The Red House

Hedge Funds and Structured Products

$PN(d_1) - EXe^{-rtf}N(d_2)$

A different quotation from our usual literary efforts and one that I do not feel Shakespeare would recognise. This is the Black-Scholes option pricing model and won a Nobel Prize for Myron Scholes and Robert Merton (Fischer Black missed out as he had died). The quote came to mind at a new client meeting when I was introduced to their son and daughter. Both in their early 20s, both still studying and both holding £80,000 in cash as an inheritance from grandmother. Their parents had taken them to their Bank and the 'wealth manager' had recommended a substantial holding in a 4 year structured product with the return linked to two US equity indices.

Both Structured Products and Hedge Funds are highly complex and sophisticated products and an appreciation of how they work will include an understanding of the above quotation.

1. The seduction of sophistication (seen and unseen)

Most readers of this note will have walked past the big glass windows of the banks and building societies in their local high streets and noticed the advertisements enticing them to invest in 'principal protected, stock market participation' products. Maybe a few have even felt tempted to invest in one - after all, why not take a punt on the equity market without risking any money? What could be more appealing than that, particularly when deposits are yielding next to nothing and equity markets are all over the place? It all seems so simple. So simple in fact that £42 billion of UK investors' money[1] is currently invested in such 'structured products', as they are known.

Returning home and picking up the paper, some will also have read about the high profile divorce, art purchase, yachting adventures or philanthropic exploits of one or other 'hedgie' (the press's nickname for hedge fund managers). Yet ask most investors what a hedge fund manager does or how a hedge fund makes money and the answers will be varied but most will allude to sophisticated investment skills and complex strategies. So sophisticated and alluring in fact that $2 trillion is invested in such products, globally.

Both of these product areas are in their own way sophisticated and complex. But investors are cautioned to proceed with extreme care down either of these avenues. Sophisticated and complex investment products, created and peddled by intelligent professionals are often seen as valuable opportunities not to be missed. Perhaps a better working rule of thumb is that the long-term value of an investment opportunity should, as a starting point, be viewed as being inversely related to its sophistication and complexity[2].

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[1] UK Structured Products Association (2012). www.ukstructuredproductsassociation.co.uk

[2] Read Warren Buffett's succinct and insightful view of investing in the 27 February, 2012 issue of Fortune Magazine at www.finance.fortune.cnn.com on the effective nature of traditional assets, such as equities.

2. Structured Products

Let's take a look at the simple investment product the bank is selling in its window. In its simplest form, you hand over cash to the bank, which buys a bond (or uses some other means to ensure that your initial amount invested is 'safe'). Instead of paying interest on this money, it promises to provide you with a specified return payoff. This is usually based on a formula such that if an event, X, occurs, you will receive Y percent of the gains of market Z. An example might be that if at the end of five years the FTSE 100 index is above its starting level (event X), you will receive 100% (Y) of the return of this index (Z). If it does not occur, you will get your money back at the end of the fixed term of the product. At the outset, you know exactly what your possible outcomes are. All fees have already been accounted for in the payoff structure. So far, so simple, although not all payoffs are quite so readily understandable in practice.

2.1 It gets trickier though

The upside return is delivered via the purchase of a derivative contract linked to an asset class index, often an equity index, such as the FTSE 100 index which tracks the price level of the 100 largest UK listed companies (getting a bit more complex), usually in the form of a call option, although this could be a SWAP or a futures contract (oh dear), priced using an option pricing model such as Black-Scholes that takes into account factors such as the strike price of the option, the price today, the implied volatility of the index and the time to expiry (help!). Hopefully you get the point - the mechanics of this 'simple' product are actually quite sophisticated and complex. Investment banks employ bright, ambitious people on big packages to structure these products. Scope exists for some tricky pricing too, given that the average advisor, let alone retail investor, will have little chance of truly understanding the underlying costs involved. Research indicates that even simple structured products can be grossly mispriced with investors paying up to 10% above their true value[3] (i.e. profit for the issuer). The more complex the pay-off structure, the harder the sums are!

