MJ HUDSON Allenbridge

Diversified Growth Funds – Doing a Good Job?

FEBRUARY 2016

Introduction

Diversified Growth Funds came into prominence following the 2008 global financial crisis when pension funds were battered on the asset side of the balance sheet which was displaying too severe a drawdown and excess volatility. Those funds already in existence performed well in 2008 and DGFs were seen as offering some key advantages:

- Long term growth with low volatility
- Nimble asset allocation
- Unconstrained
- Wide diversification
- Low governance

In the years 2009-2012 there was a massive surge in pension fund allocations to DGFs.

Steve Tyson

Senior Adviser

MJ Hudson Allenbridge

Steve is a Senior Adviser. He has over 35 years' investment experience and holds a portfolio of trustee and advisory positions. Steve is a Senior Adviser. He has over 35 years' investment experience and holds a portfolio of trustee and advisory positions.

Steve chaired the Trustees of the Manufacturers Life UK Pension Plan from 2004 until buyout in 2015 and is a Trustee/Chairman of the Investment Committees of the National Trust Pension Scheme, Devro PLC and Scotiabank. He is an independent adviser to the LGPS for Devon County Council and Gloucestershire County Council Pension Funds. He sits on the advisory panel of the Open Retirement Club.

Formerly Steve was a public member of Network Rail and a NED of Manulife Asset Management. His last full-time role was as Chief Investment Officer and CEO of Manulife Asset Management from 2004-2012, responsible for £4 billion of assets under management and advice in a variety of asset allocation and equity strategies.

Shan Gao

Associate

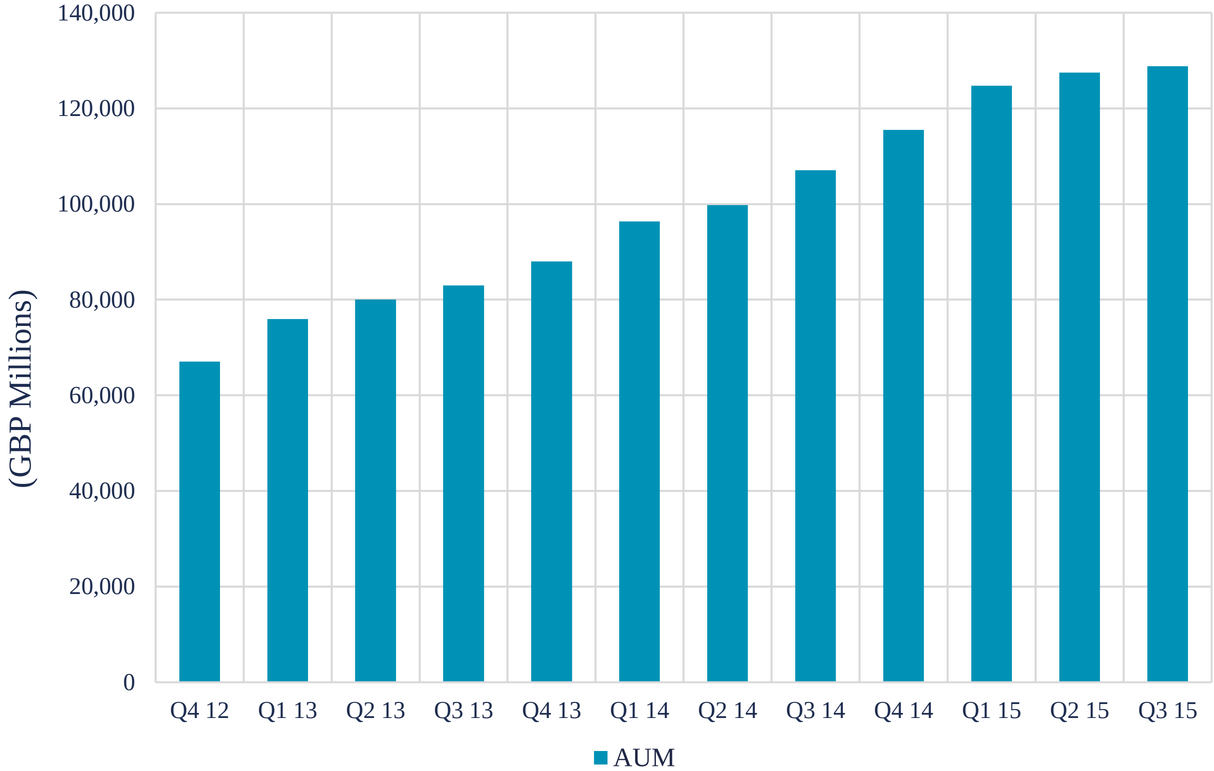
MJ Hudson Allenbridge

Shan is an Associate in the Research team. Her role includes quantitative analysis and reporting in manager selection mandates, portfolio monitoring, investment and operational due diligence of alternative investments, including hedge funds, alternative risk premia and private markets. She is also responsible for maintaining the in-house analytical diversified growth funds (DGFs) database and performing peer group performance analyses on multi-asset funds as well as for providing quantitative support and analytics across asset classes.

