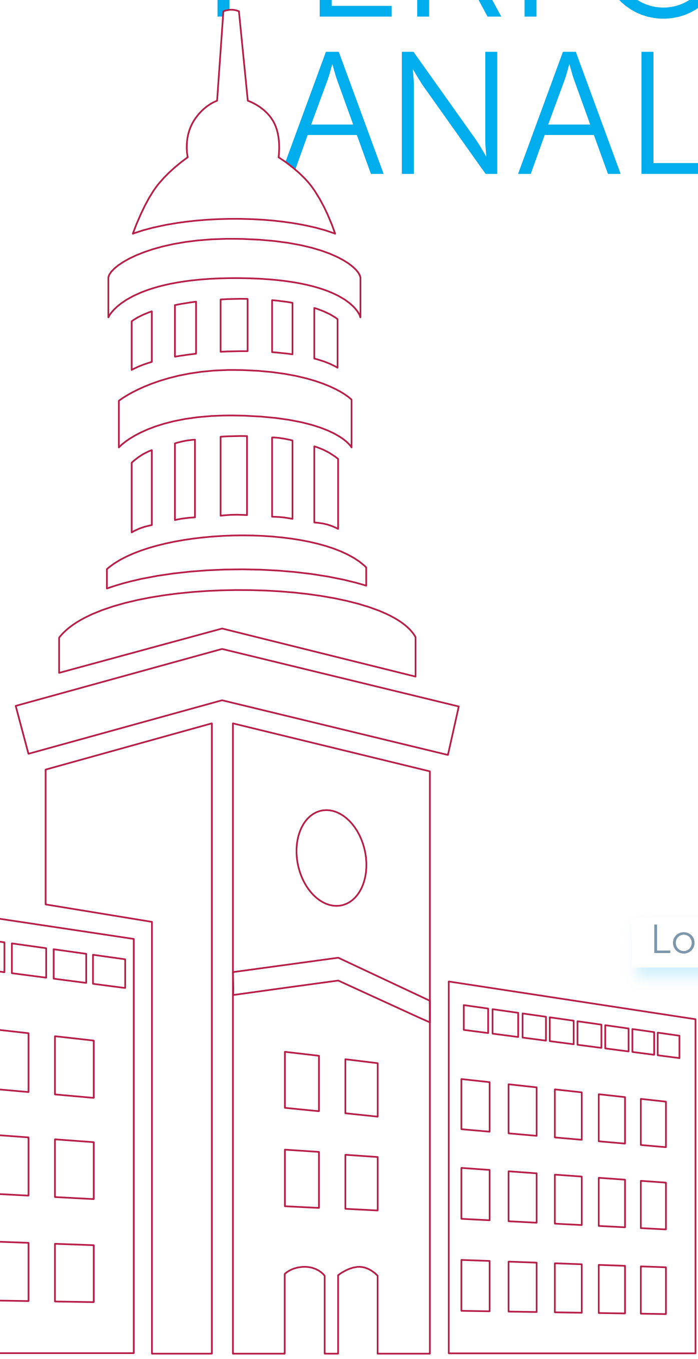
PIRC

LOCAL AUTHORITY PENSION PERFORMANCE ANALYTICS



ANNUAL REPORT 2017/18

2017/18 Local Authority Universe results

Long term results and trends

Comment and analysis

INTRODUCTION

WELCOME TO the 2017/18 PIRC Local Authority Pension Performance Analytics Annual Review.

We are delighted to be able to publish this year's peer group results, based on a Universe of 61 funds with a value of £177bn. This represents some two thirds of local authority pension fund assets and includes all of the Welsh and Northern Pools, all bar two of the London Pool, with funds from all other pools except Central. We look forward to this number continuing to grow as more funds come on board.

This year we welcomed Cornwall, Kensington & Chelsea and Wiltshire into the Universe and since this year's results were finalised we have also welcomed the Isle of Wight. The Richmond and Wandsworth funds merged and so we are now showing their results as a combined entity and South Yorkshire Passenger Transport Fund was merged into the Greater Manchester scheme so no longer shows as an individual fund within the analysis although its assets are still included.

The key theme dominating the results this year has been that of de-risking. Funds are taking advantage of improved funding levels as an opportunity to reduce risk, primarily through reducing equity exposure. The latest year saw the largest reduction yet in this area as funds moved instead into lower volatility absolute return strategies and income generating assets Given the relationship between risk and return the ongoing challenge for funds will be how to balance managing asset volatility risk whilst ensuring the ongoing affordability to participants.

If you need to know anything more please get in touch.

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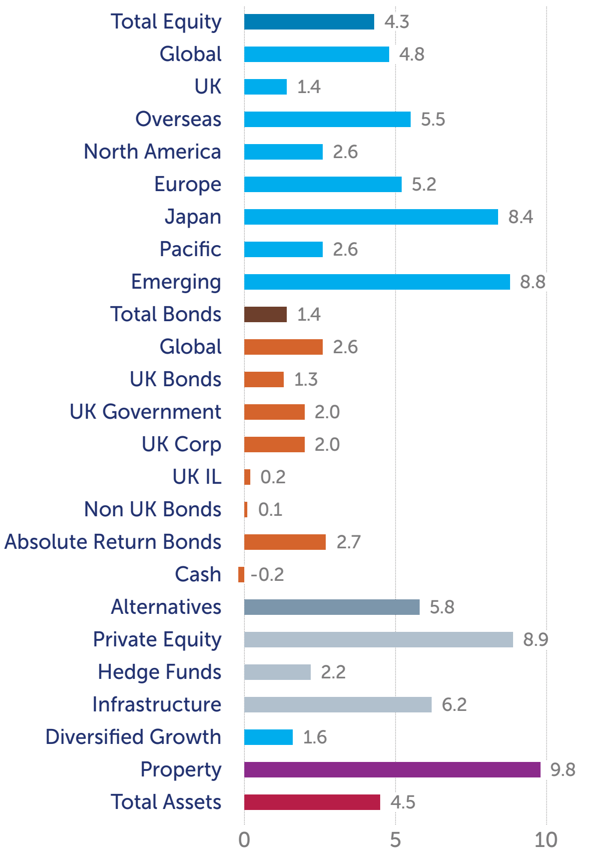
2017-18 UNIVERSE RESULTS

OVER the last twelve months the average local authority pension fund has returned 4.5%. This return is below the 30 year average of 8.9% p.a. but broadly in line with actuarial assumptions which are currently around 4% p.a.

