



# Intelligent Investment

Key Principles for Investing  
Real Money in the Real World.

An investment philosophy guide by  
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## Preface:

What does your money mean to you?

Before considering how to invest your money intelligently, you need to know what you are aiming to achieve by investing it. Any investment programme we put forward will be designed to help you achieve your goals.

To us, investment follows financial planning. It is a means to an end, not the end itself. We are not trying to chase ever higher returns. We are trying to help you live the way you want, now and in the future.

However, there are a number of key principles that lie behind any intelligent investment philosophy. These have nothing to do with being financial gurus, who know which way the market is going, or who can select the best stock at the right time. Quite the opposite: we know we can't do those things – and for that matter we don't know anyone else who can.

The key principles behind our investment philosophy are:

- Risk and return go hand in hand.
- Free markets are efficient.
- Diversification helps optimise returns within a given risk profile.
- Rebalancing helps control risk further.

Ancillary points are

- No-one can consistently:
  - Pick the "right" stock.
  - Time market movements.
  - Select the best asset class to be in next.
- On average:
  - Fund managers underperform the markets in which they invest.
  - Passive and Tracker funds are a better way to gain market exposure.

In the pages below I will try to give a flavour of what we do and why we do it. I aim to spell out the basics of intelligent investing, show how the principles above work and how they can be developed to create real portfolios, which give investors the best chance of meeting their objectives.

The guide starts very accessibly, but, as it progresses and goes deeper into the subject, some readers' eyes have been known to start glazing over. That's the problem you get when an ex maths teacher tries to explain something which he finds fascinating and involves numbers!

Good luck.

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## The building blocks of investment

So, what investment options do you have? Essentially if you want to make a return on your savings you need to do one of two things:

- Lend it and ask for interest on the loan.
- Buy something which you hope will rise in value, and probably pay you some income on the way.

As a short-hand, we will describe these as **debt** and **equity**, and I will give a quick overview below.

### Debt: Lend and expect interest.

If you are like me, when you hear the word “debt” you think someone owes money and is paying for the privilege of borrowing it. It is about a burden of interest. However, if you are saving the boot is on the other foot.

If you put cash in a bank and are paid interest on the **Deposit**, you are effectively lending them the cash. You don't just put the money in a safety deposit box and take it out later; you lend it to the bank, allow them to use it, and you expect a return in exchange.

If you can get your capital back at any time on request, the bank may offer a relatively low interest rate. If you are prepared to wait longer or tie the money up for a fixed term you may get a higher return.

This type of deposit is generally regarded as risk-free, although the credit crunch highlighted that even here there are potential risks.

Instead of lending your money to a bank, you could lend it to a government. The UK government borrows money from us by issuing Government bonds, or “**Gilts**”. These offer a fixed interest rate over a fixed term, and guarantee return of capital at the end of the term, the redemption date. There are also “**Index Linked Gilts**” whose redemption value, and the income they produce, rise each year with inflation.

Gilts can be bought from the state when they are first issued, or on the open market from those who currently hold them. If bought in the open market the price you pay will vary depending on prevailing interest rates and the time until redemption. This fluctuation means that, unless gilts are held to maturity, they do have some risks attached.

Companies looking to raise money can also issue “**Corporate Bonds**”. Here, rather than lending money to a government, you lend to a company. These bonds operate in very much the same way as Gilts, but payment of interest each year, and

capital return at redemption, will depend on the company's ability to meet those liabilities.

## Equity: Buy and expect to share in profits

As an alternative to lending money and expecting interest, you can buy something and hope to make a profit on the deal. This could be an asset like a **property**, a business or **shares** in one. It might even be a **commodity** like gold, oil, or coffee beans.

This is quite different from lending, as you can't be at all sure what you will get out of the investment. For instance, you might buy an office building and look to rent it out. You hope the value of the property will rise over the years and that you will have a tenant who will pay you rent in the meantime. But you know the value might fall, and you might have an empty office with maintenance costs and other overheads.

Buying shares in a business is similar. You consider how well the firm is doing, look at what it owns and the profits it is making, and if you think you will make a reasonable return on your investment, you might buy shares in the company.

You accept that the firm might not do as well in the future, and could even fail completely, so you will weigh that up when deciding how much you would pay for the shares.

So, these two very different types of investment approach, lending or buying (debt or equity), are the two basic options available to investors. This is the flip side to the fact that any business, looking to raise capital for expansion, must either borrow or issue new shares. On one side of the equation these are the building blocks of personal investment, on the other, vital components to economic growth.

However, if the credit crunch and its aftermath, have taught us anything it is that there are risks associated with any investment, even putting money in the bank. So, we should examine how the returns we can expect from investment relate to the risk we are prepared to take.

## Embracing Risk

### What do we mean by Risk?

Risk is part of life - we live with it every day. We instinctively weigh things; using experience or gut feeling we make judgements about what risks we want to take. This applies to every aspect of life from what we eat to how much freedom we give our children. There is usually a reward associated with a risk – or we wouldn't take it. Playing footie in the street as a 10-year-old beats sitting in the house with a games console - but it's not as "safe".

All progress in life involves taking some risk. Everyone who sets up a business takes a risk; it might not go to plan, but they do it because they expect to make a profit. No farmer can be sure of next year's crop yield, but he knows he has to take the risk of sowing seed, investing time and money, if he hopes to reap anything.

An average investor may be one or two stages removed from the coal face of capitalist endeavour and risk taking, but it is that underlying enterprise which fuels the returns we can expect from our investment. If we share in the business risk, we can expect to share in the reward.

There are different types of investment risk, for instance:

- Risk of shares or property prices falling en masse.
- Risk of dividend or rental income falling or stopping altogether.
- Risk of an individual share, or bond becoming worthless – company goes bust.
- Risk of interest rates getting very low.
- Risk of Inflation eating up all your profit and reducing your asset's real value.

However, for an individual investor the real issue is how those risks affect them. Significant risks for you might be:

- Not having enough income to live on now.
- Not having enough in your old age.
- Your savings running out.
- Having to defer retirement.
- Not being able meet your long-term goals.

Maybe we should consider what risks are most significant to our life? Is the risk of investments falling in the short term more or less important than the risk of inflation eroding the real value of your savings over the long term?

## Risk and return go hand in hand.

Let's consider each of the types of "debt" investment mentioned in section 1 above. These all involve lending money to an institution in exchange for interest and the expectation of them returning your money at some future date. Ultimately the return you get involves a calculation to do with risk. Let me try to explain.

Imagine a few years ago you wanted to tuck away some money for a couple of years. At that time an instant access bank account might pay you, say, 3.5% pa interest.

If at the same time the government were raising capital, they might offer an interest rate (or "coupon") on a new Gilt of say 4% pa until 2025.

You might like the 4% interest rate, but not be prepared to tie your money up. You'd also know that if you had to realise your cash in two years the value of your Gilt might have risen or fallen, and you might not get back exactly what you invested.

As the Gilt offered only an extra 0.5% pa you might stick with the bank deposit with its lower return, but negligible risk. If on the other hand the Gilt was offering 5%, instead of 4%, you might use the Gilt instead of the bank. The extra return would bring a little extra risk, but it might be worth it to you.

Now, if say Shell wanted to raise funds and offered to pay 5%, I suspect most investors would choose a government bond paying the same rate. The investor would get the same return from the government as offered by Shell but avoid the risk of losing their investment if the company went bust.

So, let us say Shell offered a return of 6% instead of the state's 5% offering. Then, you might prefer the Shell bond. You might think that the extra 1% pa would outweigh the relatively small risk of Shell defaulting on the bond.

Now, taking this further, imagine a football club such as Manchester United was raising funds. What interest rate would they need to offer to induce investors? Is it a bigger risk than Shell? Yes. So, they would need to offer a higher rate of interest. What would the Quakers (Darlington's club) have to offer you? If the rate isn't high enough to overcome the perceived risk, you wouldn't invest.

So, you (and the banks, the Government, Shell, and Man U) have traded off risk and return. You won't take a higher risk with your money unless you think you have a chance of getting a higher return.

Generally buying into a business, or property (equity investment), has greater risks than deposits or bonds. But investors will only pay a price, which gives them prospects of making a better return than bonds. So, here too risk and reward are linked. As you will see below this theory is definitely borne out when we look at long term investment returns.

Risk and Return go hand in hand –  
they are inextricably linked.

With this in mind it is important for an adviser to understand their client's **attitude to risk**. Some people seem to relish risk. They may be extreme sports junkies, who get high on the adrenalin rush, or the serial entrepreneur, who always looks for the next challenge. They get a buzz from doing something which most people won't do. If it works, they feel they have achieved something. If it goes wrong, they just get up and move on to the next challenge.

Others like things to feel safe and secure. They prefer to have a pretty good idea of what is going to happen and don't like shocks.

In fact, most people don't like shocks. Even those who are into free-fall parachuting spend a lot of time checking their chute before they set off! They don't want a nasty surprise when they pull the ripcord.

So, the more you understand about investment about it the better. We want our clients to have a pretty good idea of what to expect, so they don't get a surprise.

Whether someone is a risk taker or risk averse seems to be part of their makeup. Although there is some evidence that people's appetite for risk diminishes as they get older, this has a surprisingly modest effect. Mostly it is just how we are wired.

However, we should not always expect to be fully rational about this. We may have to battle between what we know makes sense and what our emotions are telling us. I am told that riding a rollercoaster is safer than crossing the road. To me it doesn't feel like it. The statistics may say one thing, but my inner ear tells me another. My fear may be irrational, but it is real to me.

We may know that markets have recovered after every stockmarket crash in history – and that if we sit back it will all be OK in the long run. But if your stomach can't take it then you may need to consider a steadier investment approach.

Having said that, we have found that irrespective of temperament, those who are experienced investors, and have seen how different types of investment fare over the long term do not worry as much when things take a downturn. Nor do they get over excited, when they see a few years of really strong returns. These are two sides of the same coin.