Prior to joining MJ Hudson Allenbridge, she worked as an associate accountant at Siemens in China. Shan has an MSc in Mathematical Trading and Finance from Cass Business School. She graduated from the University of Bristol with a BSc in Mathematics with Statistics.

Growth In Assets

CHART 1: AUM GROWTH FOR THE DGF MARKET



Source: Camradata Analytical Services

My purpose is to question whether pension funds have been well rewarded by DGFs since they invested. How have DGFs performed, and do they justify their inclusion in pension funds? The experience has been mixed.

Defining DGFs

It is important to note that DGFs are a very mixed sector. There is a wide range of benchmarks, but most have performance targets which are "Cash plus" or "Inflation plus". For instance, Libor + a range, usually between 3.5% and 5%, with some as high as 7.5%, measured over 3 or 5 years, or sometimes "a market cycle". Others are RPI or CPI plus similar outperformance targets. Importantly, most funds also have a volatility target, which may be expressed as "half/two thirds of equity volatility" or an absolute level.

Broadly, there are two types of DGFs – firstly, traditional DGFs which are dependent on directional market exposure, and usually dynamic asset allocation; secondly, absolute return DGFs which, by using Hedge Fund techniques such as relative value trades, aim to offer capital protection. There are fewer funds in the second category, but some are extremely large and therefore represent the majority when measured by AUM.

Key Advantages

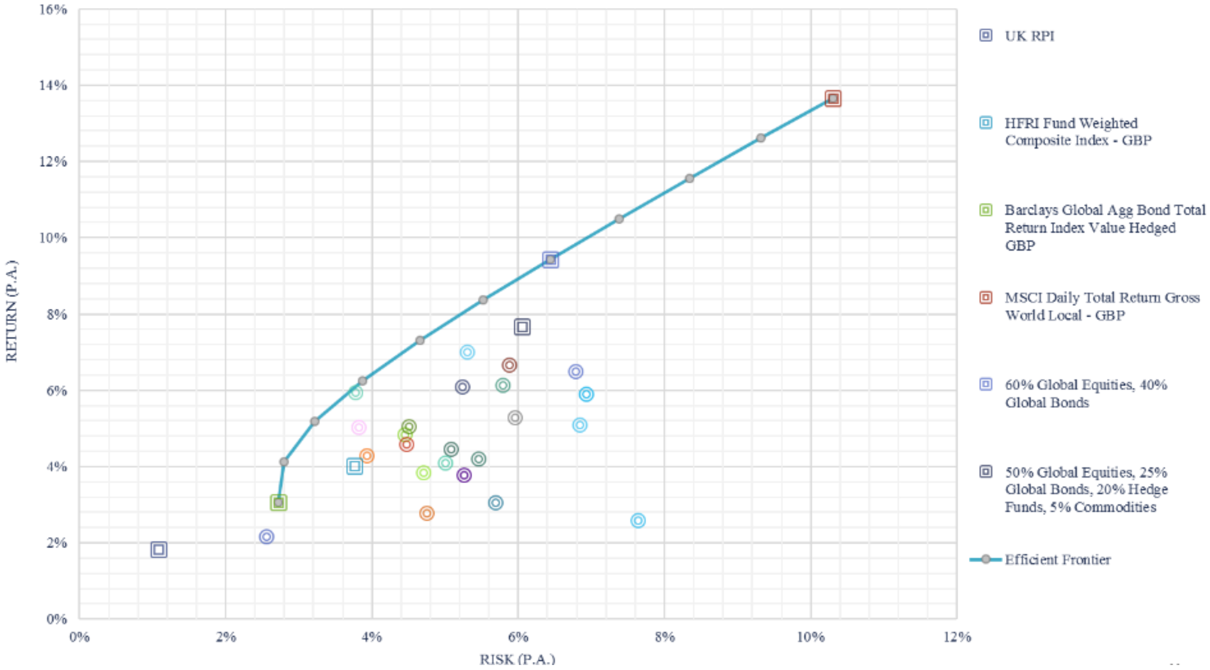
First, let's consider some advantages of DGFs by starting with the theory of diversification. Diversification was once described to me many years ago by a senior investment figure as "the only free lunch in the City". Most DGFs start with the aim of delivering equity-like returns at lower volatility, so what's not to like at this attractive prospect? Unsurprisingly, money flowed principally out of equities into DGFs. A second attraction is that DGFs can be a one-stop shop for a balanced portfolio that offers a light touch governance solution. With some well known, high performing DGFs on the market, this can be an elegant solution for trustee boards already stressed by how to deal with the strategic challenges of increased longevity, low gilt yields and the impact this has had on funding ratios. The very existence of DGFs have enabled trustees to grapple with the more complex and highly strategic issues such as LDI, knowing that the Growth assets are delegated to professional, competent hands.

