THOUGHT LEADERSHIP
AT SCHRODERS

Harvesting bond returns
Understanding volatility
Reassessing emerging markets
Exploiting behavioural biases
Unearthing indexation risks
Reframing pension principles
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Adapting to changing horizons

We hope you enjoy this second edition of Investment Horizons, our regular look at vital themes for institutional investors.

One theme that never goes away is change and rarely has change been so profound as that faced by fixed income investors today. With the end of quantitative easing in the US, market expectations are that interest rates will soon turn decisively upwards after a generation of decline. This poses serious questions for many investors, questions which we hope we have started to address in our first article.

Another area where there has been a change in recent years is in emerging markets. Although political and economic problems have resurfaced in some countries, we think the underlying case remains sound. More importantly, we believe there is now a very strong tactical case for looking anew at selected emerging markets.

Inevitably, change creates volatility, which is often unwelcome. But, as we argue, whether volatility is friend or foe depends heavily on an investor’s timescale for achieving their objectives. Even then, irrational fears can divert them from their ultimate prize. Our article on behavioural biases looks at how these fears can be turned to the advantage of those with cooler heads.

Exploiting any of these themes and ideas is harder if investors rely on hands-off, index-based strategies. We recognise the benefits of passive investing, but also highlight some serious pitfalls. Finally, we address one of the more fundamental changes facing our age, laying out a number of principles we believe investors will need to follow if they are to meet the needs of the growing army of retired people.

As ever, we hope you will find something that sparks your interest in these pages. If there is anything you would like to discuss further, please contact your local Schroders representative.

With all good wishes,

Miles O’Connor,
Head of Pan European Institutional Distribution
Harvesting bond returns as rates rise

The climate is changing for fixed income. Quantitative easing is winding down. Interest rates look ready to start reversing a generation of decline. On the face of it, this seems a difficult background for bonds and, indeed, has already contributed to market volatility. Yet we believe it will be hard to replace the diversification, liquidity and security of bonds. In fact, we believe demand will continue to grow as populations age and increasingly need retirement income.

Managing bond portfolios in this environment will be harder than in the past. It will no longer be sufficient merely to be in the market: investors will also need to actively seek the best returns. Put another way, they can no longer rely on beta, but must now put much more emphasis on alpha. Intelligently managed, we still believe bond portfolios can prosper in this environment. This article briefly explains how.

The problem with being passive

While interest rates continued their long decline from the early 1980s, a buy-and-hold strategy made sense. Indeed, many fixed income investors simply adopted index-based, passive portfolios, but these investors now face particular problems. Substantial parts of the benchmarks used to construct their portfolios are comprised of government bonds, where not only are yields low, they are highly sensitive to rising rates. For instance, over 60% of the Barclays Global Aggregate Index – a popular benchmark to track – is made up of government and government related issuers (Figure 1, left-hand chart, red bars). We think this part of the market will be particularly vulnerable as yields rise and the quantitative easing instituted by the US Federal Reserve (Fed) goes into reverse.

Figure 1: Benchmarks’ make-up can make them unappealing

Based on unaudited data as at 26 March 2014. Source: Barclays and Schroders.
Other index constituents can also force passive investors into unwanted exposures. For instance, an investor mimicking a global benchmark is often tying a substantial part of their fortunes to those of the Japanese market. In the case of the Barclays Global Aggregate, Japan accounts for around 17% of its value (Figure 1, right-hand chart, red bar). So just over a sixth of a passive investor’s portfolio would be dependent on a country where government debt is close to 230% of GDP and whose financial authorities have constantly to walk a tightrope between raising taxes to reduce debts and tipping the economy into recession. We think this is a precarious underpinning for a bond portfolio at a time like this.

Of course, there are ‘smarter’ ways to use beta to increase returns from a passive investment in government grade bonds. For instance, a buy-and-hold investor can leverage the minimal returns from high quality bonds to the desired level by using outright borrowing. Alternatively, they could buy longer dated or lower quality bonds. Unfortunately, while this increases the upside potential, it has similar – or worse – effects on the downside, particularly when yields might be expected to rise.

Figure 2 shows the leverage and the possible losses (or drawdown) we calculate a passive investor adopting these strategies might need to accept to achieve a 4% annual yield on certain asset classes. (The leveraged approaches are towards the left of the chart, while the longer duration and/or lower quality strategies are towards the right.)

This is not to say that these can’t be useful strategies if managed properly. Managers must be allowed the freedom to dynamically adjust and hedge a portfolio’s overall interest rate and credit risk to reduce the volatility of returns. So risk-averse investors may find the best way forward is to adopt a more flexible approach, with a strong focus on managing drawdown risk that doesn’t need to over-allocate to higher yielding assets.

**Thematic drivers**

While we believe active management of bond portfolios is essential in the current environment, we would question whether traditional approaches will deliver the risk-adjusted returns that investors need. Often, traditional fixed income managers adopt a sector rotation approach, which relies on predicting which sectors will do well and then emphasising them in the portfolio. However, this strategy still depends on beta – that growth will be consistent across a sector – which may be less evident in the new interest rate environment. It also takes little account of alternative scenarios that may lead to lower returns. We believe a better approach is to identify key investment themes driving global markets, and then to devise strategies which aim to exploit them to generate consistent risk-adjusted outperformance.
One theme that is crucial for investors to understand right now is the extent to which the US economy’s growth has been priced in by the market. We think many are underestimating the strength of the recovery and that the bond market is therefore poorly positioned with regard to US yields. It is worth noting here that the ‘Taylor rule’, which uses the divergence of inflation and economic growth from target to suggest what the level of interest rates should be, is pointing to higher rates (Figure 3). Pressure should begin to mount on the Fed to alter its current stance as the economy continues to perform, undermining support for the US government bond market as rates rise faster than expected.

**Figure 3: Taylor rule points to a sharp uptick in US interest rates**

![Taylor rule regression based on US Core Personal Consumption Expenditures (PCE) inflation less assumed core PCE inflation target of 2%, and US unemployment rate less assumed non-accelerating inflation rate of unemployment (NAIRU) of 6%, Okun factor of 2. Current implied policy rate = 2.4%. Regression coefficients are 1.53 and 0.47 respectively. Correlation is 0.84. Source: Bloomberg, as at 14 August 2014.](image)

Such insight is clearly useful, but even more important is what an investor does with it. We think there are at least four strategies that a risk-aware investor might use to exploit the mispricing we see as a result of our view of the US economy.

**Adopt a short duration bias in US bonds.** If, as we suspect, rates start to rise more quickly than expected, then the US bond market looks set for a period of underperformance. But this is unlikely to be uniform. An active manager can generate additional returns by adjusting not just their overall exposure to the market, but along the yield curve. In doing so, they will want to avoid the most interest-rate sensitive areas of the market, which we anticipate will be at the short end where monetary policy has its biggest effect. Accordingly, a portfolio manager with a broad fixed income toolkit can sell duration exposure at the short end and re-allocate it along the curve where the outlook is relatively more favourable.