What most of us want is a nice high return every year, with no risk of our investment value falling.

So, how do I get a high return and low risk?

**– Sorry, you can't!**

“Bricks and mortar! That’s what you should invest in. You can’t go wrong with property”. That was the mantra of the post-millennial property bubble. Double digit returns with no risk? The events of the 2007 and 2008 tell a rather different story.

“Gold. You can’t go wrong with gold” – Yes, you can! The gold price in 1980 peaked at over \$800 an ounce but was under \$300 an ounce 20 years later; it then rocketed to \$1,800 by 2010, before falling back again to \$1,550 at time of writing. That doesn’t look very safe to me.

I am not saying property or gold are bad investments per se, just that the high returns they have shown in some periods come with associated risk.

[Actually, to be honest, I don’t think Gold is “good” investment – others will definitely disagree! Gold looks good in jewellery – but an inert metal, dug out the ground, cleaned up, melted into ingots, and put back into the ground in high security vaults, doesn’t seem to add much to world economic growth. It’s for speculation not investment]

But people want a high investment return with low risk. This is the holy grail of the investment industry. Complex products are built to try to capture this elusive mix, bottle it and sell it to you. And some of these work, some of the time.

There are Hedge funds, Total Return funds, Structured bonds backed by options, and other “sophisticated financial instruments”, Ground Rents, Life Settlements, Commodity Futures, and a whole raft of similar increasingly complicated mixtures of these types.

There are the, now notorious, packaged bundles of US sub-prime mortgages, which we have come to know as Consolidated Debt Obligations (CDOs), and which were rolled into other CDOs, and sold on from one bank to another.

All clever stuff created by bright people I am sure. But here are a couple of things to ponder:

- Underneath all these sophisticated arrangements the underlying profits come from debt or equity - making loans or owning assets.
- Each layer of superstructure adds costs.

So, on average, all the re-bundling in the world can’t increase the total return produced from the underlying assets, and all the layers of cost in creating these superstructures must reduce the average return to the investor.

Chasing high return - low risk investments will usually do one of two things:

- Increase risk or
- Reduce return.

- exactly the opposite of what you’d hoped for!

Nearly all the high-profile failures we have seen from Barlow Clowes, to Equitable Life, to Northern Rock, to Bernie Maddoff involved institutions offering high returns with apparently little or no risk. They all managed it for a while, but ultimately it was not sustainable. Whether it was a fraudulent ponzi scheme, or simply incompetent management, the result was the same- the pack of cards collapsed.

The old adage is right:

“If it looks too good to be true, it is!”

So simply put, you cannot expect high returns with low risk. As long as capitalism exists, and people grow things, and make things, and sell things, risk and return will be linked.

At its core, successful investment has to accept how things are. It's about determining how much risk you want to take, taking it, and being comfortable with the outcome.

I know the rather bold statements above will inevitably be challenged. There are definitely counter-arguments - and some have a degree of intellectual rigour. But I have noticed that those who shout loudest usually want you to buy into some (theoretically) high return - low risk product. Or they offer a sophisticated investment process, (they are always “sophisticated” which roughly translated means “a bit too complicated for you to understand, dear”), which amongst other things can turn sows' ears into silk purses.

So, let's be clear; the investment strategy outlined below has as one of its cornerstones the principle that risk and return go hand in hand. There is no escaping it and in order get the best from long term investment we need to embrace an appropriate level of risk.

That is, it makes sense to embrace the level of risk that is right for you temperamentally, that fits your wealth and gives you the best chance of meeting both your short- and long-term goals.

## How do markets work?

One of the main reasons why you can't get great returns without associated risk is that free markets, in readily tradable assets, are "efficient".

Free Markets are Efficient.

Looking at the big picture, financial markets adjust to every spark of information, and competition drives prices to a fair value. At any moment a stock's price is the best estimate the world gives for its true value. Those who wish to buy at that price are balanced by those who wish to sell.

Presumably the buyers expect the returns they will get in the future warrant paying that price. However, by the same token there must be an equal number of sellers, who feel that the return in the future will not be sufficiently high, relative to other opportunities, to retain the stock. Cashing in at that price seems right to them.

So, in a free market sellers and buyers constantly move the price of any stock or commodity, to a level which is "right" at that time, and that price is always the best estimate of its true worth.

Attempting to forecast future events, or time market movements, is a futile endeavour that only burdens investors with higher costs and unnecessary risks.

For every investor who sells there must be another who buys. Each has applied all the research capacity available to them, and each is convinced he's right. But it is a 50/50 chance the seller made the "right" choice for the future. If it were not 50/50 the price would have adjusted so it was.

All we can be sure about is that the process of selling, or buying, costs the investor through dealing or transaction charges. So, on average those selling one thing and buying something else end up worse off than those who sit tight.

This is not to say that moving in and out of a stock, asset class or market, won't on occasion turn out to be a fabulous decision, (or a disastrous one). It is just that in the long run, on average, across all investors the cost of this activity drives investor returns down, and brokers' earnings up.

At Ashburn Wealth, we do not believe we can second guess the market, and don't trust those who tell us they can. This has the natural consequence that we favour the use of "passive" strategies or "tracker" funds to those offered by "active" fund managers, and we will discuss this again later.

There may be temporary inefficiencies in various markets, which allow for distortions in the basic principle that risk and return are related. However, spotting these and capitalising on them, before anyone else in the world does, is not easy. If you manage to do so: great. But, the very process of trying to find these inefficiencies, before anyone else does, increases risk.

Looking for opportunities where markets are distorted is a bit like mining for gold. That's a risky business unless you know where the gold is. It is costly, time consuming and potentially dangerous to look for it yourself. The only way you can know for sure where to look, is if someone has found it before you; but if they've found it, they've staked the land and tapped the seam. You are too late.

We do not believe we can second guess the market...  
...and don't trust those who tell us they can.

## What risk – what return?

If risk and return are linked, then what kind of returns can we expect to get for each level of risk we are prepared to take?

To answer this, it is helpful to look at long term historic trends. There are always those who tell us that “things are different now” and that history doesn't really have any bearing on today's computer-linked, light-speed investment markets.

Whilst I could spend pages debating this, you'll be glad to know I won't. Simply put, the way things have happened in the past, and how people have reacted, is probably the best guide we have, until human nature changes or someone invents a reliable crystal ball.

So, let's start by considering two different asset classes, one an example of debt and the other of equity, and see how they have behaved over the last 60 years or so. These are:

- Short term UK Government securities                      **1-month Treasury Bills**
- UK shares listed on the London stock market            **The FTSE All Share Index**

Treasury bills are short term securities, where the government commits to pay back a fixed amount one month after issue. The capital invested, and the profit to be made, are guaranteed at outset. So, these are as close as one can get to a “risk free” investment.

The All Share Index is an indicator of the value of (almost) all the shares of UK companies traded on the London Stock Exchange. It will rise and fall in line with the price people will pay for the individual shares that make it up. What people will pay will be determined by expectations of the economy as a whole, and the trading circumstances and profitability of each company individually. This index then is a good way to look at how equity investment generally has performed.

The figures below take account not only of growth in stock prices, but also assume all the dividend income has been reinvested.

To get a flavour of how these two asset classes have behaved in the past, let's consider some historic data.

### **64-year returns: period 1956 to 2019 (inc).**

FTSE All share Index:

Average annual return	11.44% pa (compound)
Value of £1 invested from 56 to 19	£1,026
Best single year	151.4% (1975)
Worst single year	- 51.6% (1974, after -28.6% in 1973)

UK Treasury Bills (short term deposits):

Average annual return	6.45% pa (compound)
Value of £1 invested from 56 to 19	£55
Best single year	16.3% (1980)
Worst single year	0.2% (2017)

So, over this long timescale, those who held only cash deposits may not have had any sleepless nights but were the poorer in the long run. The depositor's pound would be worth less than one tenth of the investor's pound.

[Actually, the poorest are those who invest in stock markets without being prepared to weather any storm that comes their way. Those who sold at the end of 1974 after two terrible years missed the best year since the war.]

.... those who held only cash deposits may not have had any sleepless nights but were the poorer in the long run.

Now let's dig a bit deeper to see what happened each year in these markets.

Chart 1 (below) shows the returns from the stock market in each individual year. You can see that there are big variations from year to year. Roughly 2/3 of the time markets have risen, but in 1/3 of years they have fallen. So, the investor has seen some significant ups and downs on the way.

**Chart 1: FTSE All share Annual Returns**

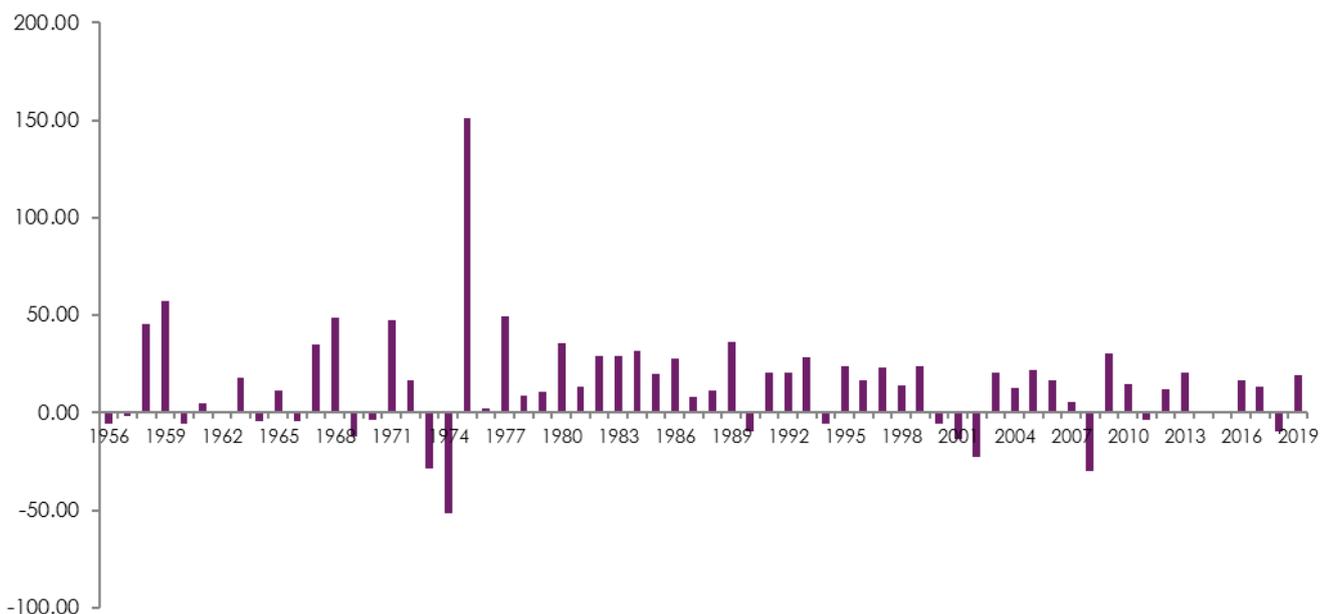


Chart 2 considers the situation for investors who had been in the stock market for 10 years. It shows the return on each ten-year period from 56-65 to 2010-19. This illustrates the point that "risk" reduces over time.