Our analysis has several important findings:

- **Track records** are quite short, and mixed
- DGFs have significantly **underperformed passive blends** of equity and bonds over the last 3/5 years.
- One **had to be invested in DGFs prior to 2008** to have reaped the benefits of DGFs, and a minority of pension funds were in fact invested before the crash. Most invested afterwards
- The **dispersion** of DGF performance outcomes is quite wide with some disappointing outcomes
- **Fund proliferation:** the asset growth in the sector has attracted substantial marketing attention leading to new fund launches and staff poaching.

Examining these points in more detail, firstly consider the 3 and 5 year performance of the largest DGFs

CHART 2: RISK VS RETURN GRAPH FOR DGF MANAGERS (3 YEARS TO 31 DECEMBER 2015)



Note: Return and Risk are measured as 3-year annualised return and annualised standard deviation.
The Efficient Frontier is comprised by the performance of possible combination of Equity (MSCI Daily Total Return Gross World Local) and Bond (Barclays Global Agg Bond Total Return Index Value Hedged.)

Data: GBP, Gross of fees
Source: Bloomberg, DGF Managers

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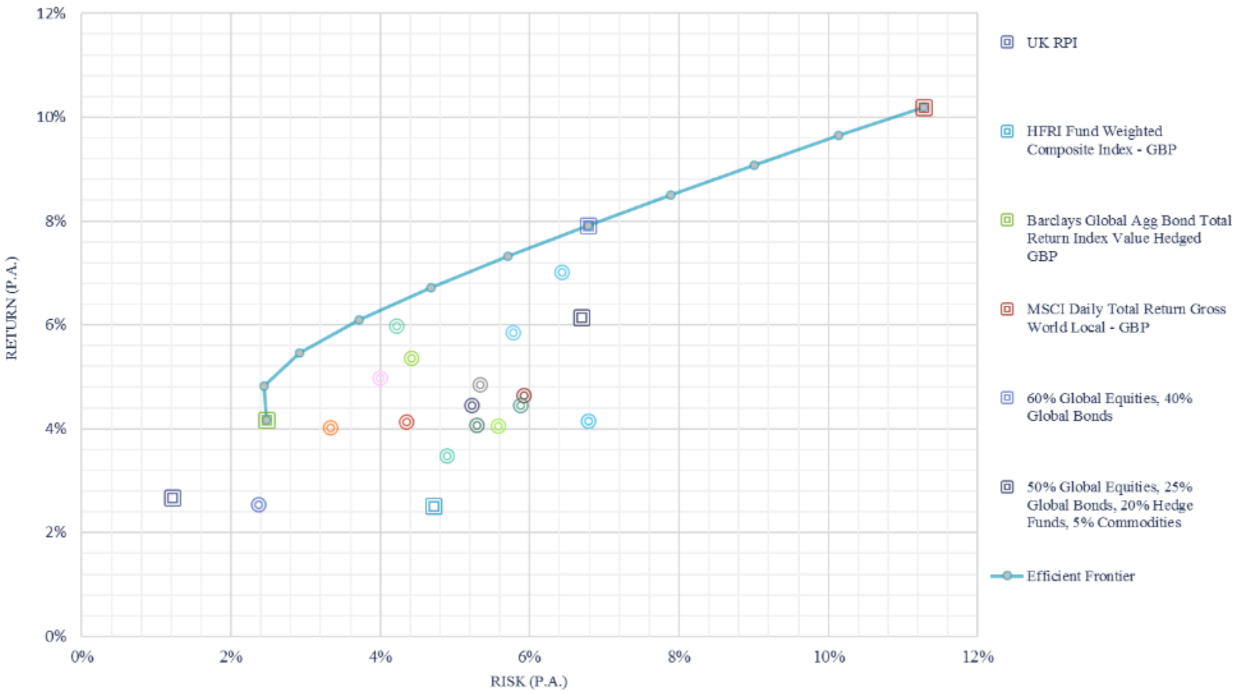
CHART 3: RISK VS RETURN GRAPH FOR DGF MANAGERS (5 YEARS TO 31 DECEMBER 2015)