**Allocate to US ‘growth assets’.** The advantage of a more selective approach means that the active manager can also capitalise on areas of the market expected to do well. One such area, we think, could be longer dated corporate bonds. Many US companies have vastly strengthened their financial position, having benefited from the economic revival and reduced debts. This has come at a time when US pension funds have also seen big improvements in their funding position. Many are now looking to swap riskier assets, like equities, for assets that will match their pension liabilities, typically bonds, to help lock in gains. In the past, these matching assets would have included Treasury bonds, but minimal yields and pension accounting make Treasuries unattractive. As a result, demand from pension funds for longer dated investment grade bonds may be expected to support that part of the US market. Furthermore, allocations to longer duration assets may form part of a yield curve flattening strategy (see next section), especially when teamed with an underweight or short exposure to shorter dated US treasuries to better manage interest rate risk.
Buy ‘yield curve flatteners’ as risk offsets. Of course, we could be wrong. The US economy may not be as robust as we think, or there may be an unforeseen event around the corner which undermines economic confidence. Either way, investors would normally run for the cover of very short dated Treasuries, traditionally seen as one of the safest havens in a crisis. But, like pension funds, the chances are they will be put off by the meagre returns available, driving them into longer dated Treasuries in search of yield. In such an event, we would expect yields to fall for all longer dated bonds, ‘flattening’ that end of the yield curve to the benefit of holders of corporate bonds (Figure 4). So a position to take advantage of unexpected strength in the US economy can still work if things do not turn out as expected.

**Figure 4: Yield curve hedge for geopolitical risks**

Put your faith in the dollar. Another asset likely to benefit from a strengthening US economy is the currency. An active manager can therefore buy dollars and/or reduce holdings in currencies likely to weaken. Such a policy would nicely complement another of our themes: that the European Central Bank will introduce quantitative easing sooner rather than later, weakening the euro against the dollar. So, where investment agreements permit, active currency strategies offer an alternative way to implement investment themes.

Conclusions

Risks are rising for fixed income investors. Rates now seem clearly to be on an upward trajectory, which normally spells bad news for bonds. However, many investors – particularly those with longer-term liabilities – will find them hard to give up. We believe they can still enjoy the benefits of bonds, but they may need to adopt different strategies. Passive benchmark investing will no longer work. We think a more flexible risk allocation approach will prove to be much more effective. Even more so as all investors will need to manage interest rate risk in the new economic circumstances. We believe this will require them to diversify their portfolio by asset class, time horizon and alpha source. It will require them to determine where is the best place on the interest rate curve to be, which countries to be in and where is the best relative value. To juggle all these requirements means having a genuinely unconstrained, global strategy, that is able to allocate risk wherever it will be rewarded, without being unduly tied by benchmarks or home country biases. An investor armed with such a strategy can, we believe, still survive and even thrive as rates move higher.

Alan Cauberghs, Investment Director, Fixed Income
Is volatility risk?

After a long period without significant market upheavals, investors might be forgiven for pushing volatility down their list of concerns. We think that would be a mistake. Low volatility can sometimes represent the calm before the storm. But even when the storm hits, we don’t think volatility is necessarily something to be feared. It can indicate danger, but it can also signal opportunity. What is crucial is that investors are able to determine which and have a plan ready so they can react appropriately.

How investors approach volatility depends critically on the immediacy of their targets. Short-term investors may find that volatility management techniques are useful. However, for those focused on the longer term, volatile markets can present significant opportunities to enhance results. In this article, we try to quantify the short and long term and look at ways investors can overcome their natural aversion to investing in volatile markets.

Defining our terms

Modern portfolio theory defines risk as volatility and tells us that there is a proportional relationship between volatility and expected returns – an investor must accept uncertainty if they are to generate returns in excess of the ‘risk-free rate’. Thus it is most efficient to minimise volatility for a given level of return, or maximise returns for a given level of volatility.

Under this definition, volatility is a measure of the variation in results, typically expressed as their standard deviation from an average level. This can, however, lead investors astray. Take the simple example of two assets, A and B, in Figure 1. The statistical volatility of A is far higher than that of B; indeed, technically, B has zero volatility. However, it is obvious that, over the three-month reference period, asset A was the better investment to own.

Figure 1: Lower volatility does not necessarily mean better returns

<table>
<thead>
<tr>
<th>Month</th>
<th>Asset A Return</th>
<th>Asset B Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8.0%</td>
<td>−5.0%</td>
</tr>
<tr>
<td>2</td>
<td>4.0%</td>
<td>−5.0%</td>
</tr>
<tr>
<td>3</td>
<td>−4.0%</td>
<td>−5.0%</td>
</tr>
<tr>
<td>Compound Return</td>
<td>7.8%</td>
<td>−14.3%</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>6.1%</td>
<td>0.0%</td>
</tr>
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</table>

For illustration only. Source: Schroders, as at October 2014.

There are, of course, many other ways of defining investment risk. For many investors it is simply the possibility of permanent loss, but for some it is more specific. For example, a pension fund might consider its main risk to be having insufficient assets to meet the retirement needs of its pensioners. For a sovereign wealth fund, the most worrying issue
might be owning a stake in a company involved in some illegal activity. Insurance companies, on the other hand, might consider the major risk to be illiquidity, i.e. not being able to sell assets when needed to pay claims. For most investors, an ever-present concern is whether the purchasing power of their money will be eroded by inflation.

It is clear that the terms ‘volatility’ and ‘risk’ are not synonymous. Yet, although they are used more or less interchangeably, very few people would be satisfied if the answer they received to the question ‘what’s the risk of this investment?’ was simply ‘five’.

**Sequencing risk**

Much analysis of risk assumes that an investment is affected in the same way whenever returns occur. In truth, of course, timing is vital. A 10% market fall when a saver is 25 and their accumulated savings are small should be much less traumatic than when they are 45 and their savings are likely to have grown to something more substantial. The order in which returns takes place can make a significant difference to the final outcome. This is sometimes termed ‘sequencing risk’ – the impact of the pattern of returns on money-weighted results.

Crucially, higher volatility increases the exposure to sequencing risk. Figure 2 shows the sensitivity of a pension saver to this risk. The blue line represents the hypothetical savings of someone who started a defined contribution (DC) pension in January 1974 and retired 40 years later. (We have assumed that they had average UK earnings, of which they saved 10% annually, and maintained a 60:40 allocation between equities and bonds.) By the time they retired they had savings of almost £500,000.