Figure 1 shows asset returns were tightly grouped with bonds, equities and alternatives returning 1%, 4%, and 6% respectively for the year. Strategic asset allocation therefore had less of an impact than usual – the range of individual fund returns was about half that seen in the year previous with almost all funds returning between 2% and 6% for the year.

Figure 1: 2017/18 performance



There were bigger differences within asset groups than between asset groups. Emerging market equities returned an average of 9% whilst UK equities delivered 1%. Likewise within alternatives funds achieved an average return of 9% from private equity and only 2% from absolute return investments. The range of results within alternatives was particularly marked with returns ranging from 1% to 24%. These figures reinforce the importance of clearly understood and implemented decision making at all levels within the asset hierarchy.

Despite a relatively difficult environment for investors the average local authority fund produced a return of 4.5% for the year.

Funds had another strong year compared to their own benchmarks – this year a large part of the outperformance can be attributed to the strong returns achieved by active equity managers, most of whom outperformed their benchmark, and some of whom outperformed by a significant margin.

What did well in the latest year?

Property was the best performing of the major asset classes, returning 10% for the year. Most funds now have some exposure to this asset which enhanced overall returns.

After struggling in 2016/17 **active global equity** managers came back strongly in the latest year. The average global equity portfolio outperformed the index by over 2% in the latest year. Baillie Gifford, the largest active equity manager across the LGPS performed particularly strongly. The funds in the top decile of performance in the latest year were all managed in part by Baillie Gifford.

Hedging - Only a relatively small number of LGPS funds hedge their overseas currency exposure. This year this decision added value as sterling appreciated strongly against other currencies.

The return was below the long term average but was ahead of inflation and broadly in line with actuarial assumptions.

Private equity continued to perform strongly with a return of 9% for the year. It has outperformed quoted equity in the medium term but the outperformance is not yet visible over the longer term.

Whilst bond returns were the poorest of the major asset classes **absolute return bond** strategies outperformed index based portfolios.

What did less well?

UK equities underperformed all major overseas markets for Sterling investors. Active management also failed to add any value above the benchmark.

With an average return under 2% **diversified growth** funds performed relatively poorly although broadly in line with other absolute return strategies.

Continued low interest rates meant holding any level of **cash** continued to have a negative impact on return.

What has changed over the year?

Figure 2 shows **equity exposure** fell to its lowest level since the LGPS began, reducing from 62% to 55% of the average fund.

Multi asset credit and diversified income strategies began to gain ground.

A continued move away from index based benchmarks towards **absolute return benchmarks** within alternative assets and within bond allocations.

There was a continuation of **reduction of size of mandates** awarded increasing the number of managers and overall scheme complexity.

For the first time there has been a year on year **reduction in the level of passive investment** (albeit small).

Major switches across index tracking managers as funds moved to take advantage of reduced fees negotiated at pool level.

2017/18 In Detail

Asset Allocation

Figure 2: Asset allocation - latest year

% allocation	31/3/2017	31/3/2018	Diff
Equities	62	55	-7
UK	20	15	-5
Overseas	42	40	-2
Bonds	15	18	+3
UK	8	8	-
Global	3	4	+1
Overseas	1	1	-
Absolute return	3	5	+2
Cash	2	3	+1
Alternatives	10	11	+1
Private equity	5	5	-
Infrastructure	2	3	+1
Hedge funds	3	3	-
Diversified growth	3	4	+1
Property	8	9	+1

The year saw the largest year on year fall in equity allocation with the average exposure falling from 62% to 55%. Within that allocation the long established trend away from domestic to international equities continued. UK equities now comprise only just over a quarter of total equity exposure. Funds instead increased exposure to bonds and alternatives.

Within bonds, absolute return mandates saw a large growth as funds moved from more traditional index based approaches in the pursuit of higher returns and lower volatility. Many of these mandates are targeting cash plus 2%, 3% or 4%, which at current rates of interest would not meet the actuarial requirements of the scheme.

Within the alternative basket there was an increased exposure to infrastructure and an increase in the number of funds investing in this area for the first time. Diversified growth funds also attracted more investment with five funds now investing more than a quarter of their assets in this class.[1]

The asset allocation changes this year seem to be driven by two key themes:
• Risk reduction
• Focus on Income generation

Risk Reduction

As funding levels have improved significantly many funds are looking to de-risk. There are a number of ways this end can be achieved but the key manifestation at this stage is the acceleration of the move from equities to less 'risky' assets such as diversified growth /absolute return portfolios which target lower than equity returns but at substantially lower than equity volatility.

Such a strategy, other things being equal, will bring with it lower long term returns. However as the key actuarial discount rate assumptions have fallen to relatively modest levels some funds may now feel more comfortable accepting more modest returns and this may be making the decision more straightforward.

There was also a small increase in liability driven investment (LDI) but local authority funds have yet to embrace this approach which has gained great traction across corporate funds.

This year we saw some modest use of **equity protection strategies**. These are effectively derivative trades where a fund insures itself against a large fall in the equity market. The cost of this protection is usually funded by the fund giving up the top of any large market rise. Given the current level of equity markets this protection is being promoted quite heavily by some consultants. Whilst some schemes are finding it an attractive insurance it is not a straightforward decision for others as they grapple with questions including whose assessment of market high, fair and low levels should be used, what history of calling markets successfully have they demonstrated.

Asset returns were tightly grouped with bonds, equities and alternatives returning 1%, 4%, and 6% respectively for the year.

Income Generation

As more funds moved close to or into a cash flow negative situation (where the payments of pensions out of the fund is greater than the contribution inflow) there has been increased focus on income generating assets. Whilst equities generate income this income is usually immediately reinvested so funds are looking more closely at alternative sources. This again is reflected in this year's asset allocation changes where the move to reduce equity exposure gathered pace.