Note: Return and Risk are measured as 5-year annualised return and annualised standard deviation.
The Efficient Frontier is comprised by the performance of possible combination of Equity (MSCI Daily Total Return Gross World Local) and Bond (Barclays Global Agg Bond Total Return Index Value Hedged.)

Data: GBP, Gross of fees
Source: Bloomberg, DGF Managers

The curved lines on these charts demonstrate how passive portfolio mixes of equities and bonds would have performed. The furthest right hand end of the curved line represents 100% equities and the furthest left hand end represents 100% bonds. Each point on the line is a mix from 100%/0%, 90%/10%, 80%/20% and so on. The mix is rebalanced each month.

What is truly striking here is that **not one DGF lies to the "north-west" of this passive "line of truth"**. In other words ALL the funds have lower return and higher risk than the equivalent simple passive blends. Moreover the manager returns here are before fees are deducted, so after fees the comparison will look worse still. This tells us a couple of things...firstly, diversification didn't work during this period. Secondly, searching questions need to be asked of the managers furthest away from this frontier towards the south-east corner. Those managers need to be asked about the value-added they have been able to create by dynamically moving assets around or selecting underlying instruments or sub-managers.

Another conclusion is to reflect on manager- and consultant-led expectations about DGFs. Expectations which were broadly "equity like returns with lower volatility". This has not been delivered over 3 and 5 years, as demonstrated in these 3 and 5 years charts, these were a false hope in the years 2010-2012, which was when the money flooded in. With hindsight, as so often in our industry, pension fund allocations were made with dubious timing.

But before we get depressed, it was not always thus. When you look over 7 years, which begins to span the financial crisis, there are in fact several high quality DGFs that have produced better return/risk characteristics than the passive frontier, and can justify the claim to have achieved equity like returns with lower risk.

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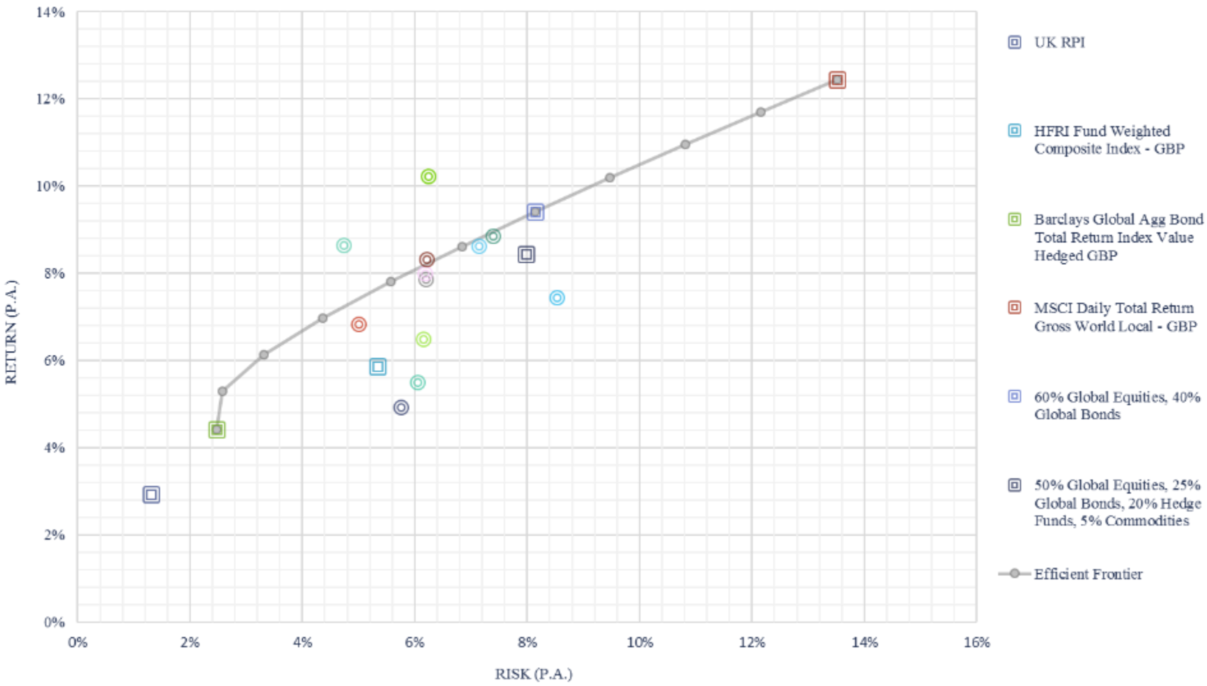
CHART 4: RISK VS RETURN GRAPH FOR DGF MANAGERS (7 YEARS TO 31 DECEMBER 2015)