**Chart 2- FTSE All share:  
Rolling 10 year returns**

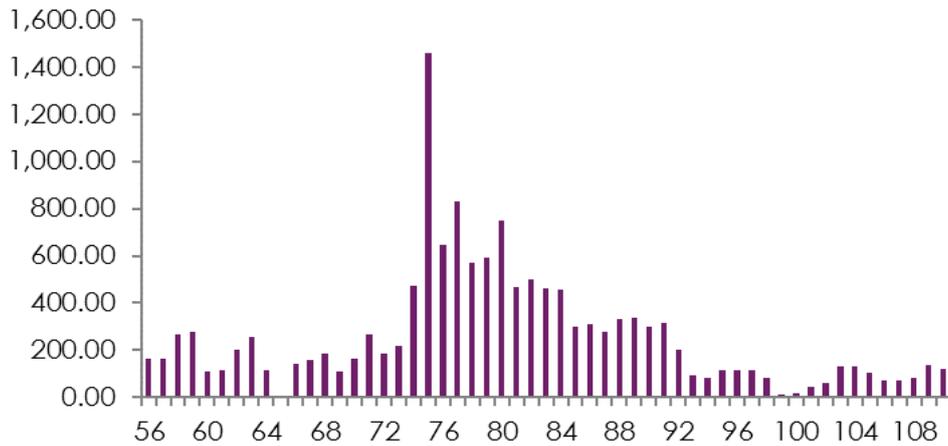
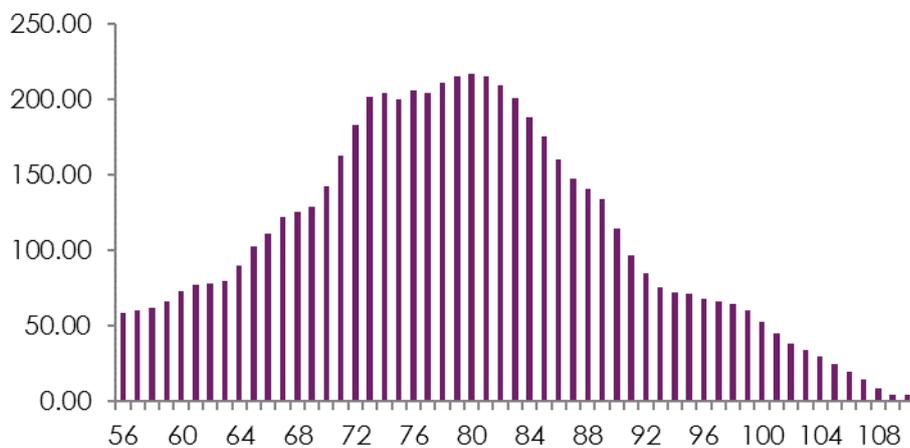


Chart 3 shows the situation for those who had held Treasury Bills for 10-year periods.

**Chart 3- UK T-Bills:  
Rolling 10 year returns**



[Note the very different scales on the vertical axis if comparing 2 and 3 above]

To help analyse these further it is perhaps worth considering the two tables below. These show the best, worst and average returns from each investment over timescales from 1 to 40 years.

### FTSE All share Index:

Best and Worst returns	Annualised returns		
	Best	Median	Worst
1 year periods	151.40	13.75	-51.60
3 years periods	56.56	12.01	-26.18
5 years periods	35.69	13.16	-10.57
7 years periods	32.27	11.09	-4.04
10 years periods	31.62	10.31	0.82
15 years periods	27.70	11.10	1.26
20 year periods	22.93	12.26	4.82
25 year periods	22.41	13.93	6.74
40 year periods	15.38	13.02	11.25

This table shows, for instance, that during the best 7-year period the UK market returned 32.27% each year compound. But in the worst 7-year period an investor would have seen his capital having fall by 4.04% each year on average.

### Treasury Bills:

Best and Worst returns	Annualised returns		
	Best	Median	Worst
1 year periods	16.30	5.80	0.19
3 years periods	14.83	6.17	0.33
5 years periods	13.44	6.35	0.35
7 years periods	12.87	6.34	0.38
10 years periods	12.24	6.61	0.42
15 years periods	12.14	7.64	1.62
20 year periods	11.67	8.35	2.37
25 year periods	10.67	8.64	3.17
40 year periods	8.77	8.58	6.15

Equities perform better over the long term, and in the case of the UK over the past 60 years or so, the extra benefit an investor would have had for suffering the ups and downs is about 5% a year, over and above the risk-free investor. This extra margin over and above the risk-free return is often referred to as the "Equity Risk Premium".

So here we have two investment classes: risk free debt, and equity. It is not appropriate to say one is better than the other, but it is certain that they are very different!

## 5

### Inflation, the thief at the door

We have looked at how Shares and Treasury Bills have fared since 1956, but it is also worth considering the effect of inflation over that period. Here are the RPI figures:

Average Inflation	5.2% pa
Required value of £1 from 56 to 19	£26
Highest single year	24.9% (1975)
Lowest single year	0.0% (1959)

So, considering that inflation meant one shilling in 1956 (5p for younger viewers) could more than buy £1 today, we really need to consider how each of these investment types has fared against inflation.

The tables below adjust all the figures in section 4 for the inflation that was running each year. We currently live in low inflationary times relative to historic trends, and long may it continue, but we should remember inflation reached nearly 25% in 1975.

#### FTSE All-share – Inflation adjusted:

Best and Worst returns	Annualised returns		
	Best	Median	Worst
1 year periods	126.50	9.25	-70.70
3 years periods	39.38	7.23	-42.15
5 years periods	22.58	7.11	-25.00
7 years periods	19.02	7.17	-16.51
10 years periods	19.70	5.39	-9.45
15 years periods	18.01	4.75	-6.73
20 year periods	14.63	4.89	-0.59
25 year periods	15.21	5.79	2.94
40 year periods	9.68	6.40	4.02

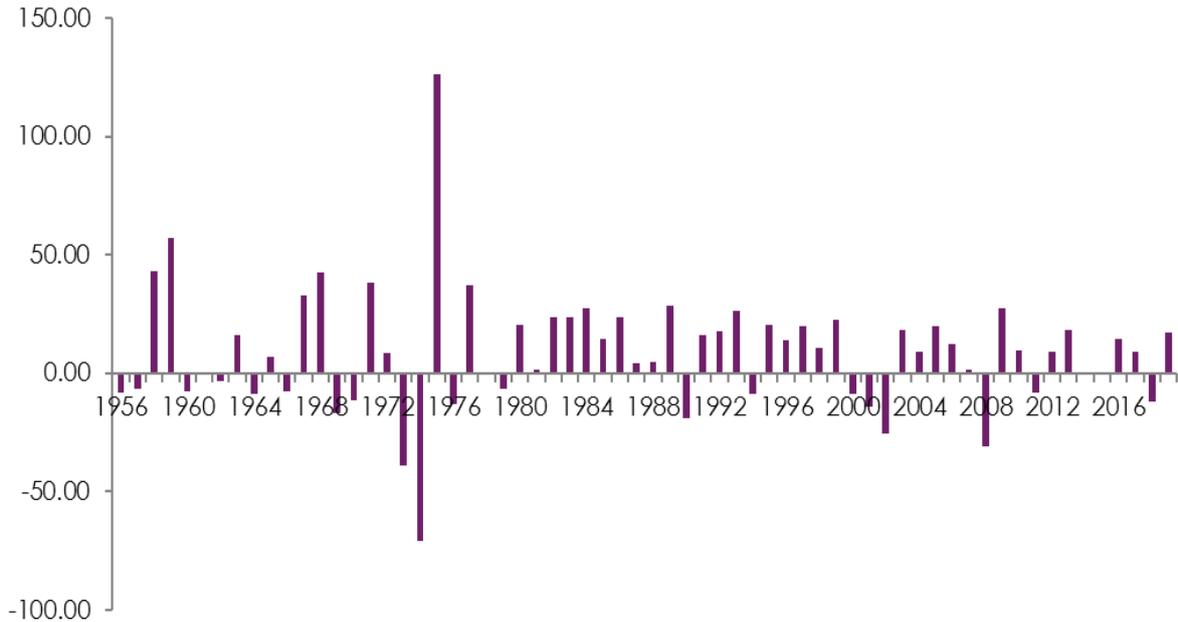
#### Treasury Bills – Inflation adjusted:

Best and Worst returns	Annualised returns		
	Best	Median	Worst
1 year periods	7.60	1.70	-14.30
3 years periods	6.97	1.66	-8.41
5 years periods	6.46	1.84	-6.21
7 years periods	6.46	1.72	-5.22
10 years periods	6.28	1.75	-4.01
15 years periods	5.51	1.28	-1.96
20 year periods	5.06	1.14	-1.17
25 year periods	4.35	1.58	-0.47
40 year periods	2.18	1.85	1.61

Usually “real” returns like these (i.e. total “nominal” return less inflation) are a more significant measure than the nominal return. Better to have a 7% return when inflation is 3% than 10% when inflation is 8%.