We have seen increased investment into higher yielding, income generating assets such as property, infrastructure and multi asset credit funds as well as private debt all of which would help to deliver the income required.

Asset Performance

Figure 3: Equity performance against market benchmark

%	Universe	Relative to BM
UK	1.4	0.1
Global	4.8	2.4
Overseas	5.5	2.6
North America	2.6	0.7
Europe	5.2	3.0
Japan	8.4	0.8
Pacific	2.6	1.6
Emerging	8.8	-2.4

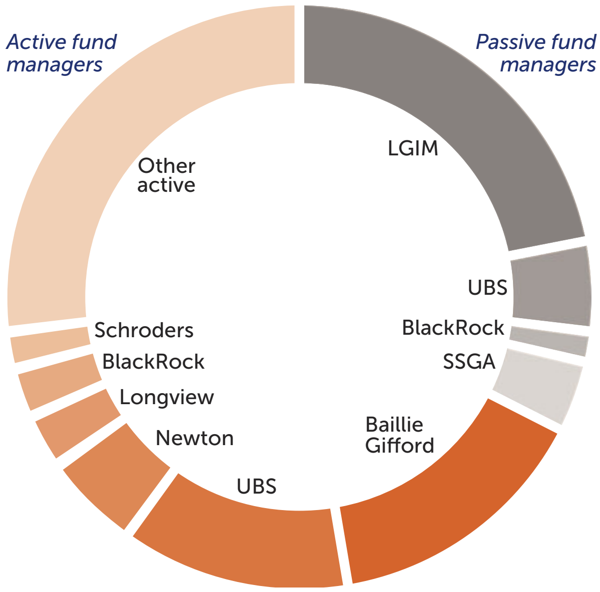
Figure 3 shows the range of equity results over the last year. It can be seen that **UK equities** performed relatively poorly. They were the worst performing of the major equity markets over the year returning only 1%. The average fund performed in line with the index but the range of returns was wide. Passive portfolios were all slightly ahead of the index as were the majority of active managers. Majedie, the largest active UK equity manager, however had a disappointing year, trailing the index by over 3%.

1. Individual funds are treating their investment in this asset in different ways, even investments in the same fund. A good example is the Ruffer LCIV vehicle where some funds are treating it as a unique class whilst others are incorporating it under absolute return strategies within their alternative exposure. We have reflected the individual funds classification in our analysis.

Global equities performed strongly in local currency terms however Sterling strengthened over the year, regaining some of the ground it had lost since the decision to leave the EU. This reduced the return to UK investors.

The majority of equity investment is undertaken through global mandates. A third are managed passively whilst the remainder are managed on an active basis as can be seen in figure 4 below. Funds use a variety of global indices which last year returned between 1% and 3% depending on whether emerging markets were included.

Figure 4: Global equity managers by % value at end March 2018



Active global equity managers added value against the index with two thirds of all portfolios outperforming. The portfolios managed by Baillie Gifford saw exceptional outperformance of around 10% above benchmark for the year.

The handful of funds that had hedged part of their overseas currency exposure saw enhanced performance in the latest year (although it had a large negative impact in the year previous).

On a country basis the US delivered around 2% for the year, Europe 4% whilst Japan and emerging markets were rather better at around 8% and 12%. Only a small number of Local Authority funds still invest their **overseas equities** on a regional basis. Those who do saw returns slightly ahead of the market indices in most areas. The exception to this was within emerging markets where funds trailed the benchmark.

Bond markets produced small positive returns as can be seen in figure 5. Those funds that invested in absolute return mandates produced better returns than those managed against market indices.

Most bonds are managed on an active basis and the move towards absolute return portfolios (all of which are managed actively) has meant that the level of passive management within this group has declined further in the latest year. Bond portfolios performed broadly in line with benchmarks with the exception of overseas bonds where they comfortably outperformed.

Figure 5: Bond performance relative to market benchmark

%	Universe	Relative to BM
UK Government	2.0	1.5
UK Corporate	2.0	0.6
UK Index Linked	0.2	-0.3
Overseas	0.1	4.7
Absolute return	2.6	-

Alternative investments, as usual, produced a wide range of results measured against a very broad range of targeted outcomes:

Private equity remains the largest of the 'alternative' assets. It also continues to be the best performing, delivering a return of 9% for the year. Whilst most funds continue to measure this asset against an equity index (or against an equity index with a hurdle) a number of funds are incorporating this within their overall absolute return alternative strategy.

Most funds beat their benchmarks by a small margin.

In the latest year **infrastructure** investments performed well, with funds averaging over 6%. Within these portfolios the benchmarks range from 0.5% to 15% p.a. Clearly what one fund is looking for from their investment in this area is quite different from another. A return of between 5% and 6%, either expressed as an absolute or as a percentage over cash is the most common benchmark. It is interesting that, whilst this asset is often viewed as inflation linked only a small number of funds are benchmarking it in this way.

There has been a move away from using cash towards more taxing benchmarks for alternative investments.

Absolute return / hedge funds produced a return of 2% for the year, broadly similar to that of diversified growth and absolute return bonds. Whilst there is a broad range of benchmarks used across the group it is encouraging to note the general move away from a cash only benchmark to the more taxing (and more appropriate) cash plus.

It was a good year for funds invested in **property**. Most local authority funds invest in this area through pooled vehicles rather than investing directly, giving them a broader exposure than they would have individually. The indices for both direct and indirectly held property both produced returns of 10% as did the average fund.

LONGER TERM PERFORMANCE

PERFORMANCE has been extremely strong over the medium and longer term. Figure 6 below shows that there have been only five years of negative performance in the last thirty – at the start of the millennium (the bursting of the dot-com bubble) and the global financial crisis of 2008/9. All periods were followed by double-digit returns. The equity 'shocks' that investors are so concerned about mitigating have been infrequent and the reward for holding equities substantial.

Long term performance has been excellent. Funds delivered a positive return in 25 of the last 30 years and delivered an annualised performance of 9% p.a.

Performance for the periods between valuation dates is always under particular scrutiny as this has an impact on funding levels and costs to the participants. Figure 7 shows the average returns achieved across each of the three year actuarial valuation periods. Only one of these periods has delivered a negative return.