Note: Return and Risk are measured as 7-year annualised return and annualised standard deviation.
The Efficient Frontier is comprised by the performance of possible combination of Equity (MSCI Daily Total Return Gross World Local) and Bond (Barclays Global Agg Bond Total Return Index Value Hedged.)

Data: GBP, Gross of fees
Source: Bloomberg, DGF Managers

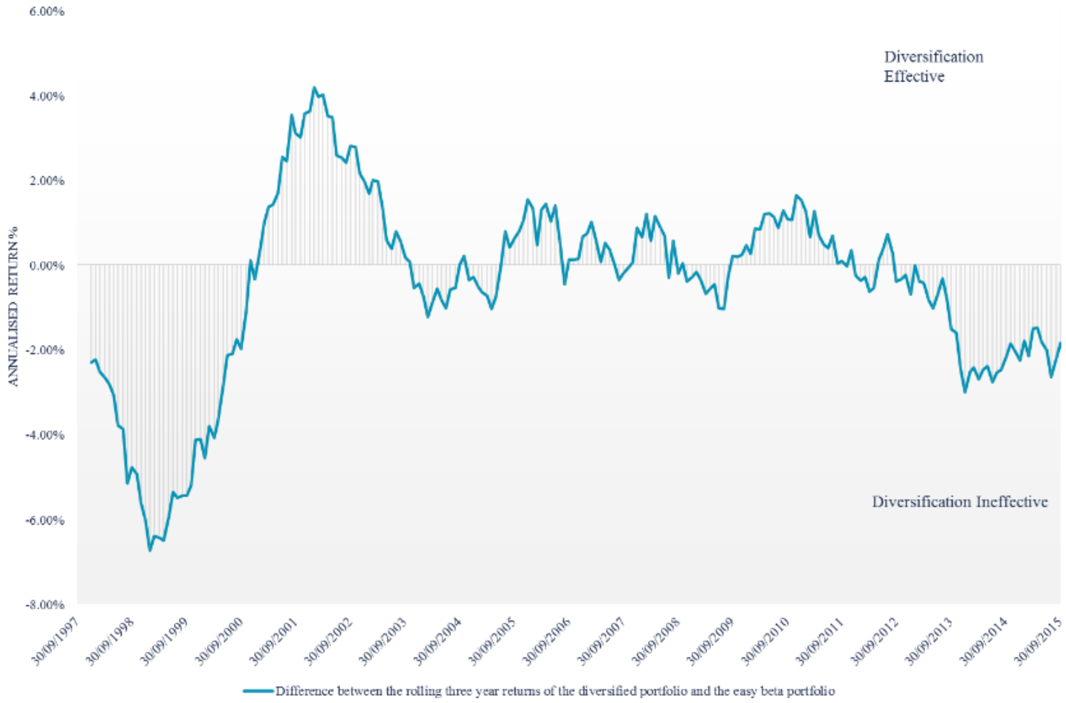
So if you were one of the early investors in this product segment (which only emerged on the scene around 2004/2006) then your DGF experience is markedly better than the majority of pension funds who arrived after 2008. You are quite likely to have achieved the holy grail of "equity-like returns with lower volatility". It just so happens that since 2009, one didn't really need to be diversified, which is easy to say in hindsight! Another way of rationalising this is to say that the performance that has been sacrificed is the "cost of protection" against down markets, which, of course, we haven't seen between 2009 and 2014 on a sustained basis.

