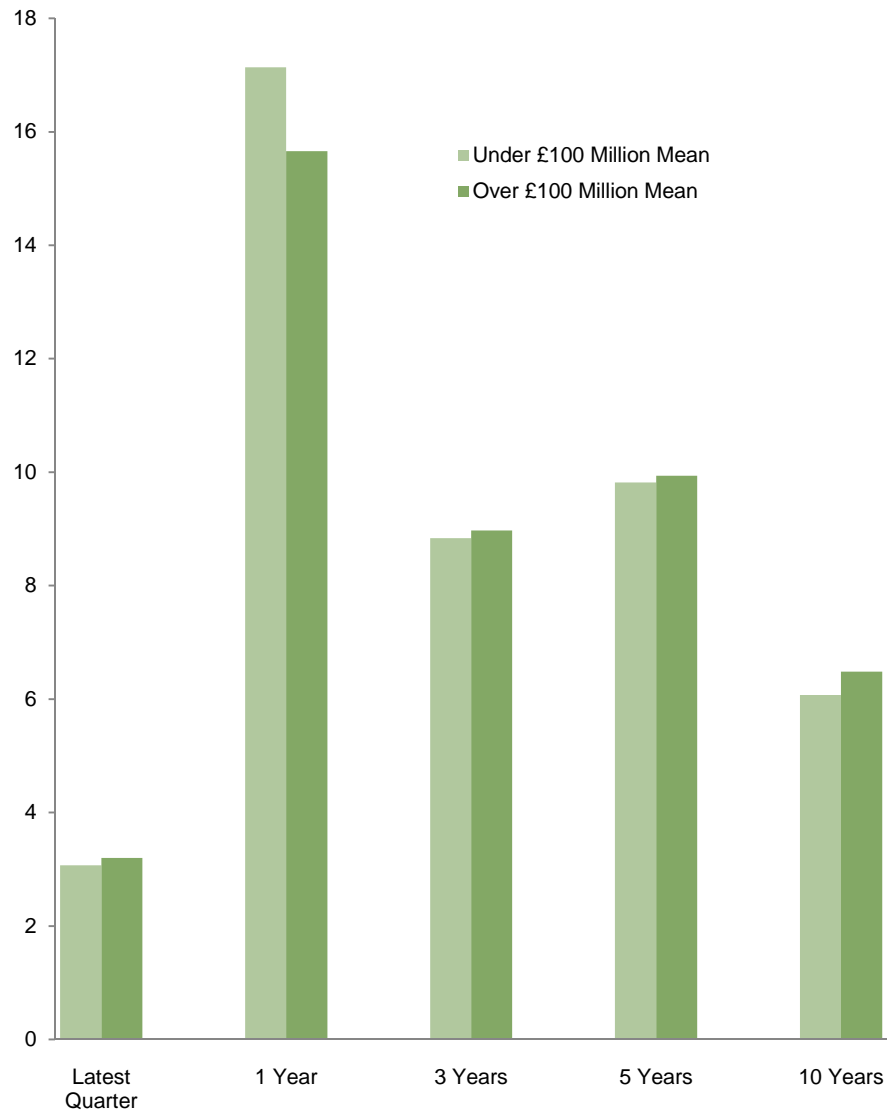
Sources: UK foundation and endowment data as reported to Cambridge Associates LLC. Index data are provided by FTSE International Limited.

Note: Three-, five-, and ten-year returns are annualised.

Exhibit 7

Nominal Total Return Summary by Asset Size: UK Foundations and Endowments

Periods Ended 31 December 2016 • Percent (%)

