

# **IFP Fellows' briefing paper series**

## **Behavioural finance**

## Introduction

The study of behavioural finance has developed over the past 30 years or so. It looks at the psychology and emotional factors behind making investment decisions and, by using these, identifies mismatches between how investors are assumed to behave, based on traditional finance theories, and how they behave in practice.

An understanding of these factors can help financial planners understand how investors make investment decisions, and the actions that may need to be taken to help investors make better decisions to avoid some of the common pitfalls of investment.

The traditional finance theories, such as modern portfolio theory (MPT) and the capital asset pricing model (CAPM), are based on many assumptions, which include:

- investors always behave rationally
- investors do not base decisions on factors other than risk and return only
- all investors have the same information available and will all use it in the same way (CAPM)
- investors are well-informed
- information is available at negligible cost
- investors understand all of the information that is presented to them.

From the above, it is already possible to see some divergence from real life!

While this paper is intended to serve as a summary of the main general principles underlying behavioural finance, there have been a multitude of papers and books written that study the subject in more detail. The intention of this paper is to provide financial planners with a basic understanding of the biases and other factors that influence investors' thought processes. Planners can then begin to develop and implement strategies to influence investors' behaviour to prevent them making some of the more common mistakes and to develop sound communication with clients to help develop trust.

## What is the value of understanding the principles of behavioural finance?

Most people understand how their emotions can affect the decisions that they make on a day-to-day basis, and indeed, that different emotions may apply in different ways at different times.

By contrast, traditional finance theories tend to assume that all investors will act in a careful and consistent manner when making investment decisions.

While behavioural finance cannot prevent investors from making ill-advised or emotionally driven investment decisions, a firm understanding of its principles may help investors and financial planners to identify the impact that emotions and biases can have when making investment decisions. An understanding of behavioural finance can help to reduce the influence of emotion or bias-driven motives and (in some cases) can be used to develop ways to work around their presence.

This may be particularly relevant as many prevalent emotions and biases may, at best, be irrational. Some may also contradict others.

It is also worth noting that, while this paper concentrates on the factors surrounding investment decision-making, many of the principles discussed also feature in day-to-day life and many have been used (and exploited) by the advertising industry since at least the 1950s.

## Automatic or reflective thinking

As a starting point, it is worth identifying which parts of the decision-making process are 'automatic' and intuitive, and which parts are reflective and rational.

The automatic parts of the thinking process use the oldest parts of the brain and generally lead to unconscious and fast, but uncontrolled, actions and decisions. An example would be reflex actions – if you perceive an object travelling towards you, you will instinctively flinch or duck to avoid it.

Gut instinct is another example of automatic thinking. Although gut instinct is quite often correct, this is not always the case. A little time spent using reflective thinking will provide a more reliable solution.

By contrast, the reflective parts of the thinking process are more controlled, deliberate and slower – the thinker makes a conscious effort to consider the pros and cons of a particular course of action, before reaching a decision.

Learning to speak a foreign language is an example of reflective thinking. The learner has to think what to say and how best to structure each sentence, until he or she is so familiar with the language that the automatic thinking process takes over and the brain processes the once-foreign language in the same way it does its mother tongue.

## Case study

To illustrate this point, read the following scenario. What answer first springs to mind?

*An investor buys 100 shares in each of two different companies A & B, investing a total of £1,100. The holding in Company B's shares cost £1,000 more than the holding in Company A's shares. How much was invested in Company A's shares?*

What was your answer? £100? £50? Something else?

Many people's instinctive, automatic thinking system would come up with an answer of £100; but a little reflection produces the correct answer, that the holding in Company A's shares cost £50 and the holding in Company B's shares £1,050 to give the total investment of £1,100.

## Heuristics

The *Concise Oxford Dictionary* defines 'heuristic' as:

1. Allowing or assisting to discover
2. Computing proceeding to a solution by trial and error

The system of trial and error generally leads to individuals developing 'rules of thumb' to cope with situations where decisions often must be taken.

While rules of thumb can assist automatic thinking, they tend to be highly personalised and can also lead to errors and mistakes being made more often, as each individual's own rules may be subtly different to everyone else's.

Each individual who develops their own rules will base them on their own personal experiences, individual biases and personal interpretations of the available information.

These rules of thumb (or behavioural traits) are, in behavioural finance, known as heuristics.

The following sections examine the main heuristics faced by investors when taking investment decisions.

### Anchoring and adjustment

Anchoring involves using a known amount as a starting point for estimating an unknown amount.

