



An occasional paper from Fiscal Engineers

The sequence of investment returns matters



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1 Introduction

In our Summary Points from the Spring 2014 Investment & Risk Committee meeting, we touched on the importance of taking care and seeking guidance when drawing down from a portfolio over time. We alluded to a paper on this subject which we are now pleased to present. If you are considering or are already in portfolio drawdown, we trust you will find this paper useful.

2 The sequence of investment returns matters

Investing would be so easy if returns came in straight lines with cash delivering inflation plus 1% and equities returning inflation plus 5%, year in, year out. But the flaw in this theoretical world is obvious; everyone would only own equities (and make lots of money) and banks would struggle to attract deposits. We know that reality is very different. A one year deposit rate provides a certain pre-inflation return (although an uncertain post inflation return), whereas the collective future corporate earnings estimates of the companies that comprise the market, and the price that investors are prepared to pay to buy these future earnings, is a very uncertain endeavour.

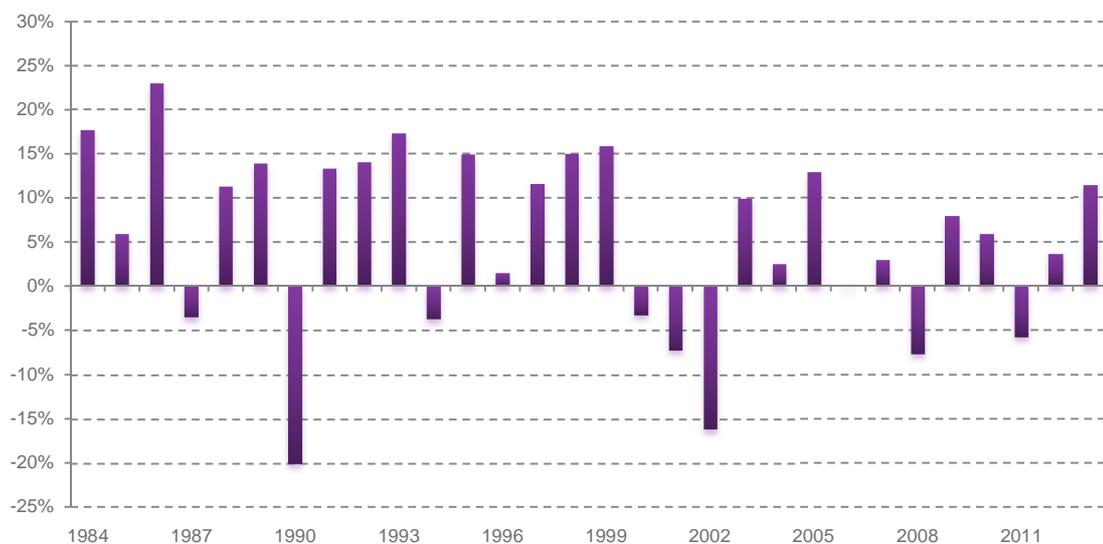
Investors with long memories will be able to recall the 1974 stock market crash, which when combined with high inflation, delivered post inflation losses of almost -60%, followed by a rebound of 100% in 1975. More recently, the technology market crash (remember dotcoms?) of 2000-2003 and the Credit Crisis of 2007-2009 resulted in post inflation losses of -44% and -42% respectively for UK equities. It is this uncertainty of year-on-year outcomes that investors are compensated for.

2.1 None of us knows what returns we will actually receive

The harsh reality for investors is that some generations will end up with better outcomes than others, based on the returns received during the period that they invest for, the phase of investing they are in (accumulation or decumulation) and the sequence in which returns are made.

Let's look at an example of each. To keep things simple we will use the past 30-year period (1984 to 2013) of post inflation returns from a simply structured 60% global equity and 40% UK short-dated gilts portfolio as our data set. To model the impact of the sequence in which returns are experienced, all we will do is use the sequence in one direction (1984-2013) and the sequence in the reverse order (2013-1984). The yearly returns are the same; it is only the sequence of returns that changes.

Figure 1: The return series used (60/40 portfolio) – 1984 to 2013 post inflation returns



Data source: DFA Returns Programme: MSCI World Index, FTSE British Government Up to 5-Years Index. No costs deducted except for inflation (UK RPI).