So, it may be interesting to see what is your chance of beating inflation with each of these assets. Here we can look at the simple year-on-year returns, each adjusted for inflation in that year. These are charts 4 and 5 below:

**Chart 4: Annual "real" returns FTSE All Share**



**Chart 5: Annual "real" returns T-Bills**



Again, there is more variation in the equity returns than the Treasury Bills, but there was only one year during the 70's when Treasury Bills returned more than inflation. With that in mind, we do have to re-examine what we mean by "risk free".

Treasury Bills are risk free as far as their face value is concerned, but not risk free when compared with inflation.

So, can we take this a stage further and estimate what chance you have of beating inflation with either Equities or Treasury Bills. We can't know the future, but this is what we experienced in the past.

<b>Time Periods</b>	<b>Equities beat Inflation</b>	<b>Bills Beat Inflation</b>
1-year periods	65.6%	67.2%
3-year periods	79.0%	67.7%
5-year periods	78.3%	66.7%
7-year periods	84.5%	69.0%
10-year periods	80.0%	65.5%
15-year periods	88.0%	66.0%
20-year periods	97.8%	71.1%
25-year periods	100.0%	87.5%
40-year periods	100.0%	100.0%

The table shows for instance that of the 20-year periods since 1956, 97.8% resulted in returns from shares beating inflation, but only 71.1% showed bonds beating inflation.

From these stats it seems that you are more likely to beat inflation with equities provided you look at medium to longer term investment (say 10 years plus).

So, what have we seen so far?

- Equities beat Bills in the long term
- They are riskier in the short term
- In the long term the reward for carrying that equity risk has tended to be about 5% a year, over and above the risk free return.
- Inflation is likely to be beaten by equities provided you take a reasonable time scale, say 10 years or more.

## 6

### Measuring Risk. The maths bit...don't switch off.....

Risk can mean lots of different things to different people; from not reaching your goals in the long term, to investments dropping in the short term. But it is useful to have some measure of risk, or at least of the likely rockiness of the ride you'll get from any particular investment strategy.

Here one number is perhaps more helpful than any other. This is what is known as the **Standard Deviation**. This gives us an indication, not of how well investments will do on average, but of how different the results in any one year might be from the average.

Consider these two very different looking series of investment returns over 5 successive years.

Year	1	2	3	4	5
Series one returns	4%	7%	5%	2%	7%
Series two returns	-12%	28%	-5%	19%	-5%

Each of these series has a simple average return of 5% (arithmetic mean = add them up and divide by 5). But, with the first the returns are pretty steady and there is little variation, whereas in the second series the returns vary by 40% from best to worst.

An average return figure is useful, but having a handle on the variability of returns, or the "volatility" is also very helpful.

Standard Deviation is a mathematical measure of this variability and is expressed as a single number. In the example above the standard deviations for the two series are 2.1%, and 17.4% respectively.

The bigger the Standard Deviation, the more volatile the series is.

Roughly 2/3 of the time, your return can be expected to be within one Standard Deviation of the average return.

For instance, if a series had Stan Dev of 15%, and average annual return of 8%, you'd expect to get between -7% (i.e. 8% -15%) and +23% (i.e. 8% +15%) in 2 out of 3 years. Obviously, it also means in 1 out of 3 getting you could get below -7% or above 23%.

So, in some of the work below I will use Standard Deviation as a short hand measure of "risk".

## Lies, Damn Lies, and Statistics.

As a side note, you should be very careful with the way statistics are manipulated. As the saying goes there are "lies, damn lies and statistics." The more eagle-eyed of you will no doubt have become incandescent with my lax approach to averaging the return figures above.

Although the simple "arithmetic" mean (i.e. the average obtained by adding up the 5 numbers in each series, and dividing the answer by 5) is 5% in each case, the amount an investor would have received by investing in each scenario is quite different:

Year	1	2	3	4	5
Series one returns	4%	7%	5%	2%	7%
Series two returns	-12%	28%	-5%	19%	-5%

The first series would have returned £1.28 for each £1 invested; the second £1.20.

The important average in financial matters is usually the "geometric" mean not the "arithmetic" mean. The geometric means are 5.06% and 3.71% respectively for the two series above.

Watch out, a 10% profit one year followed by a 10% fall the next results in you losing 1%, not being back where you started. Or after a fall of 1/3 it takes a 50% rise to get you back to square one. For those familiar with toothpaste adverts, "50% extra free" is equivalent to "1/3 off" – but guess which one they advertise. And guess how fund managers report their returns?

## Measuring and Controlling Risk:

So, armed with this newfound understanding of statistics (!?) it might be worth considering what the standard deviation has been on the two asset classes we looked at above. From 1956 to 2019 inclusive these were:

Asset:	Annual Return	Standard Deviation.
FTSE All Share Index	11.44% pa	26.6%
Treasury Bills	6.45% pa	4.2%

For many the rollercoaster of equities is more than they can stomach, but they want a return which will hopefully beat inflation, so the obvious way forward is to create an acceptable mix: some cash, and some equity.

Now, you might think that mixing half cash with half equities would give you a return which is half-way between the two, say 8.9% pa, with the standard deviation around 15.4%.

Strangely that doesn't happen. If you simply put half your money in equities and half in bills and left it, the numbers would have been:

Asset:	Annual Return	Standard Deviation.
FTSE All Share Index	11.44% pa	26.6%
Treasury Bills	6.45% pa	4.2%
50/50 Shares / Bills	10.33% pa	16.79%

The annual return from the mix is much better than the average of the two individual returns.

Now, some may have picked up that although you started with 50% in each asset, you definitely would not end up with 50% in each. Shares did better so you'd end up with more in shares, and so logically the return from shares would become the dominant figure. This in turn would mean you end up with an average return which isn't half-way between the return on shares and bills; it would be nearer that of shares.

But what would happen if you put it back to 50/50 every year? For instance, if shares did better and you ended the year with, say, 55/45 in favour of shares, you would sell some and top up the cash. Similarly, you would buy more shares if they had fallen and you had ended up "overweight" in cash.

If you follow this idea of "rebalancing" each year, a surprising thing happens as you can see below:

Asset:	Annual Return	Standard Deviation.
50/50 Shares / Bills No rebalancing	10.33%pa	16.79%
50/50 Shares / Bills Rebalanced annually	9.6%pa	13.74%

Here the total return has dropped a fraction, but what is really noticeable is how far the risk measure has dropped.

In practice, over different time scales we can see the total return of a rebalanced portfolio being close (either a little above or a little below) to that of the two without rebalancing. But what we see invariably is that the risk is reduced by rebalancing.

So, by mixing and rebalancing two different assets we can:

- Reduce risk.
- Not necessarily reduce return.

Or looking at it differently, assuming a certain level of risk was acceptable to the investor, a higher return within that risk profile can be achieved by a rebalanced portfolio.

Rebalancing is a tool to reduce risk  
or enhance returns – or both!

Rebalancing works best if we have two assets which behave very differently. Interest rates on Treasury Bills, and short-term movements in the stock market, have little in common. If interest rates are high it does not mean that we will have strong stock market returns that year, nor does it mean the opposite.

So, we would say the returns from shares and bills are not well **“Correlated”**.

More Maths.....skip this if you want....

In Maths, if two things go up and down in line with each other they would be well correlated. For instance, temperature and the sale of ice-creams would probably be well correlated. Heat wave = high ice-cream sales. If the connection is perfect the correlation would be +1.

If one thing goes up and the other goes down the correlation would be negative. For instance, the sale of ice creams and umbrellas would probably be negatively correlated. Heat wave = no umbrella sales. If one doubled when the other halved, the perfect negative correlation would give a score of -1.

If there is no connection at all between two series of numbers, like say monthly umbrella sales in Darlington, and petrol prices in Milwaukee, the correlation would be 0. They are uncorrelated.

As it happens, the correlation of the All Share Index and Treasury Bills was just 0.13 from 56 to 2019. That is pretty close mathematically to uncorrelated. This in turn means these two assets do well when mixed together, and rebalanced. One acts as a counter-weight to the other.

...come back to me.....

So, if mixing just two different assets can give a good return with a moderate risk it raises the question, can we increase the return further without increasing risk, by including more assets?

The simple answer is, “Yes”, and this is another cornerstone of our investment philosophy.

# 7

## Diversification

It is often said that you shouldn't have all your eggs in one basket, and in investment this seems intuitively obvious. Spreading things about will stop you losing too much if something unexpected happens.

So, we recommend that investment portfolios are spread as widely as practicable both within and across different asset types and economies. This balances out the sometimes random effects of individual stock performance. In practice this means we recommend investing via funds, which hold many stocks, or even every tradable stock in that sector of the market.

What is not so obvious is that the very act of diversifying can reduce risk without necessarily reducing returns. (We will look at this in more detail in section 9.)

If we could predict the future we would obviously pick the assets which will do best in the next period, but bearing in mind all I have said before about efficient markets, you will not be surprised that I do not believe it is possible to consistently predict which market to be in and when.