The orange line shows what might have happened had they instead experienced a bull market in equities and bonds in the last few years leading up to retirement. We created this alternative scenario simply by switching the relatively poor returns of the 2000s with the relatively strong returns of the 1980s. The switch has no impact on compound annual total returns over 40 years measured on a time-weighted basis. However, it does have a major impact on the final value, because the strong returns in the final decade acted on a much larger sum of money. In this scenario the final sum is over £1,000,000 – more than double that of the ‘actual’ DC saver. This exercise highlights the heavy toll on our saver’s pension pot caused by the flat-to-falling returns of the 1990s and the crash of 2007–2008, both of which happened late in their savings journey.

**Figure 2: Timing + Magnitude = Impact**

<table>
<thead>
<tr>
<th>Years</th>
<th>Actual Experience</th>
<th>Weak 1980s, Strong 2000s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1978</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>1983</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>1988</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>1993</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>1998</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>2003</td>
<td>1,200</td>
<td>1,200</td>
</tr>
<tr>
<td>2008</td>
<td>1,400</td>
<td>1,400</td>
</tr>
<tr>
<td>2013</td>
<td>1,600</td>
<td>1,600</td>
</tr>
</tbody>
</table>

Annual data from 1974 to 2013. Assumptions: 60:40 portfolio, fees of 0.5% p.a, and 10% contributions made mid-year. Source: Barclays Equity Gilt Study 2013, ONS UK Average Salary data and Schroders, as at 31 December 2013.

In short, therefore, the final value of DC pension savings is very dependent on the path taken. An early setback will have limited impact on the end result, whereas a market crash close to retirement can mean serious impairment.
Since, intuitively, lower volatility leads to a tighter range of expected outcomes, managing portfolio volatility is one way to attempt to try and manage sequencing risk. However, there is a cost to this approach in terms of lower expected returns, and at times this ‘insurance premium’ is too expensive. Moreover, simple volatility management is a blunt instrument at best as it can only give some control over the magnitude of possible losses, and none over their incidence or timing.

An alternative way to control sequencing risk is through active management of the portfolio to try and avoid steep falls in value. This leads to outcome-oriented strategies, such as low-volatility hedge funds, flexible fixed income or multi-asset portfolios. In practice, a blend of these solutions is perhaps useful. Having available a range of outcome-oriented strategies with varying targets and volatility tolerances will help in striking the right balance between achieving real returns and avoiding major crashes.

**Spotting the difference between threat and opportunity**

Are there time horizons over which volatility does constitute a significant risk? The answer depends very much on the relationship between volatility and returns. Statistically and empirically, high market volatility is associated with negative returns. But if returns have recently been negative, then the market will now be priced more cheaply than before, which should provide a buying opportunity.

Of course, the potential for higher expected returns comes at the cost of a greater probability of significant loss. This is a trade-off the extent of which varies with the time period being considered and the objectives of each investor. Figure 3 shows the weekly returns from the S&P 500 Index over the past 54 years (blue line) and the subset when the preceding volatility was relatively high (orange line). The distribution of returns in the high-volatility subset shows significantly more extreme results (‘fatter tails’) than the full sample, while the median is more or less the same for both sets of data.

Figure 4 shows the return distributions for annual periods for the same index over the same history. This time the high-volatility subset tails are slightly fatter, but the median return is significantly higher.

**Figure 3: After a volatile period, we see more extreme results**

![Graph showing weekly returns](image)


In the short term (Figure 3), the frequency of weak returns following high volatility usually offsets any benefits to be gained, so market volatility represents a threat. For those investors likely to be sensitive to such losses, the use of portfolio volatility management techniques, such as volatility capping or targeting, can therefore be an attractive option.

However, the very same signal – a period of high market volatility – can also trigger the completely opposite response. Investors willing to withstand a short stormy period can take advantage of others’ near-term concerns to exploit cheap valuations (Figure 4). This is a manifestation of the value effect, whereby those targeting longer-term investment outcomes can profit from volatility.
We further analysed many different periods, volatility subsets and investment horizons to draw broad conclusions, based on a typical investor’s likely goals. We concluded that high market volatility posed the greatest threat for those with a horizon below three months and offered decent opportunities for those with horizons from six to 24 months, while the distinction tended to fade beyond 24 months. Figure 5 summarises the analysis, showing the dispersion of results for differing investment horizons.

**Figure 4: Annual results still have downside exposures but stronger value premiums**

<table>
<thead>
<tr>
<th>Frequency</th>
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<tr>
<td>%</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>1</td>
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**Figure 5: When does volatility matter?**

Conclusions

Our conclusion has to be that volatility is not risk. Rather, it is one measure of one type of risk. Pragmatic investors recognise this, and appreciate that its use as a proxy is an imperfect short cut. Volatile markets certainly bring uncertainty about whether investors’ goals will be achieved. At the same time, volatility is also a very useful indicator, a warning of both short-term threats and longer-term opportunities. For those concerned about the near term, volatility management techniques may be useful tools for increasing certainty. But for those more focused on longer-term outcomes and able to weather the storm, volatile markets can present significant opportunities. Armed with these insights, investors should be able to take better allocation decisions at times of market stress.
Should investors be increasing equity allocations to emerging markets?

Emerging markets’ equity performance has struggled relative to the developed world over the last few years, leading some investors to question the rationale for an allocation to these markets. We believe this is short-sighted. Emerging markets are nowadays simply too significant for investors to ignore. Their stockmarkets represent around 11% of the MSCI All Country World index, while their combined GDP accounts for a third of the global economy. We believe that, given these statistics, all investors should be considering an investment in this part of the global market. While we believe there is a good structural argument for an allocation to emerging markets, our focus in this article is on the medium-term tactical case and whether investors should be looking to increase their allocations.

The strategic case

Understandably, emerging markets were traditionally seen as a higher risk asset class, particularly following the currency and debt crises of the 1990s. As a result, institutional investors viewed an allocation to the developing world as short term and tactical, rather than strategic. This picture has been changing dramatically over the past decade or so.

Since the 1990s, many emerging economies have been transformed. As a group, they have grown 3–5% faster than the developed economies, a performance that has been
highly correlated with emerging equity markets. While the growth gap has been narrowing recently, in our opinion it does not change the justification for further strong stockmarket absolute and relative returns. Emerging markets’ share of global growth continues to increase – China contributed around 40% to global growth in 2013, more than the US – and they are expected to account for over 60% of global growth for the foreseeable future.

This rapid growth represents a major structural change to the world’s economic system. It has been caused by the arrival of over 2.5 billion people in China and India, who are for the first time starting to acquire wealth and disposable income. Bank of America Merrill Lynch estimates that global wealth will increase from €313 trillion in 2010 to €667 trillion in 2030, with emerging countries responsible for 80% of this new wealth. And, in a break from the past, it will be domestic demand growth rather than exports that will be the primary driver of emerging economies’ growth (Figure 1).