Figure 7: Returns over triennial revaluation periods

% p.a. returns between actuarial valuation dates

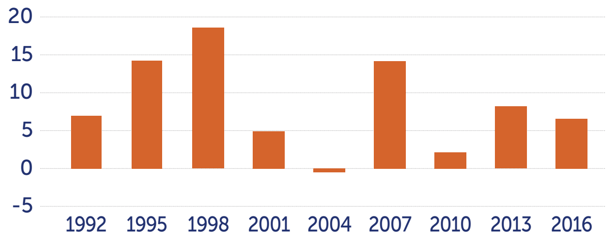


Figure 8 shows that over the three years the average fund returned 11.2% p.a. and over the ten years (which

Figure 6: Long term performance of local authority funds

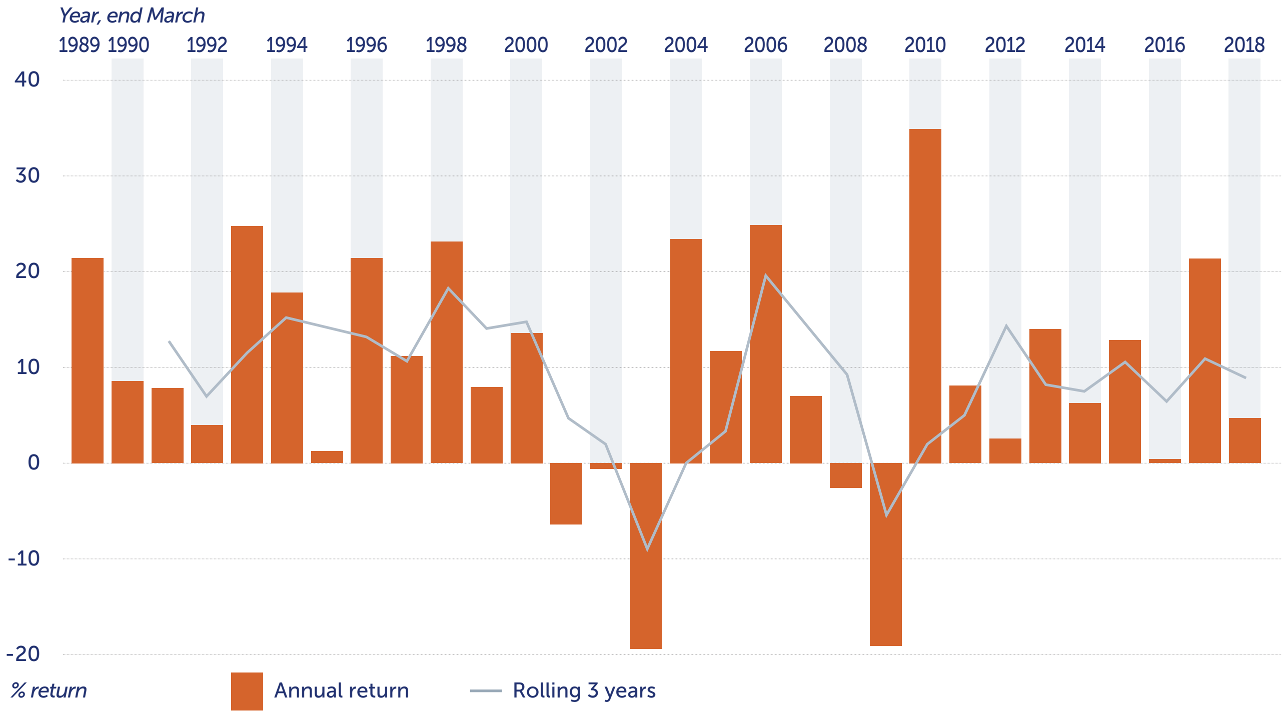


Figure 8: Long term performance

% p.a.	3 years	5 years	10 years	20 years	30 years
Average	8.3	8.8	7.7	6.5	8.9
Median	7.7	8.5	7.5	6.1	8.7
RPI	2.7	2.3	2.8	2.8	3.3
CPI	1.7	1.4	2.3	2.0	2.6

includes the period of the global financial crisis) returned 7.0% p.a. These results are particularly impressive when viewed in the context of very low single digit inflation.

The median result is below the average over all periods indicating the relatively strong performance of larger funds in aggregate over their smaller peers. This long term outperformance was one of the key drivers of the pooling initiative.

This result does not reflect the range of results across the smaller funds, a group within which there is a marked dispersion. Indeed over all periods the very best performances have come from some of the smallest funds.

Asset Class Performance

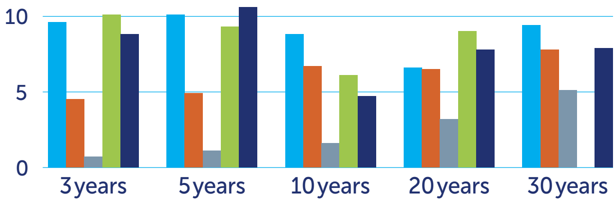
Different funds are cutting their assets in different ways: some looking at liability matching and growth, others carving out income generation, whilst others divide by liquidity. This can mean funds could hold the same investment but for different reasons. For instance one fund may include private credit within alternatives whilst another may show it under their bond allocation.

Asset class performance is becoming increasingly difficult to disentangle as funds become ever more complex.

Even within asset subclasses, we see funds with markedly different investments and benchmarks as they seek quite different outcomes – as discussed earlier, infrastructure is probably the best example of this currently.

As can be seen in figure 9 equities have produced the best returns over the longest term.

Figure 9: Longer term performance by asset class



	3 yrs	5 yrs	10 yrs	20 yrs	30 yrs
Equity	9.6	10.1	8.8	6.6	9.4
Bonds	4.5	4.9	6.7	6.5	7.8
Cash	0.7	1.1	1.6	3.2	5.1
Alternatives	10.1	9.3	6.1	9.0	-
Property	8.8	10.6	4.7	7.8	7.9

Equities

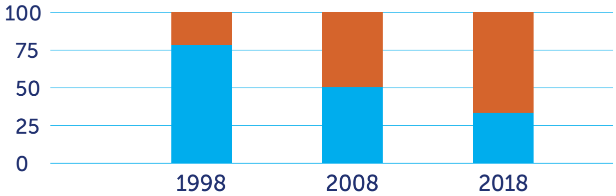
Equities remain the most transparent of the asset classes insofar as most funds have a dedicated equity component benchmarked against a market index (or combination thereof).