As an example, if a survey of radio station listeners asks you to estimate the numbers of hours the average listener spends tuned in to the station each day, your starting point (anchor) may well be the number of hours that you spend listening.

If you listen to the station for, say, 30 minutes each morning and evening while driving to and from work, you may well assume that the average listener will listen for a little longer than you do, say, two hours a day. Whereas, if you work at home and have the radio on in the background all day, it is not unreasonable to assume that the average listener will tune in for a shorter period than you do, so four or five hours may seem a reasonable answer.

Where the anchor is lower than the true answer, there is generally a tendency to underestimate the answer and, conversely, where the anchor is higher, there is a tendency to overestimate.

Salespeople may often use this heuristic by suggesting an anchor to make a customer more receptive to what they are offering.

## Availability

The availability heuristic is based on how individuals process readily available information when asked a question or taking a decision. The heuristic uses this as the basis for reaching an answer. Most people would see the chance of being struck by lightning as very low; but if you have recently read, or heard, of someone locally being struck, you may well see the chance as being significantly higher.

Similarly, the aftermath of a natural disaster can focus individuals' minds and actions. In recent years, we have seen localised flooding in some areas that have not experienced flooding for years. Many people living in these areas, even those living on flood plains, were uninsured.

In the aftermath of flooding, the purchase of flood insurance policies rises sharply, even by those who do not live in the affected area. However, if floods do not recur in the following years, the number of policy purchases and renewals falls away.

## Representativeness

The representativeness heuristic is used when an individual judges new situations against experiences that they have already had – often resulting in the use of stereotypes that are based on past learning and experiences as a guide.

There have been a number of surveys recently looking at the type of driver that buys a particular brand of car. In reality, any connection of a driving style to a particular car is spurious, but 'white van man' still carries a particular reputation!

Representativeness can be used with the manipulation of statistics to try to support a particular outcome (in other words, 'lies, damned lies and statistics'!).

In *Nudge: improving decisions about health, wealth, and happiness*, Thaler and Sunstein give an example of how London newspapers during the Second World War plotted V1 rocket strikes on an area of central London measuring 3 miles by 2.5 miles.

This then seemed to imply that the Germans could accurately aim the rockets, specifically targeting two quadrants, the south-east quadrant (the river Thames) and the north-west quadrant with the majority of strikes. Indeed, the north-east quadrant only received four strikes (from a total of 67) leading some to speculate that German spies and sympathisers lived in this quadrant.

In reality, the V1 rockets could not be accurately aimed and, therefore, the strikes were random. If the quadrants are drawn using diagonal lines rather than horizontal and vertical lines, then the frequency of strikes in each quadrant begins to look more uniform, therefore supporting that the strikes were, indeed, random.

## Gambler's fallacy

Following on from the previous example, the gambler's fallacy heuristic relates to an individual's misunderstanding of what a random sequence looks like.

If you toss a coin five times and come up with a head each time, what would you expect to come up with on the sixth toss? Many would say a tail, but the probability of a head is still (just under) 50%, as is the probability of a tail (there is a slight probability that the coin may land on its edge!)

Similarly, National Savings and Investments state that the odds for each £1 unit of Premium Bonds winning a prize each month is currently 30,000 to 1 (June 2017). An investor with the maximum holding of £50,000 would therefore expect to win, on average, 1.667 prizes a month. If the investor has perhaps not won a single prize for a few months, he or she may feel that prizes are 'overdue' and, therefore, have an expectation of several wins the following month. In reality, the chances of any single Bond winning will remain at 30,000 to 1.

## Overconfidence

Psychologists have found that individuals tend to have an unwarranted confidence in their own decision-making, leading to an inflated confidence in their own abilities. This trait affects not just investment decisions, but also most other aspects of life.

If asked to rate themselves by driving ability relative to others (for example), most drivers will rate themselves within the top 30% or so, despite the fact that 50% of drivers will be below average.

Overconfidence results in seeing the world through 'rose-tinted' spectacles. While such optimism can be useful in helping recover from disappointments quickly, it does also introduce a particular bias when making investment decisions. This often results in investors overestimating their ability to select winning investments, leading to overconcentration of particular stocks in a portfolio and a lack of diversification. In other words, 'don't put all your eggs in one basket'.

Overconfidence can, therefore, lead to the effects of systematic (market) risk being ignored, as the investor believes that his or her stock-picking skills are critical to the portfolio's performance. A knock-on effect can also be that investors trade too frequently, further eroding portfolio returns through dealing charges.