As a result of these trends, economic fundamentals in the emerging world tend to be stronger than for developed markets. The world is still feeling the repercussions of a global financial crisis caused by inappropriate lending, borrowing and over-leverage in the developed world. In contrast, by and large, the emerging world is typically characterised by high saving ratios, low levels of debt and prudent lending policies. While economic health varies between countries, on several other measures, such as current account and fiscal balances, the fundamentals are generally stronger in emerging markets than the developed world, which is still struggling to recover from the global financial crisis.

The tactical case

The near-term catalyst. Part of the explanation for recent disappointing emerging market performance has been that both GDP and earnings have surprised on the downside. Cyclical pressures, including a poor external environment, low commodity prices and local currency weakness, have weighed on profitability. However, history tells us that emerging markets are likely to be among the primary beneficiaries of a pickup in global growth. Consensus estimates of global growth for 2015 and 2016 are currently 3.0% and 3.1% respectively.

While domestic consumption remains the primary driver of emerging growth, a global cyclical upturn should support exporters in particular. This would be a welcome development for emerging markets as exports have detracted from growth there since the global financial crisis. They have indeed recently started to turn positive, supported by generally competitive exchange rates, as can be seen from Figure 2. This in turn should be positive for economic growth and improve the prospects for positive earnings revisions. The consensus forecast for 12-month forward corporate earnings growth, as collected by data provider IBES, is currently around 10% for the MSCI Emerging Markets Index.

Figure 2: Emerging exports and earnings are starting to turn upwards

Growth rate is three-month year-on-year moving average in dollars. Source: Emerging Advisors Group, data as at September 2014.

1 Source: Bloomberg, 27 October 2014
The reformers provide new opportunities. An important longer-term positive for emerging markets should come from the increasing number of countries that are embarking on reform programmes to boost or sustain growth. In many cases this follows the election of leaders perceived as pro-reform, such as Narendra Modi in India, Peña Nieto in Mexico and Xi Jinping in China. One reform many emerging countries need to tackle is reining in the influence of the state on the economy to release the potential of the private sector. However, typically the necessary reforms are country specific. For example, while China needs to move its economy away from credit and investment and towards domestic consumption growth, in India there is a greater need for spending on investment and infrastructure to reduce supply bottlenecks.

While the reform process is unlikely to be smooth in each case, over the longer term it could lift GDP meaningfully. It should also mean that emerging countries are well placed to face the future challenges of policy normalisation in some developed markets, and ongoing stimulus measures in others.

Shifting market sentiment. According to EPFR, a specialist investment management data provider, dedicated emerging markets funds experienced net outflows of $42.9 billion in the first three months of 2014. This reflected an extraordinary level of investor bearishness towards this market. To put these outflows in context, during the global financial crisis of 2008, dedicated emerging market funds had outflows of $46.2 billion over the year as a whole. However, between March and September, both sentiment and flows improved sharply as investors responded to the positive longer-term outlook for markets and probably also in recognition of the fact that they had been oversold.

Although there has been further volatility in flows since then, following softer global growth data, underlying emerging market valuations remain very attractive. At the time of writing, the MSCI Emerging Markets Index trades on a forward price-earnings ratio of around 11 times (Figure 3), which represents a discount of approximately 10% compared with its history and more than 40% compared with the S&P 500 Index (based on a comparison with the 10-year historic ‘Shiller p/e’), the largest such discount for over 10 years. It is a similar story when emerging markets are viewed on a market capitalisation-to-GDP ratio, where they stand on a lowly ratio of one standard deviation below the mean. Historically, this has been a strong buy signal for emerging markets.

Challenges remain. We believe the primary challenge facing emerging markets is the potential ramifications of monetary policy normalisation in the US. For example, the effects of more restrictive policy on the dollar bears monitoring closely, given that a stronger US currency has historically been correlated with weak emerging market returns relative to developed markets.

That said, it seems too early to start worrying about interest rate hikes at this stage of the cycle, not least since equities tend to perform well during the initial rounds of rate increases as the positive impact of strong economic growth overcomes the tighter financing environment. Furthermore, it seems likely that policy steps will remain dependent
on the data and, even then, will be very gradual given the still fragile nature of the recovery underway in the US. Meanwhile, in the eurozone and Japan, the authorities continue to implement stimulus measures and to pursue expansionary policy, given tepid growth and persistent deflationary pressures, in the case of Europe at least.

Clearly, some emerging economies are more vulnerable than others to higher US interest rates, but the adjustment process has already started in many of those economies perceived to be weaker. In some cases, they now have narrower current accounts and more competitive currencies, having slowed loan growth. When policy is eventually tightened in the US, we would expect the impact to be more muted than it was during the ‘taper tantrum’ in the summer of 2013, not least since the prospect of restrictive policy is now well known and, at least to some extent, looks to be already priced into the market.

China is seemingly a perennial cause for concern for investors. The most recent anxiety revolves around a so called ‘hard landing’ for Chinese growth. It is true that the ability of the authorities to walk the tightrope between implementing reform and supporting growth continues to bear close monitoring, but we believe the policies implemented so far by the authorities have generally been constructive. Furthermore, while the amount of debt necessary to generate growth in China has been increasing, concerns about a systemic banking crisis look overstated, given a combination of significant pools of domestic liquidity, the state control of the banking sector and the policy tools at the authorities’ disposal if required.

Tail risks remain, most notably in Ukraine and the Middle East, although the global nature of the current crises means any significant deterioration in either situation will extend well beyond emerging markets. While the recent pressure on the oil price is creating strains on the budgets of some oil producing emerging countries, lower prices are a benefit to emerging energy importers.

Conclusions
The immediate outlook for emerging economies has become less predictable, given question marks over the strength and sustainability of the recovery in the developed world. However, the positive structural case for emerging markets, coupled with generally strong fundamentals and attractive valuations, means that they remain well placed to deliver strong absolute and relative returns over the medium to long term.
Tapping into behavioural biases can create repeatable returns

Classical economics assumes the existence of a group of perfectly rational human beings who carefully weigh up the pros and cons of any financial decision. But these mythical beings have been hard to find in real life. In truth, people take sometimes irrational short cuts to help them make financial choices. This realisation has led to the development of alternative theories aimed at identifying these short cuts or ‘heuristics’ – speedy ways of solving difficult problems.

Although heuristics have long been known about, it has never been clear how investors can profit from them. This article draws on the work of behavioural economists to identify three groups of heuristic biases – prospect theory, extrapolation and herding, and ambiguity aversion and availability bias – and then looks at the financial strategies that can profit from these hard-wired behavioural patterns.

1. Prospect theory
The systematic inconsistencies that individuals bring to their decision-making processes have led to the development of prospect theory. One key finding from this has been that investors are loss averse, suggesting that there ought to be excess demand for insurance strategies that reduce downside risk. In other words, the average investor should be willing to pay over the odds to protect themselves from harm. If the behaviourists are right, it ought therefore to be possible to extract an excess risk premium over time for a disciplined strategy that underwrites that risk.