My next important point is that the past isn't necessarily a good guide to the future, as we always say in our disclaimers! As pension fund and their consultants' attention turns to issues such as how to access the illiquidity premium, or infrastructure, or absolute return bonds, or smart beta, so DGFs role in portfolios may take a turn for the better. I believe DGFs will justify their inclusion in portfolios over time, and there are sound reasons why....

I am not the only person to believe future returns for many asset classes over the coming 5 years are going to be low. The low return world we may be entering (and have already seen in 2015) might be a better environment for DGF managers on a number of counts, although first indication are that the last 12 months saw about a quarter of DGFs produce negative returns. That compares with zero return on equities.

We have looked back over past periods to try to learn when diversification works and when it doesn't. We investigated a "simple" beta portfolio of 60% global equities and 40% global bonds versus a slightly more "complex" diversified beta portfolio including other allocations such as 10% to property, 20% to FoHFs and 10% to commodities.

CHART 5: RELATIVE PERFORMANCE OF DIVERSIFIED PORTFOLIO VERSUS SIMPLE PORTFOLIO



We find evidence of a "cycle" which shows that over recent years since 2008, diversification hasn't been effective. The same was true in the late 1990s, which was also a period of strong equity returns. To paraphrase Nils Bohr, prediction is very difficult, especially if it is about the future!

Having said that, I believe that in a future of low asset returns, diversification and manager skill will be more important. It is crucial to understand several points:

- How does my DGF manager add value?
- Is it through dynamic allocation?
- Is it by having a "better" product design, such as allowing the manager to go short in declining markets?
- Is it by exploiting relative value trades which are independent of market direction?
- Is it by having some factor bias such as a quality and value approach?

As the DGF fund space has proliferated, so the opportunities for managers to be clever by designing relative value trades or using derivatives to facilitate better implementation have also proliferated. Many DGFs have embraced the techniques used by Hedge Funds, to allow going short of one asset versus another. And risk management has improved vastly from the techniques of former years. DGFs are therefore becoming increasingly complicated.

My sense is that the DGF market is going to become more discerning in future. This is an important point. Pension funds and their advisers need to be more focussed about what the DGF is there to do...and how it interacts with the rest of their portfolio.

But how to select a good DGF manager?

Starting with some quantitative analysis, we consider risk-adjusted returns, we value highly those managers who can maintain some stability in their Sharpe Ratios over time. Another way of expressing this is to say we look for managers who we think are less likely to deliver negative surprises.

Another area of enquiry, relates to understanding sources of performance attribution. Reflecting a personal bias, I dislike managers whose success has come from a few "narrow" calls. How can we know this is repeatable in the future? Better to find managers who make a larger number of modest risk-controlled bets, and get more right than wrong.

We also look at manager correlations to equities, and bonds. In this extract of some leading managers, we give an illustration of our correlation analysis...