2.2 Surely they would not take advantage?

In the 1990s, 'ROF' became an infamous acronym. It was used to describe the amount of fees that an institution could get away with charging its clients i.e. the 'Rip Off Factor', coined originally by some Bankers Trust employees, who were eventually taken to court by Proctor & Gamble, one of their clients. This is how it was reported at the time by Businessweek[4]:

> *'It's Nov. 2, 1993, and two employees of Bankers Trust Co. are discussing a leveraged derivative deal the bank had recently sold to Procter & Gamble Co. ``They would never know. They would never be able to know how much money was taken out of that,'' says one employee, referring to the huge profits the bank stood to make on the transaction. ``Never, no way, no way.'' replies her colleague.'*

[3] Securities Litigation & Consulting Group (2009), Structured Products in the Aftermath of Lehman Brothers.

[4] Businessweek (1995), The Bankers Trust Tapes, Oct 16, 1995 Issue.

But that was 1992, surely things are better now? Sadly not. The Financial Services Authority (FSA), the UK's financial regulator, recently reviewed[5] the practices of several institutions that account for 50% or so of all structured products sold in the UK. The FSA's head of conduct supervision commented:

> *'Many of the problems we found with the product design process were rooted in the fact that the firms are focusing too much on their own commercial interests rather than the outcomes they are delivering to consumers.'*

Little changes, it would appear. It is worth noting too that the popularity of these types of products to banks, building societies and insurance companies, is driven not only by the direct pricing benefits to the issuer of the product, but because they represent a cheap source of funding for the institution.

2.3 From an outcome perspective it's tricky too

While the *'if X set of events occurs you will receive Y'* pay-off outcome can be easily grasped, there is no probability estimate attached to this set of events occurring. It is no good knowing that there are two outcomes possible, but no idea the chance of one happening over the other. Pay-off structures are often more complex. For example, the return promise may be 150% of the upside of the equity market, but this is offered with less security of principal, or perhaps multiple events are included in the pay-off formula. This makes the probability assessment far more difficult.

Given the limited life span of these products, estimating the finishing level of the FTSE 100 in five years time is taking an active bet on the market, which is notoriously difficult to do well. An intuitive *'well it should be higher, but I won't lose much if it is not''* is not really the foundation of a sensible and robust approach to investing.

2.4 What happened to your dividends?

Dividends are the regular cash payment made to shareholders, as part of the compensation for taking on the risk of ownership. The other component of compensation is a rise in the price of the shares of the company. An important insight into equity investing is that share price rises alone have historically only just delivered a return higher than inflation. It is the reinvestment of cash dividends back into the market that accounts for the bulk of the attractive returns that equities have, and are expected to deliver, over time. This is illustrated in the chart below.

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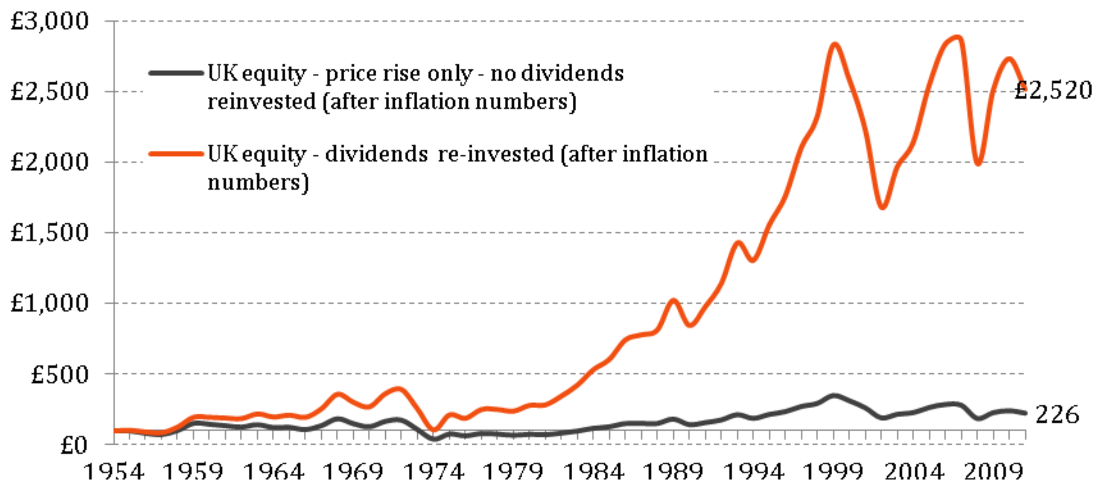
[5] FSA (Nov, 2011), Guidance consultation. Retail Product Development and Governance – Structured Products Review.