We believe there are two distinct types of investment themes that can be used to exploit this psychological intuition:

a. Shorting volatility on equity markets
The average investor not only tends to exhibit loss aversion, but also to overestimate the probability of extreme events. This leads to anxiety about a possible loss of capital. As a result, there is consistently high demand for financial assets which can avoid the discomfort caused by significant capital losses. One example is the equity put option. There tends to be a greater demand for puts than for calls as most investors are natural holders of risk assets (like equities). Risk aversion means they prefer to protect these assets from falls, rather than provide themselves with the opportunity for further upside by buying calls.

The heavy demand for this insurance means investors have a tendency to overpay. Consequently, a strategy that systematically underwrites the insurance they seek should earn a positive premium over the long term. On the other hand, the underwriters are themselves likely to suffer losses in the event of a macro shock. This tends to result in a low, even distribution of results with larger tails (‘high kurtosis’), particularly to the left (‘negative skew’). Despite these infrequent outsize losses, the strategy should still generate a small

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1 David Kahneman and Amos Tversky, ‘Judgment under Uncertainty: Heuristics and Biases’, Science, vol. 185, no. 4157 1974; and D. Kahneman and A.Tversky, ‘Prospect theory: an analysis of decision under risk’, Econometrica 47. 2 A simple example of loss aversion (and framing) is that it is easier to encourage people to pay a bill by penalising late payment than by offering them a discount for early payment. Loss aversion is in fact equivalent to the traditional concept of the diminishing marginal utility of wealth.
Tapping into behavioural biases can create repeatable returns

and generally consistent performance overall. A similar pattern of returns can be seen with currency carry trades (Figure 1).

**Figure 1: Positive overall returns despite the occasional fat left tail**

Weekly returns from 7 January 2007 to 29 October 2014. Returns to a long basket of seven high yielding currencies and a short basket of seven low yielding currencies, rebalanced monthly. Source: Bloomberg and Schroders.

b. The foreign exchange carry trade

Currency carry is the return an investor can get from borrowing in low yielding currencies – those where interest rates are low – and investing the proceeds in higher yielding ones. On the basis that investors generally dislike inflation, they should require a lower premium (interest rate) for holding a currency managed by a central bank with a more credible record on containing inflation. Conversely, higher yielding currencies should naturally be perceived as riskier.

It follows that an investment strategy that systematically withdraws liquidity from safe assets (in this case, currencies associated with low interest rates) and allocates it to more risky assets (currencies carrying a higher rate) is equivalent to an insurance policy that underwrites a broad systemic risk. This is because, at times of market stress, it will provide liquidity for investors in risky assets who wish to sell and seek safety in higher quality assets. The expected currency carry therefore becomes the risk premium offered to the provider of insurance against that systemic risk.

The principal risk of this strategy is that it is sensitive to liquidity shocks and therefore subject to significant drawdowns. It also exposes the investor to idiosyncratic country risk, which can increase in the event of any big slowdown in global growth (Figure 1). Even so, as with the previous strategy, despite the occasional large loss, an investor should still enjoy a consistently positive return overall.

### 2. Extrapolation and herding

Extrapolation leads people to believe that recent positive outcomes will be repeated in the future. The dramatic increase in property values ahead of the global credit crisis was a clear example of this heuristic: people thought that rising prices were unstoppable. This “hot hand” fallacy can be compounded by herding, or faith in the wisdom of crowds, where a wrong view shared by everyone is preferred to a correct but dissenting view.

**Momentum**

Extrapolation and herding create the momentum premium. Momentum investing is an approach that seeks to profit from autocorrelation, the tendency of price patterns to repeat themselves – essentially, it is the belief that somebody knows something you don’t.

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3. This is an uncovered interest rate arbitrage, which should not exist in theory since the currency with the higher interest rate ought to depreciate relative to the currency with the lower rate. This, however, ignores the actions of central banks and governments which may see it as in their interest to ensure that this trade rewards investors.

4. Aristotle is often credited as the first person to note the phenomenon in his *Politics*. It was also discussed by Charles Mackay in his *Memoirs of Extraordinary Popular Delusions and the Madness of Crowds*, London, 1841.
Let’s take the example of a recently floated, hot technology stock. Despite the limited price history, its presence in a ‘glamorous’ industry can lead to an immediate price rise. Extrapolation bias may then consolidate the trend, the recent price action implying that the appreciation can continue. Witnessing this, many other investors will join the bandwagon, fearing that they may miss what they perceive as the ‘easy profits’ that others are making.

Numerous studies have documented the existence of momentum effects across different asset classes⁵ which can be captured in trend-following strategies. While this effect can occur in both upward and downward markets, it is typically more pronounced during falling markets, making the strategy a good diversifier for risky assets. The main risks are of a trend reversal, which occurs when valuation is pushed to an extreme level and fundamentals take over, or of a range-bound market, where no particular trend is evident.

Value
Since cognitive biases can underpin the initial formation of market price trends, these trends may ultimately detach the price from the intrinsic value of the underlying assets. Using the previous example, when our technology company cannot fulfil the expectations of investors, the momentum driving the shares will run out of steam, prompting momentum buyers to sell. This is the point where the value discrepancy becomes too large to be ignored. Of course, this can also work the other way, where the share price falls to a level that fails to properly reflect the company’s assets or earnings power, creating a value premium. So, trend premia originating in behavioural biases can ultimately lead to the creation of value which can reward the holders of out-of-fashion and unloved stocks (Figure 2).

Figure 2: Undue pessimism can create value

One of the risks to this approach is that overvalued markets can continue to rise, taking them ever further from underlying values. In this context, the tech bubble of 1999-2000 has been etched into the memory of any value investor. Value is also susceptible to liquidity shocks that can make cheap assets cheaper. It can also be subject to crowded positions, where many investors buy the same assets for similar reasons. An example of where this can go wrong was the brutal de-leveraging in the summer of 2007, which saw a massive reversal of relative value trades, when the many quantitative investors who crowded into the same trades suffered substantial losses. Another risk is the so-called ‘value trap’, when a stock’s low value is justified by its deteriorating fundamentals, although this can be diversified away in a wider portfolio.

3. Ambiguity aversion and availability bias

Studies have shown that individuals tend to favour options with fewer unknown quantities, preferring, for example, a lottery with known probabilities to a similar lottery with unknown probabilities. This concept is generally referred to as the Ellsberg paradox. People dislike ambiguity so, to help them make decisions, they typically deploy what is called the ‘availability heuristic’, preferring to rely on easily available information rather than trying to weigh up the problem in an unbiased fashion.

Small cap versus large cap

Ambiguity aversion and availability bias mean that investors have a tendency to overweight large-capitalisation stocks at the expense of smaller-capitalisation ones. The former tend to be companies that are familiar and so, disliking ambiguity, investors will tend to prefer what is better known. Moreover, the news flow generated by analysts and the press is likely to be skewed towards larger-capitalisation stocks, making it more available to the investing public (Figure 3).