Consider the tables below:

Sector	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
UK Market	22.00	16.75	5.30	-29.93	30.12	14.51	-3.46	12.30	20.81	1.18	0.98	16.75	13.10	-9.47	19.17
UK Value	27.24	26.99	-8.94	-49.56	34.86	17.15	-13.42	18.86	19.29	-4.75	-15.69	38.01	17.34	-14.03	15.15
UK Small	26.86	24.98	-6.96	-42.80	52.02	32.80	-10.12	27.61	34.19	-2.13	10.56	8.90	20.52	-14.01	28.09
Int Market	22.50	4.39	7.30	-16.55	14.49	16.13	-5.49	10.79	24.90	12.55	5.41	29.32	11.73	-2.90	23.25
Int Value	26.16	10.11	0.80	-25.26	21.62	17.78	-13.06	16.71	30.37	9.65	1.75	41.78	9.46	-10.13	19.23
Int Small	30.17	7.20	3.89	-21.91	26.65	26.95	-12.11	11.13	26.20	7.67	4.92	39.42	9.80	-9.25	19.48
Emerging Markets	47.05	18.64	42.67	-32.98	62.65	28.94	-18.80	14.54	-2.71	5.46	-7.08	33.57	24.50	-8.82	12.88
Global Reits	23.21	21.95	-12.59	-23.80	19.00	27.88	2.10	18.28	0.85	30.48	6.35	27.88	-0.84	0.88	19.79
Global Short Dated Bond	3.48	3.88	6.06	7.02	5.14	5.89	5.22	5.50	0.17	3.50	2.06	2.02	1.46	0.56	2.70
UK Treasury Bills / Cash	4.80	4.85	5.70	4.44	0.53	0.47	0.49	0.35	0.38	0.40	0.44	0.35	0.19	0.51	0.75
Inflation / RPI	2.20	4.40	4.00	0.95	2.40	4.77	4.82	3.09	2.10	1.62	1.20	2.49	4.12	2.70	2.21

This shows the return of various asset classes in each of the past fifteen years. For instance, in 2009 the UK stock market returned 30.12%, and Emerging Markets 62.65%

This 15 years is too short a period to draw any real conclusions about how these different assets are likely to behave in the long run, but what is clear is that different types of investment perform differently at different times.

This can be seen easily if we rearrange the investments, putting them in order each year with best at the top and worst at the bottom. For example, the lilac coloured cell (Emerging Markets) was the worst performer in both 2011 and 2013 so it would go to the bottom and was best in 2005, so it would be at the top.

If we pull out the numbers and just leave the colour coding in, we get the table below. This hopefully makes the point - It is a right muddle; a rather peculiar tartan. Just try following any colour from left to right and see if you can find a pattern.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Best Performer</b>															
<b>Lowest Return</b>															

What is instantly obvious is that there isn't any obvious pattern. In fact, it looks pretty random.

If you knew what was coming, you could make a killing. But if you don't and you guess wrongly then you'd end up feeling pretty sorry for yourself.

There is nothing intrinsically wrong with trying to pick future trends, and shift assets from one area to another to capture the best return for the next year. It is just the evidence shows that, on average, those who try, get it wrong as often as they get it right.

We are back to the old story. This kind of return-chasing increases risk and cost; the opposite of what we all want.

Rather, assuming each of these different asset classes has a valid role to play in a diversified portfolio, would it not make most sense to create a mix which uses robust long-term statistical evidence to model and maximise likely future returns, within any given risk profile. And then stick with it?

Rebalancing would be sensible for the reasons described, and obviously changes might have to be made depending on an investor's changing needs, but you would be wise not to jump about from one asset class to another.

Diversification across uncorrelated assets helps reduce risk but not necessarily at the expense of return.

## 8

### What goes in the Mix? Asset allocation

If diversification is a good idea how do we do it in practice? Firstly, we need to establish the right mix of Debt and Equity. Some call this the high-level asset allocation.

What is the right balance of low risk, liquid assets and longer-term equity backed growth funds? This will be particular to you. It depends on:

- Your attitude to risk.
- Whether you are saving and accumulating or drawing down on your savings.
- Whether you need investment income, and if so, how much.
- Your other income and tax position.
- Your age.
- Your health.
- Your family situation.

In other words, this decision is a vital first step, and it depends on you and what your money means to you.

So, having established this high-level allocation, the second step is to subdivide each of the two elements.

#### Whisky and Water

In our model portfolios the element held in equity (or property) funds is subdivided broadly into the same internal proportions irrespective of how much of the whole it comprises. This diversified mix of sector specific equity funds forms the “growth” element of the portfolio.

A helpful analogy (borrowed from Tim Hale’s excellent book “Smarter Investing”) can be to think of this growth element as a blended whisky. We have selected a series of individual malts, whose characteristics we know, and blended them to create a palatable drinking whisky. In investment terms we have taken specific elements of the world equity markets, such as UK Small Companies, or International Value, each of which we know adds something unique to the mix. We have then adjusted the proportions, to create a mix which should capture the profits available from world equity markets, whilst moderating risk.

However, no matter how well blended the mix is, it is still whisky and a bit fiery for many people’s taste. So, we need to add water.

The elements held in Cash, Short Dated Bonds, Gilts, or Index Linked Gilts, are there to dampen volatility, enhance underlying security, and give liquidity and cash flow as required. This is the water in the mix.

The split of these low risk assets may vary from one portfolio to another depending on its specific requirements. However, all the assets used in these lower risk elements are chosen because they have very low risk profiles. They may produce only modest returns over the short or longer term, but they may have future guarantees as is the case with Gilts, short term capital guarantees as with Cash, or very low volatility as is the case with Short Dated Bonds.

Essentially this low risk element is supposed to be "water" not ginger beer (or, perish the thought, lemonade). It is there to dilute the whisky, not change its taste. So, we avoid holding anything in the low risk element which tries the impossible of giving high returns and low risk. "Hedge" or "Total Return" Funds and other alternative investment types are not included.

## So, what are the single malts?

Within our equity portion we want to hold sub-classes having distinct characteristics, which add to the mix. We are looking for assets whose long-term behaviour can be analysed. We want to be able to make reasonable assumptions of future behaviour, based on solid historic data on both performance and volatility.

The first subdivision we make is between **UK and Overseas equities**. Here there are two possibly conflicting issues to consider.

For a UK investor, another layer of risk is added if overseas funds are held. This is currency risk. If the pound falls the sterling value of overseas shares will rise, and vice versa. This would tend to drive us to investing in UK markets, to control this extra risk factor.

Counterbalancing this is the fact that the UK represents only around 6% of the world's stock market capitalisation. So, focussing just on the UK means the investor can be too heavily limited to the performance of the UK economy, and miss the opportunities available elsewhere in the world.

We have chosen to hold 50% in the UK and 50% overseas. Of this overseas element we hold the bulk in established world markets but have a fair element in emerging markets.

The returns from growing economies, such as the China, India, or Brazil, arguably may be greater than from the mature economies of the EU or US, but the risks are higher.

For instance, diversified investment across **Emerging Markets** as a whole returned an impressive 12.8% pa from 1988 to the end of 2019, compared to just 9.0% pa from UK equities. However, the annual volatility was 34% as opposed to 16% for the UK.

We can then add in other subdivisions, and two we focus on are “**Value Stock**” and “**Smaller Companies**”.

There has been a large amount of academic research over many years, which suggests that investment in these areas is likely to add extra returns to a long-term portfolio, when compared to the market as a whole. There is added risk or volatility, but commensurate outperformance.

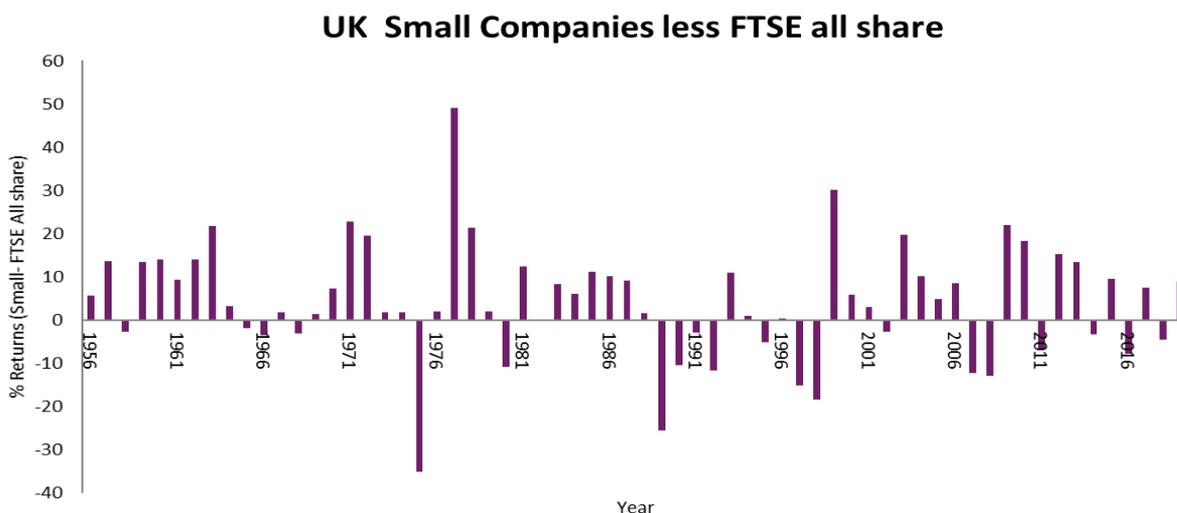
At this point I won't try to explain the reasons why these areas outperform, but it is perhaps worth considering some historic data which help illustrate the point.

Small is beautiful.

I will look first at the comparison between returns from the whole UK stock market with those companies constituting the smallest 10% of the market by capitalisation.

The table and chart below show both the long term returns from each, and how one has fared against the other each year since 1956.

	<b>Small</b>	<b>Market</b>
Annualised Return	15.1%	11.4%
Standard Deviation	28.7%	26.6%
Return over inflation	9.3%	5.7%
Value of £1	£8,083.74	£1,026.39
Real Value of £1	£299.56	£34.91



In the chart above, Small Companies have outperformed the market when the bar is above the axis and have underperformed when below.

In total then, small companies have returned 3.7% pa more than the market as a whole. However, they do not outperform every year, being ahead roughly 2/3 of the time (43 out of 64 years).