## Self-attribution

The self-attribution heuristic can fuel the overconfidence bias when investors view any positive outcome in portfolio performance as purely a reflection of their own ability and skill.

If a negative outcome is achieved, this will often just be put down to a case of bad luck; and the opportunity to improve the decision-making process in the future is ignored.

Advisers should also be careful that they do not fall prey to the overconfidence and self-attribution biases when client portfolios perform well. Advisers should regularly look to analyse how past advice and recommendations have affected investment performance, to identify what went well, and why, and how improvements can be made to the overall process for the future.

While risk-taking is a factor of life in general, and an essential part of investing to achieve longer-term real returns, it must be carefully analysed and managed; and – when positive outcomes are achieved – it must be given its true attribution to the portfolio return.

## Prospect theory and loss aversion

It is unlikely, if not impossible, that investors will always achieve positive returns in all market conditions. When the expected levels of return are not achieved, it is vitally important to understand how the investor will behave.

The prospect theory and loss aversion heuristics suggest that investors are more sensitive to investment losses than to gains, with some studies suggesting investors are twice as sensitive to losses as they are to gains.

If faced with the toss of a coin (in other words, a 50/50 chance) and a potential loss of £1,000 if you lose, what level of reward would you look for if you win? Realistically, a £1,000 gain should suffice; but most people would look for a gain of around £2,500 on winning, to offset the chance of a £1,000 loss, before the deal looks attractive.

Loss aversion also suggests that investors will avoid locking in a loss; and will show a strong desire to continue holding investments that are showing a loss, in the hope that they will recover tomorrow, at least to a stage where they are breaking even. Such behaviour can dramatically increase the amount of investment risk that the investor becomes exposed to, where the investment risk is the risk of not achieving the investor's goal or selected outcome.

## The disposition effect

Taking loss aversion one stage further, consider this situation:

*You are holding two different investments, with £10,000 invested in each. One has grown to be worth £13,000, the other has fallen in value to £7,000. You are now faced with the situation where you need to realise £5,000 from these investments. Which one would you sell down to realise £5,000?*

The disposition effect shows that investors in such a situation would tend to sell down the investment showing the gain and continue to hold the losing investment. Analysis by Professors Barber and Odean in the US quantified that investors were 50% more likely to sell down the investment showing the gain, while continuing to hold the investment showing the loss, and that this behaviour also had an adverse effect on portfolio returns.

This behaviour continued even where the actions could introduce a tax disadvantage – the sale of the investment showing the gain could trigger a capital gains tax liability (when considered

with other disposals during the tax year), while the sale of the investment showing the loss would create a loss for capital gains tax purposes to set against current year losses or to carry forward to future years.

Advisers can play a crucial role in advising clients facing loss aversion and the disposition effect, both through evaluating each investment with an honest look at its future prospects: and also through the use of automated systems, such as stop loss and stop gain mechanisms, to limit losses and lock in gains.

The disposition effect should, however, be contrasted with other portfolio management techniques, such as rebalancing, where selling high and buying low is the norm (especially in a passively managed portfolio).

## Regret

The regret heuristic provides one reason for holding onto losing investments. The investor may feel regret due to the error of judgment that has allowed this investment to 'fail'.

The regret heuristic can also lead to a tendency to select investments whose returns are well-documented and obvious, over other investments where the potential outcome is more vague. This is because many investors do not want to know about the returns that they have missed out on. Taken further, this bias can lead to simple, savings-type products being selected instead of market-based investments.

In part, this shows that investors may err towards familiar investments with a cost that historically higher performing investments are ignored as the investor has already missed out on these higher returns. The investor may also believe that as the higher returns have been achieved during the period that the investment was not being held, these higher returns will not be sustainable going forwards.

## Inertia

Inertia also plays on the investor's emotions, especially in situations where an investor is suffering regret or is subject to loss aversion. Rather than taking an unpalatable decision today, it may be easier to put off taking any action until tomorrow. This 'mañana' effect can apply even to actions that the individual wants to do, or has already agreed to take.

In some cases, inertia can be a mechanism to avoid regret. In others, it may be due to a lack of sufficient information or understanding around the decision or action to be taken. Some risk-profiling questionnaires ask how quickly investors take investment decisions – those that take fast decisions are likely to be more confident and better informed and may have a higher appetite for risk. Those that procrastinate, or delay in making decisions, may inadvertently be exposing themselves to higher levels of investment risk.