Figure 3: Analysts and investors tend to cluster around large-cap stocks

Taken together, this should encourage the overvaluation of large-cap assets, leading to the formation of a small-cap premium. And it would follow that tomorrow’s large-cap returns should be relatively depressed in light of today’s excessive demand. The underlying drivers of the small-cap strategy are, however, highly sensitive to the economic cycle, with the main risk coming from an economic slowdown.

Conclusions

Although behavioural biases and heuristics have become the subject of a best-selling book, their practical application has mainly been restricted to ways to influence the individual in his or her decision-making. In this article we have set out to show that there are financial applications of these insights that move beyond popular science and descriptive models of the way people make decisions. These applications can involve a wide range of investments, including derivatives, currencies and equities. If well understood and smartly applied, we believe they can be used to construct non-market directional portfolios of ‘strategy’ risk premia which can deliver a positive and stable total return over the medium term.

Justin Simler, Head of Product Management, Multi-Asset
Passive management is often seen as a low cost, low governance way to invest. While this may be true in a narrow sense, we think it would be a mistake to believe that it is a low risk route to success or that it offers a ‘set-and-forget’ approach. We would argue that the most important investment decisions are unavoidably active and that there are hidden risks to index-based investment approaches. Moreover, there is evidence that some active managers can add value. This article looks at these and other issues that investors need to consider when deciding whether or not to go passive.

The importance of asset allocation

First and foremost, it is important to remember that one of the biggest decisions any investor makes is how they allocate their assets. Even the best active manager in one asset class will often underperform the worst asset manager in another. In Figure 1, the asset allocation decision is demonstrably more significant than the active-passive decision.

Figure 1: Asset allocation matters: three-year returns of active funds using different asset classes

Whether and how much to allocate to different asset classes is therefore a decision of paramount importance. It is also inescapably active – it is impossible to make a ‘passive’ asset allocation decision. However they manage their portfolios, investors cannot avoid choosing which broad categories of assets to use: equities, bonds, property, alternatives, etc. Once that course has been charted, the investor needs to decide whether to use active or passive management to gain access to the assets they have chosen.

Untoward valuation biases

Investing using passive indices can certainly have benefits, but it also carries its own risks. For instance, traditional equity indices weight stocks by market capitalisation, so that bigger companies dominate. At the end of September 2014, three-quarters of the total value of the MSCI World Index – a benchmark widely followed by passive investors – was accounted for by very large-cap stocks valued at more than $20 billion.
One of the problems with this approach is that it emphasises yesterday’s winners. These are the biggest stocks which performed well historically, but are now more prone to underperform as smaller stocks erode their market dominance. This is evident when a traditional index, such as the MSCI World, is compared with an index without the market cap bias, such as the MSCI World Equally Weighted Index. The cap-weighted index lags significantly, as seen in Figure 2.

Figure 2: A market cap bias can weigh on returns

Both indices are shown rebased to 100 as at 31 December 1998; in US dollars, with net dividends reinvested. Source: MSCI Barra, Schroders, as at 30 September 2014.

One of the reasons for the underperformance of market cap-weighted indices is that they can force investors to buy stocks with expensive valuations and sell cheap ones, in other words, buy high and sell low. This is contrary to many well-tried investment strategies, such as those used by the celebrated investors Benjamin Graham and Warren Buffett. Their approach has been to buy low-valued stocks, on measures such as price-earnings ratios, and sell high.

As well as tending to favour highly valued and expensive stocks, indices can be biased towards stocks that are judged low quality on measures such as stability of earnings growth. Both types of stock – whether expensively valued or poor quality – are likely to prove a drag on long-term returns. In contrast, stocks seen as being cheap or high quality tend to outperform traditional benchmarks. So active managers that have the ability to select from these parts of the market may be expected to outperform over the long term.

Restricted choice and concentration risks

Another problem that passive investors need to overcome is lack of breadth. An index-bound investor unnecessarily restricts their investment choices. For instance, while the MSCI World Index is composed of over 1,600 stocks, we calculate that the universe of global stocks with sufficient investable liquidity comes to more than 15,000. Moreover, as we have suggested, index investors further narrow their choices by their bias towards big companies. There is a huge range of mid-, small- and micro-cap stocks beyond the reach of the index which have all been shown to outperform large cap over the long term.

This so-called concentration risk is evident in the current market. At the end of February 2014, just over 9% of the value of the MSCI World Index – tracked by many passive funds – was represented by the top 10 stocks, or less than 1% of the total by number. This means that there is considerable concentration risk for anyone buying an index tracking fund. Moreover, three of the four largest stocks were in the IT sector: Apple, Google and Microsoft. The other was Exxon Mobil, which is in the energy sector. Since February, Google has significantly underperformed, dragging down the performance of the whole market cap-weighted index (Figure 3 overleaf). Indeed, the lag has been such that Google is, at the time of writing, no longer among the 10 largest stocks in the MSCI World Index.

### Systemic risks

Arguably more serious for passive investors is the unintended systemic risks to which they are exposed. This results from the process of ‘price discovery’: the way the market sets prices. Active managers are often seen as ‘price makers’, directing capital towards healthy companies and away from poorer ones. By contrast, passive managers who are not able to distinguish between good and bad are often known as ‘price takers’.

This price taking may lead to unintended consequences. Fidelity Investments, the fund management group, has mapped the growth of exchange traded funds (ETFs). From 4% of US equity index funds in 1995, they had jumped to 27% by 2011. Over the same period, stock correlations – the propensity for share prices to move together – have grown by a similar amount (Figure 4, left chart). This growth has coincided with a sharp rise in the volatility of large-capitalisation stocks in the US market (Figure 4, right chart). The implication is that passive funds may have contributed to this volatility by trading the same index stocks at similar times.

### Figure 4: Growth of passive strategies has coincided with increased correlations and volatility

![Growth of US passive strategies and stock correlations](chart1)

![Volatility of US large-cap stocks](chart2)

Left chart: Source: Investment Company Institute, Simfund, Haver Analytics, Fidelity Investments as at 31 December 2011. Right chart: S&P 500 Index representative of US large-cap stocks; Source: Bloomberg, Fidelity Investments and Standard & Poor’s, as at 31 December 2011.

All this has come at a time when global indices have become more synchronised. An index that has become more volatile in one region is more likely to fall at the same time as an index–based in another region. So an investor who had chosen to invest in passive funds to, say, avoid the idiosyncratic risks of small companies may have simply replaced one risk with an even greater, systemic risk.
Why active share matters

Despite its manifest drawbacks, investors may feel that they should consider passive management if they cannot find an active manager who can outperform over the long term. Certainly, research has contested whether active managers can demonstrate such an ability. But one recent study by Antti Petajisto, whilst a finance professor at the NYU Stern School of Business, has found that, on average, US active equity managers do have the ability to outperform. However, this outperformance is often eroded by fees and transaction costs.