Looking at the best, average and worst 20-year return sequences from the start of the available data in 1975, provides a salutary lesson in the uncertainty of return outcomes, even over longer periods of time.



Table 1: Best and worst 20-year holding period returns, post inflation (1975-3/2014)

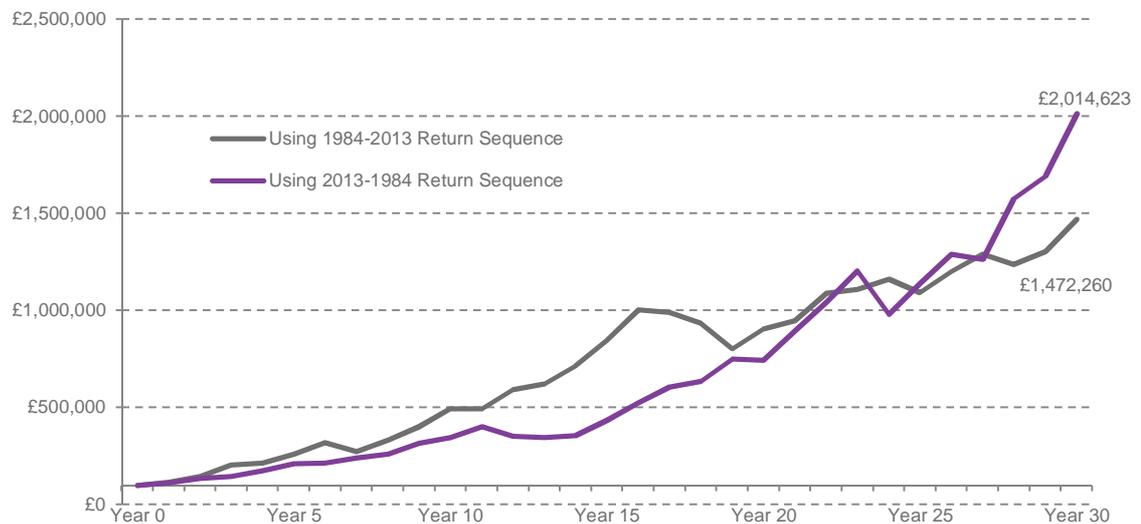
	Best	Average	Worst
Outcome (annualised %)	5.0%	3.9%	3.0%
Outcome (cumulative %)	167%	114%	79%

Data source: DFA Returns Programme: MSCI World Index, FTSE British Government Up to 5-Years Index. No costs deducted except for inflation (UK RPI).

2.1.1 Impact during the accumulation phase

In the first scenario – that of accumulation – let's assume that an investor has a pot of £100,000 and adds £20,000 to it every year (we'll ignore the issue of taxes and costs at this point, as they are largely irrelevant to the concept we are exploring). The chart below illustrates the impact on the accumulation of wealth.

Figure 2: The impact of return sequence in the accumulation phase of investing



Data source: DFA Returns Programme: MSCI World Index, FTSE British Government Up to 5-Years Index. No costs deducted except for inflation (UK RPI).

You can immediately see that the sequence of returns matters, in this case by around £500,000 in terms of the wealth accumulated during the period.

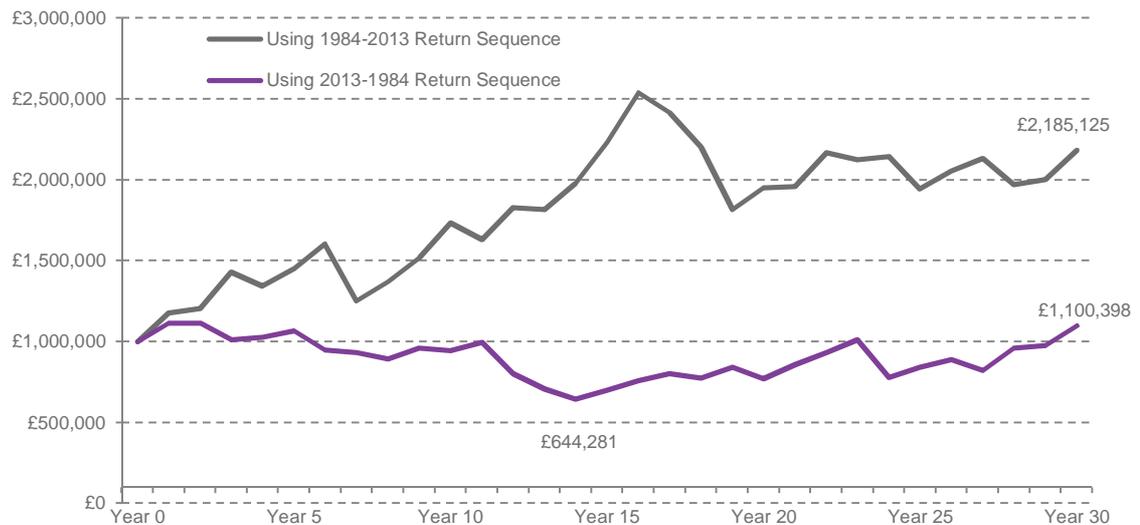
2.2 Impact when drawing down the portfolio