Inertia can have a devastating effect on portfolio returns, both through delaying selling an investment and through failing to buy an investment, but the use of 'automatic' systems and processes can help to counter inertia.



Over the years, many employees, given the option to join an employer's pension scheme have 'never quite got round to it', despite sometimes significant employer contributions – sometimes even with no requirement for the employee themselves to contribute.

The UK government has recognised such inertia; and hopes that the auto-enrolment system for pensions will mean that the majority of eligible members will remain in the scheme – inertia will play its part in stopping members from opting out.

Similarly, investors may fall into a 'comfort zone' when making regular contributions to pension plans and other investments, meaning that contributions are not regularly reviewed for both affordability and for progress towards attaining the required objective. Tying required contributions to a percentage of earnings rather than to a fixed amount is likely to lead to increased investment levels – most employer-sponsored pension schemes do this as a matter of course, but it is less common amongst those funding retirement income through personal pensions.

Again, advisers can beneficially affect investors' behaviour to counter inertia by using these techniques, as well as others, such as automatic portfolio rebalancing and stop loss/stop gain arrangements.

## **Status quo bias**

Even when inertia has been overcome, there can remain a tendency (when faced with having to make a choice) for investors to stick with what they already have. Again, there can be a number of reasons for this, including:

- the extra effort that may be involved in making a change
- the additional uncertainty that a change could bring by placing a greater weight on potential losses than potential gains
- the endowment effect.

## **Endowment effect**

The endowment effect identifies an individual's tendency to place a higher value on an asset that he or she already owns than he or she would be prepared to pay to acquire it. This, coupled with the loss aversion and regret heuristics can therefore help further explain why investors have a tendency to hold on to poorly performing investments, or to continue holding investments showing gains beyond the point when gains should be realised.

This can also be closely bound up with the anchoring effect – the investor uses the purchase price of the investment as their anchor and becomes unwilling to sell the investment for less than this amount plus the expected profit.

## Framing

The way in which information is presented can affect the way that individuals make decisions, even when faced with identical choices. For obvious reasons, the advertising and sales industries place significant focus on framing. Equally, however, the way that financial information and statistics are presented can have a significant effect on how investors process the information.

This can make framing a very powerful technique when it utilises the traits described in prospect theory, so playing on loss aversion. For example, think back to some of the techniques that have been used to sell life assurance in the past, such as the portrayal of starving widows and children.

When used with norms, framing can be used to guide individuals towards the course of action that most people would take. Then, if this course of action is not taken, the individual feels regret at not following what seems to be common sense.

Framing is also important when looking at investment portfolios. Having constructed a portfolio (assuming that this has been well constructed and diversified) investors – and advisers – should look at the portfolio as a whole. Indeed, this is what traditional finance theories suggest.

Investors (and their advisers) may still, however, focus on and pay disproportionate attention to assets (or groups of assets) within the portfolio that may be showing a loss or poor performance. This focus on past performance in specific parts of the portfolio may mean that insufficient attention is paid to best positioning the whole of the portfolio for the future.

## Mental accounting

The framing effect can also be taken a stage further, using mental accounting. Many investors will identify specific investments – or parts of a portfolio – with specific needs, objectives or time horizons. Where investors carve their wealth up into such ‘pots’, rather than using a single ‘bucket’, there is a tendency to treat each pot differently – both from the perspective of the assets held in the pot, and also from the way that the performance of different pots is analysed.

Advisers are not immune from mental accounting, especially where investment products are used within a portfolio – as an example, what are the first words that come into your head if someone says “providing for retirement income” and “tax-free investments”? Pensions? ISAs?

While the use of pots and specific product wrappers can lead to seemingly illogical outcomes (for example holding savings receiving a low rate of interest, while borrowing at a far higher interest rate), mental accounting can also be important to provide investors with discipline. The advantages of pension wrappers are not just limited to their tax-favoured status, but also, in most cases, in that the accumulated value cannot be accessed until the investor attains the age of 55 and even then, for most people, at least 75% of the fund must be applied to providing long-term income.

## Narrow framing and myopic loss aversion

Narrow framing and myopic loss aversion involve placing an undue short-term focus on long-term investments. Checking the value of the assets making up the portfolio too frequently can lead to the investor (and adviser?) becoming overly sensitive to short term volatility, and, in some cases, lead to knee-jerk reactions, which can have a detrimental effect on long-term performance.

## Naive diversification

Many people use rules of thumb and simple approaches when constructing portfolios, often due to a lack of available information.