Interestingly though, one type of manager was found to be more likely to outperform net of these costs: ‘stockpickers’ whose portfolios diverged markedly from the index, otherwise known as having a high active share. This was all the more notable given that the US equity market is considered to be the most efficient of world markets and the hardest to outperform. The outperformance by different types of active managers over 20 years is shown in Figure 5, with the ‘stockpickers’ group clearly leading in terms of both gross and net performance. This group took positions that were significantly different from the benchmark, yet their risk relative to the benchmark was lower than the concentrated managers group. The study therefore reaffirmed the long-term case for active management.

Figure 5: Not all active managers are alike: outperformance of US equity managers, 1990 to 2009


Conclusions

We believe that it is hard to escape making active decisions when setting investment strategy. There can be no such thing as a passive asset allocation policy, yet the asset allocation adopted can make a crucial difference to returns.

Once that decision has been made, there may be reasons for adopting passive investment approaches, but investors should realise that they may face unforeseen risks. These include undesirable concentrations of stocks, systemic risk and buying at too high valuations. Investing passively should not be seen as a low governance ‘set-and-forget’ option.

While it is no panacea, active management can overcome some of these issues. There is also evidence that certain active fund managers often outperform over the long term. These are managers with a high active share.

We believe that, whatever decisions they finally take, investors need to understand the issues we have raised and consider them thoroughly. Only then can they be satisfied that they have chosen the best options for their needs and circumstances.
As pension arrangements around the world increasingly shift the onus for making provision in retirement to individuals, the savings industry faces a set of unfamiliar issues. Whereas the management of defined benefits arrangements is fundamentally an investment challenge, the challenge in defined contribution (DC) is much more about emotion and psychology. In DC, sound investment principles are very likely to come into conflict with the messy real-world human biases and preferences that characterise individual savers.

So what should the industry do? Should it create answers that the customer wants or answers that the customer needs? We certainly think we need to be bold, remembering the comment often attributed to Henry Ford, developer of the first mass-market car, that ‘if I had asked people what they wanted, they would have said faster horses.’ This applies particularly to financial services where, perhaps more than elsewhere, people expect the experts to lead them down the right path. That said, trust in financial services is not in plentiful supply right now. Since the credit crunch, people need to have even greater confidence in the financial products they are being offered. Moreover, the deferred gratification inherent in pension provision is already a big hurdle to overcome with most would-be savers. Persuasion is therefore going to be crucial.

This article seeks to outline the sensible principles that can help guide us towards building solid foundations for retirement portfolios, blending – we hope – what people need with what they want.

Some prudent pension principles

Prospects for an asset’s returns are mathematically dependent on its starting value, so price is where any saver must start. Sustainable wealth accumulation means at least two things: investing in assets when they are not expensive and then protecting them from the corrosive effects of long-term inflation. Success in the latter is to a large extent achieved by success in the former, but asset prices inevitably change. They are influenced by many things but – to take a DC example – an asset allocation glide-path is not among them. Indeed, such a static allocation can be harmful, as asset values are prone to periods of over– and undervaluation. So investing while being totally agnostic to the price paid can be harmful to retirement ambitions.

Just as a balanced diet is to be recommended for an individual’s well-being, a portfolio which seeks to harvest multiple return sources is preferable to one which relies on a single asset. Given that the prices of assets do not move in tandem (over most time periods), this should also help to make the ride less bumpy, a key part of persuasion. However, diversification should be with purpose – an asset has a role in a portfolio only if it has return potential or insurance potential. So purposeful diversification is another ingredient we believe is crucial for savers, both before and particularly after retirement.

It is acknowledged that the central issue for most people is that they have not saved enough for retirement. Some will be persuaded to save more but, for many others, maintaining a
growth component into retirement will be a necessary condition for an adequate pension. The principle of money-weighted returns means that having that growth when the portfolio is larger will have much more impact – so the size of the portfolio and the sequence of returns matters too (see more on this below).

Given the significant increases in life expectancy since 1960, most people will spend a large proportion of their lives as retirees (from 1970 to 2010 life expectancy globally has increased by about four hours every 24 hours). This should permit them to run higher levels of investment risk in their portfolios into retirement.

The modelling carried out by Don Ezra and his colleagues at Russell Investments, the consultancy, supports the view that investment returns in retirement have an important role to play in meeting retirement ambitions. It suggests that only 10% of retirement income actually comes from contributions, with all the rest from investment returns, split 30% before retirement and a surprising 60% afterwards. Even if we assume a lower – and perhaps more realistic – return assumption after retirement (5% rather than 7.8%), about 85% of pension income comes from investment returns, of which nearly 40% is earned after retirement. So investing in growth assets for longer is another ingredient for success (Figure 1).

**Figure 1: Why maintaining growth in retirement is so important**

For illustration only. Both savers contribute £1,000 a year, increasing by 4.75% per annum, from 25 to 65. Both savers earn 7.8% p.a. prior to retirement; Saver 1 earns 7.8% in post-retirement, while Saver 2 earns 5%. They withdraw £30,000 a year from 65, increasing by 3.5% p.a., until they run out of money. Source: Schroders.

So far so conventional. The troublesome area is volatility. The savvy do not conflate volatility with risk. They recognise that risk is more about the permanent loss of capital and that, although volatility is a legitimate component of risk, it can also represent opportunity (see ‘Is volatility risk?’ for more on this). But, if capital is being drawn down, volatility that brings negative returns is a potentially mortal threat. Professor Moshe Milevsky well illustrates the investment logic (see next page) but, sadly, savers are not always that logical.

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2 Medicalexpress.com. Improvements in life expectancy mean that retirees in the developed world can typically expect to have about 15 years in retirement, which could increase to over 20 years by the time current 40-year-olds retire.
4 Also our longer paper, ‘Is Volatility Risk?’, Schroders Investment Perspectives, May 2014.
The quick and the slow road to ruin

The importance of the sequence of returns can be demonstrated with this simple example, suggested by Professor Moshe Milevsky of York University, Toronto. Suppose a retiree earns an average of 7% a year from their portfolio – in some years more, in some years less. For simplicity, we will assume they earn 27% in the ‘more’ years and –13% in the ‘less’ in a three-year sequence, with a 7% return coming in the other year. It doesn’t matter in which sequence these returns come, they will always produce an average return of 7%.

But if we now assume that the retiree is withdrawing a steady £9,000 a year, we will see that the sequence of returns can make a huge difference to their financial circumstances. If they experience a 7% return, followed by 27% and only then –13%, they will run out of money just short of their 90th birthday (upper line in chart). But if the cycle is reversed, starting again at 7%, but with the loss coming in the second year, they will be ruined just after reaching 83 (lower line in chart). In other words, in this simple example, timing can make a difference of seven years in the longevity of a retiree’s savings.