If we turn our attention to the decumulation phase of investing – where investors are withdrawing both income and capital to cover planned expenditure – we can again use the same technique to evaluate the effect of the sequence in which returns are experienced.

This time let's start with £1million and withdraw 4% of the starting value of the portfolio per annum (£40,000). This is a commonly used rule-of-thumb for a 'safe' withdrawal strategy.



Figure 3: The impact of return sequence in the drawdown phase of investing



Again the effect is evident; one portfolio (2013-1984) ends up with £1million less than the other, at one point falling below £650,000 with fifteen years still left in the 30-year period. While both of these outcomes exhibit favourable outcomes, i.e. not running out of money, the risks associated with the sequence of returns received are clear. It is important to reiterate that returns come from markets and no fund manager will ever protect a portfolio from the markets to the extent that market return sequences don't matter, whatever their marketing literature may promise!

Imagine if we could simulate 10,000 theoretical lives instead of just the two above by randomly picking annual returns from a similar portfolio (let's say using the average return on this portfolio from 1975 to 2013 and level of risk¹ and deducting reasonable costs); that would allow us to estimate the probability of an outcome – such as running out of money – using a 4% withdrawal rate. Fortunately we can do this by using a statistical modelling technique known as Monte Carlo simulation, rather than drawing numbers from a hat 200,000 times! The outcome tells us that around one-in-five times an investor will run out of money over a 30-year period and one-in-three times, they will have less than one quarter of their assets remaining.

2.3 Mitigating sequence risk comes from sound financial planning

On the face of it, that sounds a bit alarming. For DIY investors (even ignoring the wealth that they often needlessly destroy by chasing managers and markets) there is a real risk that they could run out of money. How will they decide what to do? How much should they withdraw and when? What impact will this have on the longevity of their portfolio? Without the insight, tools, analysis and assistance needed to make these tough calls, combined with the discipline to implement them, they will be at great risk of financial ruin. The importance and value of working in partnership, over time, with an experienced financial planning team who truly understands what you want your money to achieve for you and your family is self-evident.

2.4 Working together over the long run is the only answer

Understanding how much flexibility exists in your plan up front (by stress-testing different market return scenarios) and by keeping a close eye on market returns and portfolio valuations is an important element of the review process undertaken by Fiscal Engineers. This ensures that we can manage withdrawal levels from the portfolio in a dynamic way to mitigate the risk of running out of money. Annual client reviews should always focus on dealing with the consequences of what the markets have delivered over a period of time and facilitating the decisions you face, not what markets have delivered and whether or not this *fee/s* disappointing. Markets go up and down – they always have and they always will. The key is managing this sequence risk on an ongoing basis.

¹ In this case the after inflation return was 4.5% p.a. with a risk level of 9.5%, where risk is defined as the annual standard deviation of returns. Costs of 1.5% p.a. have been deducted for investment, ongoing advice and third party administration and safekeeping of assets.



3 In conclusion

The sequence of returns that you as an investor receive matters, particularly when drawing down from an investment portfolio. Investing liquid assets sensibly is the easiest part of the advice process. Managing the risks of unfavourable return sequences along the way takes insight, deep understanding and stress testing during financial plan updates. A regular review process that focuses on your personal lifestyle goals ensures that informed choices are made to refine the plan over time and is integral to a successful investment outcome over the long term.

The team at Fiscal Engineers

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