**Under £100 Million**

Mean	3.1	17.1	8.8	9.8	6.1
Median	3.2	17.8	8.3	9.8	6.0
<i>n</i>	14	14	14	12	8

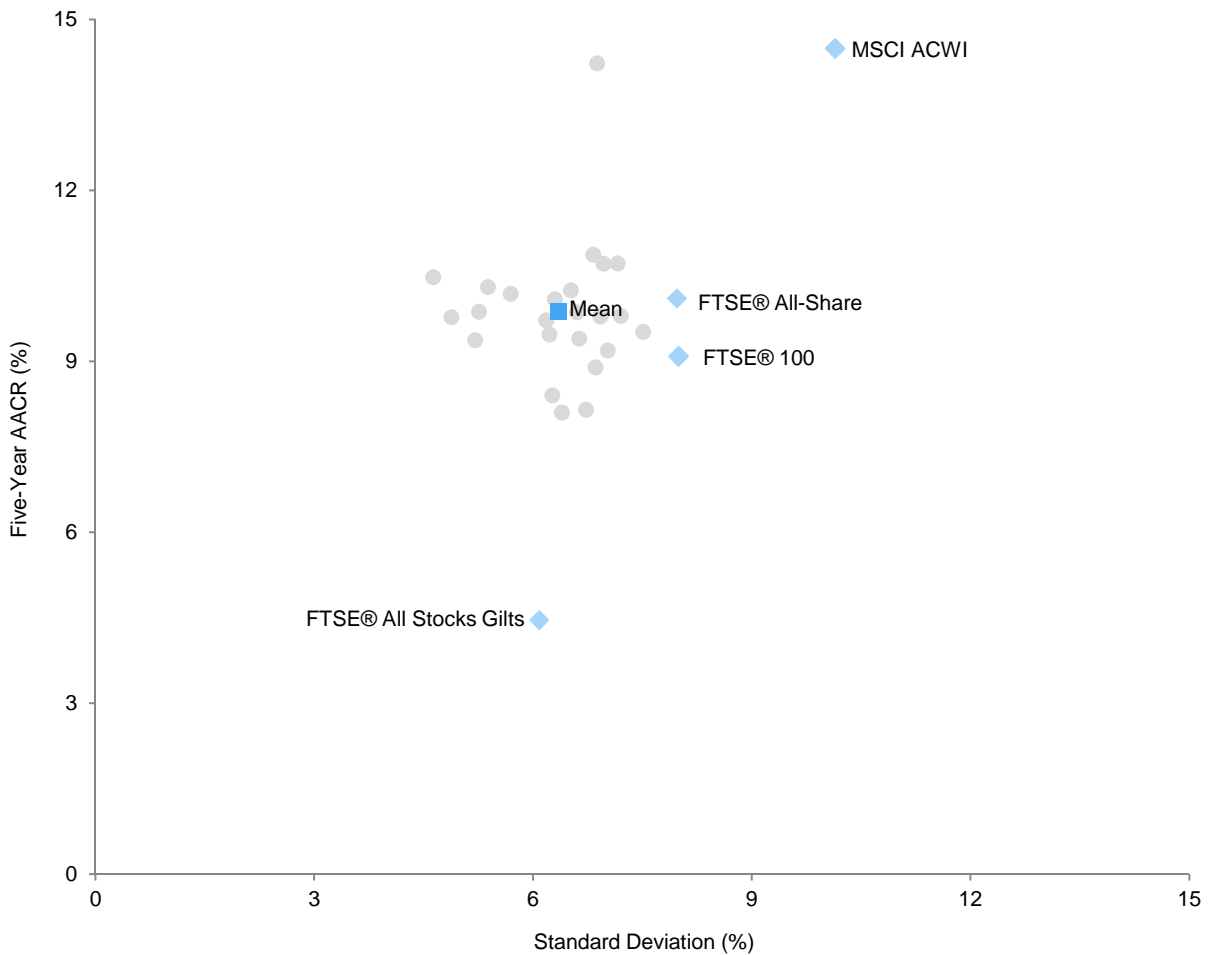
Over £100 Million

Mean	3.2	15.7	9.0	9.9	6.5
Median	3.0	16.0	8.9	9.7	6.2
<i>n</i>	15	15	14	12	9

Source: UK foundation and endowment data as reported to Cambridge Associates LLC.

Note: Three-, five-, and ten-year returns are annualised.

Exhibit 8
Standard Deviation and Sharpe Ratio: UK Foundations and Endowments
 Five Years Ended 31 December 2016



	Five-Year AACR ¹	Standard Deviation ²	Sharpe Ratio ³
Mean <i>n</i> = 24	9.9	6.3	1.46
FTSE® 100	9.1	8.0	1.06
FTSE® All-Share	10.1	8.0	1.18
MSCI ACWI	14.5	10.1	1.34
FTSE® All Stocks Gilts	4.5	6.1	0.65

Sources: UK foundation and endowment data as reported to Cambridge Associates LLC. Index data are provided by FTSE International Limited, and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

¹ Five-year geometric average annual compound returns.

² Annualised standard deviations are based on last five years of quarterly returns.

³ Sharpe Ratio = (Composite Performance - Risk-Free Rate) ÷ Annualised Standard Deviation. The risk-free rate is the UK three-month Libor.

Absolute Return: The use of different strategies (e.g., global macro, market neutral, open mandate) to produce a positive return regardless of the direction and fluctuation of capital markets. Common techniques include using arbitrage, derivatives, futures, leverage, options, short selling, and unconventional assets.

Bonds (Fixed Income): Includes long-term promissory notes that cannot be exchanged for other assets, government bonds, preferred stocks, structured debt, and derivatives where bonds are the underlying assets. Generally earn interest paid semi-annually and are repaid at the principal (par) value. Does not include mortgage real estate.

Cash & Equivalents: Highly liquid, virtually risk-free assets with maturities of less than one year (e.g., certificates of deposit, commercial paper, nonconvertible bonds, and Treasury bills). Manager-held discretionary cash is included in the asset class category for which that manager's strategy is classified (with the exception of multi-strategy funds in which assets are allocated across multiple asset classes).

Commodities: Diversified baskets of fully collateralised long-only commodity futures contracts.

Convertible Securities: Bonds or preferred stock that can be exchanged for equities according to terms established by the issuer. Classified as equity.