Timing is all for retirees

<table>
<thead>
<tr>
<th>Return Sequence</th>
<th>Ruin Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>+7%, +7%, +7%...</td>
<td>86.50</td>
</tr>
<tr>
<td>+7%, –13%, +27%...</td>
<td>83.33</td>
</tr>
<tr>
<td>+7%, +27%, –13%...</td>
<td>89.50</td>
</tr>
</tbody>
</table>

Assumes £9,000 spending per year.
Source: Moshe Milevsky, as at 27 February 2006.

Behavioural scientists tell us that ‘fight or flight’ emotions often trump our more thoughtful and logical processes when we make decisions. This means the ‘fast thinking’ part of the brain is likely to react badly to big falls in the savings balance. Indeed, experts tell us that for most people financial losses are twice as painful as gains. So even if the investment time horizon may be decades, for many, the effect of high levels of volatility on hard-earned savings set aside for the future may diminish their faith in saving for retirement. Anyone hoping to attract and build long-term savings needs to address these concerns.

Building trust

There are a number of ways, both financial and non-financial, to give people the confidence to keep their money in growth-seeking – yet volatile – assets. One behavioural solution might simply be to limit the frequency of reporting. Nassim Taleb makes a powerful point that too much information can be toxic and leads to poor decision-making. The logical response would be to present performance information on an infrequent basis (say only every three years) to savers. This is not likely to be palatable in an age of transparency.

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Another radical idea would be to acknowledge that wealth and value can move in opposite
directions. So, as the saver’s accumulated wealth decreases as a result of market falls, their
future wealth may well increase if the reduced price of assets means they can buy more with
their future contributions. This could be used to present volatility in a completely different
light by showing that falls in the value of existing assets are offset by increases in the value
of savings yet to come. To carry this off successfully will be hard, but efforts probably need
to be made to persuade naturally nervous savers (and pensioners) that the risks inherent in
owning growth assets are worth running.

While better communication with pension savers is important, we think it will only work if we
can pair it with suitable financial mechanisms. To be effective, these will need to provide the
necessary investment flexibility and they will need to offer value for money. Solutions that
incorporate such features could range from simple diversified portfolios to more sophisticated
approaches, like volatility management. Of course, any mechanism that reduces volatility will
not suit some long-term investors, who see price swings as an opportunity to buy assets
on the cheap. Many others, however, need more reassurance if they are to keep investing in
growth assets. In the messy real world, a process which seeks to limit drawdowns may be
vital if they are to stay the course. So, we believe volatility management has a role to play
in long-term savings.

What about guarantees? Insurance principles mean that investment guarantees will be
expensive (in aggregate, insurance premia properly priced should exceed claims). But, given
the uncertainties surrounding death, dealing with at least part of an individual’s mortality risk
may be worth considering. An annuity is one obvious route. However, annuities may not be
a practical proposition in some parts of the world. Where they are available they may not be
appealing for a number of reasons, not least the total loss of control over the accumulated
capital, nor the poor protection from inflation they offer, a particularly potent threat as
pensioners age.

To deal with these needs, we would argue that savers (or at least their savings) need to
embrace our pension principles. They need to maintain an exposure to growth assets for
longer, while managing risk through techniques like diversification and volatility management.
But a mortality backstop might still be extremely reassuring, even essential, if savers are to
retain trust in the way their savings are being managed.

Figure 2: Towards a better way of managing longevity risk

For illustration only. Both savers contribute £1,000 a year, increasing by 5.0% per annum, from
25 to 65, with their contributions making an annual return of 5.5%. At 65, Saver 1 buys an immediate
annuity at 5.9%, while Saver 2 puts aside enough money to buy an equivalent annuity at 7.9% in 10 years’
time, leaving his remaining capital to grow by 4.5% annually. (We have built in a discount
rate of 6% on the capital used to buy Saver 2’s annuity to take account of the impact of mortality rates between ages
65 and 75.) Saver 1 receives an annual income of £17,863 until death. Saver 2 receives an initial annual income of £17,863, rising by 1.0% a
year, paid entirely from capital until 75 and then partly from the annuity. Source: Hargreaves Lansdown and Schroders, as at
October 2014.
One possible solution would be to buy the backstop before they needed it, say at 65, and then waiting until they reached, say, 75 before making use of it. By delaying receipt of the benefit, the combined power of compound interest and mortality risk pooling means a pensioner should need to tie up less capital than they would if they bought the annuity immediately on retirement. They would also secure their income guarantee at a time when insurance is most necessary, while leaving a large part of their capital available for other purposes at a younger age. Indeed, secure in the knowledge that there is a guaranteed income stream at the frail stage of retirement would make it very much easier for the pensioner to plan the management of the remainder of their capital. They may also be able to build in some form of inflation proofing. (Figure 2, previous page, shows how much better off such a saver might be compared with someone who bought a flat annuity at 65.) So, a longevity hedge in late or frail retirement may be another key ingredient to a happier retirement.

We accept, of course, that annuities will work better in some markets than in others. It's why we believe that, if we are to exploit our pensions principles effectively, we need to think about the tools available. Current capital market instruments are very limiting. They do not always cater well for those who need income rather than capital. The industry needs to create more annuity-like products, with payment streams that combine an element of both income and capital. Why not, for instance, have bonds which pay out a higher coupon and only 75% of the principal?

There could also be more imaginative ways to divide up the returns from equities, which might involve reviving old ideas. For years, split capitalisation trusts have formed a small sub-sector of the UK market for investment trusts. They use shares with unconventional entitlements to capital and income to satisfy investors’ differing needs for capital, income and risk, yet they are often tied to very conventional equity portfolios. Unfortunately, these trusts still live under the shadow of the scandals that engulfed the sector at the turn of the century. However, there is no reason why the split cap idea should not be updated.

An alternative approach would be to effectively sell the prospect of future growth using options. Our experience is that this could substantially increase the income generated by the portfolio. Of course, there would have to be some trade-off in terms of capital growth but, for many, converting potential future growth into income for today is likely to be more palatable than depleting capital directly. There will, of course, be other solutions. In countries with extensive home ownership, we expect to see the arrival of more retirement products which unlock the capital value of property and turn it into income.

**Conclusions**

Whatever answers the industry arrives at, we believe the next generation of DC retirement savings vehicles should incorporate certain enduring principles. The combination of growing longevity, the impact of inflation and the power of money-weighted returns means retirees will need to maintain a growth element to their portfolios well into retirement. But losses also loom larger for those without a work income and who are drawing an income from their portfolios, so risks need to be mitigated through diversification, through some sort of volatility management and, ultimately, perhaps through some sort of longevity hedge backstop in very old age. Harnessing these principles may need new types of security that divide income and capital in more useful ways. To address these issues, we believe the industry needs to create a range of new financial products which, to be effective, may have to challenge previously accepted financial wisdom.
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