The latest year saw a continuation of the long term trend away from domestic equities. As can be seen in figure 10 the average UK exposure is now just over a quarter of total equity exposure compared to exactly half ten years before and an almost exact reversal of the position twenty years ago.

UK equities have performed relatively poorly when compared to overseas markets over both the short and medium term.

Despite this decline 60% of funds still retain a separate allocation to UK equities. This is largely a historical artefact – funds believed that UK assets were a better match for their UK liabilities and that domestic managers had a better chance of success in outperforming the UK market. This is consistent with a 'home country' asset allocation bias by investors across the world.

Figure 10: % Equity allocation



	1998	2008	2018
Non-UK	24	50	73
UK	76	50	27

Funds that held a relatively high exposure to **UK equities** within their portfolios would have achieved returns below their peers in the latest year and over the longer term as UK equities have trailed their overseas peers – shown in figure 11 below.

Equities are mostly managed on a global basis but most funds still retain a separate allocation to the UK market.

Active UK equity managers have trailed the index over the medium term, undermining further one of the arguments for a home bias within fund allocation.

Most external funds now view their equities on a global (World inc UK) basis, with the assets given to managers to manage against a global index. The benchmark used most commonly is the MSCI All Countries World, although the MSCI World (which excludes emerging markets) and the FTSE All World and FTSE World are used too. In the last few years we have also seen some investment into global fundamental indices (*eg* RAFI 3000) and in the latest year into sustainable global investment (*eg* MSCI World Sustainable).

Over the medium term, the overall **global equity** return has been exceptionally strong –double any assumption made by actuaries in their scheme modelling. US equities have outperformed the other major markets over all longer term periods, assisted by the strength of the Dollar.

Active global equity managers have added some value over the medium term but there has been considerable movement of money between firms and there is almost certainly survivorship bias within these results.

Figure 11: Equity performance by region

% p.a.	3 years	5 years	10 years	20 years	30 years
UK	5.8	7.0	7.2	5.3	8.9
Non-UK	11.4	11.7	9.7	7.8	9.4
Emerging	10.1	7.5	7.2	-	-
Global	10.4	11.6	9.1	-	-

Around a quarter of funds hold a separate allocation to **emerging markets**, giving them the opportunity to flex their equity risk profile – the assumption being that these markets experience higher volatility because of the additional risks involved but that this risk will be rewarded by higher returns. However, the decision to hold emerging markets has not been rewarded over most of the last decade with returns from this area below those delivered by most developed markets.

Bonds

Historically funds held most of their bond exposure within two main investments – UK Government (nominal gilts) and UK Government Index-Linked securities. These assets were seen broadly as a diversifier for equities and a proxy for scheme liabilities.

Diversification began in the late 1980's as funds started to invest some of their bond allocation overseas and continued in the mid noughties when funds started to seek out the higher returns available from corporate debt. For over a decade the average fund has held more in UK corporate bonds than it does in government gilts.

More recently we have seen funds invest in bond portfolios that are not benchmarked against market indices but which are seeking instead to deliver an absolute level of return (usually defined as Cash plus x%). These absolute return portfolios aspire to tap into better returns from a diversity of issuers, unencumbered by the straightjacket of the machinations of domestic interest rates and manipulated yields (sometimes negative in real terms) that have been available across bond markets in recent years.

We are also seeing some funds allocate some of their strategic bond weighting into multi-asset income funds where the manager can invest across a range of assets to achieve a targeted yield or an absolute level of return.

The other relatively new investment that is attracting interest and cashflow is private debt where funds are seeking additional return for a relatively higher level of risk.

Over all periods as can be seen in figure 12, index-linked gilts have been the best performing of the bond assets assisted by the increased demand from pension funds seeking to match liability cash-flows and by investors concerned about the possibility of rising inflation.

Figure 12: Bond performance

% p.a.	3 years	5 years	10 years
UK	4.1	4.8	6.6
UK Index Linked	6.5	6.8	8.0
Overseas	6.2	4.1	6.3

Longer term, funds have outperformed the market indices because of their overweighting to longer dated issues, a sector that has performed well over this period driven in large part by high demand from pension funds trying to buy assets that more closely match their liability profiles almost regardless of price.

Alternatives

As can be seen in figure 13 it was just over a decade ago that alternative investments rose from being a relatively insignificant part of the average fund to reach over ten percent of total assets today. At that time around half of all alternative investment was held within private equity, a percentage that has stayed broadly consistent through the period. However, the investments that funds held ten years ago in active currency and tactical asset allocation funds have largely disappeared and been replaced with infrastructure, hedge fund and various absolute return strategies instead.

Figure 13: Alternative investments as % of total fund

End March %	2003	2008	2013	2018
Private equity	1	3	4	5
Hedge funds	0	2	2	3
Infrastructure	0	0	1	3
Other	0	1	0	0

Hedge fund investment increased markedly following the credit crisis as funds sought to reduce equity volatility, peaking in 2011 before falling back, partly on the grounds of disappointing returns and in part, as funds diversified into an increasingly broad and complex, but arguably more transparent, pool of other absolute return investments.

Infrastructure has only been identified as a distinct component of many funds' strategies in recent years but is becoming increasingly important as funds seek diversified forms of risk and relatively high yields. It now makes up just under a quarter of the total alternative exposure of the average fund. Allowing better access for smaller funds to infrastructure investments was one of the key drivers behind Pooling and we expect that the exposure of many funds will increase over the relatively short term.

Figure 14 shows the strong results from private equity and infrastructure, whilst hedge funds have delivered returns in line with or ahead of their benchmarks, the return achieved has been well below the other alternative asset classes.