## Good Value.

Value is a word used widely in the investment world. Everyone wants to buy something which is good value.

Anyone who has had the misfortune to go clothes shopping in the sales (or venture into Primark at any time!) will know the state the shops get into. Piles of clothes are turned over, mixed up, replaced on the wrong hanger, or dumped on the floor. When people are looking for a bargain, they turn stuff over, and have a good look at it.

Everyone wants that great deal, and the better the deal looks the more people are there competing over it. It is the same with the investment world. Finding value in sophisticated markets is very difficult.

But one approach, which rigorous academic research indicates works well, is to consider how a share price in the open market compares to the company's underlying assets.

One can analyse the "Book Value" of the company (broadly its asset base) and compare it to its stock market valuation. You can then consider the "Book to Market" (BtM), ratio. Broadly, that is the value of all its assets, divided by what the stock market thinks the company is worth.

The market will factor in future earnings, growth potential, intellectual capital etc and in nearly all cases the market value will be greater than the book value.

- A "boring" company might have a very solid balance sheet, with a high asset base, but not have great appeal in the market and for one reason or another have a relatively low share price. It would have a high BtM ratio.
- A more exciting growing company could have limited assets but be loved by the city and have a high share price. This would have a low BtM ratio.

If we compare the returns to investors in the 30% of companies with the highest BtM ratios (boring companies) with the 30% with the lowest BtM (exciting companies) we notice that the high BtM, "boring" (or as someone has dubbed them "unexcellent"), companies are better "value" to the investor.

This may appear counter-intuitive, but seems to be true, in the UK and throughout the world. **Boring is best?**

If define "Value" stock as the 30% of the market with the highest BtM we see the following in the UK:

	<b>Value</b>	<b>Market</b>
Annualised Return	14.4%	11.4%
Standard Deviation	30.6%	26.6%
Return over inflation	8.7%	5.7%
Value of £1	£5,439.44	£1,026.39
Real Value of £1	£210.93	£34.91

**UK Value Companies (30% highest BtM) less FTSE all share**



Here, over 64 years Value has outperformed the Market as a whole by 3% pa. As with the small companies' effect, the outperformance was seen in around 2/3 of cases (44 out of 64 years).

So, holding Small Companies and Value stock in a portfolio is likely to increase the total return over the years. What's more, although the volatility of Small Companies or Value stock are higher than the market as a whole, a diversified rebalanced portfolio containing these can be less volatile than the market as a whole.

So, tapping into the Value and Small sectors of the market should add return, without necessarily adding risk.

## Modelling returns for model portfolios

By looking at clearly defined asset classes we can analyse what they might add to the mix. We are concerned not with how well a particular company or share has done, but rather how the asset class to which they belong has performed, ideally over very long time periods which include all manner of political and economic climates.

This allows us to use historic data to model how a given portfolio mix would have behaved, and hence have a reasonable idea of how it might perform in the future. We do not want to add anything to the mix which has unknown or unpredictable characteristics.

The key components of our Whisky (Equity mix) are:

- The UK Stock Market as a whole
- UK Value Stock
- UK Smaller Companies
- UK REITs (Property)
- Overseas Equities – Developed economies
- Overseas Value Stock
- Overseas Small Companies
- Global REITs (Property)
- Emerging Markets.

Again, mixing these asset classes controls risk (i.e. creates lower standard deviation), but does not necessarily reduce return.

We do not have very long term data on some of these asset classes, for instance Emerging Markets data are unreliable before the late 80's, but to illustrate how increasing diversification can help optimise returns within a given risk profile, let's revisit the scenario above based on Data from 1956 to 2019.

We looked at a rebalanced 50/50 Treasury Bill and UK Equity portfolio, and found the following:

	Return	Stan Dev
50/50 Shares / Bills	9.6%pa	13.74%

Now let's look at what happens if we diversify by building in overseas equities, and small companies. Here the data is based on UK and US equity markets, for which we have good long-term data sets. In each case we will assume rebalancing is done each year.

Purely looking at the relative values of annual return and volatility, in the table below you can see that the mix offering the best return relative to risk is portfolio 5, the most diversified portfolio.

Portfolio:	1	2	3	4	5
UK Market	50%	30%			15%
UK Value		10%			5%
UK Small Cos		10%			5%
US Market			50%	30%	15%
US Small Cos				20%	10%
Treasury Bills	50%	50%	50%	50%	50%
<b>Annual return</b>	<b>9.60%</b>	<b>10.38%</b>	<b>9.41%</b>	<b>9.98%</b>	<b>10.29%</b>
<b>Standard Deviation</b>	<b>13.74%</b>	<b>13.92%</b>	<b>10.32%</b>	<b>11.45%</b>	<b>11.52%</b>

So, unless you know in advance which asset class is going to perform best – and you don't – diversify. It is your best chance of getting the highest return within any given risk profile.

For reference the figures for portfolios, which were not rebalanced would have been as follows:

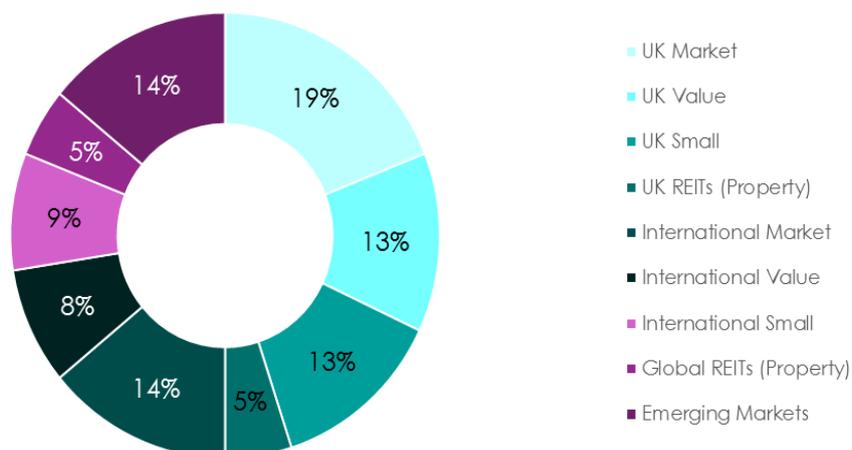
Portfolio:	1	2	3	4	5
<b>Annual return</b>	<b>10.33%</b>	<b>12.31%</b>	<b>10.38%</b>	<b>11.33%</b>	<b>11.89%</b>
<b>Standard Deviation</b>	<b>16.79%</b>	<b>21.36%</b>	<b>14.01%</b>	<b>17.17%</b>	<b>17.89%</b>

What stands out immediately is how volatility is much greater if there is no rebalancing each year. Returns are a little higher but does the extra return warrant the extra risk?

Taking this further we can model the performance characteristics of all the different equity classes that we want to use in our portfolios. We can make a reasonable assessment of the "risk premiums" we are likely to get from using them (that is the amount by which they would be expected to beat a risk-free bond in the long term). Similarly, we have a good sense of their likely volatility, and how well the different classes' returns are correlated to each other.

Using this data, we can try to create a mix of these assets which gives good returns relative to volatility. Our whisky looks like this:

Equity Allocation



This is not necessarily the mix that will give the best returns in the future but taking account of all that we know of these asset classes a mix like this is likely to achieve what we want. That is exposure to the long-term growth of world economies and their stock markets. The slant towards Small Companies, Emerging Markets, and Value Stock should increase returns further, whilst diversification and rebalancing help control risk.

There is one other asset class which we cannot ignore, and that is **property**. There is no question that property, whether commercial or residential, has been a good investment over most periods, and long-term returns have been ahead of inflation and cash, but not as good as equities.

In risk and reward terms, property lies somewhere between bonds and equities, and usually its returns are not highly correlated to either. This makes it an attractive long-term asset class, and useful as part of a diversified portfolio.

However, there are specific practical problems for an investor, such as how to gain diversified exposure to property, how valid is the valuation, and how liquid is the holding. To get around these issues we do not hold direct property in our portfolios but gain exposure through specific allocations to the shares of property companies, which make up part of our "whisky mix".

We can certainly model the returns of the "water" in the portfolio mix. If we stick to risk free (or almost risk free) asset classes, then we know where we stand, and there is very good long-term data.

So, we can add the appropriate amount of water to the whisky for any given client so that the risk profile is right for them, and the chance of meeting their objectives is maximised.

So, that's the theory, but how do we actually create portfolios which can capture the returns we want.

## Portfolios in Practice -Active, passive or something else?

Now, it is all very well for me to say we want to create a portfolio encompassing certain percentages of various equity markets, but how do we actually do that?

I have been modelling elements such as the whole of the UK Stock Market (the FTSE All Share Index) or Global Small Companies. So how do we get exposure to these elements in a real portfolio?

There are basically two ways to get exposure to world stock markets;

1. Buy a broad spread of individual shares which hopefully perform in line with (or beat) the market.
2. Buy units in one or more collective investment funds which hold a large number of individual shares.

Options one is impractical for the private investor. Firstly, you need very large sums to make it at all cost effective, secondly administration is heavy, and thirdly tax rules militate against this approach. In general, buying collective investments is simpler, more cost effective and more tax efficient.

So, given that the only practical option is collective investments, what should be held in these funds and how should they be managed? Here we need to start by considering a cause of much huffing and puffing amongst investment advisors and fund managers.

### The Active vs Passive Debate

The fund management industry grew up primarily on the premise that managers could:

1. Outperform markets
2. Select the right stock
3. Invest at the right time
4. Pick the right asset class to be in next.

They spend a fortune on research, company analysis, economists and so forth. They recruit extremely bright individuals to manage their funds. They pay them royally too and want to make a healthy profit for their firms. So, they have to apply high management charges.

Their expensive marketing teams trawl through performance figures to find which of their funds has done well over what time scale, and they push that fund: "Look how well it has done".