TABLE 1: 3-YEAR CORRELATION COEFFICIENT MATRIX AS AT 30 SEPTEMBER 2015

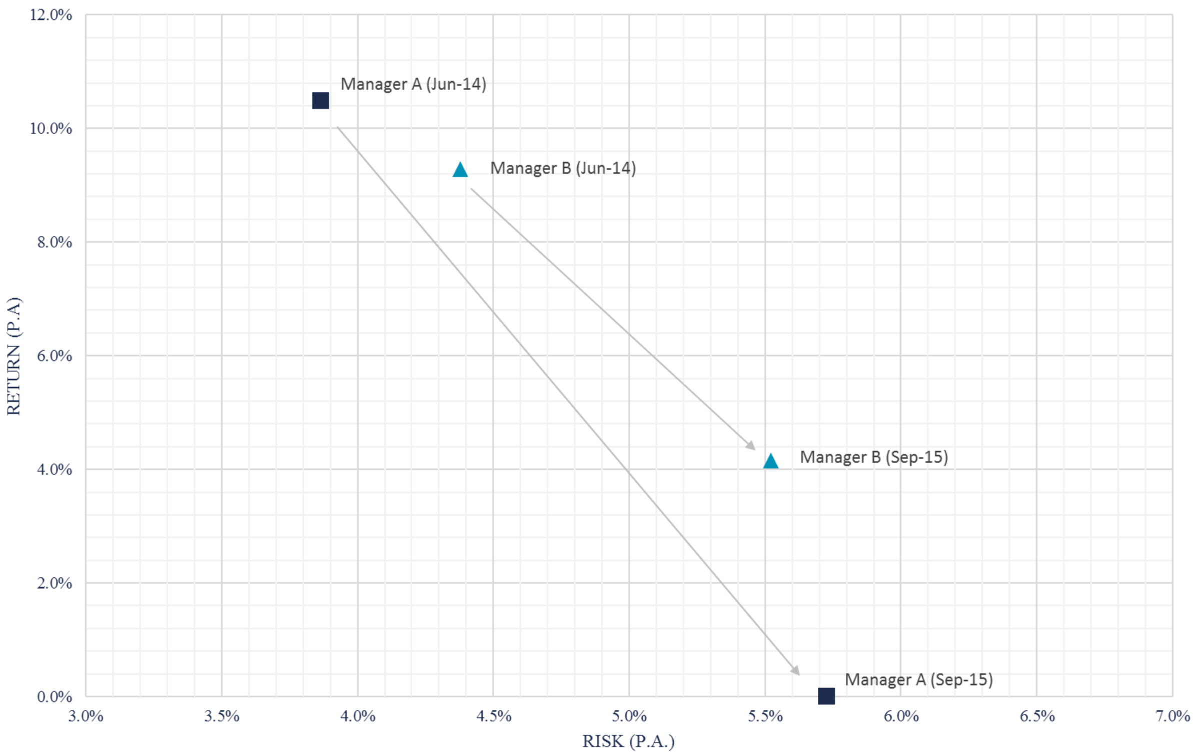
	Manager A	Manager B	Manager C	Manager D	Manager E	Manager F	Manager G	Manager H	Manager I	Manager J	Manager K	UK RPI	UK 3M Treasury	Hedge Fund	Bond	Equity	Benchmark 1	Benchmark 2
Manager A	1,0	0,6	0,8	0,9	0,9	0,9	0,8	0,9	0,9	0,7	0,9	-0,1	-0,3	0,8	0,3	0,8	0,8	0,9
Manager B		1,0	0,5	0,6	0,6	0,7	0,6	0,5	0,7	0,6	0,6	0,1	-0,2	0,7	0,7	0,7	0,8	0,7
Manager C			1,0	0,8	0,9	0,8	0,7	0,7	0,8	0,8	0,8	-0,2	-0,3	0,7	0,2	0,8	0,8	0,8
Manager D				1,0	0,9	0,9	0,8	0,8	0,9	0,7	0,9	-0,2	-0,3	0,8	0,3	0,8	0,9	0,9
Manager E					1,0	0,8	0,8	0,8	0,9	0,8	0,9	-0,2	-0,3	0,7	0,4	0,8	0,8	0,8
Manager F						1,0	0,7	0,7	0,9	0,7	0,8	0,0	-0,4	0,9	0,3	0,9	0,9	0,9
Manager G							1,0	0,7	0,8	0,7	0,8	-0,2	-0,1	0,6	0,5	0,6	0,7	0,7
Manager H								1,0	0,8	0,7	0,8	-0,2	-0,2	0,7	0,2	0,7	0,7	0,7
Manager I									1,0	0,8	0,9	0,0	-0,3	0,9	0,3	0,9	1,0	1,0
Manager J										1,0	0,7	-0,2	-0,2	0,6	0,4	0,7	0,7	0,7
Manager K											1,0	-0,1	-0,2	0,7	0,4	0,8	0,8	0,8
UK RPI												1,0	-0,2	0,1	-0,3	0,1	0,0	0,1
UK 3M Treasury													1,0	-0,4	0,0	-0,3	-0,3	-0,4
Hedge Fund														1,0	0,1	0,9	0,9	0,9
Bond															1,0	0,1	0,3	0,2
Equity																1,0	1,0	1,0
Benchmark 1																	1,0	1,0
Benchmark 2																		1,0

Note:
Hedge Fund: HFRI Fund Weighted Composite Index – GBP
Bond: Barclays Global Agg Bond Total Return Index Value Hedged GBP
Equity: MSCI Daily Total Return Gross World Local – GBP
Commodity: S&P Global Prosperity Total Return – GBP
Benchmark 1: 60% Global Equities, 40% Global Bonds
Benchmark 2: 50% Global Equities, 25% Global Bonds, 20% Hedge Funds, 5% Commodities

We sometimes find pension funds who are looking to add one more complementary DGF to an existing fund. Thus, blending different DGFs with different risk appetites, and different investment processes, which can produce a return stream that is smoother and less prone to nasty surprises. And nasty surprises don't just come in the form of bad investment calls...teams can and do move from one employer to another without warning. This has become such an important asset class that every management house wants a successful DGF team, and asset gatherers entering the DGF market have lured managers from successful houses. One highly successful investment house saw it's AUM within DGFs fall from £9bn to £2bn after the departure of key staff as consultants and their fiduciary managers jumped ship. Thus there is some key-person risk. So stability of team is desirable, and stability of performance is desirable.