Figure 14: Longer term performance of alternatives

End March %	3 years	5 years	10 years
Private equity	14.1	12.6	8.9
Hedge funds	4.0	4.8	3.0
Infrastructure	10.9	8.9	-

Diversified growth funds

These funds make up 4% of the average fund but commitment to this asset is skewed, with over half of all funds having no exposure at all.

Over the last five years, these funds returned an average of 3.7% p.a. This level of return is well below that of most other assets. It is also below the benchmark expectations of many investors in this area. However the returns have been delivered at relatively low volatility. Both the return delivered and the level of volatility have been just over a third of that of equities over the give year period.

Property

After its significant fall in value immediately post the global financial crisis in 2008/09 property has recovered strongly. Although the near term returns trail those of equities, at 8.9% p.a. and 10.7% p.a. over the three and five years respectively, the recent performance has been well above the long term (20 year) average for this area of just below 8% p.a. The 20 year return is between that of equities and bonds as would be expected.

Cash

Any exposure to cash over any of the periods would have reduced overall fund performance. To be fully invested has been a very successful long term strategy.

Asset Allocation

Figure 15 shows asset allocation has remained broadly unchanged over the last decade – with equities remaining the dominant asset class in most funds' allocations. The reduction in the equity exposure was reduced at the fastest rate yet seen in the latest year. However the average local authority fund is still substantially overweight equities when compared to the corporate sector where schemes have shrunk their equity component as they have sought to 'de-risk' their assets, moving instead to bonds and cash-flow matching investments.

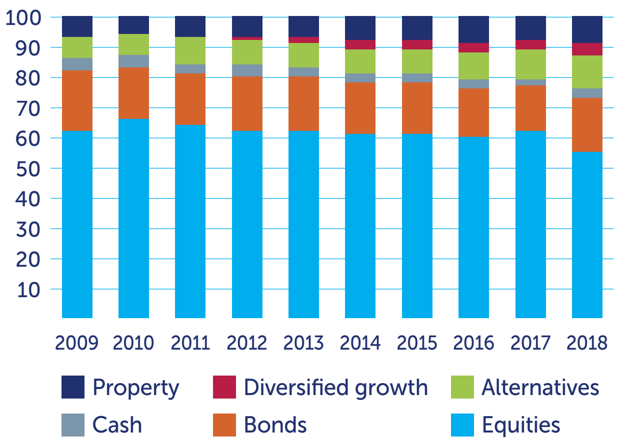
The key flow that we have seen has been a continued disinvestment from equities into lower volatility strategies.

Given the strong performance of equities over the recent past this decision will have made the corporate schemes considerably more expensive for the employer. In contrast, LGPS funds have seen their asset values increase significantly. As well as having a positive impact on funding levels this has offset some of the increases brought about by increased longevity and falling bond yields (the metric on which they are measured) in their liabilities over the same period.

Despite this broadly static high level asset allocation there has been considerable change to the detail of funds at the micro level with alternatives portfolios in particular becoming ever more diverse. There is a continuing trend for funds to hold ever large numbers of portfolios of relatively small value. At the end of March 2018 the average number of portfolios held by funds was 13, double that held a decade earlier as can be seen in figure 16 below.

Figure 15: Asset allocation

% allocation as at end March



There has been considerable change to the detail of funds at the micro level with alternatives portfolios in particular becoming ever more diverse.

Figure 16: Changes in fund structures

	1998	2008	2018
Number of managers	5	7	13
% actively managed	90	80	74

The proportion of funds managed actively, although lower than a decade ago, remains high, at almost three quarter of total assets. Although funds are focussed on reducing costs the move from (high cost) active management to (low cost) passive is not gaining significant ground as most funds continue to seek active value over and above the active managers' fees.

We fully appreciate funds' decisions to improve their risk/return profiles, provide downside protection and lock in strong historical returns, but would question how these strategies are being implemented.

Complexity brings considerable burdens in terms of administration, monitoring and governance (particularly for relatively illiquid investments) whilst the impact on the fund bottom line is likely to be minimal.

There was an opportunity through pooling to simplify asset structure and consolidate investments through well-chosen multi-manager arrangements. However, as pools try to accommodate as many funds' product and manager preferences as possible there doesn't yet seem to be any real move in that direction with most pools talking of running in excess of 20 sub funds.

Risk and volatility

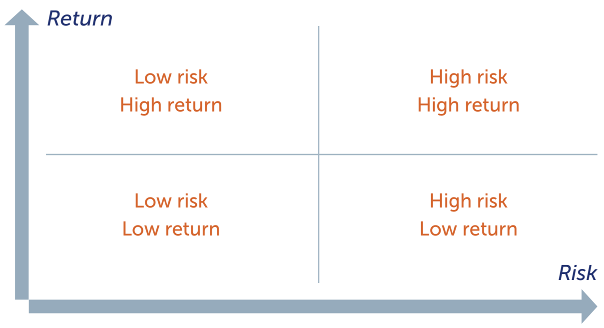
The long-term performance is always dominated by the results from equities. Despite disinvestment from this area over many years, equities still make up more than half of the average fund asset allocation. Over the last decade there has been a marked move away from UK equities towards global equity portfolios. This move has resulted in US equities becoming the largest component in most funds equity portfolios and for many the largest single component of their entire fund.

Funds have different attitudes to the investment (asset) risk that they are taking. Whilst many view their funds as very long term investors and are therefore prepared to live with market volatility in the short term, others are increasingly looking to mitigate the impact of these short term fluctuations. Over recent years we have seen a large increase in lower risk investments such as absolute return strategies and in assets with strong income generating potential.

These lower risk strategies are being put in place because of the changing circumstances in which funds find themselves. After decades of being in a situation where the money coming in (through contributions and income) has been greater than that going out (in pension payments) some funds are experiencing negative cashflow for the first time. This brings new challenges as funds try to avoid a situation where they are forced to sell assets at distressed values.

Figure 17 shows there is a direct (and ordinarily obvious) relationship between risk and return and as such, we should expect to see the more risk averse funds deliver lower volatility but achieve lower returns than their peers.