Developed Markets: Markets within countries that have an established economic infrastructure.

Distressed Securities: Securities of companies that are currently in default, bankruptcy, financial distress, or a turnaround situation.

Emerging Markets: Typically includes countries that have an underdeveloped or developing infrastructure with significant potential for economic growth and

increased capital markets participation by foreign investors.

Emerging Markets Debt: Debt instruments of emerging markets countries and issuers, including USD-denominated and local currency bonds.

Emerging Markets Equity: Equity securities of emerging markets countries; considered emerging even if the equity market is fully functional and well regulated.

Equities: Ownership positions in companies that can be traded in public markets. Often produce current income, which is paid in the form of quarterly dividends. The holders' claims are subordinate to the claims of preferred stockholders and bondholders. Includes convertible bonds if they are held as an opportunistic means of eventually acquiring a company's stock. Also includes futures, options, rights, and warrants where the underlying assets are equities.

High-Yield Bonds: Bonds regarded, on balance, as predominantly speculative with respect to capacity to pay interest and repay principal in accordance with the terms of the obligation. Typically, these bonds have a credit rating of BB or lower and pay higher yields because they are more risky than investment-grade bonds. Also includes collateralised bond obligations (CBOs).

Inflation-Linked Bonds: Fixed coupon bonds that earn interest paid semi-annually on inflation-adjusted principal.

Long/Short Hedge Funds: Portfolios with long positions in undervalued companies and short positions in overvalued companies, to capture the disparity in prospective returns, while maintaining a low level of overall market risk.

Long-Term Investment Portfolio: The group of assets that an institution deems best represents its investment policies and endowment asset allocation and returns. These assets should be subject to frequent

market valuation and may include operating funds. Pooled income funds and charitable remainder trusts should be excluded if the investment strategy varies from the institution's asset allocation policy. Assets that cannot be fairly valued such as artwork, copyrights, and patents should also be excluded.

Non-Venture Private Equity: Through negotiation or tender offer, a takeover of a majority percentage of a company's equity with the purpose of acquiring its assets and operations. Includes leveraged buyouts (LBOs).

Other Assets: Should only include assets that cannot be classified as one or more of the other asset classes.

Other Private Investments: Includes funds that are invested across multiple private investments and cannot be allocated to a single asset class. Includes multi-strategy funds-of-funds and secondary market private investments.

Private Oil & Gas/Natural Resources: Funds created to invest in the exploration or development of energy-related reserves and natural resources.

Private Real Estate: Includes ownership positions in land and buildings as well as private operating companies. May also include equity-like investments in mortgages or land leases that include substantial participation in revenues and capital appreciation. Does not include equity mortgages such as collateralised mortgage obligations (CMOs), mortgage-backed securities, publicly traded REITs, or other public real estate.

Public Energy/Natural Resources: Includes marketable energy funds and natural resources.

Public Real Estate: Includes REITs and other public real estate equity such as umbrella partnership REITs (UPREITs), and other public operating companies (REOCs).

Real Returns: The real, or inflation-adjusted, rate of return for a given investment is calculated by dividing the nominal total return by the appropriate deflator for the same time period. Throughout this report, the measure used for this purpose is the UK Retail Price Index (RPI). Note that simply subtracting RPI from the nominal total return does not result in an accurate computation of real total return. The formula is:

$$\frac{1 + \text{Nominal Total Return}}{1 + \text{RPI}} - 1 = \text{Real Total Return}$$

Timber: Funds created to invest in timber-related business. Usually limited partnerships.

Total Return: The sum of income earned and appreciation, both realised and unrealised, for a specified period of time. Preferred method of calculation is GIPS compliant, using time-weighted cash flows. If unit accounting is used, the return for a period is calculated by taking the difference between the ending and beginning unit values, plus unit income earned, then dividing this amount by the beginning unit value.

Traditional Assets: Include UK equities, non-UK equities (including emerging markets), UK investment-grade bonds, non-dollar bonds, high-yield bonds, emerging markets debt, and all cash and cash equivalents.

Venture Capital: Investments in private securities of new companies or companies considered to be in the early stages of growth; these investments may have high risk and the potential for high return. ■

The 29th May 1961 Charitable Trust
Aberystwyth University
The Art Fund
Barts Charity
The Burdett Trust
Chelsea and Westminster Health Charity
The Clothworkers' Group
Corpus Christi College, Oxford
Council for World Mission
Courtauld Institute of Art
The Drapers' Group
Esmée Fairbairn Foundation
The Foyle Foundation
Guardian Media Group
The Health Foundation
The Henry Smith Charity
King's College London
The Legal Education Foundation
Marie Curie Cancer Care
Medlock Charitable Trust
New College, Oxford
Oriental College, Oxford
Paul Hamlyn Foundation
The Pilgrim Trust
Royal Literary Fund
The Society of Merchant Venturers
St. Edmund Hall, Oxford

Note: Two participating institutions wish to remain anonymous.