But it is all **“Emperor’s New Clothes”**. They have indoctrinated investors into thinking that these high-powered bright professionals must be able to add value. What they tell us is appealing. We want good returns from our money, and if someone unveils figures to show how they have outperformed, we want to buy into it and be associated with success. But it is all talk and no trousers!

**On average actively managed funds underperform the market in which they invest – they have to.**

This is easily demonstrated by looking at past performance figures as we will see below, but it must be the case. It could not be otherwise:

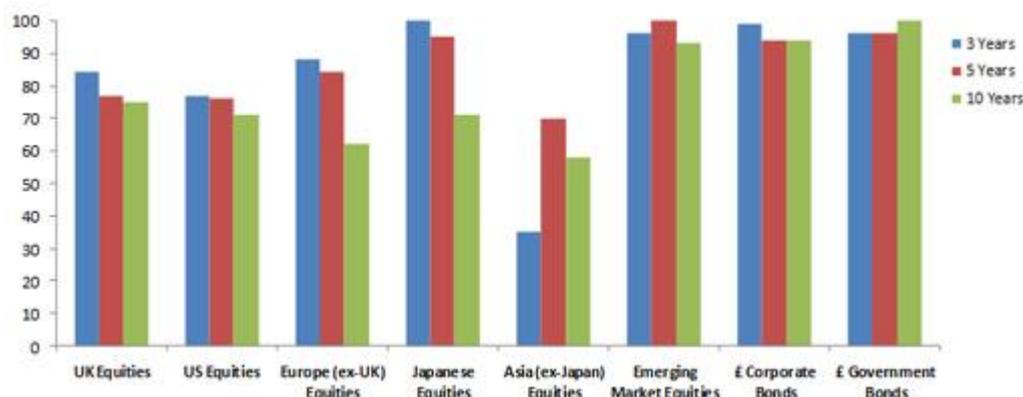
- For every buyer there must be a seller.
- Every trade involves costs.
- On average those buying and selling will return less than the market because of those dealing costs.
- Not only does the buying and selling reduce returns, the high management fees applied by these managers reduce returns further.

This is just simple maths. Imagine a manager, trying to make sure he has the “right” shares in his fund, traded half his shares each year. Let’s assume dealing costs, plus the difference between the buy and sell price plus stamp duty totalled say 1.2% (a very modest estimate), then each year his fund has to achieve a 0.6% return to cover his trading costs (i.e. 1.2% cost x 50% fund turnover).

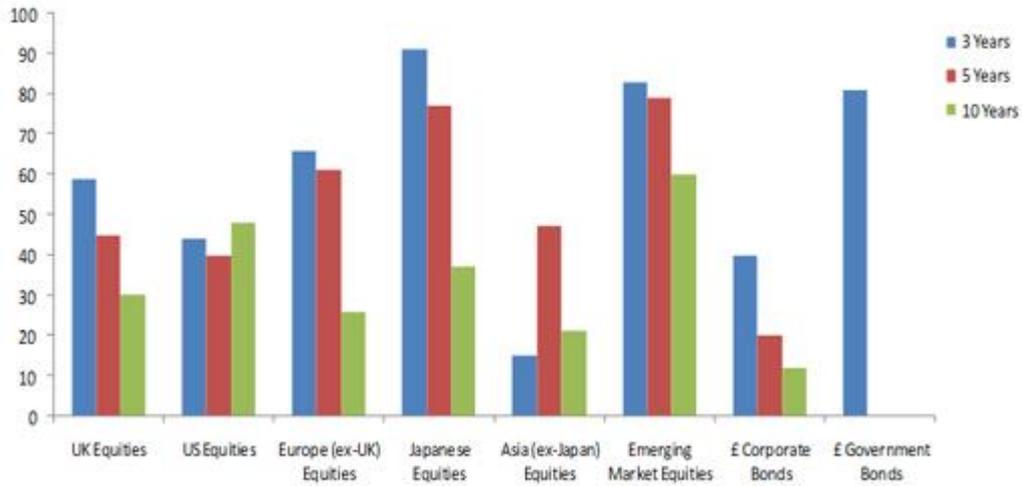
If he also has a management fee of 1.5%, then the manager must achieve an extra return of 2.1% just to match the market. If this were replicated across all managers, then you would expect the average manager to underperform the market by say 2.1%.

It really is inherently obvious – the guileless, (admittedly intelligent), child, can see the emperor is in his birthday suit - but let's look at the compelling charts below:

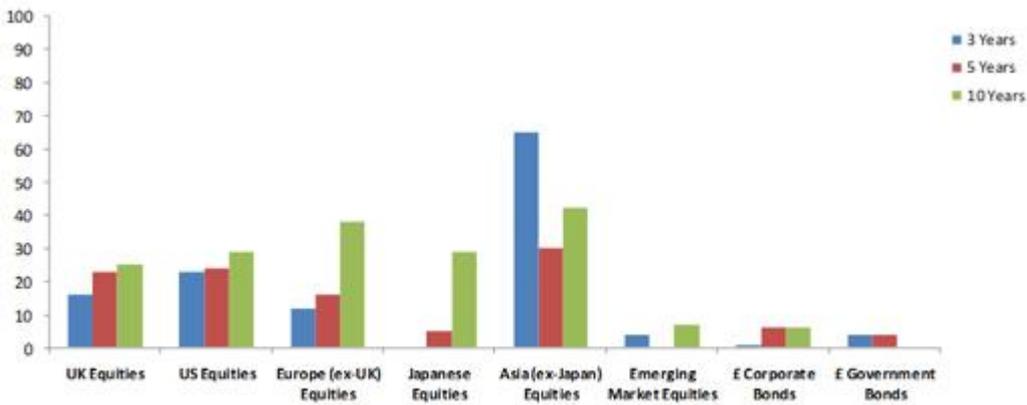
% of Managers who underperform the index



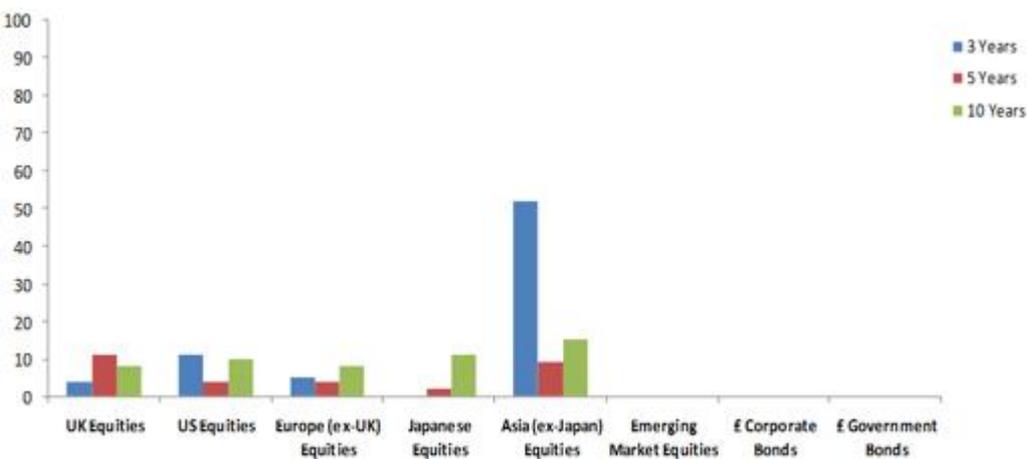
% of Managers who underperform the index by at least 2%



% of Managers who outperform the index



% of Managers who outperform the index by least 2%



Courtesy of Evencore Pan Asset. Source: Money Management magazine tables of UK Registered Investment Fund Performance, whose own data source is Morningstar. Data is to 1st Jan 2008.

So, if we would expect active funds to underperform the index by say 2% on average, what are the alternatives?

A **passive fund** will buy into the market, or a sector of it, and will hold all the tradable shares in its target market index in the proportions they make up the index (or use sampling or replication techniques which I won't discuss now). Once the shares have been bought, they will just be held.

As money comes in or out, a proportion of the fund's shares will be bought or sold to keep the balance in line with the index it is following. If a company's shares no longer fulfil the criteria associated with the index, then they will be sold as appropriate. But that's all - no shares are being sold because a manager doesn't think they are worthwhile anymore.

So, the dealing within the fund is limited and internal costs minimised. What's more, the management charges of these passive funds tend to be between 0.1% and 0.5%pa. This is very much cheaper than the typical 1.0%pa charge on active funds.

If one takes account of all costs associated with running a fund, the passive manager will have a "head start" of between 1% and 3% a year over the expensive actively managed fund.

So, a properly configured passive fund will outperform the average active fund that is fishing in the same pool. It must do.

But don't just take my word for it.

"If "active" and "passive" management styles are defined in sensible ways, it *must* be the case that:

1. before costs, the return on the average actively managed dollar will equal the return on the average passively managed dollar and
2. after costs, the return on the average actively managed dollar will be less than the return on the average passively managed dollar

These assertions will hold for *any* time period. Moreover, they depend *only* on the laws of addition, subtraction, multiplication and division. Nothing else is required."

Dr William F Sharpe, Winner Nobel Prize in Economics 1990.\*

\*The arithmetic of Active Management (The Financial Advisors' journal)

## Forget averages - why not pick good managers?

But I hear you say, that's just about averages. Everyone knows that some investment managers have performed much better than the average, and we should use them. We have the likes of Anthony Bolton, of Fidelity Special Situations fame, or Neil Woodford of Invesco Perpetual High-Income fund. Surely, they prove that it is possible to "get it right" more often than you get it wrong.

(Although even Neil Woodford has since fallen out of favour with his latest fund suspended after heavy falls and liquidity issues.)

Sounds plausible? Why not just pick the tried and tested managers who have consistently done better than average? Ok, but who are they, and how long should they outperform before I can call them consistent?

Imagine I was a fund "manager" and I picked a series of shares completely at random. You would expect, ignoring costs, that I would have a 50/50 chance of being above average in a given year.