Figure 17: Relation between risk and return



We have plotted the various asset classes into this risk/return space over the last ten years in figure 18 below. It can be seen that the more volatile assets (equities) have delivered the highest return whilst the least volatile (cash) has delivered the lowest. However over this period bonds have been the most efficient asset – delivering the best return per unit of risk taken. This apparent anomaly has been brought about by the intervention of governments and reserve banks in the bond market during this period through their quantitative easing strategies.

Whilst many view their funds as very long term investors and are therefore prepared to live with market volatility in the short term, others are increasingly looking to mitigate the impact of these short term fluctuations.

Figure 18: Ten year risk and return

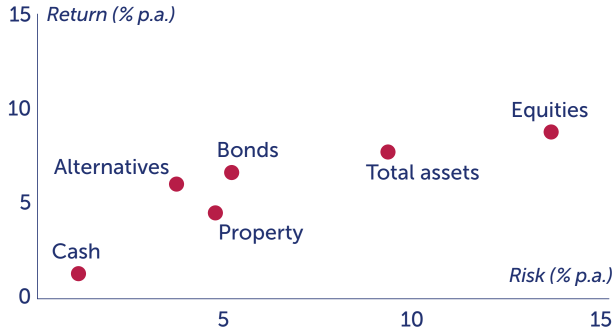
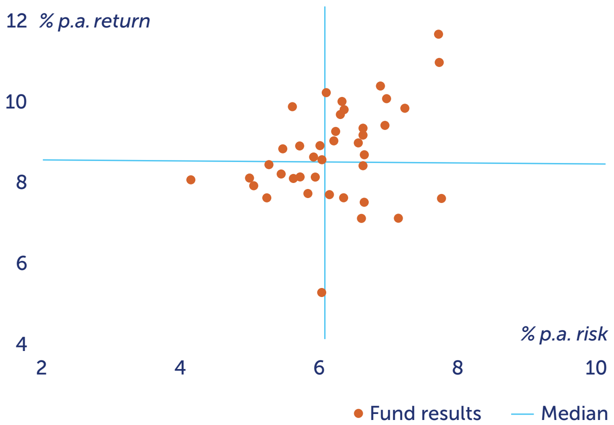


Figure 19 shows fund performance over the period in risk and return space. Each fund is represented by an orange dot. The higher the fund lies on the vertical axis

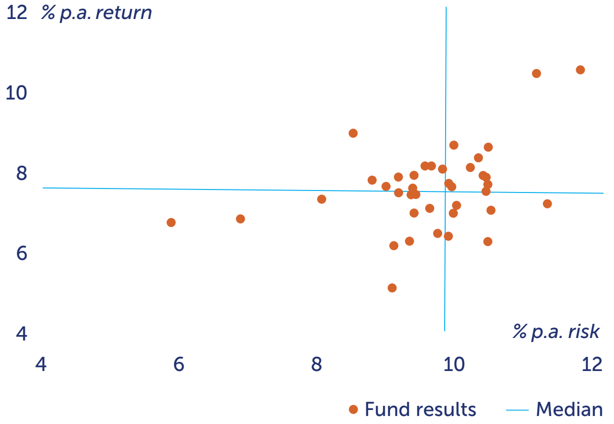
Figure 19: Risk and return distribution of funds over the last 5 years



the better its return, the further to the right on the horizontal axis the greater the volatility experienced. The cross-hair lines represent the median risk and return.

A similar pattern can be seen over the longer term in figure 20 below.

Figure 20: Risk and return distribution of funds over the last 10 years



Over the ten year period the fund with the lowest level of volatility has produced a return of 6.7% p.a, whilst the fund with the highest volatility has returned 10.5% p.a. a compounded cumulative shortfall over the period of 41%. This is not a one-off result. We saw an almost identical outcome in last year's review. Over the long term a lower risk strategy has come at a (often considerable) cost.

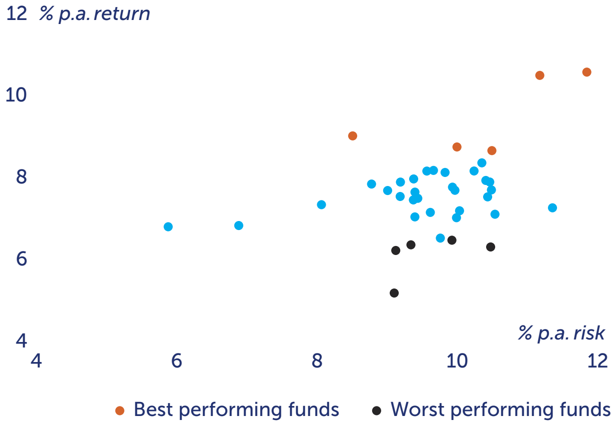
Whilst we would not wish to comment on the efficacy of one approach over the other, it is important that investment committees, officers and other decision makers appreciate the potential value implications of 'de-risking'. Most LGPS funds have liabilities that are extremely long term in nature. This should allow funds to be less concerned with short term volatility. The strictures put in place by the cycle of triennial revaluations can have the effect of reducing funds' time horizons and focussing them on much shorter term periods. However, as we have shown earlier, it is a much rarer occurrence than may be commonly perceived for there to be a negative result over the three year triennial period.

Given the relationship between risk and return it is probably no surprise that the best returns over the recent past and the longer term have been delivered by the funds that have accepted the highest level of volatility.

Best and worst performing funds – what can be learned?

Over the last 10 years the **best performing funds** which are shown in figure 21 in orange share a number of features. The funds have held a relatively high level of equities throughout the last decade and a relatively low exposure to alternatives. As a result they have experienced more volatility than other funds and, over this period the volatility has been rewarded.

Figure 21: Best and worst performing funds – last 10 years



However they have also shared some other common features. The funds have more of their assets managed actively than their peers. They have generally had long term relations with their investment managers and changes that have been made have tended to be as a result of structural realignments rather than performance disappointment. The funds are all considerably smaller than average and the fund structures are less complex. These funds are generally well funded. We do not know whether they have done well because they are well funded (and can therefore accept more volatility) or whether they are well funded because of the strong relative performance.

The funds in the **worst performing** grouping (shown in black) also share some characteristics. These funds have a relatively low level of equities and a commensurately higher level of alternatives and/or diversified growth investments. They are almost all less volatile than average. Like the best performing group these funds are considerably smaller than average. These funds now have a higher than average portion of their assets managed on an index tracking basis – possibly a reasonable response to disappointment from their active managers over part of the period.