As an example, investing in a collective investment can be a cost-effective way of diversifying a portfolio across a range of assets and asset classes. However, if the investment is split across several similar collectives managed by different fund groups, the apparent wider diversification may actually lead to increased concentration of assets within the portfolio due to overlap of the underlying assets in each fund.

Naive diversification can also manifest itself in diverse ways; a very cautious investor may feel comfortable placing all of their assets on deposit or in defensive assets. While this may shield them from short-term volatility in the portfolio, the asset allocation may have significantly increased the overall risk of the portfolio when other risks such as inflation risk, interest rate risk, reinvestment risk and credit risk are taken into account.

Similarly, investors with other risk profiles, when faced with choices between different assets or asset classes, may see the lower-risk option as being that with which they are most familiar. This can cause a portfolio to become biased towards home markets (which can provide shelter against currency, political and other risks) at the expense of insufficient diversification across global markets.

Again, advisers have an important role to play in portfolio management, to ensure that portfolios are sufficiently diversified (and non-correlated) and not over-concentrated in any areas.

## The certainty effect

The certainty effect manifests itself in two forms – one for gains and one for losses:

- Gains: investors will tend to avoid risk when thinking about the possible gains that they can make – this can explain why many investors tend to shun equity-based investments when making long-term savings towards providing a retirement income, even while knowing that opting for ‘safer’ investments is likely to mean that they may end up with insufficient income in retirement.

- Losses: when faced with the option either to accept a definite loss or to gamble for a better outcome, investors will tend to opt for the latter. This shows a reluctance to cut potential losses (as also demonstrated by the loss aversion and regret heuristics); and therefore investors will hold on to bad and poorly performing investments for longer than they should.

The certainty effects further demonstrate the general tendency to be more sensitive to losses than gains, as discussed above.

## **The herd**

The herd instinct is probably the behaviour trait that is most prevalent in all walks of life. Many humans prefer to 'go with the flow' rather than be seen to be doing something different.

While this may, in part, be due to a tendency to follow the norm, it can also be interpreted as being a demonstration of rational behaviour where, for example, there may be a cost or effort involved in obtaining information. If an individual has sufficient confidence that someone else knows what they are doing, it may be assumed to be a relatively safe option to follow them and therefore save the time and effort involved in obtaining the information themselves.

From an investment perspective, following the herd can account for many investors' uncanny ability to purchase investments just as their cost has reached a peak; and then to sell them as their value has fallen to the bottom of a trough.

These days, the herd instinct can be driven by media hype and the sheer volume of information that is available, regardless of how informed and reliable that information may actually be. While investors following the herd tend to fall victim to booms and busts in financial markets, they should, perhaps, also realise that it is the herd that causes the booms and busts in the first place, by driving up the price of "stockmarket darling" shares and assets during the booms; and then slashing their value when they fall out of favour (or the next fad comes along) - making them the "stockmarket dogs" during the busts.

At its simplest, consider the premium carried by FTSE-100 shares that is then lost if they fall out of the index.

While breaking out of the herd may take individuals out of their comfort zone, albeit temporarily, it can allow investors and their advisers to take a step back and take decisions more dispassionately. Many contrarian investors have done very well for themselves over the years by not being part of the herd.

## **Conclusion**

Within this short paper, it is not possible to cover all behavioural traits or the full detail of those outlined above; but, by having an appreciation of the psychological states that both they and their clients face when taking investment decisions, advisers can coach, guide and nudge clients towards better decisions and, therefore, hopefully better outcomes.

## Further information

### Further reading

*Nudge: improving decisions about health, wealth, and happiness.* Richard H Thaler and Cass R Sunstein (Penguin Books, 2009).

*Beyond greed and fear.* Hersh Shefrin. (Oxford, Oxford University Press, 2007).

*Behavioural investing.* James Montier. (Wiley, 2007).

*Deceit and self-deception.* Robert Trivers. (Allen Lane, 2011).

*I'll have what she's having.* Alex Bentley et al. (MIT Press, 2011).

*Brain bugs: how the brain's flaws shape our lives.* Dean Buonomano. (W W Norton & Co, 2011).

### Library catalogue

Key facts:

- Behavioural finance is a constantly evolving concept and new studies can introduce new ideas and principles.
- While the human psyche means that investors are likely to continue to behave irrationally, an understanding of the principles underlying behavioural finance can help advisers and investors to understand the rationale used when they take investment decisions.
- Behavioural finance complements traditional finance theories and helps to overcome their individual shortcomings.

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