Figure 1: Reinvesting dividends is a major contributor to long-term equity returns



Data source: Barclays Equity Gilt Study

If we go back to the products being sold in bank windows, they usually promise to deliver only the 'price return' of the index, such as the FTSE 100, rather than a 'total return' index where reinvested dividends are included. With dividend yields around 3%, over the lifespan of a five year product, an investor would give up 15% compared to equity investments where dividends are included. Looked at in another way, this is a 15% cushion for an investor taking on the full risk of equities, by simply buying an equity index tracker fund. Rolling from one structured product to the next gives up this important long-term driver of returns.

2.5 Principal protection

Promising to give you your capital back sounds like a reasonable deal if Plan A does not come off (for example, the FTSE 100 ends lower over 5 years than its start point). Try telling that to the owners of the $18 billion invested globally in structured products issued by Lehman Brothers[6], who lost most of their money. By placing your money onto the balance sheet of banks and other financial institutions, you are opening yourself up to the risk that they go bust. That is not a trivial decision to make, particularly as some products sit outside of UK investor protection schemes.

Alternatively, assume that Plan A does not come off but the issuer is still in business and they give you back the £100 you initially invested. If inflation had been at the levels we have seen over the past five years, your initial £100 would be worth only £85.

Here's a quote to round off this section from a former economist at the SEC[7] (the US's equivalent to the FSA in the UK)

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[6] Securities Litigation & Consulting Group (2009), Structured Products in the Aftermath of Lehman Brothers.

[7] Wargo, B.,(2008) The Fever for Structured Products. www.registeredrep.com

'They are horrible investments for retail investors...Simple portfolios of bonds, stocks or the S&P 500 will beat structured products 99.5% of the time because of the heavy profit built into the pricing.'

So, perhaps the next time you pass that bank or building society window, keep walking!

3. Hedge funds

Most investors would readily accept that the hedge fund world is a sophisticated arena. A number of attributes make hedge funds superficially appealing: the promise of returns that are uncorrelated to traditional asset classes; a focus on making and protecting client money; the freedom and flexibility to be long or short of the market i.e. they can sell the market or stock even if they don't own it, with the hope of buying it back cheaper when it has fallen in price; and the option to use leverage. In fact there is no definitive description of what a hedge fund is. They have been described as a variety of skill-based investment strategies with a broad range of risk and return objectives that take a performance fee.

Not all agree. One oft quoted description, for the more cynical, is that they are simply a compensation strategy masquerading as an investment strategy. Recent research released in a new book[8] reveals some interesting and thought-provoking insights:

- Between 1998 and 2003 hedge fund returns were positive in aggregate in each year. The industry at that time was small with around $200 billion in assets.
- Due to its strong performance during the 2000-2003 period (the technology stock crash) the industry attracted assets rapidly.
- By 2008 it is estimated that hedge fund assets amounted to $2 trillion, a ten-fold increase.
- The average performance loss in 2008 was -23%.
- It is estimated that these money flows and the consequent asset-weighted returns, i.e. the returns received by investors based on the timing of their investments, cancelled out all of the profit made in the previous 10-year period!
- To the end of 2010 investors were still below water, yet hedge fund managers extracted over $100 billion in fees between 2008 and 2010.
- Hedge fund managers extracted $379 billion for themselves between 1998 and 2008 out of the $449 billion they generated above the return from cash deposits.

Perhaps the cynics are right on this one. Add the fact that even some of the most sophisticated institutional investors find it both difficult and expensive to run a successful hedge fund programme, it perhaps makes sense to sit back from the hype. Better believe in the efficacy of a well diversified, sensible mix of traditional investments, returning the bulk of the returns that the markets will deliver. The less 'sophisticated', highly effective and lower cost approach that we take at The Red House.

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[8] Lack, S. (2011). The Hedge Fund Mirage: The Illusion of Big Money and Why It's Too Good to Be True. NY: John Wiley & Sons

In conclusion

Perhaps the conclusion is: smart products - dumb choices. David Swensen, CIO of the Yale University Endowment, and one of the most respected institutional investors, would agree[9]:

> *'You should invest only in things that you understand. That should be the starting point and the finishing point. For most investors the practical application of this axiom is to invest in index funds (low-fee investments that aim to mirror the performance of a particular stock market index). The overwhelming number of investors, individual and institutional, should be completely in low-cost index funds because that's easy to understand.'*

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Gareth Marr
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Other notes and risk warnings

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9 Financial Times October 8th 2009.