If I repeated this in the second year, then the chance of the two consecutive years would be 1 in 4. It's like tossing heads twice in a row.

To get three good years is 1 in 8, four years is 1 in 16, five in a row is 1 in 32. So, if there were say 1,000 managers you would expect, just on random probability that 30 would be above average every year for 5 years.

If I were one of the 30 who had sat in his back room throwing darts at the FT, I might appear to be a 1<sup>st</sup> rate manager. But I was just being lucky.

So, how do you distinguish between the genuinely gifted and the lucky? Well one way is to wait a lot longer - 10 heads in a row is getting more unlikely! Maybe he really has something. A 1 in 1,024 chance isn't too likely, but with several thousand funds open for investment, we might expect someone to do it.

So, it is not easy, even after the event, to determine who has actually been a good (rather than lucky) manager. Trying to work it out before he outperforms is well nigh impossible.

There is enough measurable risk associated with stock market investment without adding an extra unquantifiable risk, namely "manager risk". This is a lottery where the tables are stacked against you.

So, to reduce the risk of picking the wrong manager, what do the believers in active management do? They spread their money across several managers, and guess what? They are more likely to get a return close to the average market return. But that return is minus the high fund costs – and they are back to square one (or rather a couple of percent a year behind square one!).

## Picking “top” managers may be bad for your wealth.

There is also overwhelming evidence to suggest that chasing the current top managers could actually be worse than getting an average fund!

Dimensional Fund Advisors carried out a fascinating piece of research on actively managed UK Equity funds from Jan 1984 to December 2010. They looked at how the top 30 managers for each five-year period performed subsequently.

The table below, which is an extract of their work, will take a little thought and numerical dexterity to interpret fully, but if you like that kind of thing, and you probably do to have got this far(!), it's fascinating. If not just skip to their conclusions at the foot of the page.

In the top table we see that, of the top 30 managers (out of 100 funds running through Jan 94 to Dec 98), 15 beat the index in that period. In the next period 71 funds out of 149 (a little under 1/2) beat the index. Of those 71 “winners” just 17 had been in the top 30 of the previous 5 years.

In the lower table we see that only 9 of the previous period's top 30 managed to beat the index in 2004-8. The average return from those 30 was just 0.97% pa, against 1.99%pa from the average fund, and 3.48%pa from the index.

	First 5 year Period		How they fared in the subsequent period
	<b>1994-1998</b>		<b>1999-2003</b>
Top 30 Funds in 1 <sup>st</sup> period -Average annual return	14.50		0.18
All Funds -Average annual return	11.60		-0.03
FTSE All-Share Index -Annual Return	13.83		-1.08
Number of Funds (open in period)	100		149
No. of Top 30 from the 1 <sup>st</sup> period which beat Index in each period.	15		17
No. of All Funds beating FTSE All Share Index in each period.	15		71
	<b>1999-2003</b>		<b>2004-2008</b>
Top 30 Funds in 1 <sup>st</sup> period -Average annual return	7.42		0.97
All Funds -Average annual return	-0.03		1.99
FTSE All-Share Index -Annual Return	-1.08		3.48
Number of Funds (open in period)	149		239
No. of Top 30 from the 1 <sup>st</sup> period which beat Index in each period.	30		9
No. of All Funds beating FTSE All Share Index in each period.	71		63

The conclusions drawn from careful analysis of all the underlying data in the research, and other similar long term research programmes are:

- On average top performing managers do not continue to out-perform more than you would expect from chance.
- Tracking a benchmark index is likely to be a more reliable investment approach than using active fund management.

Active funds don't make good building blocks – they change shape!

Finally, active managers can and will change the management style of their fund as they see fit. This may improve or reduce performance, but it does make the fund an unhelpful building block within a balanced portfolio.

We want to know the funds we use will do “exactly what they say on the tin!”. Active funds just don't do that.

So, steer clear of Active fund managers. Passive is preferable.

Active funds are rejected because:

- They are expensive
  - High internal dealing costs
  - High management charges
- Selecting a fund that will do well in the future is a lottery.
- Top managers usually don't continue to outperform.
- Active funds are not good building blocks.

Passive funds are preferable because:

- They are low cost – so are likely to give better total returns.
- They do what they say on the tin – give accurate exposure to market sectors.
- We can model the return and risk characteristics both in isolation and in a portfolio.

So, building model portfolios with passive funds that accurately target the various asset classes that make up our “whisky and water” would be a sensible starting point of building our portfolios. Each fund should perform in line with the sector of the market it follows.

This should give us an efficient, cost effective way of capturing the returns we would expect from world equity markets. It would also enable us to make informed assumptions about both future risk and returns. And that is a key for anyone hoping to plan their financial future.

However, there is a problem with the structure of most traditional passive funds, and one that active managers inevitably cite in their defence.

The Tracker Trap.

In the final analysis, what we want from a fund is that it captures the returns of the market with as little cost as possible. If we want to benefit from the extra return expected from smaller companies, or value stock, we want a fund what will focus on those areas as efficiently as possible.

Traditionally the only practical alternatives to actively managed funds were Tracker funds. These would follow a commercial index, such as the FTSE 100 index (Footsie) which expresses the fluctuating value of the 100 largest companies in the UK. The creation of Trackers, which simply held all the shares making up the index, was a good step forward. Management costs were lower and manager risk was eliminated.

However, Trackers have drawbacks. For instance, each quarter, the companies which make up the Footsie are reassessed and a few companies, whose market value has been dropping relative to its peers will be replaced by ones, whose market value has overtaken the ones about to be demoted.

The index is unemotional. Promotion and demotion are determined by market capitalisation and have nothing to do with the long-term strength of the company. But just as promotion or demotion from the 20 club Premier League has a huge effect on the value of a football club, moving in or out of the arbitrary index of 100 shares can be very damaging for an investor.

If a share falls out of the index a tracker fund has to sell it, and forced sellers get poor prices. Similarly, the fund has to buy the promoted companies, so their share price kicks upwards because of all the forced buyers. So, the tracker sells shares at a deflated price and buys at an inflated one. That's no good!

The problem can be exacerbated if the index has both an upper and a lower threshold, like the FTSE 250, which holds the next 250 largest companies below the top 100.

It is well documented that trading in small companies can be much more costly than in large company stock, so the last thing one wants is to be a forced seller or buyer in that area. So, tracking a small companies' index could have real problems at the boundary.

To mitigate the issue of poor trading at the edge of the index one tactic is to "buy the whole market" and track the "All Share Index" where the only joiners are very small companies being listed for the first time or de-listing (or going bust). This is not a bad solution if one wants to capture the whole UK market.

But how do we capture the extra return associated with slanting towards smaller companies and value stock? In some areas no suitable "index" exists, or if there is an index why should the fund be constrained to hold precisely the companies which make up that arbitrary index.

### "Passive Plus"?

What we need is to find funds, which have at their heart a clear scientific approach. Ones which have strategies based on the best academic research, which are highly diversified, select and weight stock by analysing their size and value criteria, and which have the flexibility to trade in a considered unforced manner.

We want funds which avoid all the vagaries of active management but are not constrained by the artificial strictures of traditional trackers, slavishly following an index.

So far, we have found only one manager who fits the bill, Dimensional Fund Advisors. The firm which has over \$600B under management has grown steadily over nearly 40 years in an unconventional way. They have taken academic research on market behaviour by Nobel Prize Winners Samuelson, Markowitz, Sharpe and Fama, amongst others, and sought ways to implement it practically.

As understanding of market behaviour has developed, they have factored it into their strategies. But they only accept a principle (such as the size or value effects) if it is persistent across long time frames, and pervasive across the world. They are not interested in fads, trends or flavours of the month.

Dimensional are distinctive and different and we have yet to find a better way of capturing market returns than using their funds.

Traditional managers do one of two things: Active managers focus on picking individual stocks, the antithesis of diversification; index managers hold many securities but mimic arbitrary benchmarks.

Dimensional chooses a different path. It's not active management as we have known it, and it's not conventional passive tracking.

Maybe it's Passive Plus?

## Real World Solutions:

Turning all the theory above into workable solutions is vital. We need practical ways of harnessing the potential profits of global investment markets to give ourselves the best chance of achieving our individual financial planning objectives.

So, we build risk graded portfolios of "Passive Plus" funds, which spread money across different economies, asset classes and thousands of individual securities. From the outside they appear simple; irrespective of how large a portfolio is, it may hold just 8-10 funds. But a lot has gone into the design.

It's simple but far from simplistic.

## Intelligent Investment Checklist

So how do you Invest Real Money in the Real world? Here's a checklist to consider

1. Know what's important to you – what does your money mean to you?
2. Know what you want to achieve from investing – have a financial plan.
3. Accept that risk and reward go hand in hand.
4. Understand how different asset classes behave and use that knowledge to assess what risk level is right to you.
5. Don't try to second guess the market.
6. Once invested, stay invested, and stick to the plan.
7. Diversify within and across asset classes.
8. Use passive(plus) funds for efficient, cost effective, pure asset class exposure. Don't be seduced by fund managers' spin.
9. Rebalance to optimise return relative to risk.
10. Review investments in the light of your financial plan, not in isolation.

## Appendix: Data sources and bibliography

### Bibliography/ Suggested Reading

[1] Smarter Investing: Simpler decisions for Better Results	Tim Hale
[2] The Intelligent Asset Allocator	William Bernstein
[3] Asset Allocation: Balancing Financial Risk	Roger Gibson
[4] A Random Walk Down Wall Street	Burton G Malkeil
[5] The Investment Answer	Goldie & Murray

### Sources of Data

Data provided by Dimensional Fund advisers, full data source information available on request.

### Risk Warnings

- Past Performance is no guarantee of future returns.
- The price of units and the income from them can fall as well as rise.
- All statements concerning the tax treatment of products and their benefits are based on our understanding of tax law and Inland Revenue practice. Levels and bases of tax relief are subject to change.

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