In order to illustrate this point about stability of Sharpe ratio, consider the following. Illustrated in summer 2014 is the position of 2 of the hottest DGFs on the market: Managers A and B.

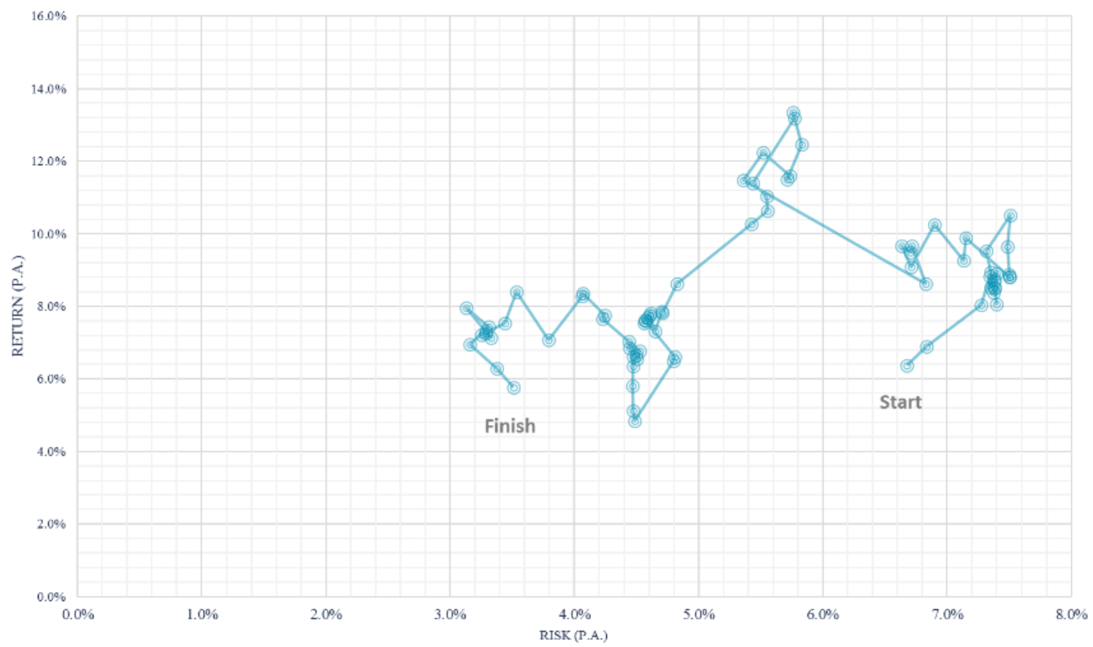
CHART 6: DROPPING PERFORMANCE OF SAMPLE MANAGERS (A & B)



Note: Return and Risk are measured as 2-year annualised return and annualised standard deviation (Data: GBP, Gross of fees / Source: Bloomberg, DGF Managers)

Also consider the position of Manager C, who have only deviated from the desirable position in the North West quadrant of Return v Risk (3 year rolling return) during the earlier periods of higher volatility associated with the 2008 financial crisis.

CHART 7: 3-YEAR ROLLING RISK VS RETURN OF MANAGER C



Note: Return and Risk are measured as 3-year annualised return and standard deviation. (Data: GBP, Gross of fees / Source: Bloomberg, DGF Managers

Having shown earlier that DGF performance has been disappointing in the last few years, a valid question is "are the fees justified"? The simple answer is that based on the post-crash experience, they are not. Moreover there is some downward pressure on fees, and I think this is set to continue.

In conclusion there are several points to note

- DGFs have a mixed track record
- Diversification has not worked in investors' favour in the last 3/5 years, but I believe the future may be different
- Robust data analysis, noting the stability of performance, drawdown and correlation analysis should be part of due diligence when appointing or replacing a DGF manager
- Massive asset growth in the sector has resulted in a plethora of new entrants and some manager rotation
- There should be continued downward pressure on fees

In all likelihood, DGFs will continue to form a key core of growth portfolios, and careful due diligence will be well rewarded.

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