Going forward, Fund performance should be shown before and after any costs associated with pooling so that the impact of these costs can be easily identified.

This group of funds tends to be relatively poorly funded when ranked against their peers. Again, it is difficult to untangle whether they have de-risked because they are poorly funded or whether they are poorly funded because they have de-risked. What we can say with certainty is that a lower risk/lower return approach is unlikely to close any funding gaps and it is likely that the participants in these funds will see contributions rise to close the shortfall.

Impact of pooling

The returns that are shown for the latest year do not include any costs that funds have incurred in the set-up of the various pooling arrangements. At this stage these costs are likely to have little impact on overall scheme returns. Going forward we are investigating how best to collect the direct costs at individual scheme level so that performance can be calculated before and after these costs which have the potential to vary quite markedly across participating funds.

It will also be important to show that the pools are delivering value for the participating funds. We have some concerns around the level of return being sought for some of the pool funds on offer.

One proposed high alpha equity fund is targetting an outperformance of 2%-3% + using around 5 managers. Looking at the performance of the global equity managers currently used by funds, over the last three years the average has outperformed by only 0.5% p.a. and, if Baillie Gifford is excluded, has added no value at all. The funds with more than one global equity manager are likely to have less volatile performance but, as has been discussed at length in this review, lower volatility usually comes at the cost of lower return. There is a real risk that, unless the Pool has substantial, demonstrable manager selection abilities (a skillset that has been sadly lacking across the industry for many years) what will be delivered could resemble expensive index tracking.

On a similar note, there are currently funds that are being offered that do not have defined benchmarks or targets attached. One has to question how the CIV can be monitored on the success of this manager without such basic metrics in place.

It is early days and these issues will likely be worked out but we would urge caution. One of the key drags on performance over the last twenty years has been the effect of fund changes. This is not just the physical cost of the transition from one manager to the next but more substantially the opportunity costs of buying and selling managers at the wrong time. Funds will need to ensure that the move into pool assets is in their own best interests and will not negatively impact longer term returns.

APPENDIX

Longer term returns, %

	2018	3 yrs p.a.	5 yrs p.a.	10 yrs p.a.	20 yrs p.a.	30 yrs p.a.
Total Equity	4.3	9.7	10.2	8.8	6.6	9.4
Global	4.8	10.4	11.6	9.1		
UK	1.4	5.8	7.0	7.2	5.3	8.9
Overseas	5.5	11.4	11.7	9.7	7.8	9.4
North America	2.6	12.5	14.7	12.6	-	-
Europe	5.2	10.2	10.9	7.5	-	-
Japan	8.4	12.2	12.6	9.2	-	-
Pacific	2.6	8.9	6.9	9.1	-	-
Emerging	8.8	10.1	7.5	7.2	-	-
Total Bonds	1.4	4.6	5.0	6.8	6.5	7.8
Global	2.6					
UK Bonds	1.3	4.1	4.8	6.6	-	-
UK Government	2.0	-	-	-	-	-
UK Corp	2.0	-	-	-	-	-
UK IL	0.2	6.5	6.8	8.0	-	-
Non UK bonds	0.1	6.2	4.1	6.3	-	-
Absolute Return bonds	2.7	-	-	-	-	-
Cash	-0.2	0.3	0.7	1.4	3.2	5.1
Alternatives	5.8	10.1	9.3	6.1	9.0	-
Private Equity	8.9	14.1	12.6	8.9	-	-
Hedge Funds	2.2	4.0	4.8	3.0	-	-
Infrastructure	6.2	10.9	8.9	-	-	-
Diversified Growth	1.6	1.9	3.7	-	-	-
Property	9.8	9.0	10.8	5.1	7.8	7.9
Total Assets	**4.5**	**8.4**	**8.9**	**7.7**	**6.5**	**8.9**

Asset allocation

	% Allocation at end March										
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Equities	65	62	66	64	62	63	63	62	60	62	55
Bonds	18	20	17	17	18	18	18	18	16	15	17
Cash	4	4	4	3	4	3	3	3	3	2	3
Alternatives	5	7	7	9	8	8	8	8	9	10	11
Diversified Growth	-	-	-	-	1	2	3	3	3	3	4
Property	7	7	6	7	7	7	8	8	9	8	10

The questions that the Universe seeks to address

THE PIRC Local Authority Pension Fund Performance Universe is a survey of UK local authority defined benefit pension funds. As at 31st March 2018 it comprised 61 funds with a value of £177 bn.

At aggregate level

- How has the LGPS performed in absolute terms over the short, medium and longer term?
- Is the LGPS adding value relative to the strategic benchmarks that funds have set?
- How is the LGPS structured in terms of asset allocation and how has this changed over time?
- What is the performance of the aggregate LGPS in the major asset classes in which it invests over the short, medium and longer term?
- How does this performance compare against benchmarks?
- Is risk taken being rewarded?
- What is the spread of performance – why are some funds performing better than others, can strengths and key drivers of performance be identified?

At fund level

- How does the absolute level of investment return achieved by the fund compare with others in the LGPS?
- What level of risk has been taken to achieve this return and how does this compare with others?
- How does the relative performance compare to that achieved by others in the LGPS?
- What level of risk has been taken to achieve this return and how does this compare with others?

These questions can be answered relative to the full LGPS or split in a variety of ways including by region/funding level/structure

- How have these differences come about?
- How does the structure of the fund differ from other funds?

New questions relating to pooling

- How does the level of investment return achieved by the fund compare with others in the pool?
- How does the relative performance compare to that achieved by others in the pool?
- How has the pool manager performed relative to its benchmark, target and other pool managers operating the same mandate?
- How has the overall pool performed in absolute terms relative to other pools?
- How has the overall pool performed in relative terms relative to other pools?
- Is the performance of the pool improving?
- Is the volatility/risk of the pool reducing? How does this compare to the other pools?
- Is manager change within the pool reducing? How does this compare to the other pools?
- How does the structure of the pool differ from that of the other pools?

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